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1.1 SYSTEM DEMAND AND RELIABILITY

Florida Power and Light has prepared the St Lucie Unit 2 Environmental Report - Operating License as part of the application to the US Nuclear Regulatory Commission for a St Lucie Unit 2 Operating License. Chapter 1 of this document presents updated and additional information which has been derived since the submittal of the St Lucie Unit 2 Environmental Report - Construction Permit, and supports the need for St Lucie Unit 2.

The requirement for new generating capacity from St Lucie Unit 2 is based on the historical and projected growth of power requirements within Florida Power & Light's system. To meet this growth, the current 1979 system capability of 10,957 MW must be expanded to meet the forecasted 1983 peak demand (most probable) of 10,715 MW plus an adequate reserve to maintain system capability and reliability. The addition of St Lucie Unit 2 in 1983 with net summer capability of 802 MW* is necessary to provide generating capacity to serve the projected loads.

1.1.1 LOAD CHARACTERISTICS

1.1.1.1 Florida Power and Light System

Florida Power & Light Company was incorporated in 1925 to manufacture, distribute and sell electricity. Service is provided to approximately 650 communities along most of the east and lower west coasts of Florida, the area around southern and eastern Lake Okeechobee, and portions of north and north-central Florida. The territory covers 27,650 square miles and has 2,032,300 customers. The population in the service area represents 50 percent of the population of Florida.

Florida Power & Light, with 13 other operating utilities comprise the Florida Subregion of the Southeastern Electric Reliability Council (SERC). SERC (in toto) consists of 28 members from the greater portion of the southeastern states. The member utilities are from Florida, Georgia, Alabama, Tennessee, North and South Carolina, as well as portions of Mississippi, Kentucky, and Virginia. Table 1.1-1 presents a complete listing of SERC members with their respective subregions.

SERC is one of the council members of the National Electric Reliability Council (NERC) formed in 1968 with the stated purpose: "...further to augment the Reliability and Adequacy of bulk power supply in the electric utility systems of North America."

NERC consists of the nine Regional Reliability Councils presented in Figure 1.1-1 and encompasses essentially all of the power systems of the United States, as well as Canadian systems in Ontario, British Columbia, and Manitoba. The stated goals of SERC fall directly in line with those of NERC and the other member councils, all with the view to encourage development of reliability and adequacy among the systems within the region. The agreement by which all SERC members abide is presented in Appendix 1.1A.

*Actual rating is 802 MW, however, 55 MW have been offered for sale to other utilities.

1.1.1.2 Load Forecast

The load forecast portion of the load forecast plan is presented in five sections. The first two sections describe the basic statistical methodology used in the development of the present net energy and peak load forecasts, respectively. Part three describes how the effects of conservation on FP&L's expected growth are modeled. Part four is a discussion of the development of the high, most probable, and low estimates which determine the forecast band through the use of simulation methods. Part five is a summary of the principal assumptions used in the preparation of the peak load and energy forecasts.

1.1.1.2.1 Energy Forecast Model

The economy of Florida Power & Light Company's service area is dominated by tourism, construction, agriculture, service industries, and light manufacturing. To adequately forecast the energy requirements for the area, this unique mix had to be recognized. In order to more accurately evaluate and project the patterns of growth for the coming years, separate forecasting equations were developed for each of the major classes of users: residential, commercial, and industrial, which account for about 93 percent of total energy sales. The remainder of total sales is forecast by extrapolation of historical data. These models are a combination of econometric and engineering methodologies.

a) Residential

The residential energy forecast begins with an estimate of the factors that influence the residential sector. The model was developed by using regression analysis over 12 years of energy sales data on a per customer basis. The forecast of total residential energy is equal to the product of residential energy per customer and the number of residential customers. This total is then reduced for the effects of conservation (described in 1.1.1.2.3).

Residential energy sales per customer are represented in the equation as functions of the following:

- Real per capita personal income in Florida
- Real price per residential kilowatt-hour (kWh)
- Air conditioning saturation
- Electric heating saturation
- Cooling and heating degree days

Yearly incremental growth rates for all of the above variables were used to eliminate variable interdependency.

b) Commercial

The commercial sector in Florida is comprised primarily of tourist and service industries. After considerable study, a model was derived in which commercial sales are a function of total employment in Florida and FP&L's residential customers from the previous year.

Using the previous year's residential customers accounts for the delay in the opening of such commercial ventures as shopping centers and restaurants following the occupancy of new residential homes. The total employment variable is used as a measure of the general economic conditions because it tracks the business cycle.

c) Industrial

Industrial energy use represents about eight percent of the total energy sales and is incorporated into the forecast by considering two factors. First, industrial sales are correlated against employment in an incremental growth rate model. This gives a general impression of how present industry is developing. Secondly, new industry is forecasted by direct contact with the companies themselves. All new industrial customers whose projected use is at least 20 megawatts (MW) are entered into the forecast directly. Coordination of these new industrial loads is accomplished through the divisions that encompass Florida Power & Light Company's service area.

1.1.1.2.2 Peak Load Model

Unpredictable variations in weather conditions can result in considerable variation in the use of air conditioning during the summer and electric heat during the winter. For analytical purposes, the peak load was separated into two components; non-weather sensitive and weather sensitive. This approach was taken in developing both a summer and a winter peak load model.

The non-weather sensitive component is defined as the average of the peak load for those weekdays (excluding holidays) when the average temperature for the day was between 65 and 75 degrees inclusive, and reflects the growth in load over time. This demand is predominantly determined by the economic environment and shows the average load when weather sensitive appliances are least used. This portion is forecast on a per customer level by using real price of electricity, Florida employment, and real per capita personal income in Florida.

The weather sensitive component is defined as the difference between the actual peak and the base load for the period. It represents the load in excess of the base load which is primarily a function of weather conditions. The summer and winter weather sensitive components are forecast on a per customer level and are related to average daily temperature, the real price of electricity, the saturation of air conditioners (summer) and electric heaters (winter) on the FP&L system.

Regression analysis was used to develop the non-weather sensitive load and the separate summer and winter weather sensitive load models. Having developed the regression equations, the relevant variables were then projected and combined with the projections of the number of customers to determine the non-weather and weather sensitive load forecasts. The forecasts for these two components were then summed to produce total summer and winter peak load forecasts. This peak load forecast is then reduced by the effects of certain types of conservation. The impact of conservation, as described below, is calculated from FP&L studies on residential load factor and demand reduction associated with energy efficient homes.

1.1.1.2.3 Conservation

The regression techniques described previously are used to derive equations that forecast long term energy and peak demand. These equations are based solely on history and cannot predict the effects of future changes in technology or consumer life-style. In order to forecast accurately, future changes must be predicted and incorporated into the forecast separately from the regression equations. These changes must be identified, assumptions made about the significant parameters, and the results subsequently entered into the forecast.

In addressing conservation, three areas have been identified as significant and having a high probability of occurrence: they are appliance efficiency improvements, solar water heating, and energy efficient homes.

a) Appliance Efficiency

The Department of Energy, in the Federal Register of October 12, 1978, mandates that by January 1, 1980, all new appliance sold must meet specified efficiency improvement targets. The overall efficiency improvement target is set at approximately 20 percent over 1972 levels. To incorporate the effects of these regulations, FP&L developed an appliance efficiency model.

The appliance efficiency model is an end-use engineering model comprised of 11 sub-models. There is one sub-model for each of ten major appliances plus a miscellaneous appliance sub-model. Input data include the efficiency improvement target for each appliance, the energy consumption per appliance for 1977 (weather adjusted), the 1977 appliance saturations, the growth rates for those saturations, and the number of residential customers for each year.

The usage forecast for each of the 11 sub-models is summed to give the total usage per residential customer. This usage per customer is not used directly because this appliance efficiency model does not account for price and income effects as does the econometric model. For this reason, a reference case is run on the appliance efficiency model with the efficiency improvements set to zero. The ratio of usage per residential customer with more efficient

appliances to usage per residential customer without appliance efficiency improvement is then entered into the econometric model as a multiplier of usage per residential customer.

b) Solar Water Heating

Solar water heating is an established technology as evidenced by the numerous manufacturers offering solar water heating systems. The only assumption needed to assess its impact is the rate at which solar water heaters will penetrate the market. This penetration rate is estimated by using a life-cycle curve and reinforced by a Delphi technique.

In order to incorporate the effects into the forecast, the solar water heating model is combined with the appliance efficiency model. This is done by reducing the saturation of electric water heaters from what it would be in the absence of replacement of solar water heaters under the appliance efficiency model.

c) Energy Efficient Homes

Florida Power & Light Company has, as have other utilities in the United States, developed an energy efficient home program. This program, known as Watt-Wise Living, will encourage home buyers and builders to insist on permanently installed conservation features in new homes. The primary emphasis is placed on structural improvements such as insulation and utilization of a rectangular floor plan. By definition, a home qualifying as a Watt-Wise home uses one-third less energy than a comparable "standard" home.

To assess the impact of this energy reduction on residential sales and system peak, the percentage of residential customers that will use single family homes is forecast. Next, the percentage of energy efficient single family homes is forecast. For each of these Watt-Wise homes, 7,290 kWh (the one-third reduction mentioned above) is subtracted from the preliminary energy sales forecast.

For many years, FP&L has actively maintained a program to provide its customers maximum benefits from the use of electric energy, by reducing waste and unnecessary losses. Through many thousands of field representative contacts with residential, commercial and industrial customers, FP&L has helped improve the efficiency of energy use and ultimately reduce the customer's bill. Long before the oil embargo and subsequent "energy crisis", hundreds of thousands of "Helpful Hints" booklets had been distributed on the use of major appliances and air conditioning, including promotion of home insulation.

FP&L intensified its public awareness and conservation efforts in 1973 by instituting the broad based "Wise Energy Management" program. The philosophy of the program is that with the inevitable increase in energy usage with economic growth, FP&L has a public

mandate to advise its customers in the most efficient use of energy through reestablishment of direct communication. FP&L promotes its conservation measures through television advertisements, radio commercials, newspaper advertisements, bill insert messages, brochures, consumer education programs, personal counseling for commercial, home and civic groups, and the "Watt-Wise Living" Program, primarily aimed at new single-family construction. The concept behind these efforts is to create a high degree of public awareness of the "Wise Energy Management" Program by making information readily available.

FP&L established their Marketing and Conservation Department to develop and coordinate the activities of the "Wise Energy Management" program. Its duties are devoted exclusively to the energy conservation effort in each of the six operating divisions. Department members give demonstrations and counseling to schools, home and civic groups on the efficient use of home appliances, and advise commercial businesses on building management to encourage wise energy usage. Many brochures have been prepared and distributed by FP&L dealing with hints on energy conservation, with particular note given to the use of insulation as a means to increase energy efficiency. An innovative poster was instituted to better inform the general public about the uses and benefits of solar energy. The Department also has the responsibility of developing and distributing information on wise energy management within the various divisions and departments of FP&L.

FP&L has incorporated many new programs into their conservation efforts, dealing primarily with current and future energy use at the residential level. The "Watt-Wise Living" program was developed to encourage builders and consumers alike to select a new home which was designed and constructed with energy efficiency in mind. Clear cut guidelines are provided for selecting energy saving options such as increased insulation, appliances, heating and cooling equipment, windows and hot water systems. By assigning each option a relative point value, the builder, the buyer and FP&L will know how energy efficient that home actually is. FP&L also conducts energy audits to determine and recommend conservation methods to existing home owners.

FP&L's future energy conservation plans include: 1) cooperation in the construction of a 495 MW solid waste fueled electric power facility; 2) expansion of the "Watt-Wise Living" program to include townhouses, attached dwellings and eventually multi-family residences; 3) Residential Energy Audit/Retrofit Program; and 4) Expansion of Audit/Retrofit Program to include commercial, industrial and non-residential structures.

1.1.1.2.4 Simulation

To achieve the flexibility to meet uncertain future events, Florida Power & Light Company has moved away from discrete forecasts. Plans made on the basis of a single set of forecast numbers do not have the flexibility necessary for unforeseen economic and technological growth.

The simulation approach is designed to allow: 1) individual and/or simultaneous evaluation of a large number of alternatives; and 2) the internal development of probabilities for these alternatives. Using this approach requires that a probability distribution be assigned to each independent variable. For example, a weather variable has been shown to be uniformly distributed through a range of values. The price variables might be described quite differently. Suppose there are only two logical values for the price in the upcoming year, corresponding to "rate relief" and "no rate relief". A probability would then be assigned to each value.

Using the forecasting model and the appropriate distributions for the independent variables, the dependent variables are arrived at by probabilistic simulation using a computer program based on Monte Carlo techniques.

1.1.1.2.5 Principal Assumptions

In this section, the assumptions used in the preparation of the peak load and net energy forecasts are developed.

a) Population and Customer Growth

Population in the Florida Power & Light Company service area will continue to grow throughout the period 1979-1988, but at a rate lower than in the past. According to a recent US Government forecast[1], Florida will be one of the fastest growing states in the US through the year 2000.

The growth is concentrated in the 25 and older age group. There are three forecasted factors which help to explain this. First, Florida will continue to remain an attractive place to retire. Secondly, the large segment of the population that resulted from post-war baby boom will be moving from the prime household forming years of 18-24 and into the more established age group of 25-34. This group, which was partly responsible for the rapid customer growth experienced over the past decade, will give way to a much smaller number, the result being a slower rate of customer growth. Finally, the fertility rate has dropped to 1.8 children per woman age 18-45. Although this will have little impact on FP&L until 1985, by 1990 the effects of today's depressed birth rate will begin to appear.

Sources for the population forecast have been drawn from federal, state, and local govenment; universities; and consulting services such as the National Planning Association. The University of Florida's population forecast is presently being used and is presented as a range. The population growth projections for the next decade are average annual rates of 1.5 to 3.3 percent. This compares with the 3.7 percent average annual growth experienced from 1969 through 1978.

Historically, the number of Florida Power & Light Company customers has grown at a rate faster than the population. From 1969 to 1978, customers increased at an average annual rate of 5.9 percent. Residential customers, which currently form about 90 percent of total customers, have accounted for most of this increase. In 1950, there were 4.2 people for every residential customer. By 1978, this ratio had dropped to 2.6, and is projected to be 2.4 by 1988. Factors which contribute to this reduced ratio are the continued increase in second homes, the tendency of more people to remain single longer, and the lower fertility rate. All of these factors contribute to a smaller average family size and will result in a household formation rate higher than the population growth rate.

b) Price

The price forecast is prepared by the Finance Department and is the result of the load forecast and the planned generation additions. The revenue required to support the generation plan is calculated and then coverted to the real price per kilowatt-hour.

Historically, the average real price per kilowatt-hour for Florida Power & Light Company's customers fell at an average annual rate of 4.6 percent from 1965 through 1972. However, from 1972 through 1978, the real price increased at an average annual rate of 4.7 percent. This variation was caused by several unusual and coincident circumstances which caused the cost of operating an electric utility to increase at a rate faster than inflation. The reoccurrence of the previous circumstances is not expected to be of the magnitude which would be necessary to cause an increase in price above inflation over the next decade. Therefore, the projected average annual rate for the real average price per kilowatt-hour for all of FP&L's customers is zero.

c) Economic Growth

As mentioned previously, real per capita income and Florida employment were used in the appropriate models in order to adequately represent the impact on both the individual and the community. Through 1988, income is forecast to grow at an average annual rate in the range of 2.8 to 3.6 percent. The corresponding rates for employment are 2.5 to 3.9 percent.

Several basic areas of economic strength continue to characterize the State of Florida. One of these is the tourist sector which experienced 34 million visitors in 1978. This is an increase over 1970 of 10.8 million. This increase can be largely attributed to new trends in the tourist industry. First, there has been an increase in the number of second homes. These people are not counted in Florida's census when occupying their homes for only parts of the year; second, there is an increasing number of tourists who arrive by automobile which typically visit central Florida; third, the increase in the number of cruise passengers passing through Florida ports; and last, the increase in the number of Latin American tourists, particularly noticeable in Miami.

A second significant growth factor is the role of manufacturing in the State. While construction has been the dominant source of employment opportunities in Florida, it will be of lessening relative importance as growth in manufacturing industries increases. Another new development has been the increased movement in Florida of subsidiaries of some of America's largest corporations, specifically set up to conduct business outside the United States. These subsidiary corporations, frequently characterized by the word "international" with the name of the parent company, are largely centered in the Miami area.

d) Other Assumptions

Appliance Efficiency

The model incorporates approximately 50 percent of the efficiency improvement targets set by the DOE for all appliances except air conditioners, where 100 percent was assumed.

Watt-Wise Market Penetration

The degree to which new single family homes will qualify for Watt-Wise is projected to increase from 1,972 homes in 1978 to 134,435 in 1988, a compound average annual growth of 53 percent.

Solar Water Heating

The saturation of solar water heaters is projected to increase at a ten year average annual growth rate of 30 percent. Solar water heaters will impact peak demand by needing no electric back-up at the time of the summer peak but will need 90 percent back-up at the time of the winter peak.

Air Conditioning Saturation

The air conditioning saturation in the FP&L service area is currently estimated at 84 percent. The saturation is expected to continue to slowly increase to the low 90's by 1988.

Heating Saturation

The number of customers using electricity to heat their homes and apartments is expected to grow as the price and availability of gas continues to depress gas usage and central units boosted by heat strips become "standard" appliances for new homes. The saturation of electric heat in 1988 is expected to be 73 percent.

Weather

The cooling degree days, heating degree days, summer peak day average temperature, and winter peak day average temperature are forecasted probabilistically on the basis of 30 years of data to include not only average but some of the variability of extremes.

1.1.1.2.6 Load Management

Accurate forecasts of future electrical demand require careful consideration of the potential impact of conservation. The price of electricity is an important "conservation" variable since it affects the customer's decision to consume or conserve electricity. Economic activity also affects the consumption of electricity. Improved appliance efficiency, solar water heating, and the energy efficient homes would also tend to reduce the rate of growth of electricity use. These variables are considered in the load forecast and were previously discussed.

In addition, Florida Power & Light Company is currently looking into alternative load management that will help reduce the peak load while improving load factor. By slowing the peak load growth, additional high cost capacity can be deferred. By improving load factor, facilities can be utilized to the maximum extent possible. If this is done, rates can be kept as low as possible while still insuring an adequate and reliable supply of electric power, both of which are vital for maintaining a healthy economy.

One type of load management technique involves direct control of load and is usually aimed at controlling specific appliance loads such as water heaters, air conditioning, and electric heating. Another technique involves application of time-of-use rates. With time-of-use rates, the price of electricity is varied according to the time-of-day and season of the year. In theory, the application of time-of-use rate should cause some consumption to shift from peak to off-peak hours.

In order to determine the feasibility of both techniques, FP&L has initiated several test programs involving residential customers. By 1980, FP&L plans to have 1,125 customers involved in load control and time-of-use rate tests. These tests are scheduled to be completed by 1982 and the results will be used to determine the feasibility of applying these techniques on a large scale basis.

In Summary:

The use of a range of forecast values representing upper and lower bounds for each of the explanatory variables resulted in the development of banded peak load and energy forecasts. The forecast of summer peak load projects an annual growth rate in the 1978-1988 period ranging from 3.4 to 5.7 percent. The winter peak load ranges from 3.2 to 4.9 percent. The energy forecast has a low annual rate of 3.0 percent and a high annual rate of 4.3 percent. Figures 1.1-2, 1.1-3 and 1.1-4 are graphical representations of these bands.

The forecasts provided in Tables 1.1-2 and 1.1-3 represent only the number for which there is equal probability for the peak load and net energy forecasts to be above or below this number and is to be used only where a singular forecast is required. Historical peak demands represent actual loads served.

1.1.1.3 Power Exchanges

Section 1.1.1.3 is based on the Ten Year Power Plant Site Plan 1979-1988 and information current to May 1979.

Florida Power & Light Company is not currently involved in any firm power purchases or sales and none are planned for the next ten years, through 1989. However, FP&L is currently negotiating for the possible purchase of unit power from Tampa Electric Company's Big Bend Unit 4. FP&L would share in the unit's output as follows:

Year	Capacity (%)	Capacity (MW)
1985	70	292
1986	50	208
1987	25	104

1.1.2 SYSTEM CAPABILITY

All parts of Section 1.1.2 are based on the Ten Year Power Plant Site Plan 1979-1988 and information current to May 1979.

1.1.2.1 Tabulated System Capacity

Generation planning is a continuous process. There is always an existing plan which is updated and revised as new information is gained. Table 1.1-4 shows actual and planned generating capability by category for the years 1973-1989. The capabilities listed are "net summer continuous" ratings expected at the time of summer peak. This is also shown graphically on Figure 1.1-5. Also, Table 1.1-5 lists Florida Power & Light Company's existing generating facilities and Table 1.1-6 shows historical capacity factors and type of use for those facilities.

1.1.2.2 Tabulated System Capacity - SERC

Florida Power & Light Company is a member of the Florida Subregion of the Southeastern Electric Reliability Council (SERC). FP&L's Generation Plan, as well as the plans of the other member utilities impact the reserves and reliability of the Florida Subregion and thus SERC. Each member of the Florida Subregion provides annually detailed information about its existing system and planned changes. Tables 1.1-7 and 1.1-8 present the existing generating capability and planned and prospective additions, retirements, and changes of generation facilities of the Florida Subregion members for the years 1979-1988.

1.1.3 RESERVE MARGINS

Florida Power & Light Company is required by law to "meet all reasonable demands for service and provide a reasonable reserve for emergencies". Section 25-6.35 of the Florida Administrative Code, "Adequacy of Supply", defines this responsibility. Developing this . . . "reasonable reserve for emergencies" . . . becomes a multifaceted process where FP&L must look at

important factors such as planned and forced maintenance outages, load forecast uncertainty, operating reserve requirements, and system reliability. These system related variables along with economic, financial, and regulatory inputs must all be considered when formulating a generation expansion plan. The following discussions will outline how each of the system related variables, as mentioned above, are considered for the final composition of an expansion scenario.

Forced and planned maintenance outages are major considerations when planning for reserve margins. FP&L must design for sufficient generation reserves to allow for planned maintenance outages without jeopardizing the system's ability to meet the demand while still maintaining sufficient available capacity to allow for emergencies. Table 1.1-9 shows the ten year forecast of capacity, most probable demand, reserves, and scheduled maintenance at the time of the summer peak. Also shown is the effect of the maintenance outages on available reserves.

As discussed in Section 1.1.1.2, FP&L develops a banded forecast. The reserve margins shown in Tables 1.1-9, 1.1-10 and 1.3-1 are computed on the most probable forecast for which there is equal probability for the peak load to be above or below that value. However, should the actual peak load be higher than expected, due to short term effects such as extreme weather conditions, FP&L must still be able to provide generation plus adequate reserves for emergencies. Due to the long construction lead times for generation facilities, the sensitivity of projected generation reserves increases due to uncertainties inherent in the load forecast. FP&L must therefore consider this sensitivity when developing a generation expansion plan to prevent the occurrence of insufficient reserves needed to compensate for unexpected high peak demand.

Another major consideration in the development of a generation plan is FP&L's responsibilities to the Florida Subregion of the Southeastern Electric Reliability Council (SERC). FP&L and other members voluntarily share operating reserve requirements for spinning reserve and supplemental reserve. FP&L's reserve requirements represent its ability to react to system emergencies and forced maintenance outages. They must be maintained if FP&L is to provide adequate and reliable generation to its customers and to SERC.

Spinning reserve is the reserve generating capability connected to the bus, ready to pick up load immediately, and capable of becoming fully applicable when frequency declines to 59.5 Hz. Supplemental reserve is any generating capability and/or load relief measure which can be made fully applicable within 30 minutes. The total Subregion spinning reserve requirement is equal to the peak capability of the largest unit on line. The spinning reserve requirement for each member utility is allocated in proportion to the participant's maximum demand in the preceding year and the peak capability of its largest unit. The total Subregion supplemental reserve requirement is equal to the second largest unit on line and each member utility's requirement is allocated in the same manner.

The installed generation reserve margin must be consistent with good operating practices and acceptable reliability criteria. To establish an acceptable criterion, FP&L has examined historic reserve levels and the degree of generation reliability provided by these reserves.

This relationship is dependent upon system characteristics such as unit additions and retirements, unit sizes, unit forced and planned outages and timing of unit additions. Due to difficulty in planning for such variables, predicting future reserve/reliability relationships is done by simulation models. This modeling is done on a peninsular Florida basis since each of the inter-connected utilities share operating reserve requirements and thus share the responsibility for generation reliability. FP&L annually participates with other members of the Florida Subregion to analyze peninsular Florida generation reliability and produces a report, "The Peninsular Florida Generation Reliability Assessment Study", that outlines its findings (see Section 1.1.4). This study takes a large integrated look at peninsular Florida's generation reliability and assesses the reliability when outage rates and timing of unit additions become sensitivity variables.

The index of reliability used is loss-of-load-probability (LOLP) which measures the frequency in number of days per year that the available generation will be insufficient to meet the firm peak load.

FP&L, as an individual utility, examines a combination of reserve margins and reliability levels that have proven effective historically and relates them to the reserve/reliability results of modeling for future plans. By comparing the historical and future reserve/reliability relationships and examining other factors such as economics, financing, and environmental obstacles, FP&L develops the optimal generation plan.

Table 1.1-10 presents historical and forecasted values of net capability, peak demand, and the resulting reserve margins, and shows these values for both cases "with St Lucie Unit 2" and "without St Lucie Unit 2". Figure 1.1-6 is a graphic illustration of the reserve margins from Table 1.1-10. Also, Figure 1.1-7 graphically presents historical and forecasted values of net capability and peak demand for both cases.

1.1.4 EXTERNAL SUPPORTING STUDIES

Florida Power & Light Company is a member of the Florida Subregion of the Southeastern Electric Reliability Council (SERC). In response to the Federal Energy Regulatory Commission Order 383-44, SERC annually submits a "Coordinated Bulk Power Supply Program" report. This report presents peak load, generation capability, and transmission capability data for all utilities responsible to SERC. The data is reported by subregion, of which there are four, and consists of all existing facilities plus planned and prospective future additions and retirements.

FP&L actively participates in Florida Subregion activities, one of which is the Peninsular Florida Generation Reliability Assessment

Study*. This study takes a large integrated look at Peninsular Florida's generation reliability and assesses the reliability when outage rates and timing of unit additions become sensitivity variables. The results of the study show that under the proposed generation plans of the participating utilities, the reliability levels (LOLP) fluctuate within a reasonable range of the industry standard of 0.1 days/year for the 1979-1988 period. Reserves in this time frame were shown to range from 21 percent to 26 percent. With unit in-service dates as a sensitivity variable (one year delay in all base load units in the 1983-1988 period), a significant shift in Florida's reliability was shown. The LOLP index increased by a factor of two to seven, depending upon unit characteristics and number of units which were delayed. A significant impact in system LOLP was also realized by a ten percent (overall) decrease in unit availability.

*The Peninsular Florida Generation Reliability Assessment Study is based on information more recent than that reflected in this St Lucie Unit 2 Environmental Report and therefore some results might be different.

SECTION 1.1: REFERENCES

1. Bureau of the Census, 1978. Population Estimates and Projections. Series P-25, No. 735. U S Department of Commerce.

TABLE 1.1-1

MEMBERS OF THE SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL (SERC)

Subregion	Utility
Southern Companies	Alabama Electric Cooperative, Inc.
Southern Companies	Alabama Power Company
Virginia - Carolinas	Carolina Power and Light Company
Southern Companies	Crisp County Power Commission
Virginia Carolinas	Duke Power Company
Florida	Florida Power Corporation
Florida	Florida Power and Light Company
Florida	Fort Pierce Utilities Authority
Florida	Gainesville/Alachua Co Reg Utility Board
Southern Companies	Georgia Power Company
Southern Companies	Gulf Power Company
Florida	Jacksonville Electric Authority
Florida	City of Lakeland - Department of Electric and Water Utilities
Southern Companies	Mississippi Power Company
TVA	Nantabala Power and Light Company
Florida	Orlando Utilities Commission
Southern Companies	Savannah Electric and Power Company
Virginia - Carolinas	Southeastern Power Administration
Virginia - Carolinas	South Carolina Electric and Gas Company
Virginia - Carolinas	South Carolina Public Service Authority
Southern Companies	South Mississippi Electric Power Association

TABLE 1.1-1

Subregion	Utility
Florida	City of Tallahasse
Florida	Tampa Electric Company
TVA	Tapoco, Inc
TVA	Tennessee Valley Authority
Florida	Vero Beach Municipal Power System
Virginia - Carolina	Virginia Electric and Power Company
TVA	Yadkin, Inc

TABLE 1.1-2

HISTORY AND FORECAST OF ENERGY CONSUMPTION

	Rural & Residential			Commercial		Industrial	
Year	GWH	Average No. of Customers	Average KWH Consumption Per Customer	GWH	Average No. of Customers	GWH	Average No. of Customers
1969*	10,278	1,045,744	9,828	5,689	115,712	1,814	4,924
1970	11,814	1,115,070	10,595	6,476	121,353	2,044	5,055
1971	13,080	1,194,015	10,955	7,395	129,371	2,236	5,116
1972	14,653	1,289,027	11,367	8,389	139,743	2,468	5,208
1973*	16,823	1,397,228	12,040	10,180	158,977	2,755	5,275
1974*	16,802	1,498,262	11,214	11,041	168,991	2,646	7,147
1975	17,313	1,555,834	11,128	11,851	171,575	2,534	8,977
1976	17,625	1,607,015	10,968	12,117	177,046	2,596	9,994
1977	19,074	1,677,532	11,370	12,885	184,676	2,756	11,796
1978	20,736	1,758,838	11,790	13,748	192,850	2,993	13,799
1979	21,060	1,854,884	11,335	14,374	202,673	3,147	14,837
1980	22,433	1,955,240	11,474	15,089	212,956	3,348	14,734
1981	23,164	1,982,000	11,687	16,000	220,000	3,265	15,500
1982	23,941	2,054,000	11,656	16,685	229,000	3,322	15,750
1983	24,508	2,124,000	11,539	17,736	238,000	3,455	16,000
1984	25,014	2,193,000	11,406	18,595	247,000	3,566	17,000
1985	25,653	2,261,000	11,346	19,364	254,000	3,687	17,500
1986	26,293	2,324,000	11,314	20,155	260,000	3,803	18,000
1987	26,736	2,391,000	11,182	20,789	268,000	3,891	18,500
1988	27,363	2,466,000	11,096	21,627	277,000	4,073	19,000

1

* Reclassification of Accounts

TABLE 1.1-2

HISTORY AND FORECAST OF ENERGY CONSUMPTION

Year	Street & Highway Lighting GWH	Other Sales to Ultimate Consumers GWH	Total Sales to Ultimate Consumers GWH	Sales For Resale GWH	Utility Uses Losses GWH	Total Net Energy Consumption GWH
1969*	175	1,840	19,796	649	1,773	22,218
1970	185	1,810	22,329	786	1,998	25,113
1971	204	1,927	24,842	947	2,095	27,884
1972	216	2,080	27,806	1,122	2,570	31,498
1973*	240	1,119	31,117	1,350	2,718	35,185
1974*	257	490	31,236	1,475	2,754	35,465
1975	285	524	32,507	1,604	3.040	37,151
1976	308	482	33,128	1,801	3,096	38,025
1977	329	474	35,518	2,012	3,182	40,712
1978	343	478	38,298	2,304	3,104	43,706
1979	358	463	39,424	2,563	3,355	45,342
1980	372	463	41,716	3,003	3,731	48,450
1981	434	485	45,348	2,521	3,991	49,860
1982	469	483	44,900	2,560	4,125	51,585
1983	506	481	46,686	2,665	4,289	53,640
1984	546	480	48,201	2,744	4,430	55,375
1985	590	480	49,794	2,881	4,580	57,255
1986	638	481	51,370	2,956	4,724	59,050
1987	689	483	52,588	2,997	4,835	60,420
1988	744	485	54,292	3,073	4,990	62,355

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* Reclassification of Accounts

TABLE 1.1-3

HISTORY AND FORECAST OF SEASONAL PEAK DEMAND AND ANNUAL ENERGY REQUIREMENTS

Year	Summer Peak Demand Net MW Interruptible**	Summer Peak Demand Net MW Total*	Net Energy* For Load - GWH	Load Factor %	Year	Winter Peak Demand Net MW Interruptible**	Winter Peak Demand Net MW Total*
1969	0	4,329	22,218	59	1969-70	0	4,716
1970	30	5,001	25,113	57	1970-71	0	5,059
1971	118	5,378	27,884	59	1971-72	0	4,676
1972	0	6,011	31,498	60	1972-73	0	5,853
1973	0	6,894	35,185	58	1973-74	0	6,258
1974	0	7,235	35,465	56	1974-75	0	5,807
1975	0	7,076	37,151	60	1975-76	0	7,287
1976	0	7,598	38,025	57	1976-77	177	8,606
1977	0	7,841	40,712	59	1977-78	0	8,617
1978	0	8,345	43,706	60	1978-79	0	8,791
1979	0	8,650	45,342	60	1979-80	0	9,732
1980	0	9,623	48,450	57	1980-81	185	9,930
1981	185	9,930	49,860	57	1981-82	192	10,320
1982	192	10,320	51,585	57	1982-83	199	10,715
1983	199	10,715	53,640	57	1983-84	206	11,105
1984	206	11,105	55,375	57	1984-85	213	11,495
1985	213	11,495	57,255	57	1985-86	220	11,885
1986	220	11,885	59,050	57	1986-87	227	12,275
1987	227	12,275	60,420	56	1987-88	234	12,670
1988	234	12,670	62,355	56	1988-89	241	13,060

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* This represents the number for which there is equal probability for the peak load and net energy forecasts to be above or below this number and is to be used only where a singular forecast is required. Historical peak demands represent actual loads served. Forecasted peak demands include interruptible loads.

** Historical values represent actual load curtailed.

TABLE 1.1-4

FLORIDA POWER & LIGHT COMPANY
NET SUMMER CAPABILITY AND UNIT ADDITIONS

				System Capability (MW)				
Year	Unit Additions	Capability (MW)	Fuel	Nuclear Steam	Oil Steam	Fossil Gas Turbine	Coal Steam	Total Capacity
1973				693	5,225	1,359	0	7,277
1974				1,332	5,652	2,031	0	9,015
1975				1,332	5,652	2,031	0	9,015
1976				1,332	5,283	2,031	0	8,646
1977				2,109	5,552	1,977	0	9,638
1978				2,109	6,316	2,423	0	10,848
1979	Riviera #1***	40	Oil	2,109	6,425	2,423	0	10,957
	Riviera #2	69	Oil					
1980	Martin #1	775	Oil	2,109	7,200	2,423	0	11,732
1981	Martin #2	775	Oil	2,109	8,015	2,423	0	12,547
	Dade	40	Solid Waste					
1982	-	-	-	2,109	8.015	2,423	0	12,547
1983	St. Lucie #2	747**	Nuclear	2,856	8,015	2,423	0	13,294
1984	-	-	-	2,856	8,015	2,423	0	13,294
1985	Martin Coal #3	700	Coal	2,856	8,015	2,423	700	13,994
1986	-	-	-	2,856	8,015	2,423	700	13,994
1987	JEA/FPL #1	300	Coal	2,856	8,015	2,423	1,700	14,994
	Martin Coal #4	700	Coal					
1988	-	-	-	2,856	8,015	2,423	1,700	14,994
1989	Unknown	700	Coal	2,856	8,015	2,423	2,700	15,994
	JEA/FPL #2	300	Coal					

* Putnam #1 and #2 are Combined Cycle units and their capabilities are included in the figures for Fossil Gas Turbines.

** Actual rating of this unit is 802 MW, however, 55 MW have been offered for sale to other utilities.

*** Riviera Units 1 & 2 were reactivated from Extended Cold Standby December 29, 1978.

TABLE 1.1-5

FLORIDA POWER & LIGHT COMPANY
EXISTING GENERATING FACILITIES

Plant Name	Unit No.	Location	Type	Fuel Pri	Fuel Alt	Com'l In-Service Mo/Yr	Exptd Retrmnt Mo/Yr	Gen Max Nameplate kW	Net Capability* Summer MW	Net Capability* Winter MW
Turkey Point		Dade County 27/57S/40E						2,337,790	2079.5	2145.5
	1		F	HO	NG	4/67	Unknown	402,050	367.0	370.0
	2		F	HO	NG	4/68	Unknown	402,050	367.0	370.0
	3		N	N	no	12/72	Unknown	759,970	666.0	696.0
	4		N	N	no	9/73	Unknown	759,970	666.0	696.0
	1-5		D	LO	no	4/68	Unknown	13,750	13.5	13.5
Lauderdale		Broward Co. 30/50S/42E						1,133,972	1126.0	1250.0
	4		F	HO	NG	9/57	Unknown	156,250	137.0	139.0
	5		F	HO	NG	4/58	Unknown	156,250	137.0	139.0
	1-12		CT	LO	NG	8/70	Unknown	410,736	426.0	486.0
	13-24		CT	LO	NG	8/72	Unknown	410,736	426.0	486.0
Port Everglades		City of Hollywood 23/50S/42E						1,679,086	1581.5	1651.5
	1		F	HO	NG	6/60	Unknown	225,250	204.0	206.0
	2		F	HO	NG	4/61	Unknown	225,250	204.0	206.0
	3		F	HO	NG	7/64	Unknown	402,050	367.0	370.0
	4		F	HO	NG	4/65	Unknown	402,050	367.0	370.0
	1-12		CT	LO	NG	8/71	Unknown	410,736	426.0	486.0
	1-5		D	LO	no	4/68	Unknown	13,750	13.5	13.5
Rivera		City of Rivera Beach 33/42S/43E.						739,590	653.0	662.0
	1		F	HO	NG	11/46	Unknown	43,750	40.0	41.0
	2		F	HO	NG	11/53	Unknown	75,000	69.0	71.0
	3		F	HO	NG	6/62	Unknown	310,420	272.0	275.0
	4		F	HO	NG	3/63	Unknown	310,420	272.0	275.0

* Capabilities are specified in accordance with "SERC Guideline Number 2 for the Uniform Generator Ratings for Reporting."

TABLE 1.1-5

FLORIDA POWER & LIGHT COMPANY
EXISTING GENERATING FACILITIES

Plant Name	Unit No.	Location	Type	Fuel Pri	Fuel Alt	Com'l In-Service Mo/Yr	Exptd Retrmnt Mo/Yr	Gen Max Nameplate kW	Net Capability* Summer MW	Net Capability* Winter MW
St. Lucie		St. Lucie Co. 16/36S/41E						850,000	777.0	795.0
	1		N	N	no	12/76	Unknown	850,000	777.0	795.0
Cape Canaveral		Brevard Co. 19/24S/36E						804,100	729.0	736.0
	1		F	HO	NG	4/65	Unknown	402,050	367.0	370.0
	2		F	HO	NG	5/69	Unknown	402,050	362.0	366.0
Sanford		Volusia Co. 16/19S/30E						1,028,450	861.0	871.0
	3		F	HO	NG	5/59	Unknown	156,250	137.0	139.0
	4		F	HO	no	7/72	Unknown	436,100	362.0	366.0
	5		F	HO	no	6/73	Unknown	436,100	362.0	366.0
Putnam		Putnam Co. 16/10S/27E						580,000	446.0	518.0
	1		CC	HO	LO	4/78	Unknown	290,000	223.0	259.0
	2		CC	HO	LO	8/77	Unknown	290,000	223.0	259.0
Ft. Myers		Lee Co. 35/43S/25E						1,302,300	1176.0	1337.0
	1		F	HO	no	12/58	Unknown	156,250	137.0	139.0
	2		F	HO	no	7/69	Unknown	402,050	367.0	370.0
	1-12		CT	LO	no	6/74	Unknown	744,000	672.0	828.0
Manatee		Manatee Co. 18/33S/20E						1,726,600	1528.0	1550.0
	1		F	HO	no	10/76	Unknown	863,300	764.0	775.0
	2		F	HO	no	12/77	Unknown	863,300	764.0	775.0
							Total System as of December 31, 1978 =		10957.0	11516.0

* Capabilities are specified in accordance with "SERC Guideline Number 2 for Uniform Generator Ratings for Reporting."

TABLE 1.1-5

FLORIDA POWER & LIGHT COMPANY
EXISTING GENERATING FACILITIES

Plant Name	Unit No.	Location	Type	Fuel Pri	Fuel Alt	Com'l In-Service Mo/Yr	Exprd Retrmnt Mo/Yr	Gen Max Nameplate kW	Net Capability* Summer MW	Net Capability* Winter MW
Cutler**		Dade County 24/55S/40E						305,500	264.0	272.0
	4		F	HO	NG	11/52	Unknown	69,000	67.0	70.0
	5		F	HO	NG	11/54	Unknown	75,000	67.0	70.0
	6		F	HO	NG	9/55	Unknown	161,500	130.0	132.0
Palatka**		Putnam Co. 16/10S/27E						109,500	107.0	111.0
	1		F	HO	NG	8/51	Unknown	34,500	32.0	34.0
	2		F	HO	NG	8/56	Unknown	75,000	75.0	77.0

* Capabilities are specified in accordance with "SERC Guidelines Number 2 for Uniform Generator Ratings for Reporting."

** The Company currently has five fossil fuel units on extended cold standby (ECS) status (reactivation of these units would require 8 months to 14 months).

TABLE 1.1-5

FLORIDA POWER & LIGHT COMPANY
EXISTING GENERATING FACILITIES

UNIT TYPE	FUEL
F - Fossil	C - Coal
N - Nuclear	HO - Heavy Oil
CT - Combustion Turbine	LO - Light Oil
D - Diesel	N - Nuclear
CC - Combined Cycle	SW - Solid Waste
	NG - Natural Gas

TABLE 1.1-6

FLORIDA POWER & LIGHT COMPANY
CAPACITY FACTORS AND TYPE OF USE

Plant	Unit Number	Annual Capacity Factors* 1973	1974	1975	1976	1977	1978	Type of Use
Turkey Point	1	59.8	69.8	61.3	63.4	50.1	60.0	Base/Inter.
	2	69.7	67.4	65.8	64.6	59.3	59.4	Base/Inter.
	3	49.5	54.0	65.8	65.4	67.2	66.9	Base
	4	20.8	64.3	59.9	56.4	55.1	57.4	Base
Cutler (Ret.12-15-75)	3	26.3	13.1	13.9	—	—	—	Intermediate
	4**	63.9	32.6	40.7	25.2	ECS	ECS	Intermediate
	5**	52.1	32.6	26.6	20.4	ECS	ECS	Intermediate
	6**	50.1	41.2	5.8	30.4	ECS	ECS	Intermediate
Miami (Ret.12-15-75)	8	22.5	0.2	—	—	—	—	
Lauderdale	4	61.4	49.0	45.4	39.1	30.2	33.9	Intermediate
	5	61.2	48.2	45.1	52.9	37.4	48.8	Intermediate
Port Everglades	1	66.5	57.1	49.6	57.7	44.0	57.4	Intermediate
	2	67.1	54.1	51.3	59.2	53.8	56.2	Intermediate
	3	65.3	66.8	64.0	58.0	61.3	47.2	Base/Inter.
	4	67.7	55.3	66.0	69.6	54.8	61.2	Base/Inter.
Riviera	1**	31.6	21.3	20.6	15.9	ECS	ECS	Intermediate
	2**	28.3	24.0	29.4	22.7	ECS	ECS	Intermediate
	3	66.0	46.8	65.9	57.1	39.2	56.3	Intermediate
	4	66.5	51.1	50.6	58.6	51.3	43.2	Intermediate
St Lucie	1	—	—	—	6.9	71.4	67.2	Base
Cape Canaveral	1	66.1	63.4	70.2	66.2	62.6	56.6	Base/Inter.
	2	64.7	52.2	64.9	67.4	56.4	65.8	Base/Inter.
Sanford	3	52.9	52.7	36.2	35.3	23.9	39.7	Intermediate
	4	29.1	30.4	43.5	48.4	36.4	31.6	Base/Inter.
	5	26.6	30.6	37.0	47.4	38.3	48.5	Base/Inter.
Palatka	1**	30.7	19.6	17.9	14.4	ECS	ECS	Intermediate
	2**	70.7	66.7	56.1	21.2	ECS	ECS	Intermediate
Manatee	1	—	—	—	9.4	37.0	40.0	Base/Inter.
	2	—	—	—	—	3.5	32.0	Base/Inter.

* Capacity Factors were computed using nameplate ratings.

** ECS; Extended Cold Standby

TABLE 1.1-6

FLORIDA POWER & LIGHT COMPANY
CAPACITY FACTORS AND TYPE OF USE

Plant	Unit Number	Annual Capacity Factors* 1973	1974	1975	1976	1977	1978	Type of Use
Ft Myers	1	44.3	35.9	48.2	46.6	38.2	36.8	Intermediate
	2	63.2	53.3	56.1	48.7	68.2	54.1	Base/Inter.
Lauderdale Gas Turbines		3.9	3.0	2.6	2.3	3.6	5.1	Peak
Port Everglades Gas Turbines		8.3	4.0	6.7	2.4	4.0	5.4	Peak
Ft Myers Gas Turbines		--	7.4	11.0	9.2	5.1	2.3	Peak
Putnam Combined Cycles		--	--	--	--	7.2	11.2	Intermediate

TABLE 1.1-7

SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL - FLORIDA SUBREGION

EXISTING GENERATING CAPABILITY
(as of January 1, 1979)

System	Station Name	Unit No.	Unit Type	Primary Fuel Net Capability-MW Summer	Primary Fuel Net Capability-MW Winter	Primary Fuel Fuel Type	Alternate Fuel Fuel Type
Florida Power and Light							
FLPL	Cape Canaveral	1	ST	367	370	F06	NG
FLPL	Cape Canaveral	2	ST	362	366	F06	NG
FLPL	Cutler 1/	4	ST	67	70	F06	NG
FLPL	Cutler 1/	5	ST	67	70	F06	NG
FLPL	Cutler 1/	6	ST	130	132	F06	NG
FLPL	Ft Myers	1	ST	137	139	F06	-
FLPL	Ft Myers	2	ST	367	370	F06	-
FLPL	Ft Myers	1-12	GT	672	828	F02	-
FLPL	Ft Lauderdale	4	ST	137	139	F06	NG
FLPL	Ft Lauderdale	5	ST	137	139	F06	NG
FLPL	Ft Lauderdale	1-12	GT	426	486	F02	NG
FLPL	Ft Lauderdale	13-24	GT	426	486	F02	NG
FLPL	Manatee	1	ST	764	775	F06	-
FLPL	Manatee	2	ST	764	775	F06	-
FLPL	Palatka 1/	1	ST	32	34	F06	NG
FLPL	Palatka 1/	2	ST	75	77	F06	NG
FLPL	Port Everglades	1	ST	204	206	F06	NG
FLPL	Port Everglades	2	ST	204	206	F06	NG
FLPL	Port Everglades	3	ST	367	370	F06	NG
FLPL	Port Everglades	4	ST	367	370	F06	NG
FLPL	Port Everglades	1-12	GT	426	486	F02	NG
FLPL	Port Everglades	1 -5	IC	14	14	F02	-
FLPL	Putnam	1	CT/CA	118/97	138/113	F06	F02
FLPL	Putnam	2	CT/CA	118/97	138/113	F06	F02
FLPL	Riviera	1	ST	40	41	F06	NG
FLPL	Riviera	2	ST	69	69	F06	NG
FLPL	Riviera	3	ST	272	275	F06	NG
FLPL	Riviera	4	ST	272	275	F06	NG
FLPL	Sanford	3	ST	137	139	F06	NG
FLPL	Sanford	4	ST	362	366	F06	-
FLPL	Sanford	5	ST	362	366	F06	-
FLPL	St Lucie	1	NP	777	795	UR	-
FLPL	Turkey Point	1	ST	367	370	F06	NG
FLPL	Turkey Point	2	ST	367	370	F06	NG
FLPL	Turkey Point	3	NP	666	696	UR	-
FLPL	Turkey Point	4	NP	666	696	UR	-
FLPL	Turkey Point	1-5	IC	13	13	F02	-
			TOTAL	10941	11500		

TABLE 1.1-7

SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL - FLORIDA SUBREGION

EXISTING GENERATING CAPABILITY
(as of January 1, 1979)

System	Station Name	Unit No.	Unit Type	Primary Fuel Net Capability-MW Summer	Primary Fuel Net Capability-MW Winter	Primary Fuel Fuel Type	Alternate Fuel Fuel Type
Florida Power Corporation							
FLPC	Anclote	1	ST	466	506	F06	-
FLPC	Anclote 3/	2	ST	466	506	F06	-
FLPC	Avon Park	2	ST	42	44	F06	NG
FLPC	Avon Park	1	GT	26	35	F02	NG
FLPC	Avon Park	2	GT	26	35	F02	NG
FLPC	Bartow	1	ST	114	114	F06	-
FLPC	Bartow	2	ST	116	116	F06	NG
FLPC	Bartow	3	ST	210	215	F06	NG
FLPC	Bartow	1- 4	GT	168	204	F02	-
FLPC	Bayboro	1- 4	GT	160	208	F02	-
FLPC	Crystal River 4/	1	ST	383	383	F06	-
FLPC	Crystal RIver	2	ST	383	413	BIT	-
FLPC	Crystal River	3	NP	717	731	UR	-
FLPC	DeBary	1	GT	42	52	F06	F02
FLPC	DeBary	2	GT	42	52	F06	F02
FLPC	DeBary	3	GT	42	52	F06	F02
FLPC	DeBary	4	GT	42	52	F06	F02
FLPC	DeBary	5	GT	42	52	F06	F02
FLPC	DeBary	6	GT	42	52	F06	F02
FLPC	Higgins	1	ST	39	40	F06	NG
FLPC	Higgins	2	ST	39	41	F06	NG
FLPC	Higgins	3	ST	41	42	F06	-
FLPC	Higgins	1	GT	27	30	F02	NG
FLPC	Higgins	2	GT	27	30	F02	NG
FLPC	Higgins	3	GT	30	35	F02	NG
FLPC	Higgins	4	GT	30	35	F02	NG
FLPC	Intercession	1- 6	GT	264	330	F02	-
FLPC	Port St Joe	1	GT	14	17	F02	-
FLPC	Rio Pinar	1	GT	14	17	F02	-
FLPC	Suwannee River	1	ST	34	34	F06	NG
FLPC	Suwannee River	2	ST	33	33	F06	NG
FLPC	Suwanee River	3	ST	80	80	F06	NG
FLPC	Turner	3	ST	71	72	F06	NG
FLPC	Turner	4	ST	72	75	F06	NG
FLPC	Turner	1- 2	GT	28	34	F02	-
FLPC	Turner	3 -4	GT	124	162	F02	-
			TOTAL	4030	4423		

TABLE 1.1-7

SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL - FLORIDA SUBREGION

EXISTING GENERATING CAPABILITY
(as of January 1, 1979)

System	Station Name	Unit No.	Unit Type	Primary Fuel: Net Capability-MW Summer	Primary Fuel: Net Capability-MW Winter	Primary Fuel: Fuel Type	Primary Fuel: Transp. Method	Alternate Fuel: Fuel Type
Fort Pierce Utilities Authority								
FOPC	King	5	ST	7	7	F06	WA	NG
FOPC	King	6	ST	18	18	F06	WA	-
FOPC	King	7	ST	35	35	F06	WA	NG
FOPC	King	8	ST	51	51	F06	WA	NG
FOPC	King	1	IC	2	2	F02	TK	-
FOPC	King	2	IC	3	3	F02	TK	-
			TOTAL	116	116			
Gainsville/Alachua County Regional Utilities Board								
GAMW	Crystal River 2/	3	NP	12	12	UR	-	-
GAMW	Deerhaven	1	ST	81	83	F06	TK	NG
GAMW	Deerhaven	1	GT	20	26	F02	TK	NG
GAMW	Deerhaven	2	GT	20	26	F02	TK	NG
GAMW	J. R. Kelly	6	ST	14	14	F06	TK	NG
GAMW	J. R. Kelly	7	ST	23	23	F06	TK	NG
GAMW	J. R. Kelly	8	ST	44	45	F06	TK	NG
GAMW	J. R. Kelly	1	GT	14	15	F02	TK	NG
GAMW	J. R. Kelly	2	GT	14	15	F02	TK	NG
GAMW	J. R. Kelly	3	GT	14	15	F02	TK	NG
GAMW	J. R. Kelly	1	IC	1	1	F02	TK	-
			TOTAL	257	275			

TABLE 1.1-7

SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL - FLORIDA SUBREGION

EXISTING GENERATING CAPABILITY
(as of January 1, 1979)

System	Station Name	Unit No.	Unit Type	Primary Fuel Net Capability-MW Summer	Primary Fuel Net Capability-MW Winter	Primary Fuel Fuel Type	Alternate Fuel Fuel Type
City of Homestead							
HSTX	G. W. Ivey	1- 3	IC	6	6	F02	NG
HSTX	G. W. Ivey	7	IC	1	1	F02	NG
HSTX	G. W. Ivey	8-10	IC	9	9	F02	NG
HSTX	G. W. Ivey	11-12	IC	8	8	F02	NG
HSTX	G. W. Ivey	13-17	IC	10	10	F02	NG
HSTX	G. W. Ivey	18-19	IC	18	18	F02	NG
			TOTAL	52	52		
Jacksonville Electric Authority							
JACO	Kennedy	8	ST	43	45	F06	
JACO	Kennedy	9	ST	43	45	F06	
JACO	Kennedy	10	ST	130	134	F06	
JACO	Kennedy 5/	1- 2	GT	25	26	F02	
JACO	Kennedy 5/	3- 6	GT	216	216	F02	
JACO	Northside	1	ST	262	262	F06	
JACO	Northside	2	ST	262	262	F06	
JACO	Northside	3	ST	460	460	F06	
JACO	Northside 5/	1- 2	GT	23	28	F02	
JACO	Northside	3- 6	GT	206	244	F02	
JACO	Southside	1	ST	27	27	F06	
JACO	Southside	2	ST	29	32	F06	
JACO	Southside	3	ST	46	48	F06	
JACO	Southside	4	ST	70	72	F06	
JACO	Southside	5	ST	144	146	F06	
JACO	Southside 5/	1- 2	GT	25	30	F02	
			TOTAL	1884	1939		
Lake Worth Utilities Authority							
LWUA	Smith	1	ST	7	8	NG	F06
LWUA	Smith	2	ST	7	8	NG	F06
LWUA	Smith	3	ST	25	26	NG	F06
LWUA	Smith	4	ST	33	35	NG	F06
LWUA	Smith	5	CT/CW	20/10	23/12	NG	F02
LWUA	Smith	1	GT	29	32	F02	-
LWUA	Smith	1- 5	IC	10	10	F02	-
			TOTAL	141	154		

TABLE 1.1-7

SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL - FLORIDA SUBREGION

EXISTING GENERATING CAPABILITY
(as of January 1, 1979)

System	Station Name	Unit No.	Unit Type	Primary Fuel: Net Capability-MW Summer	Primary Fuel: Net Capability-MW Winter	Primary Fuel: Fuel Type	Alternate Fuel: Fuel Type
City of Lakeland							
LALW	Larsen	4	ST	19	19	NG	
LALW	Larsen	5	ST	25	25	NG	
LALW	Larsen	6	ST	25	25	NG	
LALW	Larsen	7	ST	40	52	NG	
LALW	Larsen	1- 3	GT	33	39	NG	
LALW	McIntosh	1	ST	92	93	NG	
LALW	McIntosh	2	ST	104	102	-	
LALW	McIntosh	1	GT	20	23	-	
LALW	McIntosh	1- 2	IC	5	6	-	
			TOTAL	372	384		
Orlando Utilities Commission							
ORLA	Crystal River 2/	3	NP	13	13	UR	-
ORLA	Indian River	1	ST	90	92	F06	NG
ORLA	Indian River	2	ST	204	208	F06	NG
ORLA	Indian River	3	ST	318	321	F06	NG
ORLA	Lake Highland	1	ST	30	31	F06	NG
ORLA	Lake Highland	2	ST	30	31	F06	NG
ORLA	Lake Highland	3	ST	30	31	F06	NG
ORLA	Lake Highland	A-B	GT	26	32	F02	NG
ORLA	Lake Highland	1	IC	1	1	F02	-
			TOTAL	742	760		
Seminole Electric Cooperative							
SECI	Crystal River 2/	3	NP	14	14	UR	-
			TOTAL	14	14		
City of Tallahasse							
TALL	Crystal River 2/	3	NP	11	11	UR	-
TALL	Hopkins	1	ST	78	80	F06	NG
TALL	Hopkins	2	ST	225	238	F06	NG
TALL	Hopkins	1	GT	14	16	F02	NG
TALL	Hopkins	2	GT	27	30	F02	NG
TALL	Purdom	1- 2	ST	14	16	F06	-
TALL	Purdom	3	ST	7	8	F06	NG
TALL	Purdom	4	ST	7	8	F06	NG
TALL	Purdom	5	ST	22	22	F06	NG

TABLE 1.1-7

SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL - FLORIDA SUBREGION

EXISTING GENERATING CAPABILITY
(as of January 1, 1979)

System	Station Name	Unit No.	Unit Type	Primary Fuel: Net Capability-MW Summer	Primary Fuel: Net Capability-MW Winter	Primary Fuel: Fuel Type	Alternate Fuel: Fuel Type
City of Tallahasse (Cont'd)							
TALL	Purdom	6	ST	22	22	F06	NG
TALL	Purdom	7	ST	46	45	F06	NG
TALL	Purdom	1	GT	11	11	F02	NG
TALL	Purdom	2	GT	11	11	F02	NG
			TOTAL	459	518		
Tampa Electric Company							
TAEC	Big Bend	1	ST	362	362	BIT	
TAEC	Big Bend	2	ST	338	338	BIT	
TAEC	Big Bend	3	ST	362	362	BIT	
TAEC	Big Bend	1	GT	14	14	F02	
TAEC	Big Bend	2- 3	GT	130	130	F02	
TAEC	Gannon	1	ST	98	98	F06	
TAEC	Gannon	2	ST	108	108	F06	
TAEC	Gannon	3	ST	150	150	F06	
TAEC	Gannon	4	ST	169	169	F06	
TAEC	Gannon	5	ST	229	229	BIT	
TAEC	Gannon	6	ST	338	338	BIT	
TAEC	Gannon	1	GT	14	14	F02	
TAEC	Hookers Point	1	ST	28	28	F06	
TAEC	Hookers Point	2	ST	29	29	F06	
TAEC	Hookers Point	3	ST	28	28	F06	
TAEC	Hookers Point	4	ST	42	42	F06	
TAEC	Hookers Point	5	ST	66	66	F06	
			TOTAL	2505	2505		

TABLE 1.1-7

SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL - FLORIDA SUBREGION

EXISTING GENERATING CAPABILITY
(as of January 1, 1979)

System	Station Name	Unit No.	Unit Type	Primary Fuel Net Capability-MW Summer	Primary Fuel Net Capability-MW Winter	Primary Fuel Fuel Type	Alternate Fuel Fuel Type
City of Vero Beach							
VEBM	Municipal Plant	1	ST	12	12	F06	NG
VEBM	Municipal Plant	2	ST	17	17	F06	NG
VEBM	Municipal Plant	3	ST	33	33	F06	NG
VEBM	Municipal Plant	4	ST	56	56	F04	NG
VEBM	Municipal Plant	1- 6	IC	15	15	F02	NG
			TOTAL	133	133		

1/ Units on cold standby. Capacity of these units is not included in total resources for Subregion. Reactivation of these units would require several month.
2/ Total Capability: 797/812 MW, 80/81 MW owned by various Municipal and REA utilities.
3/ Operation of Anclote 2 is contingent upon the result of proceedings with the U. S. Environmental Protection Agency concerning thermal discharge. The unit is allowed to operate only during declared emergency conditions.
4/ Being converted to coal per ESECA; expected to return to service in May of 1979.
5/ The following units are unavailable until 1980 and are excluded from the Existing Generating Capability Total: Kennedy GT 1,2,6; Northside GT 1,2; Southside GT 1,2 (total MW = 127-S, 138-W).

TABLE 1.1-7

SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL-FLORIDA SUBREGION EXISTING GENERATING CAPABILITY

UTILITY SYSTEMS COMPRISING REPORTING PARTY

FLPL	Florida Power & Light Company
FLPC	Florida Power Corporation
FOPC	Fort Pierce Utilities Authority
GAMW	Gainesville/Alachua County Regional Utilities Board
HSTX	City of Homestead
JACO	Jacksonville Electric Authority
LWUA	Lake Worth Utilities Authority
LALW	City of Lakeland
ORLA	Orlando Utilities Commission
SECI	Seminole Electric Cooperative
SEPA	Southeastern Power Administration
TALL	City of Tallahassee
TAEC	Tampa Electric Company
VEBM	City of Vero Beach

UNIT TYPE ABBREVIATIONS

NP = PWR Nuclear
ST = Steam Turbine/Non-Nuclear
IC = Internal Combustion
GT = Combustion Turbine (Gas Turbine)
CT/CW= Combined-Cycle:
Combustion Turbine Portion/
Steam Portion - Waste Heat Only
CT/CA= Combined-Cycle:
Combustion Turbine Portion/
Steam Portion - Auxiliary Fired

FUEL TYPE ABBREVIATIONS

BIT = Bituminous Coal
NG = Natural Gas
FO2 = No. 2 Fuel Oil
FO6 = No. 6 Fuel Oil
UR = Uranium

TABLE 1.1-8

SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL-FLORIDA SUBREGION

FUTURE GENERATING CAPABILITY INSTALLATIONS AND REMOVALS
(January 1, 1979 through December 31, 1988)

System	Station Name	Unit No.	Unit Type	Primary Fuel Net Capability-MW Summer	Primary Fuel Net Capability-MW Winter	Primary Fuel Fuel Type	Alternate Fuel Fuel Type	Effective Date	Status
FLPC	Crystal River 1/	1	ST	383	383	BIT	-	5/79	
JACO	Northside	3	ST	58	58	FO6	-	/79	A
TAEC	Big Bend	2	ST	24	24	BIT	-	5/79	A
FLPC	Crystal River	3	NP	27	27	UR	-	6/79	A
			TOTAL	492	492				
VEBM	Municipal Plant	1-2,4-6	IC	-15	-15	FO2	-	1/80	R
JACO	Kennedy	6	GT	54	54	FO2	-	3/80	S
HSTX	G. W. Ivey	20-21	IC	14	14	Unk	Unk	4/80	P
JACO	Northside	1- 2	GT	23	28	FO2	-	4/80	S
FLPC	Crystal River	2	ST	50	50	BIT	-	5/80	A
FLPL	Martin	1	ST	775	787	FO6	-	/80	V
FLPL	Solid Waste	1- 2	ST	40	40	SW	-	/80	P
JACO	Kennedy	1- 2	GT	25	26	FO6	-	7/80	S
FLPC	Suwannee	1- 3	GT	153	195	FO2	-	10/80	L
JACO	Southside	1- 2	GT	25	30	FO2	-	10/80	S
			TOTAL	1144	1209				
GAMW	Deerhaven	2	ST	235	235	BIT	-	1/81	U
GAMW	J. R. Kelly	6	ST	-14	-14	FO6	-	1/81	R
FLPL	Martin	2	ST	775	787	FO6	-	/81	U
FLPC	Higgins	1- 3	ST	-119	-123	FO6	-	10/81	R
FLPC	Higgins 2/	1- 3	CT/CA	305/119	353/123	FO6	-	10/81	L
LALW	McIntosh	3	ST	200	200	BIT	-	11/81	U
ORLA	McIntosh	3	ST	134	134	BIT	-	11/81	U
			TOTAL	1635	1695				

*RR is probably better to use.

TABLE 1.1-8

SOUTHEASTERN ELECTRIC RELIABILTY COUNCIL-FLORIDA SUBREGION

FUTURE GENERATING CAPABILITY INSTALLATIONS AND REMOVALS
(January 1, 1979 through December 31, 1988)

System	Station Name	Unit No.	Unit Type	Primary Fuel Net Capability-MW Summer	Primary Fuel Net Capability-MW Winter	Primary Fuel Fuel Type	Alternate Fuel Fuel Type	Effective Date	Status
FLPC	Crystal River	4	ST	640	640	BIT	-	12/82	U
ORLA	Lake Highland	1- 3	ST	-90	-93	FO6	NG	12/82	R
			TOTAL	550	547				
LALW	Larsen	4	ST	-19	-19	FO6	-	1/83	R
TAEC	Big Bend	4- 5	GT	100	100	FO2	-	3/83	L
FLPL	St. Lucie	2	NP	747	764	UR	-	/83	U
SECI	St. Lucie	2	NP	48	48	UR	-	/83	U
OTHER	St. Lucie	2	NP	7	8	UR	-	/83	U
JACO	Unknown	1- 3	GT	150	180	FO2	-	5/83	P
SECI	Seminole	1	ST	600	600	BIT	-	5/83	L
FLPC	Simple Cycle	1	GT	100	100	FO2	-	10/83	P
FOPC	King	5	ST	-7	-7	FO6	-	12/83	R
			TOTAL	1726	1774				
TAEC	Big Bend	6- 7	GT	100	100	FO2	-	3/84	L
FLPC	Crystal River	5	ST	640	640	BIT	-	5/84	U
TALL	Purdom	1- 4	ST	-28	-28	FO6	NG	5/84	R
			TOTAL	712	712				
TAEC	Big Bend	4	ST	417	417	BIT	-	3/85	L
FLPL	Martin Coal	1	ST	700	720	BIT	-	/85	P
JACO	Unknown		GT	150	180	FO2	-	5/85	P
SECI	Seminole	2	ST	600	600	BIT	-	5/85	L

TABLE 1.1-8

SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL-FLORIDA SUBREGION

FUTURE GENERATING CAPABILITY INSTALLATIONS AND REMOVALS
(January 1, 1979 through December 31, 1988)

System	Station Name	Unit No.	Unit Type	Primary Fuel Net Capability-MW Summer	Primary Fuel Net Capability-MW Winter	Primary Fuel Fuel Type	Alternate Fuel Fuel Type	Effective Date	Status
TALL	Hopkins	3	GT	50	50	FO2	-	5/85	P
FLPC	Avon Park	2	ST	-42	-44	FO6	-	6/85	R
FLPC	Fossil-Coal	1	ST	660	660	FIT	-	10/85	P
			TOTAL	2535	2583				
LWUA	Smith	1	ST	-7	-8	NG	-	1/86	R
FLPC	Suwannee	1- 2	ST	-67	-67	FO6	-	6/86	R
ORLA	Lake Highland	A-B	GT	-26	-32	FO2	-	12/86	R
			TOTAL	-100	-107				
TALL	Unknown 3/		Unk	200	200	Unk	-	4/87	P
FLPL	Coal A	1	ST	300	300	Unk	-	/87	P
JACO	Coal A	1	ST	300	300	Unk	-	/87	P
FLPL	Martin Coal	2	ST	700	720	BIT	-	/87	P 4/
LALW	Unknown 3/		ST	200	200	Unk	-	5/87	P
ORLA	Unknown 3/		ST	150	150	BIT	-	5/87	P
FLPC	Fossil-Coal	2	ST	640	640	BIT	-	10/87	P
			TOTAL	2490	2490				
LALW	Larsen	1- 3	GT	-33	-39	FO2	-	1/88	R
LWUA	Smith	2	ST	-7	-8	NG	-	3/88	R
FOPC	King	6	ST	-18	-18	FO6	-	12/88	R
			TOTAL	-58	-65				

1/ Conversion from oil to coal complete.
2/ Conversion of Higgins 1-3 from steam to combined cycle.
3/ Possible joint participation unit.
4/ Certain initial activities have been authorized for this unit.

TABLE 1.1-8

SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL-FLORIDA SUBREGION EXISTING GENERATING CAPABILITY

UTILITY SYSTEMS COMPRISING REPORTING PARTY

FLPL	Florida Power & Light Company
FLPC	Florida Power Corporation
FOPC	Fort Pierce Utilities Authority
GAMW	Gainesville/Alachua County Regional Utilities Board
HSTX	City of Homestead
JACO	Jacksonville Electric Authority
LWUA	Lake Worth Utilities Authority
LALW	City of Lakeland
ORLA	Orlando Utilities Commission
SECI	Seminole Electric Cooperative
SEPA	Southeastern Power Administration
TALL	City of Tallahassee
TAEC	Tampa Electric Company
VEBM	City of Vero Beach

UNIT TYPE ABBREVIATIONS

NP = PWR Nuclear
ST = Steam Turbine/Non-Nuclear
IC = Internal Combustion
GT = Combustion Turbine (Gas Turbine)
CT/CW= Combined-Cycle:
Combustion Turbine Portion/
Steam Portion - Waste Heat Only
CT/CA= Combined-Cycle:
Combustion Turbine Portion/
Steam Portion - Auxiliary Fired

FUEL TYPE ABBREVIATIONS

BIT = Bituminous Coal
NG = Natural Gas
F02 = No. 2 Fuel Oil
F06 = No. 6 Fuel Oil
UR = Uranium

FUTURE UNIT STATUS ABBREVIATIONS

P = Planned
L = Regulatory Approved Pending; not under construction
U = Under Construction, less than 50% complete
V = Under Construction, more than 50% complete
T = Regulatory Approved Received, but not under construction
A = Capability Increase
D = Capability Decrease
M = Inactive Reserve
S = Reactivated from M
R = Permanently Removed

TABLE 1.1-9

FLORIDA POWER & LIGHT COMPANY
FORECAST OF CAPACITY, DEMAND, AND SCHEDULED MAINTENANCE
AT TIME OF SUMMER PEAK[a]

Year	Total Installed Capacity MW	Firm Capacity Import MW	Total Available Capacity MW[c]	Peak Demand MW[b]	Margin Before Maintenance MW	Margin Before Maintenance % of PK.	Sched. Maint. MW	Margin After Maintenance MW	Margin After Maintenance % of PK.
1979	10,957	0	10,957	8,975	1,982	22	450	1,532	17
1980	11,732	0	11,732	9,540	2,192	23	250	1,942	20
1981	12,547	0	12,547	9,930	2,617	26	250	2,367	24
1982	12,547	0	12,547	10,320	2,227	22	250	1,977	19
1983	13,294	0	13,294	10,715	2,579	24	250	2,329	22
1984	13,294	0	13,294	11,105	2,189	20	250	1,939	17
1985	13,994	0	13,994	11,495	2,499	22	250	2,249	20
1986	13,994	0	13,994	11,885	2,109	18	250	1,859	16
1987	14,994	0	14,994	12,275	2,719	22	250	2,469	20
1988	14,994	0	14,994	12,670	2,324	18	250	2,074	16

[a] Capacity additions and changes must be made by June to be considered in effect at the time of the Summer peak. All values are Summer net MW.

[b] This represents the number for which there is equal probability for the peak load forecast to be above or below this number and is to be used only where a singular forecast is required.

[c] Actual rating of St. Lucie Unit #2 is 802 MW however, 55 MW have been offered for sale to other utilities. Capacity values reflect 747 MW.

TABLE 1.1-10

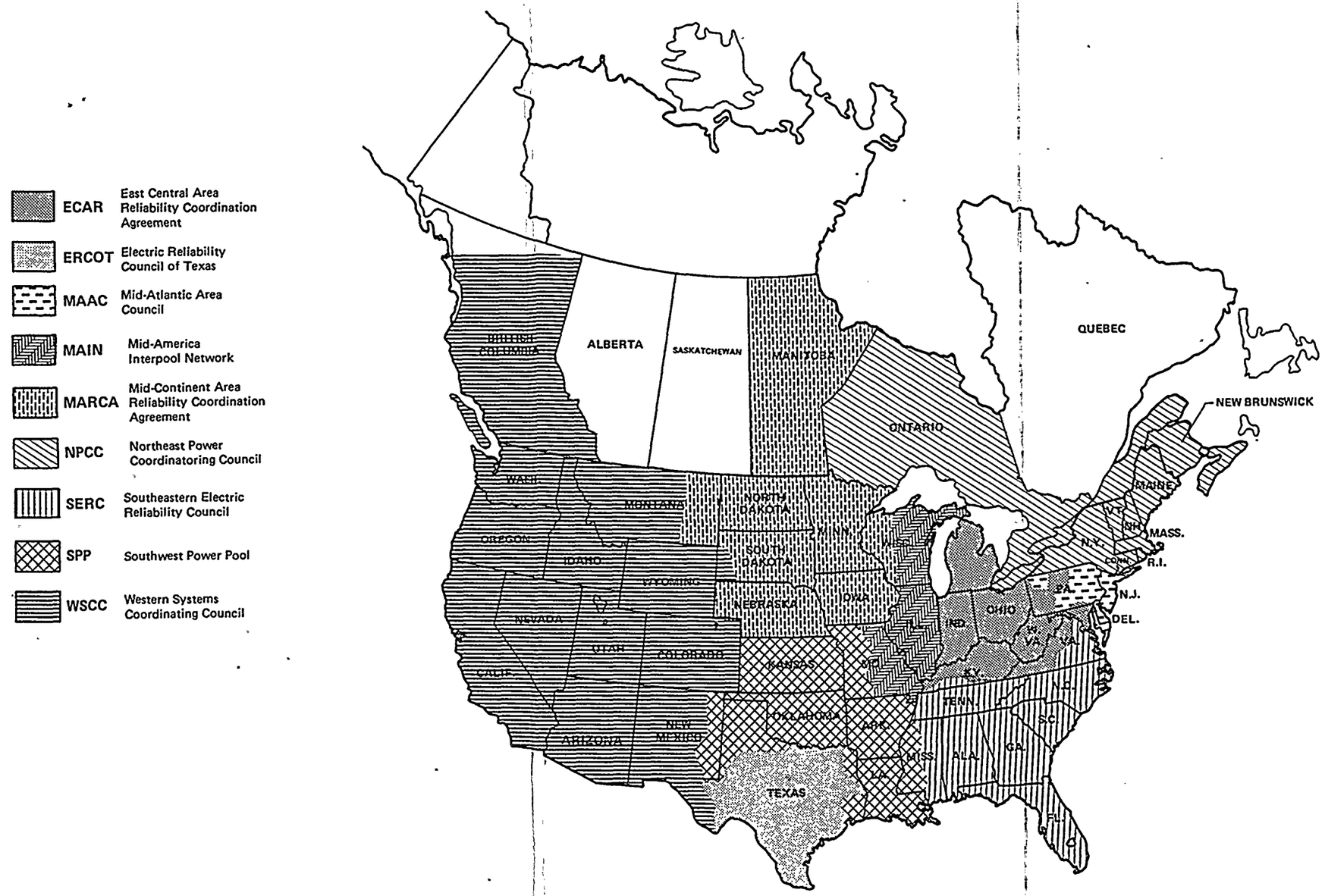
FLORIDA POWER & LIGHT COMPANY
SYSTEM LOAD, CAPACITY AND RESERVE

Year	Peak Demand (MW)	Net Summer Peak Capability[b] (MW)	Reserve with St. Lucie #2[a] (MW)	(%)	Reserve without St. Lucie #2[c] (MW)	(%)
1973	6,894	7,277			383	6
1974	7,235	9,015			1,780	25
1975	7,076	9,015			1,939	27
1976	7,598	8,646			1,048	14
1977	7,841	9,638			1,797	23
1978	8,345	10,848			2,503	30
1979	8,975	10,957			1,982	22
1980	9,540	11,732			2,192	23
1981	9,930	12,547			2,617	26
1982	10,320	12,547			2,227	22
1983	10,715	13,294	2,579	24	1,832	17
1984	11,105	13,294	2,189	20	1,442	13
1985	11,495	13,994	2,499	22	1,052	9
1986	11,885	13,994	2,109	18	662	6

[a] Same as "without St Lucie 2" except where indicated.

[b] Actual rating of St Lucie Unit 2 is 802 MW however, 55 MW have been offered for sale to other utilities.

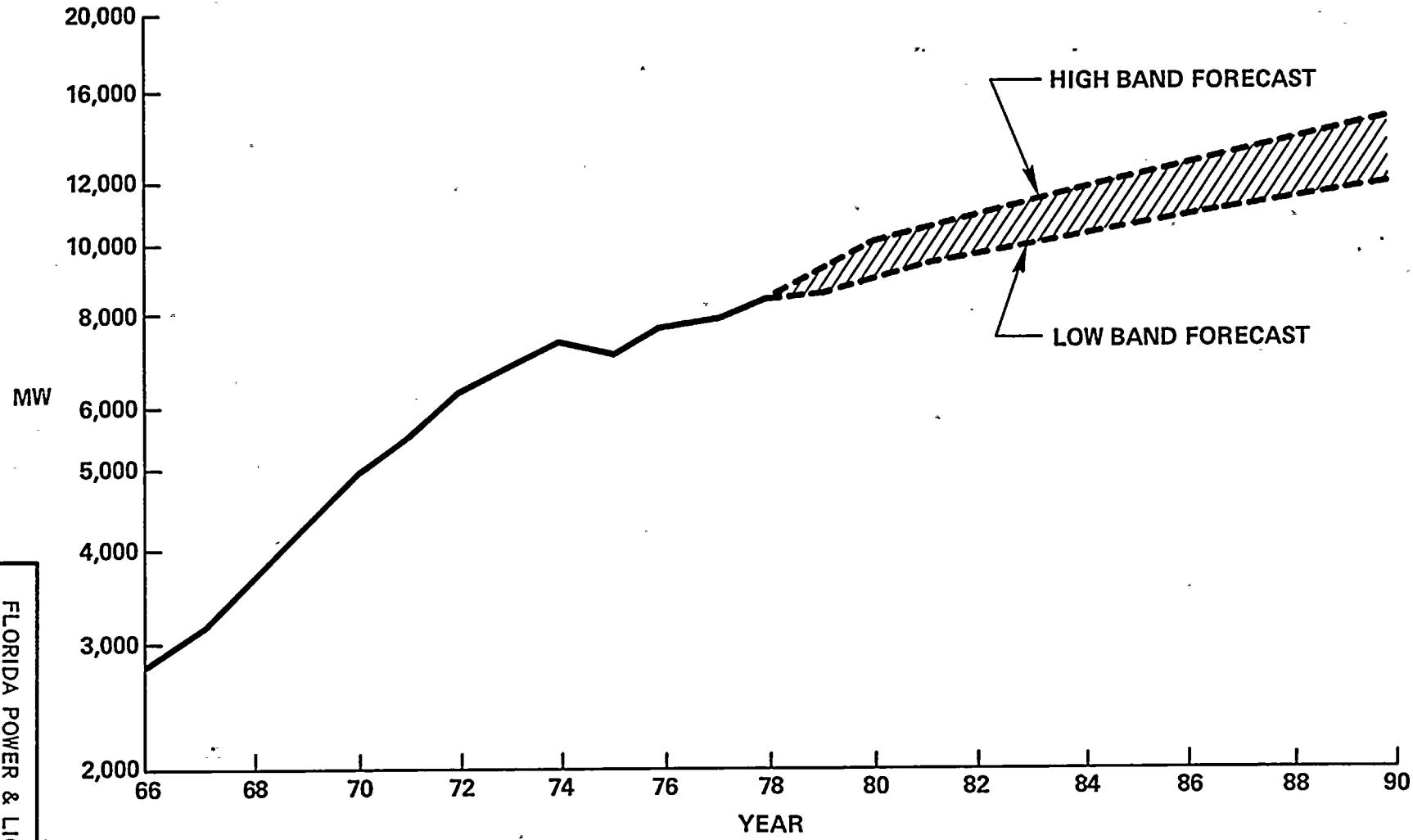
[c] "Reserve without St Lucie 2" also assumes that the planned Martin Coal 3 unit will not be added (planned for 1985).



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

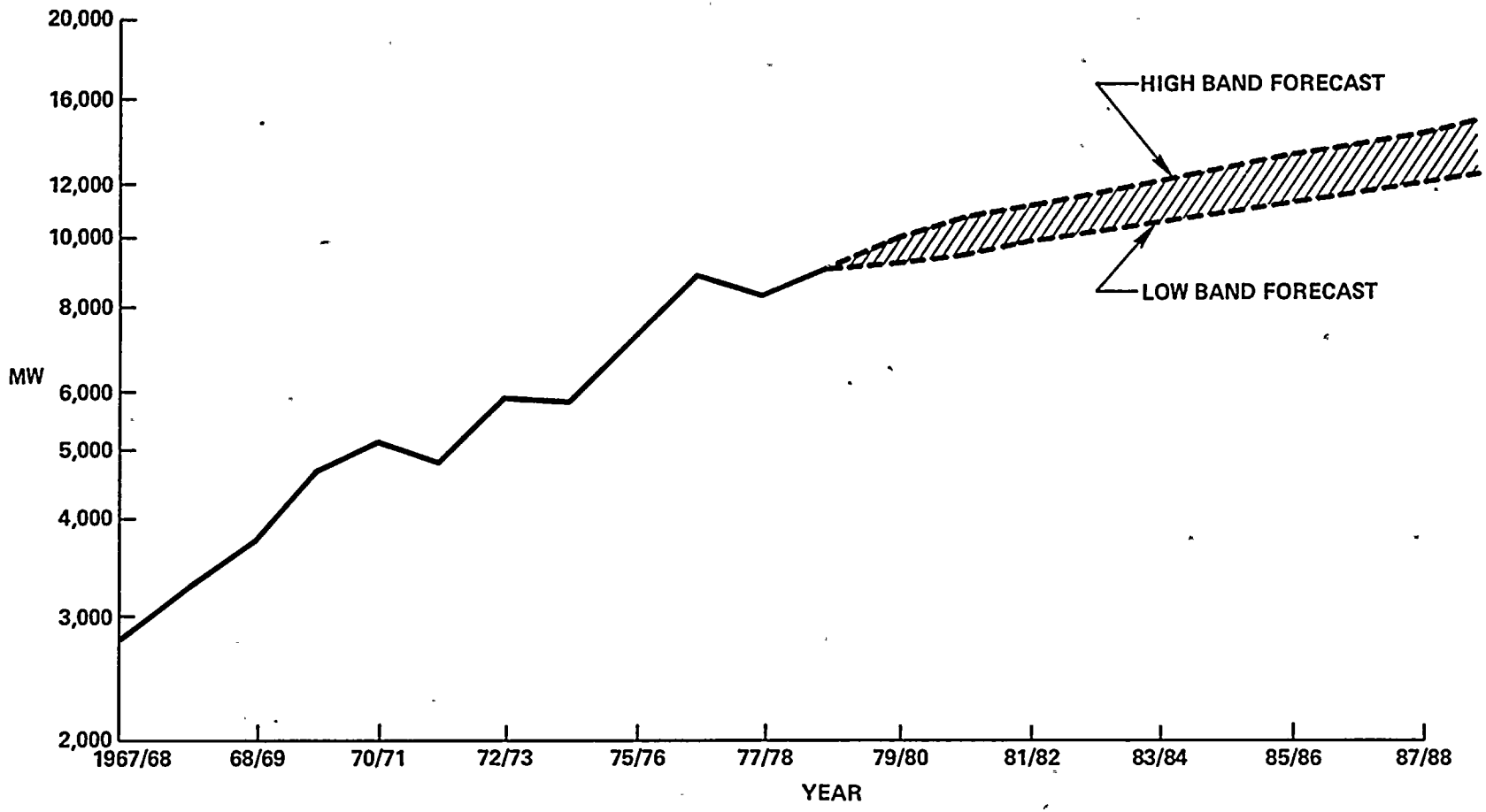
NATIONAL ELECTRIC RELIABILITY COUNCIL

FIGURE 1.1-1



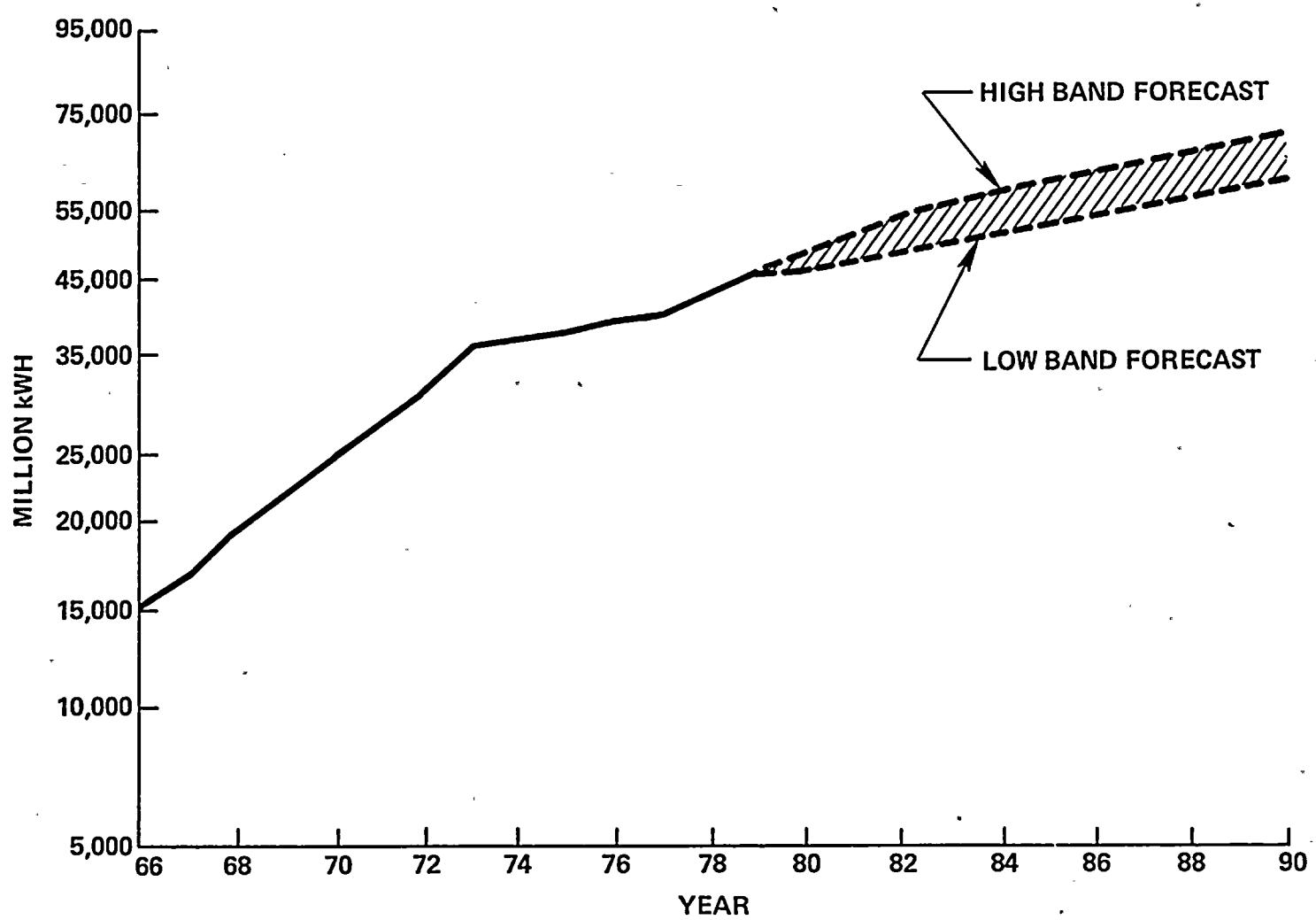
FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

TEN YEAR FORECAST
NET SUMMER PEAK LOAD
(60 MINUTE NET)
FIGURE 1.1-2



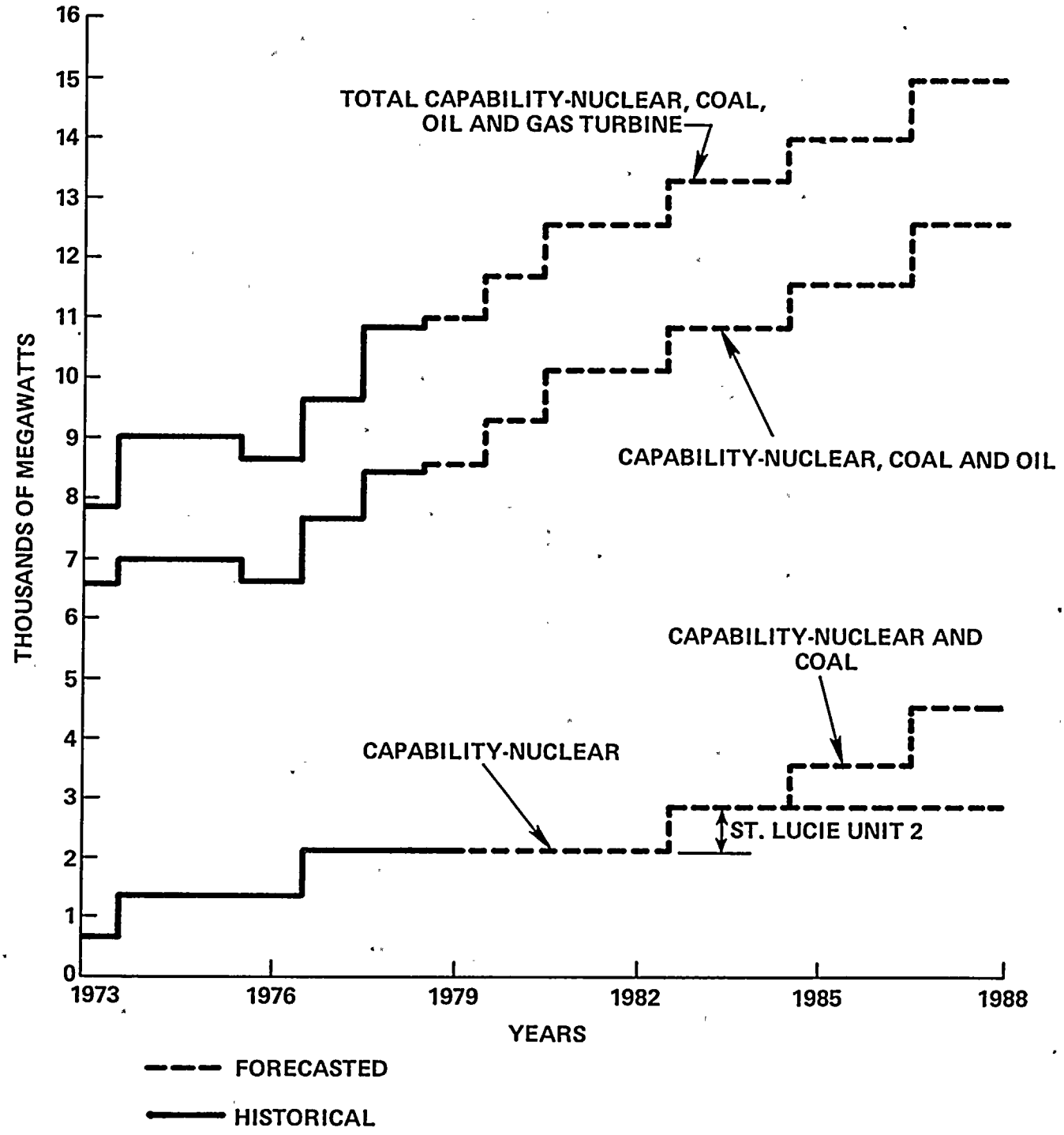
FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

TEN YEAR FORECAST
NET WINTER PEAK LOAD
(60 MINUTE NET)
FIGURE 1.1-3



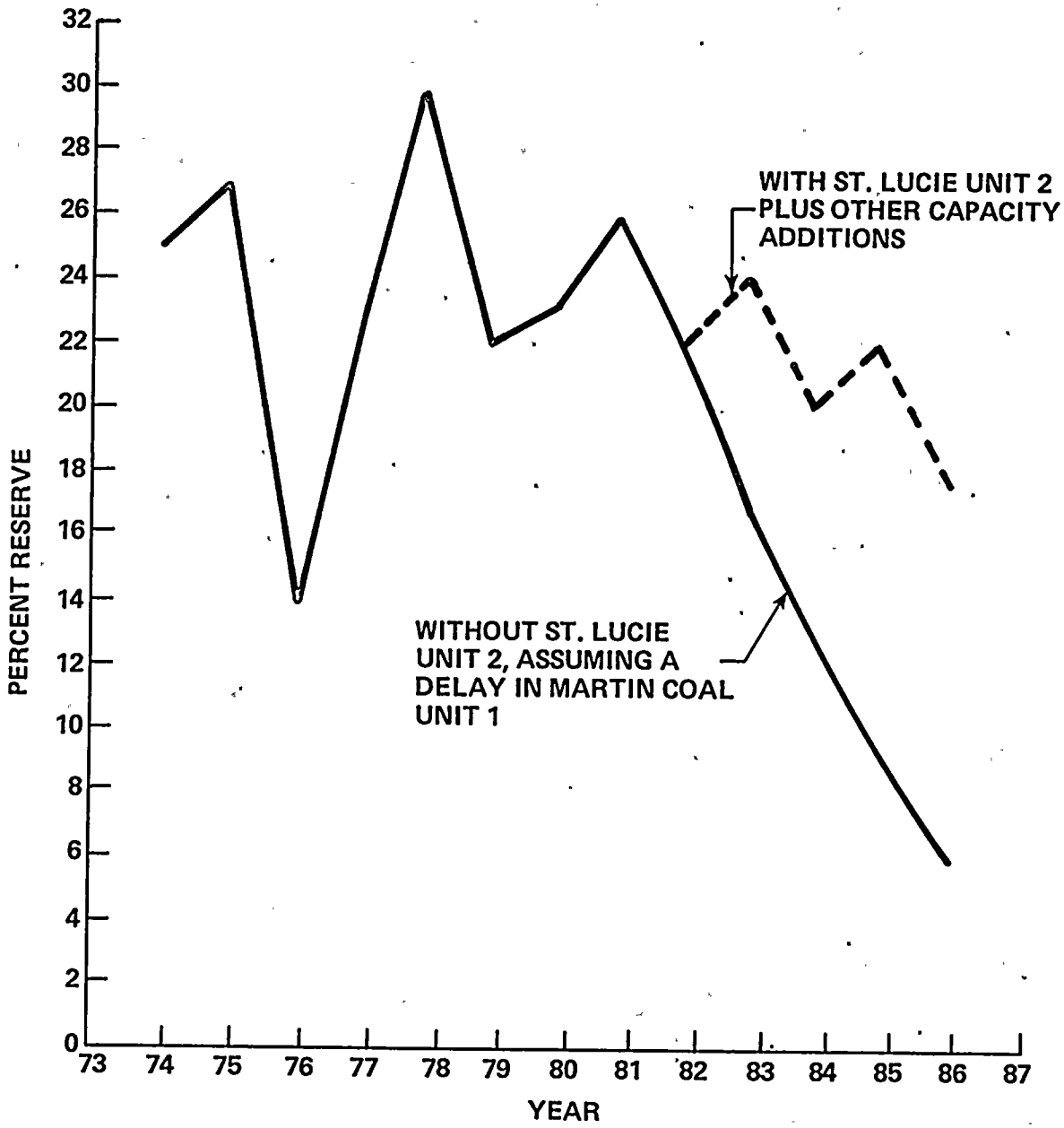
FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

TEN YEAR FORECAST
NET ENERGY
FIGURE 1.1-4



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

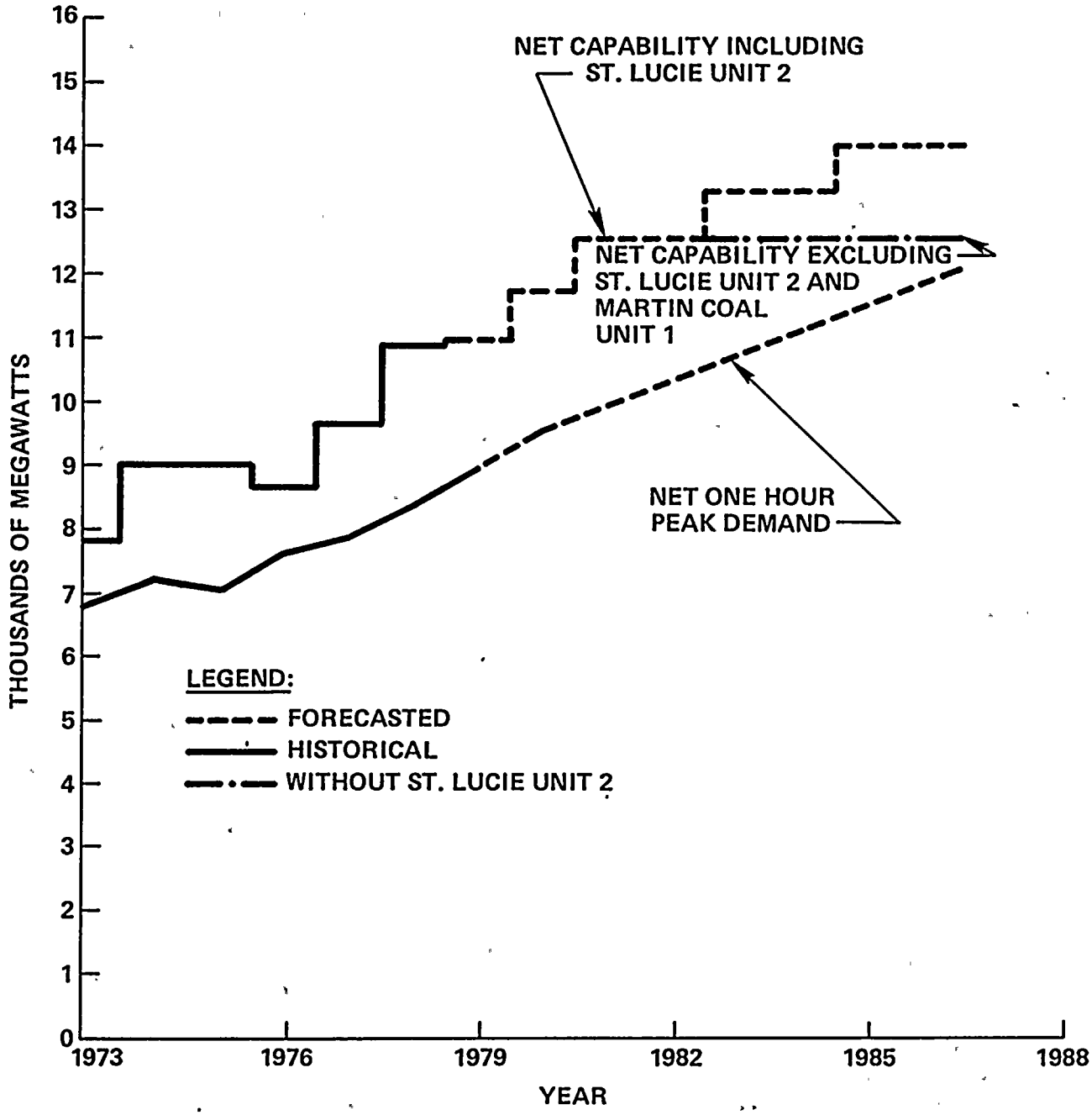
SYSTEM SUMMER NET CAPABILITY
FIGURE 1.1-5



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

FLORIDA POWER & LIGHT
RESERVE MARGIN

FIGURE 1.1-6



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

SYSTEM LOAD & SUMMER
NET CAPABILITY

FIGURE 1.1-7

APPENDIX 1.1A

SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL

AGREEMENT

Dated as of January 14, 1970

Amended October 10, 1973

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AGREEMENT, dated as of January 14, 1970, between ALABAMA ELECTRIC COOPERATIVE, INC., ALABAMA POWER COMPANY, CAROLINA POWER AND LIGHT COMPANY, CRISP COUNTY POWER COMMISSION, DUKE POWER COMPANY, FLORIDA POWER CORPORATION, FLORIDA POWER AND LIGHT COMPANY, GEORGIA POWER COMPANY, GULF POWER COMPANY, THE JACKSONVILLE ELECTRIC AUTHORITY, CITY OF LAKELAND-DEPARTMENT OF ELECTRIC & WATER UTILITIES, MISSISSIPPI POWER COMPANY, NANTAHALA POWER AND LIGHT COMPANY, ORLANDO UTILITIES COMMISSION, SAVANNAH ELECTRIC AND POWER COMPANY, SOUTHEASTERN POWER ADMINISTRATION, SOUTH CAROLINA ELECTRIC & GAS COMPANY, SOUTH CAROLINA PUBLIC SERVICE AUTHORITY, CITY OF TALLAHASSEE, TAMPA ELECTRIC COMPANY, TENNESSEE VALLEY AUTHORITY, AND VIRGINIA ELECTRIC AND POWER COMPANY, and amended by action of the Board on April 1, 1970, to include TAPOCO, INC., and YADKIN, INC.; by Board action on October 6, 1971, to include SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION, BIG RIVERS ELECTRIC CORPORATION of HENDERSON, KENTUCKY, and MUNICIPAL POWER AND LIGHT DEPARTMENT of HENDERSON, KENTUCKY; by Board action on October 10, 1973, to include GAINESVILLE/ALACHUA COUNTY REGIONAL UTILITIES SYSTEM; and by Board action on November 29, 1973, to include FORT PIERCE MUNICIPAL POWER SYSTEM and VERO BEACH MUNICIPAL POWER SYSTEM; as parties to the Agreement, (Hereafter referred to separately as a Member System, collectively as Member Systems.)

WITNESSETH:

Each Member System is concerned with the reliability and adequacy of bulk power supply in the area in which it serves.

ARTICLE 1

NAME

1.01 This organization shall be known as the Southeastern Electric Reliability Council. (Council).

ARTICLE 2

PURPOSE OF AGREEMENT

2.01 The purpose of this Agreement is to augment further the reliability and adequacy of bulk power supply in the areas served by the Member Systems. To this end, the Council will:

(a) encourage the development of reliability and adequacy arrangements among the systems within the region;

(b) exchange information with respect to planning and operating matters relating to the reliability and adequacy of bulk power supplies;

(c) review periodically activities within the region on reliability and adequacy;
(d) provide information with respect to matters considered by the Council, where appropriate, to the Federal Power Commission and to other Federal and state agencies concerned with reliability and adequacy.

ARTICLE 3

MEMBERSHIP

3.01 Any power supply entity operating or otherwise having responsibility for the operation of facilities normally connected with the interconnected power system in the general area encompassed by the Member Systems, and providing bulk power supply with normally connected generating capacity of 25 mw or more may become a member.

3.02 The Board shall designate as associate members of the Council up to four representatives from each of the following categories of distribution systems (including any with generating capacity of less than 25mw)which are not members of the Council but are connected to the Member Systems: (a) municipal and other publicly owned systems and (b) rural electric cooperatives. Such associate members may be chosen by the Board from names suggested by the systems in such categories, giving due regard to geographic location. Associate members may participate in meetings of the Board but shall not be entitled to vote.

ARTICLE 4

ORGANIZATION

4.01 The affairs of the Council shall be administered by an Executive Board (Board) which shall consist of the principal officer or other authorized representative of each Member System.

4.02 Any member of the Board may designate an alternate to represent him at any meeting. Voting shall be in proportion to installed generating capacity and a vote of nine-tenths of the total voting rights of the membership shall be required for action by the Board. Installed generating capacity shall be determined as nameplate value is reported on FPC Form 1.

4.03 Regular meetings of the Board shall be held on the first Wednesday of April and October in each year; special meetings may be called by the Chairman on his own initiative and shall be called upon request of two or more members. As far in advance of each meeting as practical, an agenda therefor shall be distributed to the members.

4.04 Bienially at the April meeting the members of the Board shall select one of their members to serve as Chairman, one as Vice Chairman, and one as Secretary-Treasurer, each for a term of two years.

4.05 The Chairman shall conduct all meetings and shall be responsible for the preparation of the agenda therefor. In his absence, the Vice Chairman shall serve in his place.

4.06 The Secretary-Treasurer shall sign or countersign checks, arrange audits of financial records, sign appropriate documents, and perform such other duties normally performed by Secretary-Treasurer, except duties of the Administrative Manager.

4.07 The Executive Committee shall consist of the Chairman, Vice Chairman, Secretary-Treasurer, and Ex Officio Chairman of the Technical Advisory Committee. It is empowered to make such decisions and take such actions as are deemed to be required between meetings of the Executive Board.

4.08 The Board may appoint such committees and task forces as it deems necessary to carry out the purposes of this Agreement.

4.09 The Executive Committee shall arrange for the services of an Administrative Manager. Under general direction, he shall manage the operations of the Council to the end that its purposes will be accomplished. Among his duties are to assist in and coordinate the preparation of testimony and reports, coordination of Subregional activities and Interregional affairs, initiation of agendas for Board and TAC meetings, arranging for meetings, handling financial affairs, keeping minutes of Board meetings, securing office space and other services as needed. He will normally attend all Board and standing committee meetings of SERC and the Technical Advisory Committee meetings of NERC. He shall provide other assistance to SERC and NERC as appropriate.

4.10 The Board shall, within the scope of Article 2, paragraph 2.01, periodically review principles and procedures with respect to matters affecting the reliability and adequacy of bulk power supply of the region.

ARTICLE 5

REGULATORY COMMISSION PARTICIPATION

5.01 To implement the purpose of this organization, the Chairman of the Federal Power Commission and the Chairman or President of any State Utility Commission in a state in which electric service is provided by a member of this Council shall each be invited to designate a representative to attend meetings of the Board.

ARTICLE 6

EXPENSE

6.01 The expenses of each member or associate member, appointed committees and task forces, and of the Secretary-Treasurer shall be borne by the party by whom he is regularly employed. Administrative expenses of the Council itself will be authorized by the Board through the adoption of an annual budget. Such administrative expenses shall be shared in proportion to voting rights by the systems which are members of the Council. The commitment of Southeastern Power Administration to share in the administrative expenses of the Council is dependent upon the availability of appropriations for such purpose.

ARTICLE 7

TERM

7.01 This Agreement shall continue until terminated by unanimous agreement of the parties, but any party to this Agreement may cease to be such by giving the others at least 30 days written notice of its intention. Any such party shall nevertheless continue to be liable for any obligation it may have had to pay a share of the expenses of the Council incurred prior to the end of the calendar year in which such notice is given.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed.

ALABAMA ELECTRIC COOPERATIVE, INC.

GAINES R. JEFFCOAT
President

ALABAMA POWER COMPANY

JOSEPH M. FARLEY
President

1.2 OTHER OBJECTIVES

The single primary objective of St Lucie Unit 2 is to assure FP&L's ability to produce efficient, low cost electricity to meet the demands of its customers and to provide a level of reserve power to the system as a whole.

1.3 CONSEQUENCES OF DELAY

All parts of Section 1.3 are based on the Ten Year Power Plant Site Plan 1979-1988 and information current to May 1979.

1.3.1 EFFECTS ON FLORIDA POWER & LIGHT COMPANY SYSTEM

The effects of delays of St Lucie Unit 2 on the generation reserve margins for Florida Power & Light Company are shown in Table 1.3-1. This table illustrates the effects of delays of one, two, and three years to 1983, 1984, and 1985. Since it is likely that a delay in St Lucie 2 would precipitate a delay in Martin Coal Unit 3, the reserve margin analysis accounts for this. This analysis was based on the most probable forecast and the current generation expansion plan other than the delays of the above mentioned units.

It is apparent that one, two, and three year delays of the commercial date for St Lucie 2 significantly reduce Florida Power & Light Company's generation reserves to 17 percent, 13 percent, and 9 percent in 1983, 1984, and 1985, respectively. These reserve margins are dangerously low and directly reduce Florida Power & Light Company's system reliability and ability to "meet all reasonable demands for service and provide a reasonable reserve for emergencies."

1.3.2 EFFECTS ON FLORIDA SUBREGION

Delays of one, two, and three years in the commercial operation of St Lucie 2 will produce the following effects on the reserve margins of the Florida Subregion of SERC. (Delay of St Lucie 2 causes an equivalent delay of Martin Coal 3.)

Year	Delay Time (Years)	% Reserve Without Delay	% Reserve With Delay
1983	1	24.4%	20.7%
1984	2	22.6%	19.0%
1985	3	25.3%	18.9%

Note: The above values are based on generation capacity of the Florida Subregion, excluding Florida Power Corporation's Anclote Unit 2 since that unit is currently allowed to operate only during declared emergency conditions awaiting proceedings with the United States EPA.

1.3.3 CONSEQUENCES OF NO INCREASE IN CAPACITY

If Florida Power & Light Company added no generation in 1983 or beyond, the Company's ability to maintain sufficient reserves will rapidly diminish. As indicated below, by 1988, the forecasted load will exceed the Company's generating capability. This would mean that Florida Power & Light Company could not meet the system load and would be in conflict with Florida Law.

Year	Net Summer Capacity	% Reserves
1983	12,547	17
1984	12,547	13
1985	12,547	9
1986	12,547	6
1987	12,547	2
1988	12,547	(1)

TABLE 1.3-1

EFFECTS OF DELAY ON FLORIDA POWER & LIGHT COMPANY'S SYSTEM

Unit Addition	Year	Net Summer Capability (MW)	Load (MW)	Reserve (MW)	Reserve (%)
		St Lucie Unit 2 on Schedule			
St Lucie 2	1983	13,294	10,715	2,579	24
No Addition	1984	13,294	11,105	2,189	20
Martin Coal 3	1985	13,994	11,495	2,499	22
		St Lucie Unit 2 Delayed One Year			
No Addition	1983	12,547	10,715	1,832	17
St Lucie 2	1984	13,294	11,105	2,189	20
No Addition*	1985	13,294	11,495	1,799	16
		St Lucie Unit 2 Delayed Two Years			
No Addition	1983	12,547	10,715	1,832	17
No Addition	1984	12,547	11,105	1,442	13
St Lucie 2*	1985	13,294	11,495	1,799	16
		St Lucie Unit 2 Delayed Three Years			
No Addition	1983	12,547	10,715	1,832	17
No Addition	1984	12,547	11,105	1,442	13
No Addition	1985	12,547	11,495	1,052	9

It is assumed that if St Lucie Unit 2 is delayed, then Martin Coal Unit 3 will be delayed and is therefore not shown in-service in 1985 as currently planned.

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2.1 GEOGRAPHY AND DEMOGRAPHY

2.1.1 SITE LOCATION AND DESCRIPTION

2.1.1.1 Specification and Location

Florida Power & Light Company's (FP&L) St Lucie site is located on Hutchinson Island, St Lucie County, Florida. St Lucie Unit 2 is located at latitude 27° 20' 55" north and longitude 80° 14' 47" west; the Universal Transverse Mercator (UTM) coordinates are 3025150 meters north and 574500 meters east in Zone 17. Approximately 300 feet to the north of St Lucie Unit 2 is FP&L's St Lucie Unit 1, which has been operational since 1976. The coordinates for St Lucie Unit 1 are latitude 27° 20' 58" north and longitude 80° 14' 48" west; the UTM coordinates are 3025250 meters north and 574450 meters east.

The eastern boundary of the site is the Atlantic Ocean and the western boundary is the Indian River, a tidal lagoon. Other prominent natural features within 50 miles of the site include Lake Okeechobee, 30 miles to the west-southwest of the site and a portion of the Everglades approximately 24 miles to the south of the site. Figure 2.1-1 shows the site in relation to the region within 50 miles. Figure 2.1-2 shows the area within five miles of the site. 2

Prominent cities within ten miles of the site include Fort Pierce, approximately seven miles to the northwest of the site; Port St Lucie, 4.5 miles to the west-southwest of the site; and Stuart, 8.0 miles to the south of the site. The largest urbanized area within 50 miles of the site is West Palm Beach located 36 miles to the south southeast. All distances are straight line measurements from the site to the closest boundary of each city or area.

Transportation facilities within five miles of the site include U S Highway 1; State Roads (SR) A1A, 712 and 707; the Florida East Coast Railroad, shipping on the Atlantic Ocean and the Intracoastal Waterway which is located in the Indian River. SR A1A, the major north-south route on Hutchinson Island, traverses FP&L's property to the east of St Lucie Units 1 and 2. Figure 2.1-2 shows the location of these transportation facilities.

2.1.1.2 Site Description

A map of FP&L's St Lucie site is shown in Figure 2.1-3, entitled Site Area Map. This map includes plant property lines, site boundary, principle plant structures and boundary lines of the exclusion area and low population zone. FP&L owns approximately 1132 acres of land. The site is generally flat, and has dense vegetation characteristic of Florida coastal mangrove swamps. At the ocean shore, the land rises slightly to a dune or ridge approximately 19 feet above mean sea level.

Figure 2.1-4 shows the location and orientation of the principal plant facilities for St Lucie Units 1 and 2. The area preempted by the plant is about 300 acres, or 27 percent of the total land owned by FP&L.

There are no industrial, commercial, institutional, recreational or residential structures within the plant area. SR A1A traverses FP&L's property approximately 1,000 feet east of the St Lucie Unit 2 containment building.

The exclusion area and the low population zone are shown in Figure 2.1-3. The radius of the exclusion area is 0.97 miles from the centerline of the St Lucie Unit 2 reactor building. The low population zone includes that area within approximately one mile of the centerline of the St Lucie Unit 2 reactor building. 2

2.1.1.3 Boundaries for Establishing Effluent Release Limits

The minimum boundary distance for establishing gaseous effluent release limits is that noted on Figure 2.1-4, Property Plan, directly north of the St Lucie Unit 2 reactor containment building. Also indicated in Figure 2.1-4 are other boundary line distances from plant liquid and gasesous release points. The restricted area, as defined in 10CFR20 includes the fenced area shown in Figure 2.1-5.

2.1.2 POPULATION DISTRIBUTION

2.1.2.1 Population Within Ten Miles

Table 2.1-1 and Figure 2.1-6 show the distribution of present and projected population within ten miles of St Lucie Unit 2. The estimated 1981 population within ten miles of the plant is 91,512 persons, concentrated in the cities of Fort Pierce and Stuart, which are the seats of government and centers of activity for St Lucie and Martin Counties, respectively. Most of the area within ten miles of St Lucie Unit 2 is in St Lucie County; only annular sectors S and SSW between the five and ten mile radii, fall within Martin County. The total population in 1981 for St Lucie County is estimated to be 91,041 persons[1]. The 67,150 residents of St Lucie County, within the ten mile radius, represent 73.8 percent of the county total. In the same manner, the 14,026 residents of Martin County, within the ten mile radius, comprise 20.7 percent of the total estimated county population of 67,807 in 1981[1]. 4 4

2.1.2.1.1 Cities, Towns and Settlements

Cities, towns and settlements within 10 miles of St Lucie Unit 2 are shown in Figure 2.1-7. All or parts of several incorporated areas fall within the ten mile radius. The largest of these is the city of Fort Pierce, with an estimated 1980 population of 33,802. The mainland portion of Fort Pierce falls in sectors NW and NNW, while the section of Fort Pierce on the northern end of Hutchinson Island is in sector NNW. This area, called South Beach, is linked to the mainland by South Bridge, a continuation of SR A1A. 4 4

Nearly all of Fort Pierce's population is located within the five to ten mile annulus. A part of the Fort Pierce incorporated area, a long narrow extension to the southeast, comes within 4.1 miles of the St Lucie Unit 2 site. However, most of this area consists of the Savannahs Recreation Area and has few residents. 4

The second incorporated area in St Lucie County within the ten mile radius is the city of Port St Lucie. The total estimated population for Port St Lucie in 1980 is estimated to be 14,690[2]. Approximately 75 percent of the incorporated area falls within ten miles of St Lucie Unit 2, extending from the S to W sectors. Although lots have been platted and sold in many sections, residential development in 1978 was concentrated in annular sectors SW five to ten and WSW five to ten[3]. In 1978, that part of Port St Lucie east of US 1, within five miles of the site, had no residential development[4]. However, by 1981 substantial development had taken place in that area (see Section 2.1.2.1.5). 4 4 4

A portion of the incorporated area of the city of Stuart falls within annular sector S five to ten. The estimated 1980 population for the city of Stuart was 9,467 persons[2]. As in the Fort Pierce area, the city of Stuart offers residents services and employment, proximity to the Atlantic Ocean and beaches, and access to Hutchinson Island. Two of the three means of access to Hutchinson Island, the Jensen Beach Bridge and Stuart Causeway, are located in annular sector SSE five to ten. 4

The town of Ocean Breeze Park is located in Martin County, north of the city of Stuart, on the western shore of the Indian River in annular sector SSE five to ten. Ocean Breeze Park adjoins the community of Jensen Beach, located at the intersection of SR 707 and the Jensen Beach Causeway (SR A1A). Also, in the SSE sector is a portion of the Town of Sewall's Point, which occupies the peninsula separating the St Lucie River from the Indian River.

Along the western shoreline of the Indian River (paralleling SR 707 east of the Florida East Coast Railroad) is a ridge of dry sandy soils[22]. This area, which is predominately low-density residential development throughout the five mile radius, includes the unincorporated settlements of Eden, Walton, and Ankona. A development called Indian River Estates is located in annular sectors W 3-5 and WNW 3-5. Approximately 40 percent of its land was developed for residential use in 1978[4]. Collins Park Estates, also in annular sector WNW four to five, is west of Indian River Estates and is smaller in area but more densely settled. Together, these developments contain about 500 dwelling units. 4

Spanish Lakes is another major development in the unincorporated area of St Lucie County inside the five mile radius. This mobile home community, which has 1387 lots[5], is located in annular sector WSW four to five, east of US 1. To the west of US 1, in Sector WSW, the developers of Spanish Lakes have completed a second project called Riverfront, which has a total of 620 units[5]. A third large mobile home park, Golf Village, is located to the southeast of US 1, in annular sectors SW 3-4 and 4-5. This development, which was completed in 1981, contains 617 dwelling units. 4 4

There are extensive areas of vacant land south of Indian River Estates between US 1 and the coastal ridge. Portions of this area are being acquired by the State of Florida for the Savannahs State Preserve[6].

On Hutchinson Island, in 1981, resident population within the five mile radius was located in annular sectors SE 1-2, SSE 1-2 and SSE 4-5. The 945 persons in annular sector SSE four to five included residents of Nettles Island, 4

a trailer park of 1588 lots[7], most of which are located on a man-made island reached by a short causeway. Many of the lots are owned or rented by persons who are seasonal visitors.

Other recently completed developments on Hutchinson Island within five miles of the plant include five condominium projects, listed as follows:

Name	Location by Annular Sector	Total Number of Units	Completion Date
Sand Dollar Villas	SE 1-2 & SSE 1-2	203	1981
Ocean Towers	SSE 4-5	158	1981
Island Village	SSE 4-5	32	1981
Sheraton Condo (Formerly Sheraton Motel)	SSE 4-5	84	1978
Oceana	SSE 4-5	286	1981

4
310.6

Most of the residents in these units are in fact transient population, visiting here only in the winter months.

2.1.2.1.2 Population by Annular Sectors

The most heavily populated annular sectors are those which cover the towns and developments mentioned above. The most heavily populated annular sector in 1981 was annular sector NW five to ten, which includes much of the city of Fort Pierce with an estimated 35,826 residents. 4

2.1.2.1.3 Population by Annuli

4

In 1981, the annulus between five and ten miles of St Lucie Unit 2 was more densely populated than the area within five miles. Population density for the five to ten mile annulus (excluding the seven sectors over the Atlantic Ocean) has 612 persons per square mile. Inside five miles, the four to five mile annulus has a density of 198 persons per square mile. 4

In 1981, the area within four miles of the plant was sparsely populated, with an overall density of 45.6 persons per square mile (excluding the five sectors over the Atlantic Ocean). Within two miles of St Lucie Unit 2, there was an estimated total of 186 residents, a population density of approximately 22 persons per square mile. The entire area within one mile of the plant is owned by FP&L and is included in the exclusion area and low population zone. Much of the area in the one to two mile annulus is over water. 4

2.1.2.1.4 Population by Sectors

The most populous sector within ten miles of St Lucie Unit 2 is the NW sector which, because of the large concentration of resident population in the city of Fort Pierce, contains 35,959 persons. The second most heavily populated sector is WSW, which has 13,977 persons and includes part of Port St Lucie. The adjacent sector, S, is third highest with 11,444 residents in 1981. 4

2.1.2.1.5 Projected Population

The population within ten miles of St Lucie Unit 2 is expected to quadruple during the life of the plant, from 91,512 in 1981 to 372,443 in 2030. This represents an increase of 307 percent over the 49 year period, or an average annual rate of growth of 2.91 percent. All interest rates referred to in Section 2.1 are compounded rates. The State of Florida is expected to grow by an average annual rate of 1.46 percent, or by 106 percent over the period from 1980 to 2020[1,8], as discussed in Section 2.1.2.2.5.

The very rapid population growth expected in the area within 10 miles of St Lucie Unit 2 is a result of four major trends:

a) The area of Florida's coast roughly between Vero Beach and West Palm Beach is the last remaining thinly developed area of tropical climate along the Atlantic coast. As such, it is very attractive for in-migrants.

b) The in-migration to this area has increased rapidly not only because of people moving here from elsewhere in the nation, but also because residents of the congested areas near Miami are seeking a less crowded environment.

c) The city of Port St Lucie is expected to be the single most important influence on growth in this region. According to the 1980 comprehensive plan for Port St Lucie, the City is expected to grow at a rate of 6 percent per year for the foreseeable future. Port St Lucie's position as providing affordable housing in an attractive environment, with good access to the more expensive areas of Martin County, provides added impetus for its growth. By 1990, Port St Lucie is expected to have 34,000 residents; by 2000, it should have more than 60,000, and it can reasonably be expected to reach its build-out population of 250,000 before 2030. Most of Port St Lucie is located within ten miles of St Lucie Unit 2. 4

d) The majority of population growth within the ten mile area of St Lucie Unit 2 can be expected in the coastal region of St. Lucie County because of the influence of Port St Lucie, and also because St Lucie County has historically had less restrictive development policies than its neighboring counties.

It is expected that by 2030 the population locus of the ten mile region will have shifted from its present position northwest of St Lucie Unit 2 to the southwest, in the region of Port St Lucie. By 2030, sector WSW will be the largest, with 118,839 persons, and sector SW will be second in size, with a population of 59,677. By contrast, the Fort Pierce area is expected to grow slowly because most of the growth in the area will be absorbed by the more attractive areas closer to the coast or in Port St Lucie.

Within the city limits of Port St Lucie, a proposed development of 2,200 dwelling units, called Midport[9], has been approved under State Development of Regional Impact (DRI) regulations[10,11]. In 1981, this development is under construction. Its estimated population of approximately 5,000 people will reside in annular sectors SSW and SW between 3.5 and 5.5 miles of

St Lucie Unit 2. It is expected that Midport will be completed and fully occupied by 1990. Therefore, the 1983 and 1990 population estimates include the Midport Project. 4

Several other major developments are planned for the next ten years on the mainland between Port St Lucie and the Indian River. Information about them is listed in the following tabulation: 4 310.8

Name	Location by Annular Sector	Total Number of Units	Completion Date
Saddle Club	WNW 4-5	700	1985
	NW 4-5		
	WNW 5-10		
The Grove	W 4-5	576	1990
Savannah Club	SW 2-3	2560	1990
	SW 3-4		
	SW 4-5		
	WSW 2-3		
	WSW 3-4		
	WSW 4-5		

The part of Hutchinson Island which falls within the five mile radius (sectors SE, SSE, and NNW) is another area expected to undergo considerable growth. In 1981, there was a total of 1,035 residents in these sectors; this population is expected to reach 8,698 by 2030. These residents will probably represent only a fraction of the island's future population since many new dwelling units for seasonal visitors and tourist accommodations will be constructed on this highly valued beachfront property. 4

Developments which are planned during the next decade are listed below: 4 310.8

Name	Location by Annular Sector	Total Number of Units	Completion Date
Sand Dollar	SE 1-2 &	162*	1983
Villas	SSE 1-2	144*	1986
Island Dunes	SSE 3-4	108	1982
		540	1988
Island Village	SSE 4-5	102*	1982
Islandia	SSE 4-5	388	1983
		184	1986

While the area of Hutchinson Island to the north of St Lucie Unit 2 is less attractive for development at present; it can be expected to experience considerable growth as the southern part of the Island fills up.

County planning officials have indicated that congestion of the bridges from the mainland to Hutchinson Island could restrict development[13,14].

* These units are in addition to those tabulated in Section 2.1.2.1.1.

A bridge has been proposed which would cross the Indian River at SR 712 and link US 1, the Florida Turnpike, and Interstate 95 to Hutchinson Island[13]. An additional river crossing would induce development on the Island. However, it is uncertain when or where another river crossing will be constructed because of the waters of the Indian River in this area are part of an aquatic preserve[13].

In the past, the availability of potable water on Hutchinson Island has been cited as another possible constraint to development. However, present indications are that this may not be the case. Presently there are plans to expand the water supply on Hutchinson Island. The Fort Pierce Utilities Authority (FPUA) plans to construct a 16 inch water main to a point approximately 3.5 miles south of St Lucie Unit 2[12]. This water main is being installed to serve Island Dunes, a 648 unit high rise development which is scheduled for completion by 1988. The first building of Island Dunes will be completed in December, 1982[21]. The FPUA water main serving Island Dunes is in addition to the 12 inch FPUA main already serving Hutchinson Island between St Lucie Unit 2 and the southern boundary of St Lucie County.

Other plans to expand the water supply on Hutchinson Island involve the construction of deep wells to the Floridan Aquifer. These wells employ a desalinization process called "reverse osmosis". They are being constructed by developers not served by public water supplies. On Hutchinson Island, all planned developments, except for Island Dunes and projects within the City of Fort Pierce, will be providing their own potable water with the reverse osmosis process. This desalinization process is being encouraged by the South Florida Water Management District (SFWMD), and at present there do not appear to be any constraints, other than cost, to providing potable water in this manner[22]. Furthermore, the SFWMD indicates that the reverse osmosis desalinization process "may soon become competitive with conventional treatment plants in terms of cost and reliability".[114] 4

2.1.2.1.6 Age Distribution

The age distribution of the projected population for the year 2000, within ten miles of St Lucie Unit 2, is presented in Table 2.1-2. In each annular sector, the number of people under 11 years of age; between 12 and 18; and over 18 have been estimated, based on the distribution of these age groups in Florida[17]. 4

2.1.2.2 Population Between 10 and 50 Miles

Table 2.1-1 and Figure 2.1-8 show the distribution of the estimated 1981 population between 10 and 50 miles of St Lucie Unit 2. The estimated 1981 population is 481,536 persons (see Section 6.1.4.2, Methodology) and represents 84.0 percent of the total population within 50 miles of the plant. This population is confined to sectors SSE through NNW since sectors N through SE, beyond the ten mile radius, include only the Atlantic Ocean. The major concentration of population occurs in annular sector SSE 40-50, which includes the city of West Palm Beach. West Palm Beach is the northern limit of the Florida Gold Coast development extending north from Miami through Dade and Broward Counties into Palm Beach County. The 139,046 residents in annular sector SSE 40-50 live on approximately 48 square miles of land (the east- 4

ern three quarters of annular sector SSE 40-50 extends over the Atlantic Ocean). Annular sectors S 40-50 and SSE 30-40 have the second and third highest populations, respectively, per annular sector, and reflect that Palm Beach County is more highly developed than any other part of the region. In the 1980 Census, Palm Beach Couunty was one of the 16 Standard Metropolitan Statistical Areas (SMSA's) in Florida. One of the total 573,125 residents of Palm Beach County in 1980, 307,195 lived within 50 miles of St Lucie Unit 2. 4

2

2.1.2.2.1 Cities and Towns Within 50 Miles

Table 2.1-3 lists towns, cities, and communities within 50 miles of St Lucie Unit 2 with a 1980 population of more than 5,000 persons (see Figure 2.1-9). There are eight towns with a population of more than 10,000, the largest of which is West Palm Beach, with a 1980 population of 62, 530. The second largest is the city of Fort Pierce, with 33,802 persons; the third largest is Riviera Beach in Palm Beach County, with 26,596 persons; and the fourth largest is Vero Beach, seat of government for Indian River County, with 16,176 persons. Of the eight largest towns, five are in the West Palm Beach Urbanized Area (as defined by the US Census[15]). In addition to West Palm Beach and Riviera Beach, the five include North Palm Beach (11,344 persons), Palm Springs (8,166 persons), and Palm Beach Gardens (14,407 persons). Stuart, the largest city in Martin County, has an estimated 1980 population of 9,467. 4

Of the eight towns with population between 5,000 and 10,000, three are within the West Palm Beach Urbanized Area. These include the towns of Palm Beach, with 9,729 persons; Lake Park, with 6,909 persons; and Greenacres City, with 8,843 persons. Pahokee, with an estimated 1980 population of 6,346 is also in Palm Beach County but is located in the north western quarter of the county, on the shore of Lake Okeechobee. 4

2.1.2.2.2 Population by Annular Sectors

The most heavily populated annular sectors between 10 and 50 miles from St Lucie Unit 2 are those which encompass the cities and towns with the greatest populations as discussed in Section 2.1.2.2.1. The most populous annular sector, SSE 40-50, includes West Palm Beach, Palm Beach Shores, Riviera Beach, and Palm Beach (see Figure 2.1-8).

Immediately to the west of annular sector SSE 40-50 lies the second most populous annular sector S 40-50, which includes Greenacres City (8,843) persons) and Haverhill (1,249 persons in 1980), as well as numerous large residential developments of up to 7,400 acres. 4

The third most populous annular sector between 10 and 50 miles from St Lucie Unit 2 lies north of West Palm Beach on the Atlantic Coast (SSE 30-40). Although its land area is less than half of the 137 square miles which comprise the annular sector, it includes Lake Park, North Palm Beach, Juno Beach, portions of Riviera Beach, Palm Beach Gardens, and the town of Jupiter, all of which are heavily populated. When the above three annular sectors are combined, they comprise 57.8 percent of the total population between 10 and 50 miles of the St Lucie Unit 2. 4

2.1.2.2.3 Population by Annuli

Populations by annuli between 10 and 50 miles of St Lucie Unit 2 range in number of residents from the largest, with a total of 239,009 persons (the 40-50 miles annulus), to the smallest, with 62,378 persons (the 10 to 20 mile annulus). The annulus between 30 and 40 miles has the second largest population of 97,160, while the annulus between 20 and 30 miles contains 82,989 persons (see Figure 2.1-8). 4 4

The 40-50 mile annulus has not only the largest population and the greatest overall area (approximately 1,590 square miles, excluding the seven sectors over the Atlantic Ocean), but also the highest population density in the region. The population density of the 40-50 mile annulus is 150 persons per square mile. Ninety-one percent of the population is located on 22 percent of the total annulus area, in sectors SSE and S, which include West Palm Beach and environs. 4 4

2.1.2.2.4 Population by Sectors

The most populous sectors between 10 and 50 miles of St Lucie Unit 2 are those which cover the West Palm Beach area and the Atlantic Coast. Sectors SSE and S have estimated 1981 populations of 235,178 and 109,572, respectively, and densities of 499 persons per square mile and 233 persons per square mile, respectively. Sector NNW has a population of 62,195, and a density of 132 persons per square mile; sector NW, the next one inland, has a total population of 18,741 and a density of 40 persons per square mile. The five remaining sectors have densities which range from two to 37 persons per square mile. 4

The sparseness of population in the five interior sectors can be attributed to extensive acreage covered by wetlands and surface water (Lake Okeechobee), inaccessibility to population centers, and the extent of range and cropland.

2.1.2.2.5 Projected Population

Figure 2.1-8 shows the projected residential population between 10 and 50 miles of St Lucie Unit 2. Total population between 10 and 50 miles is expected to grow by 332 percent between 1981 and 2030, or from 481,536 to 1,337,696. The average annual growth rate for this area would be 2.11 percent for the 52 year period. This rate of growth can be compared to the rate for the State of Florida, which is expected to be 1.46 percent per year from 1981 to 2020[1,8] and 0.76 percent per year for the United States from 1978 to 2025[17]. Florida is presently one of the most rapidly growing states in the United States. Between 1970 and 1980, the state grew by 43 percent, a net addition of almost three million people. Ninety percent of this growth was attributed to net migration[1]. 4 4

2.1.2.2.6 Areas of Development

The principal area of development between 10 and 50 miles of St Lucie Unit 2 occurs in Palm Beach County in the sectors including and adjacent to the Atlantic Coast. Major development activity outside of Palm Beach is concentrated in what can be called the "Atlantic Corridor", the five to ten mile area between the Atlantic Ocean and either Interstate 95 or the Florida Turnpike in Martin, St Lucie, Indian River, and southern Brevard Counties.

Land to the west of this region is mostly used for pasture, agricultural production (citrus, sugar cane, and truck farming), or remains undeveloped. Access is limited and population is sparse. In a few widely scattered sites, tracts of land have been platted and sold as home sites or proposed for such development. No significant development of any of these projects which lie west of the Atlantic Corridor has yet taken place.

Development is focused in the Atlantic Corridor for the following reasons: 4

a) Proximity to existing population centers and services;

b) Access to the Atlantic Ocean and Indian River, and the amenities they provide: scenic beauty, sports and recreation, tourist industry potential;

c) Presence of soils suitable for development on the coastal ridge;

d) Zoning and planning policies developed by county and regional agencies which permit development in these areas; and

e) Availability of land suitable for development.

Only three significant clusters of development occur outside the Atlantic Corridor between 10 and 50 miles of St Lucie Unit 2. Two are on or near the shores of Lake Okeechobee (which covers 400 square miles in sectors SW and WSW between 30 and 50 miles of the plant). On the southeastern shore of the lake in Palm Beach County, the community of Pahokee serves

the agricultural community of the western section as well as the sport fishing community using the lake. A few miles north of the lake in Okeechobee County, a regional center has developed at Okeechobee City. The third location where significant development is occurring is Indiantown, in south central Martin County, at the intersection of the St Lucie Canal and the Seaboard Coast Rail Line.

The following is a summary of development trends by county within 50 miles of St Lucie Unit 2.

a) Palm Beach County

The principal area of growth within 50 miles of St Lucie Unit 2 is in the northeastern quadrant of Palm Beach County, which lies south of the plant, at a distance of more than 27 miles. About 40 percent of Palm Beach County falls within 50 miles of St Lucie Unit 2; the total population of this area is expected to increase from 319,866 in 1981 to 784,262 in 2030. This increase represents a growth of 145 percent over the entire period, or 1.85 percent averaged annually. The corridor in Palm Beach County between the Atlantic Ocean and the Florida Turnpike is intensively developed with contiguous towns and cities such as Palm Beach, West Palm Beach, Riviera Beach and Lake Park. Residential development activity in 1977 included a sizeable number of dwelling units under construction west of the Turnpike in sectors S and SSW[16]. Development is expected to continue in this area because of strong growth to date and its reputation as a desirable place to live. Many developments include self-contained recreation amenities. The Professional Golfers' Association (PGA) has recently located its headquarters in Palm Beach County[18]. 4

Another area of growth exists in the northwestern quadrant of Palm Beach County where Pahokee is located on the shore of Lake Okeechobee. Pahokee is one of the 15 largest cities and towns within 50 miles of St Lucie Unit 2 (see Table 2.1-3). It has an estimated population for 1980 of 6,346. 4

b) Martin County

Nearly all (75 percent) of Martin County's 1981 population is located between 10 and 50 miles of the plant. The remaining residents were within ten miles of St Lucie Unit 2. The 1981 total of 55,060 persons between 10 and 50 miles is expected to grow by 204 percent to 167,642 by the year 2030. This represents an average annual growth of 2.3 percent. The city of Stuart is the major population center for the county; in 1980, its estimated population of 9,467 represented 15 percent of the total county population of 64,014. Population is expected to grow in and around the city of Stuart and on the barrier beaches in the Atlantic Corridor in Martin County[16]. Additional impetus for population growth in this area is expected to come from Martin Downs, a planned residential community in annular sector SSW 10-20 which is expected to reach a population of 13,700 by 2000. 4

Indiantown, with an estimated 1980 population of 8,143, is an incorporated area located approximately 26 miles southwest of St Lucie Unit 2, at the intersection of SR 710 and SR 76. At the Martin County site FP&L is presently constructing two generating units and a 6,600 acre cooling lake west of Indiantown. Two additional units will be constructed there[19]. 4

The western part of Martin County is largely range and cropland, with few permanent residents outside of Indiantown. A project formerly known as "Rotunda", and now called Palm Beach Heights, was proposed for land west of the Turnpike and was platted and sold for home sites. To date, there has been no actual development of these properties, and the wetness of soils is expected to limit the development of many lots which have been sold[20].

c) St Lucie County

St Lucie County extends from the plant site west to the 30 mile radius. Of the county's total estimated population of 91,041 in 1981, approximately one-fifth, or 17,298 persons, are estimated to reside outside the ten mile radius. This number is expected to grow at the rate of 602 percent (or 4.06 percent average annual rate) to a population of 121,365 in 2030. The primary reason for this growth is the city of Port St Lucie. 4

St Lucie County's major population center is the city of Fort Pierce, with an estimated 1980 population of 33,802, located inside and out of the ten mile radius. While the county as a whole grew 71.5 percent between 1970 and 1980, the city of Fort Pierce grew only 13.7 percent[15]. Most of Fort Pierce's growth occurred in the portion of the City on Hutchinson Island. Inland, relatively little population growth is taking place in Fort Pierce. As Fort Pierce is built up, development is expected to occur within the Atlantic corridor, outside the city limits. 4

In St Lucie County, the only coastal area outside the ten mile radius lies north of the St Lucie Unit 2. Annular sectors NNW and NW contain more than 89 percent of the 1981 St Lucie County population outside of ten miles. The western portion of St Lucie County is dominated by pasture and croplands. However, this situation should change dramatically by 2030, as the city of Port St Lucie expands to the southwest. The locus of population in the St Lucie county will shift to this area. 4

In 1974, Ashland Oil proposed a refinery and new town for the northwest corner of the county where the Turnpike runs NS-SE[19]. However, no firm plans or schedules exist for the development of this area. 4

d) Indian River County

All of Indian River County falls within the 10 to 50 mile radius. The county population, estimated at 62,398 in 1981, is expected to 4

grow to 153,962 by 2030[1]. This overall growth of 147 percent represents an annual average growth of 1.86 percent. The principal community in the Atlantic Corridor is the county seat, Vero Beach, with an estimated 1980 population of 16,176 persons (one-quarter of the total county population). Other cities and towns include Gifford, 9,494 persons in 1981; Sebastian, 2,831 persons in 1980; and Indian River Shores, 1,254 persons in 1980. Only one settlement, the Town of Fellsmere, with a 1980 population of 1,161, is located outside the Atlantic Corridor. Aside from the community at Fellsmere (NW 30-40), the area west of Interstate 95 is for the most part protected wetlands which are part of the St Johns River Flood Control District. 4

e) Brevard County

The portion of Brevard County (about 18 percent of total county land area) which lies within the 50 mile radius of the St Lucie Unit 2 has a 1981 population of 3,607. This number, which represents 1.3 percent of the county's total 1981 population, is expected to increase to 51,854 by 2030. Brevard has the slowest expected growth rate of the nine counties included in the 50 mile radius. Major development in Brevard County has taken place at Cape Canaveral, Cocoa Beach, Merritt Island, and Melbourne, all north of the 50 mile radius. It is expected that the locus of growth will shift southward as vacant coastal areas become more attractive. 4 4

In southern Brevard County, development has occurred along the Indian River and Atlantic Coast. Small communities include Micco, Melbourne Shores, and Floridana. The only incorporated town entirely within the 50 mile radius of St Lucie Unit 2 is Malabar, which in 1980 had a population of 1,118. The town of Palm Bay lies to the north of Malabar, just outside the 50 mile radius, on the Indian River. However, part of Palm Bay's incorporated area falls within the 50 mile radius. In this portion, a large-scale development called Port Malabar has been proposed. Because of lot sales and promotion, development will be directed to this area, but there is no definitive schedule which could be incorporated into projections made at the present time. The development of Palm Bay is proceeding at a rapid pace. The city grew from 7,176 persons in 1970 to 18,560 in 1980, an increase of 158.6 percent. In southern Brevard, as in Indian River County, development will be confined to the eastern coastal area because of restrictions imposed in the western region by the St Johns River Flood Control District. 4 4

f) Okeechobee County

Located inland of Martin, St Lucie, and Indian River Counties, Okeechobee County accounts for approximately 4.5 percent of the residents between 10 and 50 miles of St Lucie Unit 2. About 92 percent of its estimated 1981 population, or 19,576 persons, resides within the 10 to 50 mile area. By the year 2030, this number is expected to increase by 156 percent to 50,158. Okeechobee's population is concentrated in and around the county 4

seat of Okeechobee City. The county seat is at the convergence of US 98 and US 441 and SR 70, SR 78 and SR 710, less than five miles north of Lake Okeechobee. This accessibility is expected to ensure its continued growth as a regional center. The city's 1980 population of 4,225 represents about 20 percent of the county total. The adjacent town of Cypress Quarters has a population of approximately 2,176. These towns comprise 35 percent of the total county population. A large scale development has been proposed for sectors W and WNW at the 50 mile radius[23]. 4

g) Glades, Osceola, and Highlands Counties

Three counties on the periphery of the 50 mile study area contribute a total of only 3,731 persons to the 1981 population between 10 and 50 miles of St Lucie Unit 2. In Glades County, just outside of the 50 mile radius, on the northwest shore of Lake Okeechobee, a community known as Buckhead Ridge has developed since 1970. Although only 12 percent of Glades County's land area falls within the 50 mile radius, its most significant growth occurs in this location[24,25,26]. The 4

The only other settlement of greater size in Glades County is the county seat of More Haven, which had a 1980 population of 1,250 an increase of 28.3 percent from 1970[2]. Buckhead Ridge's 566 permanent residents represented approximately ten percent of the total county population for 1978[28]. 4

Osceola County is included in the 50 mile radius in sectors NW and WNW. Approximately three percent of the county's 1,313 square miles are included in the 50 mile radius. There, the small settlement of Yeehaw Junction was estimated to have 119 persons in 1978[29]. 4

Like Osceola, Highlands County has roughly three percent of its land area within the 50 mile radius. In this area, a small settlement has developed on SR 70[30]. Highlands County's predominant growth is expected to continue outside of the 50 mile radius in the vicinity of Sebring, Avon Park and Lake Placid, in the central part of the county[31,32,33]. All three interior counties reflect the lower rates of development taking place in Florida's central regions, which are not adjacent to the Atlantic or Gulf Coasts. 4

2.1.2.2.7 Projected Growth Rates Between 10 and 50 Miles

The total population between 10 and 50 miles is expected to grow by 177.8 percent from an estimated 481,536 persons in 1981 to 1,337,696 in 2030. The area of greatest growth between 10 and 50 miles of St Lucie Unit 2 is in Palm Beach County, in the three annular sectors surrounding West Palm Beach. Annular sector S 40-50 is expected to experience the highest rate of growth, with its 1981 population growing by 193 percent from 76,386 to 223,866 in 2030. Annular sectors SSE 30-40 and S 30-40 are each expected to grow by 190 percent over the entire 52 year period. In contrast, a relatively low rate of growth is expected for annular sector SSE 40-50 which contains the city of West Palm Beach. This can be attributed to the shift in development from heavily urbanized areas to vacant land in the north and west, as well as to the recognized tendency of heavily pop- 4 4

ulated areas to exhibit low growth rates while surrounding areas with low densities undergo high rates of growth[34].

Another area showing relatively intensive growth is located south and southwest of the plant between 10 and 30 miles. This includes Martin County's Atlantic corridor and the City of Stuart. 4

The fastest growing annulus is expected to be between 20 to 30 miles of St Lucie Unit 2. This band is influenced by the high rates of growth expected for Port St Lucie. The greatest growth by sector is expected to occur in sector SW which includes a portion of Port St Lucie. 4

2.1.2.2.8 Age Distribution

The age distribution of the projected population for the year 2000, between ten and 50 miles of St Lucie Unit 2, is presented in Table 2.1-4. In each annular sector, the numbers of persons under 12 between 12 and 18, and over 18 were estimated based on the distribution of these age groups in Florida[17]. 4

2.1.2.3 Transient Population

Transient population within 30 miles of St Lucie is estimated to be 54,680 persons in 1981. This figure is based on estimates in each annular sector of peak daily tourists and seasonal visitors. These estimates are presented in Table 2.1-5 and in Figures 2.1-10 and 2.1-11, and represent both daily and seasonal variations in the movement of persons or their temporary redistribution within the 30 mile radius. 4

As in much of Florida, this region experiences significant fluctuations in population as thousands come to the area for the winter season (generally from Christmas/New Year's to Easter) or for summer or winter vacation. Many attractions and events are held throughout the year which draw thousands of people. Although few in number, major industries and colleges draw many workers and students every day. The population from each of these sources has been estimated and projected for the required years through 2030. Estimates and projections for these three components are presented in Tables 2.1-6 and 2.1-7, and discussed in the sections which follow. Transient population resulting from transportation by road, rail, waterway, and air is estimated by calculating the average daily passengers at locations where vehicles or passenger counts are made. To avoid double counting, estimates of transient population at attractions and events, major industries, colleges, and transportation facilities have not been incorporated into transient totals by annular sector. 4

Throughout the region, Atlantic Coast beaches are enjoyed for their scenic beauty and recreation potential. Both St Lucie and Martin Counties provide public access strips to the beaches, and State sovereignty guarantees public access to all lands seaward of the mean high water line[35].

Because of the lack of comprehensive data concerning both the use of the beaches and the number of users, estimates were not included in peak daily transient totals. The only data available on beach usage is as follows:

The best estimates available from St Lucie County[36] indicate that average daily beach usage was 656 persons at four guarded beaches on Hutchinson Island. Between October 1, 1977 and September 30, 1978 a cumulative total of approximately 239,000 persons attended all four beaches in sector NNW. If beach usage were to grow at the same rate of growth as resident and seasonal population, average daily beach usage would reach 1,503 by the year 2030. 2 310.3 4

In Martin County, there were two guarded beaches within ten miles of St Lucie Unit 2 (in sector SSE). Average daily usage for both was estimated at 2,340 persons in 1978[27]. This number could be expected to reach 5,362 by 2030. Attendance is the greatest in the summer. It was estimated that as many as 2,000 persons attend Jensen Beach, at the junction of 42nd Street (from the Jensen Street Bridge) and SR A1A on holidays such as Memorial Day, Fourth of July and Labor Day[37]. 4

2.1.2.3.1 Tourists and Seasonal Visitors

The total of peak daily tourists and seasonal visitors within ten miles of St Lucie Unit 2, in 1981, is estimated to be 21,099 (see Table 2.1-5). This figure includes persons staying in tourist accommodations and campgrounds, dwelling units occupied by seasonal visitors, winter residents, and visitors staying with friends and relatives. 4

Inside the ten mile radius, the following sectors had the highest transient population totals in 1981: 4

a) NNW, zero to ten, had an estimated 3,841 tourists

b) SSE, zero to ten, had an estimated 8,925 tourists

These numbers reflect the fact that both sectors have the greatest number of these tourist accommodations as compared with the other annular sectors. Sector SSE, for instance, contains three campgrounds on Hutchinson Island: Venture Out, Windmill Village, and Holiday Out - St Lucie. Sector NW has a high resident population which presumably houses out-of-town visitors.

Between 10 and 30 miles of St Lucie Unit 2, the greatest number of tourists in 1981 were located in sectors NNW, with an estimated 12,914 visitors, and SSE, with an estimated 7,594 visitors. These numbers reflect the fact that between 10 and 30 miles of St Lucie Unit 2, these sectors afforded the largest number of tourist accommodations, such as motels, campgrounds and permanent residents' homes. Estimates for the 1981 tourist population and projections through 2030 are presented in Table 2.1-5. 4 4

2.1.2.3.2 Attractions and Events

Many attractions and events draw large crowds in this part of Florida; they include high school football games, major league exhibition games, county fairs, jai alai frontons and a dog track, tournaments, rodeos, and festivals. Attendance at events within 50 miles of St Lucie Unit 2 is presented in Table 2.1-6 for the year 1978 to 2030.

Within the ten mile radius, peak daily attendance in 1978 occurred at two walk-through events. Each lasted two days, and had a total estimated attendance of 40,000 persons. The Art-on-the-Green Festival brought 20,000 persons per day to the Indian River Memorial Park in January of 1978[39]. In March, 20,000 persons walked through the Auto Show, held at the St Lucie County Civic Center in Fort Pierce[38]. The third largest event was the Jensen Beach Fireworks, held on the Jensen Beach Causeway each Fourth of July[40]. Other attractions include the high school football games held at Lawnwood Stadium in Fort Pierce[49], and annual events such as the Sailfish Regatta (a hydroplane event on the St Lucie River)[41], the Outdoor Art Festival in Jensen Beach in March[40], the Sandy Shoes Festival (a week of events with a country and western theme) in Fort Pierce in January[50], the Sea Turtle Watch at Jensen Beach on Hutchinson Island in June[40], and Leif Erikson Day in Jensen Beach in October[40]. 4 2 2

In February of 1978, a total of 20,800 persons attended the week long St Lucie County Fair[46], which is held at the County Fairgrounds in Fort Pierce, located approximately 12 miles from St Lucie Unit 2. The Martin County Fair[47], held at the fairgrounds in Stuart, had a peak daily attendance of 7,559 and a total attendance of 27,000 persons. Other attractions and events include the football games at Vero Beach High School Stadium and at Martin County High School, exhibition games by the Los Angeles Dodgers at Dodgertown Sports Complex in Vero Beach, and attendance at jai alai games in Fort Pierce.

Between 30 and 50 miles from St Lucie Unit 2, there are several attractions and events held annually. The highest daily attendance at any event (in fact, for the entire 50 mile radius) took place at the South Florida Fair, at the Palm Beach County Fairgrounds. In 1978, 470,752 people attended the Fair, with 88,000 persons on the peak day[51]. Other events, such as fireworks, football games, and festivals, may draw from 1,000 to 10,000 persons on a single day[43]. These are listed in Table 2.1-6, Part C, and shown on Figure 2.1-12. 2 2

2.1.2.3.3 Major Industrial Employers

Most industrial employers within the 30 mile radius have fewer than 50 workers each and are involved in citrus growing, packing and processing, construction materials, or marine industries. Major employers are included in Table 2.1-7 and in Figure 2.1-13. Three employers in the 50 mile radius employ 500 or more workers per shift within 10 miles of St Lucie Unit 2; none is within ten miles of St Lucie Unit 2. 4

Between the 20 and 30 mile radii, two employers are considered significant. The first, Piper Aircraft, at the Vero Beach Airport in Indian River County in sector NNW, has a total employment of 2,887 persons and a peak daily shift of 2,000 persons in 1978[45]. The second, Grumman Aerospace, in 1978 employed 731 workers at its Stuart plant near the Martin County Airport[48]. The peak daily shift is 700 workers. Grumman is located in sector SW, between 10 and 20 miles of St Lucie Unit 2.

Between the 30 and 50 mile radii, Pratt & Whitney Aircraft is located on SR 710 in Palm Beach County. Total employment is 7,261 at the plant,

with a peak shift of 6,094 persons in 1978[52].

2.1.2.3.4 Enrollment at Major Colleges

Two major colleges are located inside the 30 mile radius. Estimates and projections of their enrollments are presented in Table 2.1-7. In annular sector SSE five to ten, Florida Institute of Technology-Jensen Beach Campus[42] has a peak enrollment of 900 students with dormitories accommodating approximately 300 students. Enrollment ranges from 200 in the summer trimester to 800 in the fall trimester and 900 in the winter session. The Jensen Beach Campus has a capacity for 1,200 students, which administrators expect to be reached by 1982[42].

Indian River Community College (IRCC)[44] has a total enrollment of 16,000 students on four campuses within the 50 mile radius. The main campus is located in Fort Pierce, in sector NW between the 10 and 20 mile radii. Seventy percent of the students, who come from St Lucie, Martin, Indian River and Okeechobee Counties, attend classes in Fort Pierce. Peak daily attendance in 1978 is an estimated 2,240 students. Between ten and 30 miles of St Lucie Unit 2, there are campuses in Vero Beach and Stuart. In Stuart (SSW 10-20), approximately 1,280 students, or a peak daily estimate of 256, attended class in 1978, while in Vero Beach, the total is 3,200 students, or an estimated peak daily attendance of 640. Only two percent of the students attended class on the Okeechobee Campus, located outside the 30 mile radius with peak daily enrollment estimated at 64 students.

2 310.5
2 310.5
2 310.5

Projections for IRCC, included in Table 2.1-7, incorporate the ten percent annual rate of growth expected through 1983 (expansion of facilities underway in 1978); in subsequent years, it is assumed that enrollment would grow at an annual average rate of 2.46 percent, the rate for the 50 mile radius area.

2 310.5
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2.1.2.3.5 Transportation Sources of Transient Population

The transient population resulting from the four basic modes of transportation is estimated by calculating the average daily number of passengers at locations on roads, waterways, rails, and airports where vehicles, vessels or passengers are counted. Since there is no way to know which or how many annular sectors people have traveled through and to avoid counting people as both residents and as passengers, transient population resulting from transporation has not been incorporated into the transient population totals by annular sector (Section 2.1.2.3). Estimates and projections of passengers for 1978 through 2030 are presented in Tables 2.1-8, 2.1-9 and 2.1-10; estimates for 1978 also appear on Figures 2.1-14 and 2.1-15.

2.1.2.3.5.1 Highway Traffic

Within ten miles of St Lucie Unit 2, highways and roads are a major source of transient population. SR A1A, SR 707, and US 1 are major north-south arterials. SR A1A passes within approximately 1000 feet of St Lucie Unit 2 on Hutchinson Island. SR 707 along the mainland coast is less than

two miles from the St Lucie site at its nearest point. US 1 is not only a major arterial north and south, but also a focus of commercial activity in St Lucie County. At its closest point, US 1 is approximately 4.8 miles from St Lucie Unit 2.

At or near the ten mile radius, four major river crossings concentrate traffic over the St Lucie and Indian Rivers (Figure 2.1-14). These include the South Bridge, Jensen Beach Bridge and Stuart Causeway from the mainland to Hutchinson Island and the Roosevelt Bridge on US 1 in Stuart. In February and March, traffic congestion in the Fort Pierce area and at the access points to Hutchinson Island is a severe problem; in fact, it is considered a limit to growth[14]. Recommendations for an additional bridge crossing the Indian River have been made for the northern end of Hutchinson Island, within Fort Pierce City limits or in adjacent areas[14]. Traffic from the larger region comes within ten miles of St Lucie Unit 2 on Florida's Turnpike, Interstate 91. At its closest point, the Florida Turnpike is approximately 7.5 miles from St Lucie Unit 2. At Interchange 56, in sector NW at the ten mile radius, the southbound average daily traffic (ADT) count was 5,920 vehicles[53] in 1977. Northbound traffic on the Turnpike in sector SSW had an ADT count of 9,980 vehicles. Passenger estimates for major state roads and interstates within ten miles of St Lucie Unit 2 in 1978 are displayed in Table 2.1-8 and in Figures 2.1-14 and 2.1-15. 2

Between 10 and 30 miles, in sector NW, Interstate 95 (I-95) terminates approximately one mile east of the Florida Turnpike at SR 70. At the 30 mile radius, southbound traffic on I-95 had an ADT count in 1977 of 3,896, while the Turnpike, in sector WNW at the 30 mile radius, had a southbound ADT count of 5,920. To the south, in sector SSE, the northbound traffic on the Florida Turnpike had an ADT count of 10,365.

In 1978, I-95 was approximately 85 percent complete from the Georgia state line to South Miami[54]. The 55 miles of I-95 remaining to be built are located in St Lucie, Martin and Palm Beach Counties. In St Lucie County, an eight mile section between SR 614 and SR 70 is under construction and scheduled to open in 1979. The remaining 47 miles south of SR 70 to completed sections in Palm Beach County are in the planning and/or design stages. In St Lucie County, the proposed corridor is located west of the Turnpike. In Martin County, serveral alternate routes have been considered at public hearings[55], but as of early 1979 no decision had been reached.

Average daily traffic counts for interstate highways have been converted into average daily passengers (2.5 passengers per vehicle) in Table 2.1-8 and on Figures 2.1-14 and 2.1-15. (See Methodology, Section 6.1.4.2).

2.1.2.3.5.2 Waterway Traffic

The potential total of average daily passengers on waterways within ten miles of St Lucie Unit 2 in 1978 was 1,999 persons. This total was derived from available vessel or passenger counts for commercial and pleasure craft (see Table 2.1-10). As in the case of highways, the figure represents an approximation of potential passengers because there is no way to know in 4

which or through how many annular sectors persons on the waterways may have traveled.

The St Lucie site on Hutchinson Island is bounded to the west by the Indian River, in which is located the Intracoastal Waterway, a major north-south route for commercial and pleasure craft along the eastern seaboard. Between Jacksonville and Miami, the US Army Corps of Engineers estimated a total of 518,841 excursion passengers in 1976[56], or an estimated average daily passenger count in 1978 of 1,490 passengers. This number is for the total length of the Intracoastal Waterway section between Jacksonville and Miami and therefore is a conservative estimate of the actual number of passengers within one mile of St Lucie Unit 2. There is no way to estimate how many passengers actually pass within one mile of the site from the data available.

Located in sector NW at the ten mile radius, Fort Pierce Harbor is the only shipping port within 30 miles of St Lucie Unit 2. The harbor is reached from the Atlantic Ocean shipping lanes via Fort Pierce Inlet, at the northern end of Hutchinson Island. Fort Pierce Harbor is a US Army Corps of Engineers project; in 1976, the Corps recorded a total of 7,800 passengers on ships entering the harbor[56].

The Florida peninsula is transversed from Fort Myers to Stuart by the Okeechobee Waterway, a cross-land lock system providing access from the Gulf of Mexico to the Atlantic Ocean and Intracoastal Waterway. From September 1977 to September 1978, 9,671 vessels used the Waterway[57]. These vessels were pleasure craft, cargo ships, and shrimpers under eight foot draft (maximum draft on Lake Okeechobee in 1978). The Waterway runs from Fort Myers Harbor to Lake Okeechobee. At Port Mayaca in Martin County, the Waterway enters the St Lucie Canal. Heading north and east through Indiantown, the Canal connects with the South Fork of the St Lucie River in Stuart. This eastern terminus of the Waterway lies within the ten mile radius in sectors S and SSE. In 1978, the average daily number of passengers on ships going through the locks was estimated to be 108 persons. Within the ten mile radius, in sectors NW, S and SSE, five drawbridges must be opened for large vessels on the St Lucie and Indian Rivers. In 1978, bridge openings represent an average daily estimate of 379 passengers. These passenger estimates supplement the Intracoastal Waterway data[56] which include only commercial vessels. Although there are no data available on the numbers of small craft passing under the bridges, it is likely that those passengers are local residents or transient population accounted for in estimates of resident and seasonal population. Estimates and projections of waterborne passengers are presented in Table 2.1-10. Figure 2.1-14 shows estimates for 1978 and the locations where passenger and vessel counts were taken.

2.1.2.3.5.3 Rail Passengers

Within ten miles of St Lucie Unit 2, the Florida East Coast Rail Line passes at a distance of approximately two miles from St Lucie Unit 2. It carries no passengers[58]. To the southwest, Amtrak trains on the Seaboard Coast Line carried a total of 135,336 passengers between October 1, 1976 to September 30, 1977. At its closest point, the Seaboard Coast Line is approximately 26 miles from St Lucie Unit 2. Peak daily capacity, which

means all seats available on all six trains on the line, was 2,474 in August, 1978[58]. As indicated in Table 2.1-9 and Figure 2.1-14, the Seaboard Coast Line, which passes through the 30, 40 and 50 mile annuli, had a daily average of 389 passengers in 1978 between Sebring, Florida and West Palm Beach. A cutback in the number of passenger trains is expected to reduce passenger totals after 1978[59].

2.1.2.3.5.4 Airport Passengers

No regularly scheduled airline passenger service was available at any of the airports within 30 miles of St Lucie Unit 2 in 1978. Although no airports exist within the ten mile radius, both St Lucie and Martin Counties have airports located between the ten and 20 mile radii. The St Lucie County Airport is located north of the city of Fort Pierce in sector NW. St Lucie is a landing rights airport with complete US Customs facilities. In 1979, a small commuter airline known as Golden South expects to begin operation with five round trip flights to West Palm Beach, Melbourne, and Orlando. Longer range plans (1982-1985) include expansion of the runway to accommodate DC-9's and improvements of the tower to meet FAA Standards[60]. In developing scheduled passenger service, St Lucie County Airport has the advantages of sufficient land area for runway expansion and US Custom Service facilities for non-US destinations in the Bahamas or the Caribbean.

The Stuart/Martin County Airport is located south of Stuart in annular sector S ten to 20. As of 1978, its use was limited primarily to test flights for Grumman Aerospace. No plans exist for expansion of structures or facilities.

Between 20 and 30 miles of St Lucie Unit 2, in Indian River County, the Vero Beach Municipal Airport will resume scheduled passenger service in 1979. Eastern Airlines discontinued its service into Vero Beach in 1973. Allegheny Commuter Service will offer round trip service for 150 passengers daily between Vero Beach and Orlando. Allegheny has found a good frequency/small aircraft type of service a success in other parts of the US, and expects strong growth here[61,62].

The West Palm Beach International Airport is located in sector SSE, inside the 50 mile radius (Figure 2.1-14). In 1977, a total of 1,603,971 arriving and departing passengers used the airport. In 1978, the average daily number of passengers is estimated to be 4,878. Although the number of landings grows at a rate of only two percent per year (see Section 2.2), the use of larger aircraft accommodates the increasing demand for seats. It is expected that at least 4,474,000 passengers will use the West Palm Beach International Airport in 1990[63]. Plans are underway for construction of new terminal, runway, and road facilities. In addition to passengers, airport officials estimated that in 1978 there were 1,800 workers at the airport on a peak day, and that passengers were accompanied on the average by two persons each prior to departure and upon arrival. If passengers, workers and persons accompanying passengers are totalled for 1978, the average daily number of persons at the West Palm Beach International Airport for 1978 would be 6,992. Estimates and projections of average daily passengers are included in Table 2.1-9.

2.1.3 USES OF ADJACENT LANDS AND WATERS

2.1.3.1 Existing Land Uses on Applicant's Property

The St Lucie site boundaries, exclusion area boundary, and station perimeter, are shown in Figures 2.1-3 and 2.1-5. A map showing existing land uses on this property is given in Figure 2.2-1. Acreages of each category of land use within the property boundaries are given in Table 2.2-1.

Table 4.1-1 lists the various uses and the respective acreages required for the St Lucie site. A detailed discussion of the site area breakdown is given in Section 4.1.

2.1.3.2 Land Uses Within The Exclusion Area

The exclusion area falls within FP&L property boundaries, and encompasses the area within a one mile radius of the plant (See Figure 2.1-3). Apart from the utility facility itself, the only other principal land uses/land cover within the exclusion area are SR A1A, undeveloped mangrove, sandy beaches and dirt trails along the eastern coast of Hutchinson Island.

2.1.3.3 Future Land Use on the Applicant's Property

FP&L is investigating the feasibility of constructing a small recreational area of approximately five acres located at the northeast corner of the property. This facility would be operated by the county if it is constructed. Suitable barriers would be installed along the southerly boundary of this area to limit vehicular access south along the dune road. There are no other proposed land uses within the applicant's property boundaries other than the structure and facilities related to the construction and operation of St Lucie Unit 2. Apart from the three acres required for the discharge canal extension and headwall project, and the acreage that may be required for the recreational area, no other disturbance to existing land is expected.

2.1.3.4 Nearest Residences and Agricultural Activities

Table 2.1-11 gives the location of the nearest cow, goat, meat animal, vegetable garden (greater than 500 square feet in area), and residence found within five miles of St Lucie Unit 2. The location of these items is given by annular sector. The following is a discussion of this Table[66,67,68].

- No milk cows were observed within five miles of St Lucie Unit 2.
- No milk goats were observed within five miles of St Lucie Unit 2.
- No meat animals were observed within five miles of St Lucie Unit 2.
- The ground survey showed the nearest vegetable garden of 500 square feet or greater to be located 1.87 miles SW of the facility.
- The nearest residence lies 1.4 miles SE of the plant site.

2.1.3.5 Existing Land Uses Within Five Miles of St Lucie Unit 2

Table 2.1-12 lists each land use found within five miles of St Lucie Unit 2 with the acreage involved for each category. Figure 2.1-16 is a map showing the distribution of these land uses[69-72]. The site survey and land use classification methodologies are discussed in Section 6.1.4.2.1.

A detailed discussion of existing land uses within five miles of St Lucie Unit 2 is given below.

2.1.3.5.1 Land Use/Land Cover by USGS Categories

a) Residential

The residential category of land use includes single family units, multiple family units, group quarters, mobile home parks, and transient lodgings, (motels and hotels). Permanent residents live, for the most part, in single family units consisting of free standing houses and mobile homes. Transient accommodations include residential units which are rented out, motels, hotels and individual housing units which are visited by friends or relatives.

Housing developments on the mainland are clustered along US Highway 1 (US 1) and SR 707 (along the western coast of Indian River). Housing facilities on Hutchinson Island are located at the shoreline and are, for the most part, transient accommodations. These residential units are used by seasonal visitors throughout the year and include motel rooms, condominiums and mobile home park facilities. Residential developments within five miles of St Lucie Unit 2 are discussed below. See Figure 2.1-7 for their location.

Mainland Residential Units

Indian River Estates, located between three and five miles of St Lucie Unit 2, east of US 1, and just south of Fort Pierce, is a single family housing development designed primarily for permanent residents[73]. Although streets and plots were laid out for this development many years ago, only roughly 40 percent of the land within Indian River Estates was occupied in early 1978. 4

Collins Park Estates, just west of Indian River Estates, occupies much less land area than does Indian River Estates, but is more densely settled. Most of the residents are permanent[74]. Taken together, these developments contain more than 500 dwelling units (Section 2.1.2.1.1). 2

Spanish Lakes is a mobile home community east of US 1 and contains 1,387 lots[75]. Although most of the occupants are permanent residents, a significant number of dwelling units are owned or occupied by seasonal visitors. West of Spanish Lakes and US 1 is a mobile home project known as Riverfront. A small portion of this development extends into the area within five miles of St Lucie Unit 2. Like Spanish Lakes, it accommodates both permanent and transient residents.

A third large mobile home park, Golf Village, is located to the southeast of US 1, in annular sectors SW 3-4 and 4-5. This development, which was completed in 1981, contains 617 dwelling units. 4

Along US 1, there are a number of individual dwelling units which are scattered between, adjacent to, or atop commercial establishments. These residential units are used by both permanent residents and seasonal visitors.

Paralleling SR 707 is a strip of individual houses on the shore of the Indian River[76]. Typically, these houses sit on lots which extend back from the shoreline approximately 1000 ft. Most of the people residing in this area are permanent residents. The area is primarily low density and includes the settlements of Ankona, Walton, and Eden.

There are a few isolated houses in the largely undeveloped area between the Florida East Coast Railroad and the housing developments adjacent to US 1. These are also predominantly owned and occupied by permanent residents. The multiple housing units built on the mainland are primarily located alongside US 1.

Hutchinson Island Residential Units

In 1981, most of the residential units on Hutchinson Island were concentrated in annular sectors SE 1-2, SSE 1-2 and SSE 4-5. The principal residential developments on the Island are described below. 4

Extending into the Indian River is a large, densely populated, mobile home park known as Nettles Island. It has 1588 lots (see Section 2.1.2.1.1)[75]. Many of the lots are used by seasonal visitors. Across from Nettles Island on the ocean are three lodgings: Hutchinson Island Inn (21 rooms), Sheraton Condominium (84 condominiums) and Oceana (286 condominiums)

Sand Dollar Villas is a housing development containing 203 units, located 1.4 miles south of the plant. It is located in both the southeast and south-southeast 1-2 mile sectors. Planned expansion of Sand Dollar villa includes an additional 162 units to be completed by 1983 and another 144 units by 1986. 4

Ocean Towers (158 units) and Island Village (32 units) are recently completed residential developments located in the south-southeast 4-5 mile sector.

b) Commercial and Services

The commercial and service category includes areas used for the sale of products and services as well as institutions such as schools, medical centers and churches. A total of 28 acres within five miles of St Lucie Unit 2 fall within this category.

Commercial

Of the total area under consideration, only 22 acres consist of commercial and service establishments. Most of these facilities, such as drycleaners and supermarkets, serve local residents. There are two shopping centers within five miles of St Lucie Unit 2, located on US 1. Most other commercial establishments are related to the automotive industry (gas stations, used car lots, mechanic's shops) or tourists.

There are few commercial and service establishments on Hutchinson Island. For the most part, they are specialized facilities such as beauty shops, and bait and tackle shops. As a result, people on the island have to cross over to the mainland for most supplies and services required.

The principal commercial centers serving the area are Fort Pierce and Stuart. A smaller commercial center is located in Jensen Beach. All three centers are located outside the five mile radius.

Institutional - Schools, Medical Facilities, Churches

The classification of commercial and services, includes institutional land uses such as schools and hospitals. There are no schools located within five miles of St Lucie Unit 2. The nearest school, White City Elementary School, is about six miles WNW from St Lucie Unit 2. There is one medical facility, approximately five miles WSW from the plant site, called the Port St Lucie Medical Center. Several churches fall within the five mile radius and include the Kingdom Hall of the Jehovah's Witnesses and the New Testament Baptist Church. Roughly six acres fall within this category.

c) Industrial

The General Development Corporation (GDC) owns approximately 32 acres, used as a small industrial park located off US 1, roughly four and a half miles WSW of the plant. One of the tenants is FP&L, one is a surgical and dental equipment firm and one is a plumbing supplier. The 18 acres leased by FP&L is classified as utility use. The remaining 14 acres, leased by other firms is classified as light industrial.

d) Transportation, Communications, and Utilities

This category encompasses major transportation routes, such as highways and railways, and communications and utilities areas, "such as those involved in processing, treatment, and transportation of water, gas, oil, and electricity[69] ..."

Within five miles of St Lucie Unit 2, 964 acres can be classified as transportation, communications, or utility use, representing about two percent of the total acreage. Nearly three quarters of this (704 acres) is given over to utility structures and facilities.

All of these are owned and operated by FP&L. Most of this acreage supports St Lucie Units 1 and 2, and related structures. However, as mentioned above, FP&L leases an 18 acre storage and maintenance yard in GDC's Industrial Park.

Transportation

The principal transportation corridors on the mainland are US 1, SR 707, and the Florida East Coast Railroad. US 1 is a four lane divided highway which runs from north to south. SR 707 is a two lane road which parallels the Indian River. The Florida East Coast Railroad is a two track installation for most of its length, except for a section between Ankona and a point approximately 1.3 miles south of Weatherbee Road, where it narrows to a single track. Secondary transportation routes on the mainland include Walton Road (two lane), which runs due west from Walton; Weatherbee Road, (two lane) which runs due west from White City Station; and Route 712, also known as White City Road (two lane), which also runs east to west (Figure 2.1-2).

The only major paved road on Hutchinson Island is SR A1A. It has a width of two to three lanes and transects the entire length of the island.

Communications

With the exception of an underground telephone line which transects the western rim of the five mile area, there are no communications areas within five miles of St Lucie Unit 2.

There are no major pipelines located within five miles of St Lucie Unit 2.

Utilities

Roughly 704 acres fall within the utilities category. Of this total, approximately 300 acres on Hutchinson Island are committed to FP&L's Units 1 and 2 and their related structures. Roughly 386 acres accommodate the transmission lines which extend from the plant site to the circumference of the area within five miles. For most of its length, the transmission line right of way is 660 feet in width; however, for a short distance immediately adjacent to the Indian River, the width is 1,200 feet[81]. The remaining 18 acres support a utility storage area within the GDC Industrial Park.

e) Other Urban or Built-Up Land 4

Included in this category are miscellaneous urban land uses such as cemeteries, urban parks, undeveloped urban land, and recreational facilities. Approximately 235 acres (or less than 1/2 percent) have been classified as urban or built-up land. Forty-seven of these acres comprise both a cemetery off SR 707, and pockets of undeveloped urban land contingent to US 1. A total of 188 acres are given over

to both public and private recreational facilities. The private facilities consist of the golf course within the Spanish Lakes compound and the Tu Bahd Saddle Club. The public establishments are the southern end of the Savannahs Recreational Area (a park in the NW quadrant, owned by the City of Fort Pierce and used for picnicking, boating and camping) and public picnicking and beach facilities on Hutchinson Island. Recreational beach usage is discussed in Section 2.1.3.8.2. 2

f) Agricultural Land

Approximately 541 acres of agricultural land (approximately 1.1 percent of the total area) fall within five miles of St Lucie Unit 2. 2
Most of this land supports citrus groves. In 1979 - 1980, 40,768 acres were in citrus production in St Lucie County[113]. Several 4
nurseries comprise part of the agricultural acreage and produce ornamentals for local use.

g) Forest Land and Wetlands

4

Approximately 10.2 percent of the area under consideration can be identified as pine flatwood forest/fresh water marsh. This land cover consists of a mixture of pine, sawgrass marsh, and palmetto. The soils underlying this area are nearly level, poorly drained, sandy, and belong to the Myakka-Immokalee-Basinger Association[71]. Much of the undeveloped land between the Florida East Coast Railroad and US 1 is marshy, and supports a scattering of pine trees. The ridge along SR 707 has drier soils and supports a denser forest canopy consisting mostly of pines[82]. The forest within five miles of St Lucie Unit 2 is not commercially logged[83].

The other principal vegetation community within five miles of St Lucie Unit 2 is the mangrove community located on Hutchinson Island. For a discussion of this community, see Section 2.2.1.

h) Water

Most of the area within five miles of St Lucie Unit 2 is covered with water, and accounts for more than two-thirds of the total area; most of this consists of the Atlantic Ocean. One-third is a section of the Indian River, and the remainder is mainland water bodies. The Indian River is a brackish tidal lagoon. Most of the water on the mainland is concentrated in a string of lakes running from north to south at the eastern edge of the Savannahs. The boundaries of these lakes vacillate with seasonal flooding and often merge with the surrounding marsh. The rest of the water is concentrated in small man-made ponds and canals located towards the western boundary of the five mile perimeter.

i) Barren Land

The classification system considers barren land as land which has a limited ability to support life. Beaches are an example.

There are three types of barren land within five miles of St Lucie Unit 2. The first type is located at the site of the sand mining operation, just west of the Florida East Coast Railroad tracks and on either side of Weatherbee Road. Roughly 195 acres serve this extraction operation.

The second type of barren land is found along the Atlantic Coast of Hutchinson Island in the form of beaches. Almost 100 acres of beaches occur within five miles of St Lucie Unit 2.

The third type of barren land is found within the so-called transitional areas. "The Transitional Areas category is intended for those areas which are in transition from one land use activity to another[69]." There are three transitional areas within five miles of St Lucie Unit 2. Two of these are located north of Weatherbee Road and appear to have once supported agricultural activity. The third is located near the southern boundary of the five mile circumference. It contains land which has been cleared and drained for a commercial/residential development known as "Midport"[37].

2.1.3.6 Future Land Uses Within Five Miles of St Lucie Unit 2

To determine future land uses within five miles of St Lucie Unit 2, the St Lucie County Growth Management Plan (The Plan) and other critical planning documents, such as The Plan for Hutchinson Island, were examined [84,86]. In addition, projects under construction or in the process of obtaining permits were considered, as well as growth trends in St Lucie County, and local site suitability characteristics. Figures 2.1-17 and 2.1-18 present the proposed land uses.

The Plan states, "After adopting a plan, local governments and their agencies may not issue building permits, approve zoning changes or subdivision requests, undertake public development projects or approve development actions that are inconsistent with the plan for the area. In addition, the adoption or amendment and land development regulations (e.g., zoning, subdivision regulations) shall be consistent with the adopted comprehensive plan or element thereof"[84].

Anticipated future land uses, by USGS land use categories, are discussed below:

Residential

The greatest increase in land use is expected to occur in residential development. Projected population increases suggest that housing construction activity will be necessary to accommodate population growth. (See Tables 2.1-1 and 2.1-5).

Most of the land area within five miles of St Lucie Unit 2 is undeveloped pine flatwood/fresh water marsh. It is anticipated that with the projected increase in population, much of this land will be cleared and drained to accommodate new dwelling units.

In the following discussion of future residential development, separate consideration is given to the mainland and to Hutchinson Island.

a) Future Residential Development on the Mainland

According to The Plan, land abutting the eastern right of way of US 1, south of General Development Corporation's (GDC) Industrial Park, will be set aside for medium and low density residential use. It is expected that those areas designated for residential development by The Plan will support dwelling units in the future. In addition, residential development is anticipated in other areas.

Most of the undeveloped land extending from US 1 to the western border of the Florida East Coast Railroad right-of-way is designated in The Plan for Agricultural Use. In practice, however, portions of this "agricultural" land have already been committed for residential use.

Golf Village, for example, is a project of 617 mobile home units which was recently completed in 1981. This development was constructed by the managers of Spanish Lakes Riverfront[75]. Golf Village is located south of GDC's Industrial Park and east of US 1. 4

Another example of the pressure being placed on "agricultural" land for residential use is the project known as Midport. Midport is located north and south of Walton Road and east of US 1 (see Section 2.1.2.1.5). In 1981 this development is under construction and will introduce 2,201 dwelling units with both single and multiple family unts[87]. Much of the Midport development will fall within the five mile area, although it is difficult to specify exactly how many residential units will be built within five miles of St Lucie Unit 2. The Midport Project has been issued a DRI (Development of Regional Impact) permit[87]. Midport is a part of Port St Lucie which is, over the long term, expected to be the major influence on growth on the mainland. If the present six percent per year growth rate continues, Port St. Lucie is expected to reach a population of 250,000 by 2030 (see also Sections 2.1.2.1.5 and 6.1.4.2.2). 4 4

The locations of both Golf Village and Midport are shown on Figure 2.1-7. In addition to Midport, planned new development includes the Saddle Club (700 units) the Grove (576 units) and the Savannah Club (2,560 units). (See Section 2.1.2.2.5). 4

b) Future Residential Development on Hutchinson Island

That portion of Hutchinson Island which falls within the five mile radius is expected to experience considerable development. Specifically, the 1981 estimated population of 1,035 is expected to grow to 9,122 by the year 2030 (see Table 2.1-1). These projections reflect the fact that most of the Atlantic Coast of Hutchinson Island is undeveloped, and the demand for beach front property is growing. In recognition of this, The Plan has designated most of the land area within five miles of St Lucie Unit 2 as low or medium density residential. 4

However, there are some considerations which may affect the rate at which demand for Hutchinson Island property will increase. For example, there are no fresh water wells on Hutchinson Island; therefore, all potable water has to be piped in from the mainland. In the past, the city of Fort Pierce has supplied potable water to the Island. However, at this time, the distribution system supplying the island has reached its capacity. Until this system is expanded, development on the island will be hampered[88].

In general, it is anticipated that residential development within five miles of St Lucie Unit 2 will consist of a mixture of single family and multiple family units. It is also expected that these units will house both permanent residents and seasonal visitors.

A complete list of planned new development on Hutchinson Island is included in Section 2.1.2.2.5. | 4

Commercial and Services

a) Commercial

Commercial establishments on the mainland are concentrated along US 1. It is expected that there will be an increase in commercial land uses in conjunction with the predicted increase in residential land use, and that this increase will occur adjacent to US 1 on the mainland. As is currently the case, it is anticipated that new commercial establishments will serve both local residents and highway travellers. Two car dealers, Buick and Cadillac, have moved into the area, and other automotive related services may follow. | 4

On Hutchinson Island, it is expected that the new residential projects will house commercial establishments such as beauty shops, sports equipment outlets, etc. In addition, other commercial establishments may be constructed along SR A1A. In fact, The Plan has zoned pockets of land on Hutchinson Island for such commercial development.

b) Institutions

At the present time, there are no plans to construct any schools or medical facilities within five miles of St Lucie Unit 2. However, pressure has been brought by local citizens on the General Development Corporation and other developers to provide school facilities for children residing within developments. For example, Port St Lucie, a development run by the GDC, has asked that schools be built to accommodate their children's needs[74]. GDC has provided land for three schools within the Midport development. If these shcools are built, a middle school-high school will be located about 3.5 miles southwest of St Lucie Unit 2, and an elementary school will be located about 4.5 miles south-southwest of the plant.

Industrial

Currently there is very little industrial land use (roughly 14 acres) within five miles of St Lucie Unit 2. It is not expected that a significant amount of new industrial activity will be initiated in this area.

According to The Plan, only the area currently abutting the GDC Industrial Park (roughly 180 acres) will be zoned light industrial. According to local planning officials, there are no new firms currently seeking to relocate within the 180 zoned acres[87]. 4

Transportation, Communication, and Utilities

Within the transportation, communications and utilities classification, limited growth is anticipated. The Plan calls for the widening of roads currently intersecting with limited access highways. The Plan indicates that these roads could be expanded to four lanes. Within the five mile area, this objective would affect White City Road and SR A1A.

In June 1978, a traffic study of Hutchinson Island was published for the St Lucie Board of County Commissioners. The report concluded that the three existing connecting structures - South Bridge, Jensen Causeway, and Stuart Bridge - were inadequate to handle existing traffic volumes. The report recommended that a fourth bridge be constructed at SR 712 (White City Road) which would link US 1, the Florida Turnpike, and Interstate 95 to Hutchinson Island[89]. However, it is uncertain if, when, or where another river crossing will be constructed because the waters of the Indian River in this area are part of an aquatic preserve[85].

No expansion of the communication category is anticipated at this time. Future utility land use associated with the construction of St Lucie Unit 2 is discussed in Section 2.1.3.3.

Other Urban and Built-Up Land

The other urban and built-up land category encompasses miscellaneous urban land uses, such as urban parks, and recreational facilities.

A major land use change which will occur is the establishment of the State Savannahs Preserve. Using state funds, 3,372 acres of land located at the western edge of the Florida East Coast Railroad right-of-way and paralleling SR 707 have been purchased for a conservation preserve[90]. It is intended that the property which is eventually included in this preserve will be restricted to public access, and will serve primarily as a wildlife refuge. According to the Recreation and Parks Division of the Natural Resources Department, most of the land which will be included in the State Savannahs Preserve has been purchased to date[91].

With the increase in residential and commercial land uses, it is expected that some growth in private recreational facilities will also occur. New residential complexes will probably include such recreational amenities as tennis courts, swimming pools, and possibly golf courses. Other urban land uses will probably increase as the area becomes more developed. For

example, it can be expected that urban land, such as that given over to urban parks and water control structures, may be expanded in the future. At this time, there are no specific plans for such development; therefore, it is not possible to predict where such development will occur. However, it is likely that most of this type of development will occur along US 1 and other major roads, such as White City Road and Walton Road.

Agricultural Land

There are currently roughly 450 acres of actively used agricultural land within five miles of St Lucie Unit 2. It is unlikely that there will be an expansion of agricultural activities in the future. According to the local County Agricultural Agent, the expansion of agricultural activities is likely to occur to the west of US 1 and not within the five mile area[92]. The soils found within five miles of the plant, belonging to the Myakka-Immokolee-Basinger Association, have low potential for citrus production, which is the primary agricultural activity within five miles of the plant[71].

According to The Plan, "Prime agricultural, especially citrus, land should be preserved for continued production and benefit to the County economy". In spite of this stated concern for the preservation of agricultural land, it is expected that pressure to develop this land for residential or commercial use will be intense. Typically, the agricultural land within five miles of the plant which has been drained, is located near existing transportation corridors, and is easy to develop. Therefore, it is prime developable land in an area which will experience considerable development pressure in the future.

Other Land Uses

Little change is expected to occur in the future in the following USGS land cover/land use categories: forest land, water, and barren land.

Some of the pine forest scattered on the mainland will probably be cleared to accommodate new residential and commercial development. However, it is not anticipated that a significant percentage of the total forested acreage will be affected.

At this time, no major changes are projected within the barren land category. The transitional areas will eventually support one or more other land uses. Specifically, the transitional land north of Weatherbee Road, which was once agricultural, will probably evolve back into forested land.

2.1.3.7 Agricultural and Fisheries Within 50 Miles of St Lucie Unit 2

2.1.3.7.1 Introduction

This section consists principally of tabulated data concerning agricultural, livestock, and commercial and recreational marine landings within 50 miles of the St Lucie Unit 2 nuclear generating facility.

Data has been compiled on a county basis from field surveys and from information provided by federal, state, and county agencies, and reporting services. All or parts of ten counties are included within the 50 mile radius. These are St Lucie, Indian River, Brevard, Martin, Palm Beach, Okeechobee, Osceola, Glades, Highlands and Hendry counties. All of Indian River, St Lucie and Martin counties fall within the 50 mile radius. Approximately 65 percent of Okeechobee County, 48 percent of Palm Beach County and 19 percent of Brevard County fall within the 50 mile radius. Less than ten percent of Osceola, Highlands, Glades and Hendry Counties are contained within the 50 mile area. 3

Agricultural data for those counties whose land area is not completely within the 50 mile area was allocated to the 50 mile area in the following manner:

The area of the entire county was analyzed using 1972 US Geological Survey Maps (Scale 1:250,000) to exclude those areas where agriculture or livestock farming could not occur. This would include water, wetland, urban recreation or "forested areas". The remaining "open" lands have been analyzed to determine what percentage falls within the 50 mile radius. This percentage is then applied to the county data to calculate what proportion of agricultural production falls within 50 miles of the site.

For fisheries production, data on marine landings for each county is used since data on fishing locations are not available.

2.1.3.7.2 Beef Production

Beef cattle production is one of the primary agricultural activities in southeastern Florida counties, with a production of approximately 178,700 head within the 50 mile study area. Table 2.1-13 shows Okeechobee, Martin and St Lucie counties as the major beef producers, producing 28,435 x 10^2 kilograms in 1979[93]. 3 470.2

Presently there are 116 beef cattle ranches in St Lucie County, occupying 169,200 acres or 50 percent of the county area[95]. Of this, 108,000 are improved pasture, 232 acres are unimproved pasture and 538 rangeland. By 1980-85, it is expected that beef cattle production will increase in the county along with an intensification in the cultivation of improved grasses and clover[94]. 3

The grazing season for beef cattle in the study area begins in April, peaks in late July and August, and ends in February. During this period, bahia and pangola grasses are the principal pasture feeds; hay grasses rank second[95]. In the cooler months from mid-November through January, small grains, hay and grass silage are necessary feed supplements, though in some areas the availability of white clover allows year around pasture feeding[95]. 3 3

2.1.3.7.3 Milk Production

Milk production within the study area totaled approximately 149 x 10^6 kilograms in 1979[96]. Okeechobee County accounted for a little more 3 470.2

than two-thirds of this total, producing 103 x 10^6 kilograms in 1979[96]. Within the Okeechobee area, corn and grass silage are the principal dairy cow feeds, although state figures show that commercial mixed feeds consisting of corn, cotton seed meal, wheat bran shorts and alfalfa pellets, are fed on the average of 16 pounds per day[96].

Table 2.1-14 identifies dairy herds and milk production within 50 miles of the proposed facility. Table 2.1-15 shows that approximately 97.5 percent of the annual milk produced within the 0-50 mile radius study area is sold to plants for manufacturing dairy products. Of the remaining, approximately 0.6 percent is used raw on the farm for milk, cream and butter; 0.3 is fed to calves; and 1.5 percent is sold locally[96]. | 4

2.1.3.7.4 Egg Production

Egg production, from poultry farms within the study area, accounts for less than nine percent of the state total[97]. Indian River and Brevard counties are the egg producers in the 50 mile area. Each of these counties has 1,000 and 405 layers respectively producing on the average a total of 1,094 eggs per day. Table 2.1-16 is a breakdown by county of the commercial egg production within 50 miles of St Lucie Unit 2. | 2 | 4 | 3 | 470.2

2.1.3.7.5 Commercial Vegetables, Fruit and Sugarcane Crops

Commercial vegetables and citrus fruits are the main agricultural products in the area. Table 2.1-17 provides vegetable harvest statistics for the 0-50 mile radius mile. Corn and beans are the principal produce within 50 miles of the site, accounting for annual harvests of approximately, 12,449 acres and 12,120 acres respectively[98]. Table 2.1-18 provides yield statistics for those counties in the southeastern part of the state; Table 2.1-19 shows state-wide yield statistics. 3 470.2

Citrus crops are grown throughout the study area. Table 2.1-20 lists, by county, the amounts and types of citrus crops grown in the 50 mile area. St Lucie and Indian River Counties are the largest producers in the area. In 1980, St Lucie County produced 3.7×10^8 kilograms of oranges and 3.5×10^8 kilograms of grapefruit. In the same year Indian River produced 2.2×10^8 kilograms of oranges and 3.6×10^8 kilograms of grapefruit[99]. These two counties accounted for 73 percent of the total citrus produced in the study area. 3 3 470.2

Florida statistics show a net decline in Florida citrus acreage since 1970. In 1977, 21,538 acres were removed from production. St Lucie and Martin Counties were major contributors to the decline, while Hendry and Palm Beach Counties were the only two counties within the study area (and two of three counties within the State) showing significant gains in citrus acreage[113]. 2

Sugarcane is produced in the Everglades in the south and southwest portion of the study area in Glades, Martin, and Palm beach counties. Table 2.1-21 lists sugarcane production in Florida that was produced in the 50 mile study area[100]. 3

2.1.3.7.6 Commercial Fish and Shellfish Landings

Commercial landing statistics of fish and shellfish for the coastal counties within 50 miles of St Lucie Unit 2 (Brevard, Indian River, St Lucie, Martin, and Palm Beach counties) are presented by total landing in 1976 and principal species in Table 2.1-22. While Florida east coast landings in 1976 dropped by four percent from 1975[101], the total fish and shellfish landings for the coastal counties within 50 miles of the site showed a marked increase. Total landings for these were up approximately 18.6 percent from 1975 (See Table 2.1-23). The increase was the result of a 33.6 percent increase in fish landings from 7.1×10^6 kilograms in 1975 to 9.5×10^6 kilograms in 1976. Total shellfish landings however, declined by 36.9 percent from 1.9×10^6 kilograms in 1975 to 1.2×10^6 in 1976. Brevard was the only county which experienced a decline in both fish and shellfish landings. with a 8.9 percent decrease in fish landings and 26.1 percent decrease in shellfish landings between 1975 and 1976.

Table 2.1-23 compares 1976 to 1975 total fish and shellfish marine landings for Brevard, Indian River, St Lucie, Martin and Palm Beach counties. Approximately 90 percent of the fish caught is consumed by humans (see Table 2.1-24). Twenty percent of fish catch is consumed locally[102]. Principal finfish species taken were black mullet, menhaden, Spanish mackeral, bluefish, pompano and red snapper. The major commercial ports within this

area include Fort Pierce in St Lucie County, Port Salerno in Martin County, and Riveria Beach and Jupiter in Palm Beach County.

According to the National Marine Fisheries Service, future commercial fish and shellfish landings are difficult to project, since catch is dependent largely on weather conditions, and the statistics are influenced by reporting estimates. Nonetheless, the trend in Florida marine landings over the past several years has been a decline of from two to four percent annually[101].

2.1.3.7.7 Recreational Fishing

Principal sport fishing areas within 50 miles of the plant site include the waters off Hutchinson Island, where pompano, bluefish, false albacore, kingfish, sailfish, dolphins, amberjack, flounder, mackerel and barracuda are common, and the St Lucie Inlet, predominated by snook, tarpon, redfish, spotted sea trout and bottom fish[103].

Shore fishing occurs along the beaches of Hutchinson Island in the vicinity of St Lucie Unit 2. Access along the beach is not restricted, so it is possible for someone to fish directly on shore front of the discharge pipeline. However, information is not available concerning the quality of the fishing in the area.

The variety of species of fish which may be caught while shore fishing include kingfish, pompano, palometa and spotfin mojarra[104].

2.1.3.7.8 Hunting Statistics

Hunting statistics have been tabulated for the J W Corbett Wildlife Management Area and are shown in Table 2.1-25. The J W Corbett Wildlife Management Area occupies approximately 500 square miles of the western portion of the study area, mainly in Palm Beach County.

Hunting season lasts from September 10 through March 26; the second week of January through the end of February each year is small game season and the month of March is spring turkey season[105]. Quail, snipe and duck are the most common fowl taken while deer, hogs and squirrels are the principal wild animals taken[105]. The game biologist for the J W Corbett Wildlife Management Area assumes that 100 percent of the wild game harvest is consumed locally[105].

2.1.3.8 Surface Water Use

2.1.3.8.1 Consumptive Use

This is no potable water use of any water resource which would be affected by St Lucie Unit 2 discharge[81]. Since drinking water supplies are brought to Hutchinson Island by pipeline and since groundwater flows are from west to east toward the ocean, no contamination of drinking water is considered plausible[81]. Therefore, no analyses of consumptive surface water use were performed.

2.1.3.8.2 Recreational Water Use

Since the discharge of St Lucie Unit 2 is into the Atlantic Ocean, only those recreational uses associated with saltwater activities have been considered. These include beach activities, fishing, boating, and surfing, as defined in Outdoor Recreation in Florida (1976), a publication of the State of Florida Department of Natural Resources[106].

It is difficult to estimate accurately the number and location of people involved in these activities because of the lack of information on the places at which people take part in recreational pursuits. However, by utilizing the results of state user surveys[106], a general order of magnitude estimate of saltwater recreational activities with 50 miles of St Lucie Unit 2 can be generated. Statewide 1975 annual per capita participation rates for each saltwater related activity were modified to reflect daily recreational use (see Table 2.1-26 for methodology). These average daily per capita participation rates were applied to the projected population (resident and tourist) within 50 miles of St Lucie Unit 2 (see Section 2.1.2) to estimate the average daily number of recreational saltwater users. The results of these calculations are shown in Table 2.1-26.

These projections are based on the following assumptions:

a) Recreational users will pursue their activities only within 50 miles of St Lucie Unit 2. Residents and tourists in this area will sometimes journey out of the area for saltwater recreation, and, in turn, people from outside this area will enter it for these purposes. However, it is felt that these movements largely counterbalance one another, and because of the lack of more specific data, the numbers shown in Table 2.1-26 reflect a reasonable estimate of recreational saltwater use.

b) Recreational participation rates will not change over time. As stated in Outdoor Recreation In Florida 1976, such factors "have not been accurately estimated and quantified"[41]. Because of this assumption, recreational use varies directly with the projected population.

c) Participation rates for only Region X (southeast Florida from St Lucie to Dade Counties) would apply in the study area. Indian River and Brevard Counties fall in a different Region, where participation rates are considerably lower. However, it was felt that using the Region X rates would result in a more conservative estimate, taking into account any unforeseen future increases in participation. 2

A 1981 average daily total of 167,735 recreational saltwater users is estimated within 50 miles of St Lucie Unit 2. This is expected to increase to 506,583 by 2030. Each category of saltwater recreational activity is discussed in the following paragraphs: 4 4

Beach Activities

Beach activities including saltwater swimming, sunbathing, relaxing, beachcombing and shell collecting. These activities account for 65 percent of all saltwater related recreational use. The density of these users will vary according to whether or not access is available to the beach, and whether or not the beach is public (i.e., has lifeguards). For example, according to a survey of beaches in Martin County[107] performed in 1978, guarded beaches had an average density of 0.9 persons per linear foot, while unprotected areas had as few as 0.0036 people per linear foot. In a survey of beaches within two miles of St Lucie Unit 2 conducted by FP&L in July, 1975[108], the average density was 0.0122 people per linear foot on the July 4th weekend. On other weekends this density was as low as 0.0025 people per linear foot. The beaches near St Lucie Unit 2 have relatively few access points. 4 4

The differences in user density along the coast within 50 miles of St Lucie Unit 2 can be shown generally by mapping the public beaches and access points. This is done in Figure 2.1-19[109,110]. The public beaches closest to the St Lucie Unit 2 discharge are on Hutchinson Island about four miles NNW of the plant. Averge daily usage at these beaches was 656 persons between October 1, 1977 and September 30, 1978[1978]. In general, the public beaches tend to be clustered near brdiges over the Indian River.

Saltwater Fishing

Saltwater fishing activities account for 15.5 percent of recreational water users within 50 miles of St Lucie Unit 2. These activities can include surf casting, crabbing, and deep sea fishing. No information on distribution of these users is available. 4

Boating

Boating includes both power boating and sailing. Power boating is a considerably more popular activity than sailing, occupying 16.7 percent of the recreational saltwater users, as opposed to only 1.9 percent for sailing. Boating activity takes place in conjunction with marinas and boat ramps, and the greatest density of this activity probably take place in the vicinity of these facilities. Marinas within 50 miles of St Lucie Unit 2 are shown in Figure 2.1-19. Most of these facilities are located near the populated areas and the Indian River inlets. The nearest public marina to St Lucie Unit 2 is approximately six miles south of the St Lucie plant[112]. It can also be expected that extensive pleasure boating takes place in most other areas of the Indian River as well as the nearby areas of the Atlantic Ocean. 4

Surfing

Surfing is a relatively unimportant activity in this area, with only 2.8 percent of the recreational saltwater users involved in this pursuit. 4

2.1.3.9 Groundwater Use

Field permeability tests at the plant site have indicated a seepage or flow of about 15,000 feet per year in the top 30 feet of the sand deposits. Taking the highest permeability coefficient obtained and a hydraulic gradient of 100 percent, any discharge introduced into the ground at the plant site would reach the Indian River in about a day. The discharge would then be greatly diluted. Because of the width of Indian River and presence of a continuous flow of groundwater toward the coastline, there is no possibility of subsurface flow from the site to the mainland. This precludes any intrusion of plant releases into the mainland groundwater supplies[81].

In addition, no successful fresh water wells have been found on Hutchinson Island[81]. For these reasons, no analysis of groundwater users has been made.

SECTION 2.1: REFERENCES

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TABLE 2.1-1

RESIDENT POPULATION WITHIN 50 MILES OF ST LUCIE UNIT 2
1981

Annular Sector	0-1	1-2	2-3	3-4	4-5	5-10	*	Total 0-10	*	10-20	20-30	30-40	40-50	*	Total 10-50	*	Total 0-50
N	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
NNE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
NE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
ENE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
E	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
ESE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
SE	0	45	0	0	0	0	*	45	*	0	0	0	0	*	0	*	45
SSE	0	45	0	0	945	2733	*	3723	*	10646	22229	63257	139046	*	235178	*	238901
S	0	0	0	145	150	11149	*	11444	*	25360	665	7161	76386	*	109572	*	121016
SSW	0	0	70	20	556	3430	*	4076	*	2509	4814	597	4774	*	12694	*	16770
SW	0	37	16	241	2160	6796	*	9250	*	2509	2305	136	12532	*	17482	*	26732
WSW	0	47	0	16	3468	10446	*	13977	*	0	0	10191	668	*	10859	*	24836
W	0	12	30	213	503	1708	*	2466	*	1730	0	9342	2958	*	14030	*	16496
WNW	0	0	77	515	892	6059	*	7543	*	637	0	0	148	*	785	*	8328
NW	0	0	0	49	84	35826	*	35959	*	14748	1310	2683	0	*	18741	*	54700
NNW	0	0	0	0	0	3029	*	3029	*	4239	51666	3793	2497	*	62195	*	65224
Total	0	186	193	1199	8758	81176	*	91512	*	62378	82989	97160	239009	*	481536	*	573048

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TABLE 2.1-1

RESIDENT POPULATION WITHIN 50 MILES OF ST LUCIE UNIT 2
1983

Annular Sector	0-1	1-2	2-3	3-4	4-5	5-10	*	Total 0-10	*	10-20	20-30	30-40	40-50	*	Total 10-50	*	Total 0-50
N	0	124	0	0	0	0	*	124	*	0	0	0	0	*	0	*	124
NNE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
NE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
ENE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
E	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
ESE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
SE	0	130	0	0	0	0	*	130	*	0	0	0	0	*	0	*	130
SSE	0	87	102	137	1246	2919	*	4491	*	11916	24633	75324	153388	*	265261	*	269752
S	0	0	0	145	150	11564	*	11859	*	28387	761	8902	91074	*	129124	*	140983
SSW	0	0	70	75	620	3845	*	4610	*	4250	5389	685	5478	*	15802	*	20412
SW	0	37	23	260	2926	7731	*	10977	*	2808	2581	152	14380	*	19921	*	30898
WSW	0	47	24	64	3517	11930	*	15582	*	0	0	11888	724	*	12612	*	28194
W	0	12	40	274	564	1901	*	2791	*	1980	0	10898	3205	*	16083	*	18874
WNW	0	0	77	533	952	6417	*	7979	*	695	0	0	172	*	867	*	8846
NW	0	0	0	49	84	35881	*	36014	*	16201	1491	3050	0	*	20742	*	56756
NNW	0	53	23	27	34	3473	*	3610	*	4749	55501	4199	2871	*	67320	*	70930
Total	0	490	359	1564	10093	85661	*	98167	*	70986	90356	115098	271292	*	547732	*	645899

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TABLE 2.1-1

RESIDENT POPULATION WITHIN 50 MILES OF ST LUCIE UNIT 2
1990

Annular Sector	0-1	1-2	2-3	3-4	4-5	5-10	*	Total 0-10	*	10-20	20-30	30-40	40-50	*	Total 10-50	*	Total 0-50
N	0	313	0	0	0	0	*	313	*	0	0	0	0	*	0	*	313
NNE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
NE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
ENE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
E	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
ESE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
SE	0	150	8	0	0	0	*	158	*	0	0	0	0	*	0	*	158
SSE	0	214	251	512	1457	3592	*	6026	*	16108	30495	93553	172462	*	312618	*	318644
S	0	0	0	145	150	13068	*	13363	*	38372	917	10576	113890	*	163755	*	177118
SSW	0	0	70	131	1731	4967	*	6899	*	11174	7285	814	6508	*	25781	*	32680
SW	0	37	675	2676	4884	9161	*	17433	*	9259	3488	205	17084	*	30036	*	47469
WSW	0	47	201	1129	3711	17656	*	22744	*	616	0	14352	910	*	15878	*	38622
W	0	12	55	427	2053	3008	*	5555	*	2459	0	13156	4001	*	19616	*	25171
WNW	0	0	77	610	2029	7713	*	10429	*	703	0	0	225	*	928	*	11357
NW	0	0	0	49	221	36079	*	36349	*	16559	2223	4532	0	*	23314	*	59663
NNW	0	135	58	69	87	5079	*	5428	*	6092	67289	6446	4147	*	83974	*	89402
Total	0	908	1395	5748	16323	100323	*	124697	*	101342	111697	143634	319227	*	675900	*	800597

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TABLE 2.1-1

RESIDENT POPULATION WITHIN 50 MILES OF ST LUCIE UNIT 2
2000

Annular Sector	0-1	1-2	2-3	3-4	4-5	5-10	*	Total 0-10	*	10-20	20-30	30-40	40-50	*	Total 10-50	*	Total 0-50
N	0	380	0	0	0	0	*	380	*	0	0	0	0	*	0	*	380
NNE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
NE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
ENE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
E	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
ESE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
SE	0	252	10	0	0	0	*	262	*	0	0	0	0	*	0	*	262
SSE	0	422	304	822	2108	4666	*	8322	*	20002	37233	118176	198930	*	374341	*	382663
S	0	0	0	145	150	15467	*	15762	*	47648	1112	13787	142796	*	205343	*	221105
SSW	0	0	70	251	1791	8195	*	10307	*	19981	9045	985	7878	*	37889	*	48196
SW	0	37	996	3532	5170	11033	*	20768	*	14497	4332	255	20681	*	39765	*	60533
WSW	0	47	1294	3324	5912	21807	*	32384	*	11143	0	17568	1102	*	29813	*	62197
W	0	12	510	2715	4425	5300	*	12962	*	2758	0	16104	4439	*	23301	*	36263
WNW	0	0	77	982	3464	9780	*	14303	*	726	0	0	277	*	1003	*	15306
NW	0	33	0	49	221	36395	*	36698	*	19906	3215	6637	0	*	29758	*	66456
NNW	0	899	707	528	1192	7641	*	10967	*	8150	77049	9944	6981	*	102124	*	113091
Total	0	2082	3968	12348	24433	120284	*	163115	*	144811	131986	183456	383084		843337		1006452

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TABLE 2.1-1

RESIDENT POPULATION WITHIN 50 MILES OF ST LUCIE UNIT 2
2000

Annular Sector	0-1	1-2	2-3	3-4	4-5	5-10	*	Total 0-10	*	10-20	20-30	30-40	40-50	*	Total 10-50	*	Total 0-50
N	0	380	0	0	0	0	*	380	*	0	0	0	0	*	0	*	380
NNE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
NE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
ENE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
E	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
ESE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
SE	0	252	10	0	0	0	*	262	*	0	0	0	0	*	0	*	262
SSE	0	422	304	822	2108	4666	*	8322	*	20002	37233	118176	198930	*	374341	*	382663
S	0	0	0	145	150	15467	*	15762	*	47648	1112	13787	142796	*	205343	*	221105
SSW	0	0	70	251	1791	8195	*	10307	*	19981	9045	985	7878	*	37889	*	48196
SW	0	37	996	3532	5170	11033	*	20768	*	14497	4332	255	20681	*	39765	*	60533
WSW	0	47	1294	3324	5912	21807	*	32384	*	11143	0	17568	1102	*	29813	*	62197
W	0	12	510	2715	4425	5300	*	12962	*	2758	0	16104	4439	*	23301	*	36263
WNW	0	0	77	982	3464	9780	*	14303	*	726	0	0	277	*	1003	*	15306
NW	0	33	0	49	221	36395	*	36698	*	19906	3215	6637	0	*	29758	*	66456
NNW	0	899	707	528	1192	7641	*	10967	*	8150	77049	9944	6981	*	102124	*	113091
Total	0	2082	3968	12348	24433	120284	*	163115	*	144811	131986	183456	383084		843337		1006452

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TABLE 2.1-1

RESIDENT POPULATION WITHIN 50 MILES OF ST LUCIE UNIT 2
2010

Annular Sector	0-1	1-2	2-3	3-4	4-5	5-10	*	Total 0-10	*	10-20	20-30	30-40	40-50	*	Total 10-50	*	Total 0-50
N	0	380	0	0	0	0	*	380	*	0	0	0	0	*	0	*	380
NNE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
NE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
ENE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
E	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
ESE	0	0	0	0	0	0	*	0	*	0	0	0	0	*	0	*	0
SE	0	285	10	0	0	0	*	295	*	0	0	0	0	*	0	*	295
SSE	0	488	304	917	2326	5861	*	9896	*	22938	42699	137787	221362	*	424786	*	434682
S	0	0	0	145	150	18136	*	18431	*	54641	1275	15812	167151	*	238879	*	257310
SSW	0	0	70	371	2327	12770	*	15538	*	21913	10373	1129	9035	*	42450	*	57988
SW	0	37	1320	4394	5458	19759	*	30968	*	22928	4967	292	23717	*	51904	*	82872
WSW	0	47	2394	5534	8129	38860	*	54964	*	19956	0	20160	1263	*	41379	*	96343
W	0	12	967	5192	6950	8949	*	22070	*	3114	0	18480	4851	*	26445	*	48515
WNW	0	0	77	1503	5363	12080	*	19023	*	865	0	0	317	*	1182	*	20205
NW	0	44	0	49	221	36747	*	37061	*	23690	4280	8918	0	*	36888	*	73949
NNW	0	1164	935	687	1582	10492	*	14860	*	10163	83468	14396	12221	*	120248	*	135108
Total	0	2457	6077	18792	32506	163654	*	223486	*	180208	147062	216974	439917	*	984161	*	1207647

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310.8

TABLE 2.1-1

RESIDENT POPULATION WITHIN 50 MILES OF ST LUCIE UNIT 2
2020

Annular Sector	0-1	1-2	2-3	3-4	4-5	5-10	Total 0-10	10-20	20-30	30-40	40-50	Total 10-50	Total 0-50
N	0	380	0	0	0	0	380	0	0	0	0	0	380
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	285	10	0	0	0	295	0	0	0	0	0	295
SSE	0	488	304	917	2326	7127	11162	26109	48602	159402	245531	479644	490806
S	0	0	0	145	150	21417	21712	62196	1452	17997	192825	274470	296182
SSW	0	0	70	616	2327	19873	22886	24880	11807	1286	10284	48257	71143
SW	0	37	1974	6137	6040	35384	49572	37531	5654	333	26996	70514	120086
WSW	0	47	4619	10005	12612	69014	96297	35737	0	22944	1434	60115	156412
W	0	12	1892	8951	11071	15069	36995	3556	0	21032	5559	30147	67142
WNW	0	0	77	1503	5911	14907	22398	1046	0	0	361	1407	23805
NW	0	44	0	49	221	37180	37494	28024	5547	11365	0	44936	82430
NNW	0	1164	935	687	1582	13474	17842	12584	89704	20477	21102	143867	161709
Total	0	2457	9881	29010	42240	233445	317033	231663	162766	254836	504092	1153357	1470390

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310.8

TABLE 2.1-1

RESIDENT POPULATION WITHIN 50 MILES OF ST LUCIE UNIT 2
2030

Annular Sector	0-1	1-2	2-3	3-4	4-5	5-10	Total 0-10	10-20	20-30	30-40	40-50	Total 10-50	Total 0-50
N	0	380	0	0	0	0	380	0	0	0	0	0	380
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	285	10	0	0	0	295	0	0	0	0	0	295
SSE	0	488	304	917	2326	7268	11303	29764	55348	184360	272151	541623	552926
S	0	0	0	145	150	25674	25969	70904	1653	21948	223866	318371	344340
SSW	0	0	70	725	2327	25619	28741	26989	13460	1463	11705	53617	82358
SW	0	37	2266	6914	6300	44160	59677	46175	6446	379	30727	83727	143404
WSW	0	47	5611	11998	14611	86572	118839	44601	0	26113	1628	72342	191181
W	0	12	2305	10627	12908	19179	45031	3975	0	23936	6370	34281	79312
WNW	0	0	77	1503	6155	18576	26311	1169	0	0	411	1580	27891
NW	0	44	0	49	221	37741	38055	32743	7082	14472	0	54297	92352
NNW	0	1164	935	687	1582	13474	17842	15152	96380	30301	36025	177858	195700
Total	0	2457	11578	33565	46580	278263	372443	271472	180369	302972	582883	1337696	1710139

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310.8

TABLE 2.1-2

AGE DISTRIBUTION OF THE PROJECTED POPULATION FOR THE YEAR 2000
WITHIN TEN MILES OF ST LUCIE UNIT 2

Sector	0-1 miles			1-2 miles			2-3 miles			3-4 miles			4-5 miles			5-10 miles			Total 0-10 miles			Total 0-10 miles
	12*	12-18**	18***	12	12-18	18	12	12-18	18	12	12-18	18	12	12-18	18	12	12-18	18	12	12-18	18	All ages
N	0	0	0	55	36	289	0	0	0	0	0	0	0	0	0	0	0	0	55	36	289	380
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	36	24	192	1	1	8	0	0	0	0	0	0	0	0	0	38	25	199	262
SSE	0	0	0	61	40	321	44	29	231	118	78	626	304	198	1,606	672	439	3,555	1,199	782	6,341	8,322
S	0	0	0	0	0	0	0	0	0	21	14	110	22	14	114	2,227	1,454	11,786	2,270	1,482	12,010	15,762
SSW	0	0	0	0	0	0	10	7	53	36	24	191	258	168	1,365	1,180	770	6,245	1,484	969	7,854	10,307
SW	0	0	0	5	4	28	143	94	759	509	332	2691	744	486	3,940	1,589	1,037	8,407	2,991	1,952	15,825	20,768
WSW	0	0	0	7	4	36	186	122	986	479	312	2533	851	556	4,505	3,140	2,050	16,617	4,663	3,044	24,677	32,384
W	0	0	0	2	1	9	73	48	384	391	255	2069	637	416	3,372	763	498	4,039	1,867	1,218	9,877	12,962
WNW	0	0	0	0	0	0	11	7	59	142	92	748	498	326	2,640	1,408	9,319	7,453	2,060	1,344	10,899	14,303
NW	0	0	0	5	3	25	0	0	0	7	5	37	32	21	168	5,241	3,421	27,733	5,284	3,450	27,964	36,698
NNW	0	0	0	129	85	685	102	66	539	76	50	402	172	112	908	1,100	718	5,823	1,579	1,031	8,357	10,967
	0	0	0	300	197	1585	570	374	3024	1179	1162	9,407	3,518	2,297	18618	14,577	9,476	76,822	23,490	15,333	124,292	163,115

*Persons eleven years of age or younger.
**Persons between and including twelve to eighteen years of age.
***Persons nineteen years of age or older.

TABLE 2.1-3

CITIES, TOWNS AND COMMUNITIES OF OVER 5,000 PERSONS WITHIN 50 MILES OF ST LUCIE UNIT 2

a) Communities of over 10,000 Persons

City or Town	County	1970 Population	1980 Population
West Palm Beach	Palm Beach	57,375	62,530
Fort Pierce	St Lucie	29,721	33,802
Riviera Beach	Palm Beach	21,401	26,596
Vero Beach	Indian River	11,908	16,176
Port St Lucie	St Lucie	330	14,690
Palm Beach Gardens*	Palm Beach	6,102	14,407
North Palm Beach	Palm Beach	9,035	11,344

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b) Communities of between 5,000 and 10,000 Persons

City or Town	County	1970 Population	1980 Population
Jupiter	Palm Beach	3,316	9,868
Palm Beach	Palm Beach	9,086	9,729
Gifford+	Indian River	5,772	9,494
Stuart	Martin	4,820	9,467
Greenacres City	Palm Beach	1,731	8,843
Palm Springs	Palm Beach	4,340	8,166
Lake Park	Palm Beach	6,993	6,909
Pahokee	Palm Beach	5,663	6,346

Note: The information in this table is based upon Florida Population: A Summary of 1980 Census Results, April 1, 1980. Prepared by Bureau of Economic and Business Research, University of Florida.

+ 1980 population estimated on basis of annual average growth rate from the 1960 population of 3,509 to the 1970 population of 5,772 (1970 Census, Florida, Number of Inhabitants, Table 6) because 1980 estimate was not available.

* Part of West Palm Beach Urbanized Area, 1970 Census, Florida, Number of Inhabitants, Table 11 and Table 11-45.

TABLE 2.1-4

AGE DISTRIBUTION OF THE PROJECTED POPULATION FOR THE YEAR 2000
BETWEEN TEN AND 50 MILES OF ST LUCIE UNIT 2

Sector	10-20 miles			20-30 miles			30-40 miles			40-50 miles			Total 10-50 miles			Total 10-50 miles
	12*	12-18**	18***	12	12-18	18	12	12-18	18	12	12-18	18	12	12-18	18	All ages
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	2,880	1,880	15,242	5,361	3,500	28,372	17,017	11,109	90,050	28,646	18,699	151,585	53,905	35,188	285,248	374,341
S	6,861	4,479	36,308	160	105	847	1,985	1,296	10,506	20,563	13,423	108,810	29,570	19,302	156,471	205,343
SSW	2,877	1,878	15,226	1,303	850	6,892	142	93	750	1,134	741	6,003	5,456	3,562	28,871	37,889
SW	2,087	1,363	11,047	624	407	3,301	37	24	194	2,978	1,944	15,759	5,726	3,738	30,301	39,765
WSW	1,605	1,047	8,491	0	0	0	2,530	1,651	13,387	159	103	840	4,293	2,802	22,718	29,813
W	397	259	2,102	0	0	0	2,319	1,514	12,271	639	417	3,383	3,355	2,190	17,756	23,301
WNW	105	68	553	0	0	0	0	0	0	40	26	211	145	94	764	1,003
NW	2,867	1,871	15,168	463	302	2,450	956	624	5,057	0	0	0	4,285	2,797	22,676	29,758
NNW	1,174	766	6,210	11,095	7,243	58,711	1,432	935	7,577	1,005	656	5,320	14,706	9,600	77,818	102,124
	20,853	13,611	110,347	19,006	12,407	100,573	26,418	17,246	139,792	55,164	36,009	291,911	121,441	79,273	642,623	843,337

*Persons eleven years of age or younger.
**Persons between and including twelve to eighteen years of age.
***Persons nineteen years of age or older.

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310.1

TABLE 2.1-5

PEAK DAILY TOURISTS AND SEASONAL VISITORS WITHIN 30 MILES OF ST LUCIE UNIT 2

1981

Annular Sector	0-1	1-2	2-3	3-4	4-5	5-10	*	Total 0-10	*	10-20	20-30	*	Total 10-30	*	Total 0-30
N	0	0	0	0	0	0	*	0	*	0	0	*	0	*	0
NNE	0	0	0	0	0	0	*	0	*	0	0	*	0	*	0
NE	0	0	0	0	0	0	*	0	*	0	0	*	0	*	0
ENE	0	0	0	0	0	0	*	0	*	0	0	*	0	*	0
E	0	0	0	0	0	0	*	0	*	0	0	*	0	*	0
ESE	0	0	0	0	0	0	*	0	*	0	0	*	0	*	0
SE	0	162	0	0	0	0	*	162	*	0	0	*	0	*	162
SSE	0	162	0	0	3507	5256	*	8925	*	2459	5135	*	7594	*	16519
S	0	0	0	9	9	1591	*	1609	*	5858	154	*	6012	*	7621
SSW	0	0	4	1	33	206	*	244	*	580	1112	*	1692	*	1936
SW	0	2	1	14	130	408	*	555	*	580	532	*	1112	*	1667
WSW	0	3	0	1	208	627	*	839	*	0	0	*	0	*	839
W	0	1	2	13	52	102	*	170	*	400	0	*	400	*	570
WNW	0	0	5	31	54	1024	*	1114	*	147	0	*	147	*	1261
NW	0	0	0	3	5	3632	*	3640	*	3407	303	*	3710	*	7350
NNW	0	0	0	0	0	3841	*	3841	*	979	11935	*	12914	*	16755
TOTAL	0	330	12	72	3998	16,687	*	21099	*	14410	19171	*	33581	*	54680

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310.8

TABLE 2.1-5

PEAK DAILY TOURISTS AND SEASONAL VISITORS WITHIN 30 MILES OF ST LUCIE UNIT 2

1983

Annular Sector	0-1	1-2	2-3	3-4	4-5	5-10	Total 0-10	10-20	20-30	Total 10-30	Total 0-30
N	0	446	0	0	0	0	446	0	0	0	446
NNE	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0
SE	0	468	0	0	0	0	468	0	0	0	468
SSE	0	313	367	493	4591	5604	11368	2753	5690	8443	19811
S	0	0	0	9	9	1618	1636	6557	176	6733	8369
SSW	0	0	4	5	37	231	277	982	1245	2227	2504
SW	0	2	1	16	176	464	659	649	596	1245	1904
WSW	0	3	1	4	211	716	935	0	0	0	935
W	0	1	2	16	56	114	189	458	0	458	647
WNW	0	0	5	32	57	1091	1185	161	0	161	1346
NW	0	0	0	3	5	3640	3648	3742	344	4086	7734
NNW	0	191	83	97	122	4411	4904	1097	12821	13918	18822
TOTAL	0	1424	463	675	5264	17889	25715	16399	20872	37271	62986

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310.8

TABLE 2.1-5

PEAK DAILY TOURISTS AND SEASONAL VISITORS WITHIN 30 MILES OF ST LUCIE UNIT 2

1990

Annular Sector	0-1	1-2	2-3	3-4	4-5	5-10	Total 0-10	10-20	20-30	Total 10-30	Total 0-30
N	0	1127	0	0	0	0	1127	0	0	0	1127
NNE	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0
SE	0	540	29	0	0	0	569	0	0	0	569
SSE	0	770	904	1843	5350	6897	15764	3721	7044	10765	26529
S	0	0	0	10	11	1830	1851	8864	212	9076	10927
SSW	0	0	5	9	121	298	433	2582	1683	4265	4698
SW	0	3	47	187	342	550	1129	2139	806	2945	4074
WSW	0	3	14	79	260	1059	1415	142	0	142	1557
W	0	1	4	30	166	181	382	568	0	568	950
WNW	0	0	5	43	142	1311	1501	162	0	162	1663
NW	0	0	0	3	15	3658	3676	3825	514	4339	8015
NNW	0	486	209	248	313	6450	7706	1489	15544	17033	24739
TOTAL	0	2930	1217	2452	6720	22234	35553	23492	25803	49295	84848

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310.8

TABLE 2.1-5

PEAK DAILY TOURISTS AND SEASONAL VISITORS WITHIN 30 MILES OF ST LUCIE UNIT 2

2000

Annular Sector	0-1	1-2	2-3	3-4	4-5	5-10	Total 0-10	10-20	20-30	Total 10-30	Total 0-30
N	0	1368	0	0	0	0	1368	0	0	0	1368
NNE	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0
SE	0	907	36	0	0	0	943	0	0	0	943
SSE	0	1519	1094	2959	7694	8959	22225	4620	8601	13221	35446
S	0	0	0	12	13	2165	2190	11007	257	11264	13454
SSW	0	0	6	20	143	492	661	4616	2089	6705	7366
SW	0	3	80	283	414	662	1442	3349	1001	4350	5792
WSW	0	3	104	266	473	1308	2154	2574	0	2574	4728
W	0	1	41	217	376	318	953	637	0	637	1590
WNW	0	0	6	79	277	1663	2025	168	0	168	2193
NW	0	3	0	4	18	3665	3690	4598	743	5341	9031
NNW	0	3236	2545	1901	4784	9704	22170	1883	17798	19681	41851
TOTAL	0	7040	3912	5741	14192	28936	59821	33452	30489	63941	123762

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310.8

TABLE 2.1-5

PEAK DAILY TOURISTS AND SEASONAL VISITORS WITHIN 30 MILES OF ST LUCIE UNIT 2

2010

Annular Sector	0-1	1-2	2-3	3-4	4-5	5-10	*	Total 0-10	*	10-20	20-30	*	Total 10-30	*	Total 0-30
N	0	1368	0	0	0	0	*	1368	*	0	0	*	0	*	1368
NNE	0	0	0	0	0	0	*	0	*	0	0	*	0	*	0
NE	0	0	0	0	0	0	*	0	*	0	0	*	0	*	0
ENE	0	0	0	0	0	0	*	0	*	0	0	*	0	*	0
E	0	0	0	0	0	0	*	0	*	0	0	*	0	*	0
ESE	0	0	0	0	0	0	*	0	*	0	0	*	0	*	0
SE	0	1026	36	0	0	0	*	1062	*	0	0	*	0	*	1062
SSE	0	1757	1094	3301	8479	11253	*	25884	*	5299	9863	*	15162	*	41046
S	0	0	0	12	13	2539	*	2564	*	12622	295	*	12917	*	15481
SSW	0	0	6	30	186	766	*	988	*	5062	2396	*	7458	*	8446
SW	0	3	106	352	437	1186	*	2084	*	5296	1147	*	6443	*	8527
WSW	0	3	192	443	650	2332	*	3620	*	4610	0	*	4610	*	8230
W	0	1	77	415	578	537	*	1608	*	719	0	*	719	*	2327
WNW	0	0	6	120	429	2054	*	2609	*	200	0	*	200	*	2809
NW	0	4	0	4	18	3675	*	3701	*	5472	989	*	6461	*	10162
NNW	0	4190	3366	2473	5695	13325	*	29049	*	2348	19281	*	21629	*	50678
TOTAL	0	8352	4883	7150	16485	37667	*	74537	*	41628	33971	*	75599	*	150136

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310.8

TABLE 2.1-5

PEAK DAILY TOURISTS AND SEASONAL VISITORS WITHIN 30 MILES OF ST LUCIE UNIT 2

2020

Annular Sector	0-1	1-2	2-3	3-4	4-5	5-10	Total 0-10	10-20	20-30	Total 10-30	Total 0-30
N	0	1368	0	0	0	0	1368	0	0	0	1368
NNE	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0
SE	0	1026	36	0	0	0	1062	0	0	0	1062
SSE	0	1757	1094	3301	8479	13684	28315	6031	11227	17258	45573
S	0	0	0	13	14	2998	3025	14367	335	14702	17727
SSW	0	0	6	55	209	1192	1462	5747	2727	8474	9936
SW	0	3	178	552	544	2123	3400	8670	1306	9976	13376
WSW	0	4	416	900	1135	4141	6596	8255	0	8255	14851
W	0	1	170	806	1018	904	2899	821	0	821	3720
WNW	0	0	7	135	532	2534	3208	242	0	242	3450
NW	0	4	0	4	20	3718	3746	6474	1272	7746	11492
NNW	0	4190	3366	2473	5695	17112	32836	2907	20722	23629	56465
TOTAL	0	8353	5273	8239	17646	48406	87917	53514	37589	91103	179020

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TABLE 2.1-5

PEAK DAILY TOURISTS AND SEASONAL VISITORS WITHIN 30 MILES OF ST LUCIE UNIT 2

2030

Annular Sector	0-1	1-2	2-3	3-4	4-5	5-10	Total 0-10	10-20	20-30	Total 10-30	Total 0-30
N	0	1368	0	0	0	0	1368	0	0	0	1368
NNE	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0
SE	0	1026	36	0	0	0	1062	0	0	0	1062
SSE	0	1757	1094	3301	8479	13955	28586	6875	12785	19660	48246
S	0	0	0	15	15	3594	3624	16379	382	16761	20385
SSW	0	0	7	62	233	1537	1839	6234	3109	9343	11182
SW	0	4	197	614	604	2650	4069	10666	1489	12155	16224
WSW	0	5	462	1001	1261	5194	7923	10303	0	10303	18226
W	0	1	189	895	1129	1151	3365	918	0	918	4283
WNW	0	0	8	150	591	3158	3907	270	0	270	4177
NW	0	4	0	5	22	3774	3805	7564	1636	9200	13005
NNW	0	4190	3366	2473	5695	17112	32836	3500	22264	25764	58600
TOTAL	0	8355	5359	8516	18029	52125	92384	62709	41665	104374	196758

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310.8

TABLE 2.1-6

 4

TRANSIENT POPULATION: ATTENDANCE AT ATTRACTIONS AND EVENTS
1978-2030

		Annular Sector	Location	Time of Year	Number of Persons 1978 Total for Events (of more than one day)	1978 Peak Daily	1978 Maximum	1980	1983	1990	2000	2010	2020	2030
A.	Attractions and Events Within 10 Miles of St Lucie Unit 2													
1.	Art on the Green Festival(1)*	NW 5-10	Indian River Memorial Park, Fort Pierce	January	40000	20000		20995	22582	26766	34122	43501	55457	70699
2.	Jensen Beach Fireworks(2)	SSE 5-10	Jensen Beach Causeway	July 4th		10000		10498	11291	13383	17061	21751	27729	35350
3.	Lawnwood Stadium (St Lucie County Schools)(3)	NW 5-10	Fort Pierce	Fall Football		6000	6000	6000	6000	6000	6000	6000	6000	6000
4.	Leif Erikson Day(2)	S 5-10	Town of Jensen Beach	October		2000		2100	2258	2677	3412	4350	5546	7070
5.	Outdoor Art Festival(2)	S 5-10	Town of Jensen Beach	March	5000	2500		2624	2823	3346	4265	5438	6932	8837
6.	Sailfish Regatta(4)	S 5-10	St Lucie River	May	10000	7000		7348	7904	9368	11943	15225	19410	24745
7.	St Lucie County Civic Center(5)	NW 5-10	Fort Pierce	March	40000	20000	5700**	20995	22582	26766	34122	43501	55457	70699
8.	Sandy Shoes Festival(6)	NW 5-10	Fort Pierce & Fairgrounds	January	7900	1500***		1575	1694	2007	2559	3263	4159	5302
9.	Sea Turtle Watch(2)	SSE 5-10	Jensen Beach	-		1500		1575	1694	2007	2559	3263	4159	5302
9a.	Hutchinson Island Beaches (St Lucie County)	NNW 5-10	Hutchinson Island	-		656****		689	741	878	1119	1427	1819	2319
9b.	Hutchinson Island Beaches (Martin County)	SSE 5-10	Hutchinson Island	-		2340****		2456	2642	3132	3992	5090	6488	8272

* See Sheet 4 for sources of information.
** Maximum seating capacity. Forty thousand attended an Auto Show on a walk-through basis over two days.
*** 1977 attendance. No festival was held in 1978.
**** Average daily beach usage.

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TABLE 2.1-6

TRANSIENT POPULATION: ATTENDANCE AT ATTRACTIONS AND EVENTS
1978-2030

		Annular Sector	Location	Time of Year	Number of Persons 1978 Total for Events (of more than one day)	1978 Peak Daily	1978 Maximum	1980	1983	1990	2000	2010	2020	2030	
B.	Attractions and Events Between 10 and 30 Miles of St Lucie Unit 2														
10.	Dodgertown Sports Complex(7)	NNW 20-30	Vero Beach	March		7405	10000	7774	8361	9910	10000	10000	10000	10000	
11.	Jai Alai of Fort Pierce(8)	WNW 10-20	Fort Pierce	Year-Round		3200	4000	3359	3613	4000	4000	4000	4000	4000	4
12.	Martin County Fair(9)	S 10-20	Martin County Fairgrounds, in Stuart	March	27000	7559		7935	8535	10116	12897	16441	20960	26721	
13.	Martin County High School Stadium(10)	S 10-20	Stuart	Fall Football		4500	4500	4500	4500	4500	4500	4500	4500	4500	4
14.	St Lucie County Fair(11)	NW 20-30	St Lucie County Fairgrounds, in Fort Pierce	February	20800	8300		8713	9371	11108	14161	18053	23015	29340	
15.	Vero Beach Senior High School Stadium(12)	NW 20-30	Vero Beach	Fall Football		8000	8000	8000	8000	8000	8000	8000	8000	8000	4
C.	Attractions and Events Between 30 and 50 Miles of St Lucie Unit 2														
16.	Fish Fry, Volunteer Fire Department(13)	NW 40-50	Grant Brevard County	February	30000	15000		15746	16936	20074	25592	32625	41593	53024	
17.	Horse Complex(14)	S 40-50	Palm Beach Fairgrounds	Year-Round		2000		2100	2258	2677	3412	4350	5546	7070	4
18.	Labor Day Rodeo and Bluegrass Convention(15)	WSW 30-40	Okeechobee City	September	12000	10000		10498	11291	13383	17061	21750	27728	35349	

TABLE 2.1-6

TRANSIENT POPULATION: ATTENDANCE AT ATTRACTIONS AND EVENTS
1978-2030

		Annular Sector	Location	Time of Year	Number of Persons 1978 Total for Events (of more than one day)	1978 Peak Daily	1978 Maximum	1980	1983	1990	2000	2010	2020	2030
C.	Attractions and Events Between 30 and 50 Miles of St Lucie Unit 2 (Cont'd)													
19.	Lion Country Safari+(16)	S 40-50	Route 441 Palm Beach County	Year-Round	-	-	-	-	-	-	-	-	-	-
20.	Offshore Sport Fishing Tournament(17)	NNW 30-40	Sebastian Inlet and Atlantic Ocean	May-June		500		525	565	669	853	1088	1386	1767
21.	P.G.A. Complex(18)	SSE 30-40	Palm Beach Gardens	Year-Round	--under construction--				50000++	50000	50000	50000	50000	50000
22.	Pahokee Fireworks(19)	SW 40-50	Hoover Dike in Pahokee	July 4th		3000		3000	3000	3000	3000	3000	3000	3000
23.	Palm Beach Auto Auction(20)	S 40-50	Palm Beach Fairgrounds	Year-Pound		1000		1050	1129	1338	1706	2175	2773	3535
24.	Palm Beach Fairgrounds Speedway(21)	SSE 40-50	Palm Beach Fairgrounds	Year-Round		8000		8000	8000	8000	8000	8000	8000	8000
25.	Palm Beach Kennel Club(22)	S 40-50	West Palm Beach	January-May		5800		6089	6549	7762	9896	12615	16083	20503
26.	South Florida Fair(21)	WSW 30-40	Palm Beach Fairgrounds	January-February	470752	88000		92379	99360	117770	150138	191404	244011	311077
27.	Speckled Perch Festival(15)	WSW 30-40	Okeechobee City	March		5000		5249	5645	6691	8531	10875	13864	17675
28.	West Palm Beach Auditorium(23)	SSE 40-50	West Palm Beach	Year-Pound		6000	6000	6000	6000	6000	6000	6000	6000	6000
29.	West Palm Beach Jai Alai(24)	SSE 40-50	Mangonia Park Palm Beach County	September-January		9000	9000	9000	9000	9000	9000	9000	9000	9000
30.	West Palm Beach Municipal Stadium(25)	SSE 40-50	West Palm Beach			6800	7000	7000	7000	7000	7000	7000	7000	7000

+ Attendance figures are confidential and not available for use in this report.
++ First World Championship Tournament scheduled for 1982.

TABLE 2.1-6

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TRANSIENT POPULATION - ATTENDANCE AT ATTRACTIONS AND EVENTS
1978-2030

SOURCES OF INFORMATION

(1) Chairman, Art-on-the-Green Festival, Fort Pierce, Florida, Letter Dated November 17, 1978
(2) Executive Director, Jensen Beach Chamber of Commerce, Jensen Beach, Florida, Letter Dated November 17, 1978
(3) Maintenance Foreman, St Lucie County School Board, Ft Pierce, Florida, Letter Dated November 28, 1978
(4) Director, Stuart/Martin County Chamber of Commerce, Stuart, Florida, Letter Dated November 22, 1978
(5) Supervisor of Special Facilities, St Lucie County Civic Center, Ft Pierce, Florida, Letter Dated November 17, 1978
(6) Executive Secretary, Sandy Shoes Festival (1979), Fort Pierce, Florida, Letter Dated November 27, 1978
(7) Office of Eastern Division Manager, Los Angeles Dodgers Baseball Team, Dodgertown Sport and Conference Center, Vero Beach, Florida, Letter Dated November 17, 1978
(8) Associate Chief of Security, Jai Alai of Fort Pierce, Fort Pierce, Florida, Letter Dated November 17, 1978
(9) Fair Secretary, Martin County Fair Association, Stuart, Florida, Letter Dated November 20, 1978
(10) Athletic Director, Martin County High School, Stuart, Florida, Letter Dated November 28, 1978
(11) Fair Secretary, St Lucie County Fair, Fort Pierce, Florida, Letter Dated November 20, 1978
(12) Finance Officer, Indian River County Schools, Vero Beach, Florida, Letter Dated November 27, 1978
(13) Chairman, Fish Fry in Grant, Melbourne, Florida, Personal Communication, December 14, 1978
(14) Horse Complex, Palm Beach County Fairgrounds, West Palm Beach, Florida, Personal Communication, November 21, 1978
(15) Okeechobee Chamber of Commerce, Okeechobee, Florida, Letter Dated November 17, 1978
(16) Office of Public Relations, Lion County Safari, Royal Palm Beach, Florida, Letter Dated November 20, 1978
(17) Chairman, Offshore Sport Fishing Tournament, Sebastian, Florida, Letter Dated December 13, 1978
(18) Project Manager, PGA Complex, Florida Realty Building Company, West Palm Beach, Florida, Letter Dated December 11, 1978
(19) Office Manager, Pahokee Chamber of Commerce, Pahokee, Florida, Letter Dated November 20, 1978
(20) Palm Beach Auto Auction, Palm Beach County Fairgrounds, West Palm Beach, Florida, Personal Communication, December 11, 1978
(21) South Florida Fair, Palm Beach County Fairgrounds, West Palm Beach, Florida, Personal Communications, November 21 and 27, 1978
(22) Palm Beach Kennel Club - Greyhound Racing, West Palm Beach, Florida, Letter Dated November 21, 1978
(23) West Palm Beach Auditorium, West Palm Beach, Florida, Letter Dated November 22, 1978
(24) Office of Public Relations, West Palm Beach Jai Alai, West Palm Beach, Florida, Letter Dated November 21, 1978
(25) Spring Training Coordinator, Atlanta Braves, West Palm Beach Municipal Stadium, West Palm Beach, Florida, Letter Dated November 20, 1978

TABLE 2.1-7 | 4

TRANSIENT POPULATION: MAJOR INDUSTRIAL EMPLOYERS AND COLLEGES
1978-2030

	Annular Sector	Location	1978 Total Employment	1978 Peak Daily Employment	1980	1983	1990	2000	2010	2020	2030	
A. Major Industrial Employers												4
1. Grumman Aerospace(1)	S 10-20	Martin County Airport, Stuart	731	700	700	700	700	700	700	700	700	
2. Piper Aircraft(2)	NW 10-20	Vero Beach Municipal Airport Indian River County	2887	2000	2000	2000	2000	2000	2000	2000	2000	4
3. Pratt & Whitney(3) Government Products Division	S 30-40	Route 770, South of Route 710 Palm Beach County	7261	6094	6094	6094	6094	6094	6094	6094	6094	
			Total Enrollment	Peak Daily Enrollment(6)								
B. Major Colleges												
4. Florida Institute of Technology(4)	SSE 5-10	Jensen Beach Campus Martin County		900(4)	1050	1200	1200	1200	1200	1200	1200	
5. Indian River Community College(5)	NW 5-10	Fort Pierce Campus St Lucie County	11200	2240	2710	3608	4170	5129	6309	7759	9543	
	S 10-20	Stuart Campus, Martin County	1280	256	310	412	476	586	720	886	1090	4
	WSW 30-40	Okeechobee Campus, Okeechobee County	320	64	77	103	119	146	180	221	272	
B. Major Colleges	MNW 20-30	Vero Beach Campus, Indian River County	3200	640	774	1031	1192	1466	1803	2217	2727	

(1) Personal Communication, Personnel Department, Grumman Aerospace, November 30, 1978.

(2) Personal Communication, Personnel Department, Piper Aircraft Corp, December 4, 1978.

(3) Personal Communication, Employment Office, Pratt & Whitney Aircraft, November 30, 1978. | 4

(4) Personal Communication, Student Activities Office, Florida Institute of Technology, Jensen Beach Campus, November 27, 1978.

(5) Personal Communication, Office of the Vice President, Indian River Community College, Fort Pierce Campus, November 28, 1978.

(6) Based on the assumption that peak daily enrollment is approximately 20 percent of total enrollment. | 4

TABLE 2.1-8

TRANSIENT POPULATION: AVERAGE DAILY PASSENGERS ON MAJOR ROADS WITHIN 30 MILES OF ST LUCIE UNIT 2

1978-2030

Highways and State Roads Within 10 Miles of St Lucie Unit 2

Route	County	Station Number	Estimated Average Daily Number of Passengers(2) 1978	1980	1983	1990	2000	2010	2020	2030
SR A1A	St Lucie	114 (North Beach Causeway)	2,802	2,941	3,164	3,750	4,781	6,094	7,770	9,905
SR 605	St Lucie	268	2,505	2,630	2,828	3,352	4,274	5,448	6,946	8,855
US 1	St Lucie	121	14,357	15,071	16,210	19,214	24,495	31,227	39,810	50,752
SR 607A	St Lucie	199	6,525	6,850	7,367	11,132	14,192	14,192	18,093	23,066
SR 68	St Lucie	151	8,271	8,683	9,339	11,069	14,111	17,990	22,934	29,238
SR 611	St Lucie	274	2,172	2,280	2,452	2,907	3,706	4,724	6,023	7,678
SR 70	St Lucie	106	5,910	6,204	6,673	7,909	10,083	12,855	16,388	20,892
I-91/ Florida's Turnpike	St Lucie	Southbound	15,151	15,905	17,107	20,276	25,849	32,954	42,011	53,558
SR 709	St Lucie	279	990	1,039	1,118	1,325	1,689	2,153	2,745	3,500
I-91/ Florida's Turnpike	St Lucie	Northbound	25,541	26,812	28,838	34,181	43,576	55,553	70,821	90,287
US 1	Martin	113 (Roosevelt Bridge/Northbound)	20,922	21,963	23,623	28,000	35,695	45,506	58,014	73,959
SR A1A	Martin	144	8,516	8,940	9,615	11,397	14,529	18,523	23,614	30,104
Highways Within 30 Miles of St Lucie Unit 2										
I-95	Indian River	Southbound	9,971	10,467	11,258	13,344	17,012	21,687	27,648	35,247
I-91/ Florida's Turnpike	Okeechobee	Southbound	15,151	15,905	17,107	20,276	25,849	32,954	42,011	53,558
I-95/ Florida's Turnpike	Palm Beach	Northbound	26,527	27,847	29,951	35,501	45,258	57,697	73,555	93,772

(1) State of Florida, Dept of Transportation, Bureau of Planning assigns code numbers to each station where average daily traffic (ADT) counts are taken in each county.

(2) See Methodology, Section 2.1.3.8.2.

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TABLE 2.1-9

TRANSIENT POPULATION: AVERAGE DAILY PASSENGERS BY RAIL AND AIR WITHIN 50 MILES OF ST LUCIE UNIT 2
1978-2030

	County	Location	1978	1980	1983	1990	2000	2010	2020	2030
A. Rail										
1. Amtrak - Seaboard Coast Line(1)	-	Sebring - West Palm Beach	389(2)	195(3)	207	239	294	362	445	547
B. Air										
2. West Palm Beach International Airport(4)	Palm Beach	West Palm Beach	4,878(2)	5,121	5,508	6,528	8,322	10,610	13,526	17,244

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(1) Peak daily capacity (that is, all seats available on all six trains on the line on one day) was 2,474 in 1978 (August). Personal Communication, Route Analyst, Eastern Routes, Marketing Research, Amtrak, Washington, DC, November 22, 1978.

(2) See Methodology, Section 2.1.3.8.

(3) In May, 1979, Congress accepted a Department of Transportation plan to reduce service to Florida from three trains each day to one train. It is expected that ridership will be reduced to half the 1978 levels with this change in service. Sources: Personal Communication, Manager - Eastern Routes, Marketing Research, Amtrak, Washington, DC, May 22, 1979.

(4) Data includes implanements and deplanements. Personal Communication, Director of Planning, Palm Beach International Airport, West Palm Beach, Florida, November 30, 1978.

TABLE 2.1-10

TRANSIENT POPULATION: AVERAGE DAILY PASSENGERS ON WATERWAYS WITHIN 30 MILES OF ST LUCIE 2
1978-2030

	County	Location	1978	1980	1983	1990	2000	2010	2020	2030
A. Waterways Within 30 Miles of St Lucie 2										
1. Intracoastal Waterway(1)	--	Jacksonville - Miami via Indian River	1,490	1,564	1,682	1,994	2,542	3,241	4,132	5,267
2. Fort Pierce Harbor(1)	St Lucie	Fort Pierce	22	23	25	29	38	48	61	78
3. St Lucie Canal(2)	Martin	Lake Okeechobee/Port Mayaca - Stuart	108	113	122	145	184	235	299	382
B. Bridges Within 10 Miles of St Lucie 2										
4. Jensen Beach Bridge(3)	Martin	Indian River at Jensen Beach	46	48	52	62	78	100	128	163
5. Roosevelt Bridge(4)	Martin	St Lucie River in Stuart	89	93	100	119	152	194	247	315
6. St Lucie Bridge(5)	Martin	St Lucie River, Stuart-Seawall's Point	62	65	70	83	106	135	172	219
7. Stuart Causeway (Indian River Bridge)	Martin	Indian River, Sewall's Point - Hutchinson Island	60	63	68	80	102	131	166	212

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(1) US Army Corps of Engineers, Waterborne Commerce of the United States, Part 1, 1976 Jacksonville District pp. 135, 137.

(2) Personal Communication, Lockmaster, St Lucie Lock & Dam, Stuart, Florida, September 14 and October 10, 1978.

(3) Personal Communication, Bridgetender, Jensen Beach Bridge, Jensen Beach, Florida, September 14 and November 10, 1978.

(4) Personal Communication, Engineering Department, Martin County Department of Transportation, September 14, 1978.

(5) Personal Communication, Bridgetender, St Lucie Bridge, Stuart, Florida, September 14, 1978.

(6) Personal Communication, Bridgetender, Stuart Causeway, Sewall's Point, Florida, September 14, 1978.

TABLE 2.1-11

LOCATION BY ANNULAR SECTOR PARAMETERS NEAREST TO AND WITHIN FIVE MILES OF ST. LUCIE UNIT 2, MAY 1981[1,2]

CATEGORY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
Milk Cows	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0
Milk Goats	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0
Meat Animals	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0
Vegetable Gardens	*	*	*	*	*	*	*	L	4.35 miles/ 183°	3.0 miles/ 192°	1.87 miles/ 235°	1.9 miles/ 245°	1.9 miles/ 265°	2.4 miles/ 287°	4.47 miles 313°	L
Residences	*	*	*	*	*	*	1.4 miles/ 144°	3.9 miles/ 155°	3.2 miles/ 191°	2.2 miles/ 213°	1.9 miles/ 236°	1.9 miles/ 242°	1.9 miles/ 260°	2.3 miles/ 281°	3.85 miles/ 304°	L

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470.1

1. * = Ocean Areas
2. L = Land Areas: Zero entry indicates that a ground survey of an established 22-1/2 degree radial sector showed no evidence of any activity.

Source: Data obtained from a helicopter and ground survey of the five mile area conducted in May, 1981.

TABLE 2.1-12

LAND USES AND LAND COVER WITHIN FIVE MILES OF ST LUCIE UNIT 2

Level I Land Use Classification	Acreage	Percent of Total	Level II Land Use Classification	Acreage	Percent of Total	Level III Land Use Classification	Acreage	Percent of Total	
1. URBAN OR BUILT-UP LAND	3,541	7.0	11. Residential	2,300	4.6	111. Single-family Residences	2,220	5.4	4 310 .8
						112. Multiple-family Residences	49	.1	
						116. Transient Lodgings	60	.1	
			12. Commercial and Services	28	*	122. Retail, Commercial Services	22	*	
						123. Institutional Services	6	*	
			13. Industrial	14	*	131. Light Industrial	14	*	
			14. Transportation, Communications, and Utilities	964	2.0	141. Highway, Principal Road	210	.4	4 310 .8
						142. Railroad	50	.1	
						143. St Lucie 1 & 2 Facilities	300	.6	
						144. Transmission Lines	386	.8	
						145. Utility Storage	18	*	
			17. Other Urban or Built-up Land	235	.5	171. Cemetery	10	*	
						172. Undeveloped Land	37	.1	
						173. Recreation Facilities	188	.4	
2. AGRICULTURAL LAND	541	1.1	21. Cropland and Pasture	449	.9	212. Citrus Groves	449	.9	
			22. Other Agricultural Land	92	.2	221. Nurseries	9	*	
						222. Old Field	83	.2	
4. FOREST/MARSH COVER+	10,653	21.2	41. Coniferous Forest/ Freshwater Marsh	7,910	15.6	410. Pine Flatwood Forest/ Freshwater Marsh	5,116	10.2	4 310 .8
						411. Freshwater Marsh	2,316	4.6	

Sheet 1 of 2

	Average Percent of Total
Resi-	2 [illegible]
[illegible]	[illegible]

TABLE 2.1-12

Level I Land Use Classification	Acreage	Percent of Total	Level II Land Use Classification	Acreage	Percent of Total	Level III Land Use Classification	Acreage	Percent of Total
			42. Other Forested Wetland	2,714	5.4	421. Mangrove	2,714	5.4
5. WATER	34,849	69.3	51. Freshwater	1,243	2.5	510. Streams and Canals	113	.2
						511. Lakes	1,130	2.3
			52. Fresh/Salt Water	10,656	21.2	520. Estuary	10,656	21.2
			55. Salt Water	22,950	45.6	550. Open Marine Water	22,950	45.6
7. BARREN LAND	682	1.4	71. Natural Barren Land	97	.2	710. Beaches	97	.2
			74. Man-made Barren Land	585	1.2	740. Transitional Areas	390	.8
						741. Extractive	195	.4
	50,266	100%		50,266	100%		50,266	100%

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310
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+The forest cover is to a great extent concentrated in a transitional area which is primarily marshy but includes relatively dry sites. In addition, the Florida land use/cover classification system considers mangroves as a type of wetland - hardwood forest. To account for these considerations, the USGS categories of Forest and Wetlands were combined.

*Less than .1%

TABLE 2.1-13

TOTAL BEEF CATTLE AND BEEF SLAUGHTER WITHIN 0-50 MILES OF SITE

County	Total No. of Head(1)	Total Slaughter/Yr (2)	Kg/Yr(3)
Brevard	5,550	555	130,425
Glades	4,200	420	98,700
Hendry*			
Highlands	3,525	353	82,955
Indian River	26,000	2,600	611,000
Martin	32,000	3,200	752,000
Okeechobee	39,000	3,900	916,500
Osceola	4,050	405	95,175
Palm Beach	14,340	1,434	336,990
St. Lucie	50,000	5,000	1,175,000
	178,665	17,867	4,198,745

*No beef production assumed since that portion of county within 0-50 miles of site is water (Lake Okeechobee).

(1) Estimated from county totals assuming equal distribution of cattle throughout county.

(2) Most animals are shipped out-of-state as calves to feedlots, so there is only approximately a 10% annual slaughter for culling purposes.

(3) Assumes that 60% of liveweight is meat. 1979 average liveweight (861 pounds) of cattle and calf slaughter from "Florida Agricultural Statistics - Livestock Summary 1979", Florida Crop and Livestock Reporting Service, Orlando, Florida, 6/80.

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TABLE 2.1-14

DAIRY HERDS AND MILK PRODUCTION[a,b]
WITHIN 50 MILES OF ST LUCIE UNIT 2

County	Number of Dairies	Heifers Over 500 lb	Heifers Under 500 lb	No. of Milk Cows	1979 Annual Milk Production (1000 lb)
Brevard	1	16	8	36	594
Glades	1	15	31	525	1,147
Hendry*					
Highlands	1	94	47	210	3,080
Indian River	1	368	322	400	16,790
Martin	7	900	550	3,600	33,500
Okeechobee	23	7,475	9,100	26,000	227,500
Osceola*					
Palm Beach	4	360	140	2,200	24,200
St. Lucie	3	432	378	1,800	19,710
Total	41	9,660	10,576	34,771	326,521

*No dairy production assumed since that portion of county, within 0-50 miles of site is water or wetland.

(a) From "Dairy Summary 1979 - Florida Agricultural Statistics," Florida Crop and Livestock Reporting Service, Orlando, Florida 8/80.

(b) Estimated from county totals for 0-50 mile radius, excluding wetland areas and assuming equal distribution of dairies throughout county.

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TABLE 2.1-15

MILK UTILIZATION FROM DAIRY HERDS-
WITHIN 50 MILES OF ST. LUCIE UNIT 2[a]

1.	Average Annual Milk Production per Cow	= 9,666 lbs = 4,385 kgs
2.	Milk Fat (average)	= 3.5%
3.	1977 Annual Milk Production[b]	= 330.0×10^6 lbs = 151.0×10^6 kgs
4.	Milk Utilization	
	(a) Used on Farm	= 3.1×10^6 lbs = 1.4×10^6 kgs
	1) For milk, cream, butter	= 2.0×10^6 lbs = 0.9×10^6 kgs
	2) Fed to calves	= 1.1×10^6 lbs = 0.5×10^6 kgs
	(b) Milk Sold Directly to Consumers	= 5.1×10^6 lbs = 2.3×10^6 kgs
	(c) Milk Sold to Plants for Manufacturing Dairy Products	= 324.8×10^6 lbs = 147.3×10^6 kgs
	1) For frozen products-ice cream, ice milk, sherbert	= 7.6×10^6 gal
	2) For cottage cheese -curd, creamed	= 8.9×10^6 lbs = 4.0×10^6 kgs
	3) For skim milk and butter milk products	= 23.2×10^6 lbs = 10.5×10^6 kgs
	4) For whole milk products	= 61.0×10^6 lbs = 27.7×10^6 kgs

(a) Estimated 1977 data from "Florida Agricultural Statistics - Dairy Summary, 1977," prepared by Florida Crop and Livestock Reporting Service, 1222 Woodward Street, Orlando, Florida 32803 (July 1978)

(b) Estimated from county data.
Only accounts for those portions of county within 0-50 mile radius, assuming equal distribution of dairy herds.

TABLE 2.1-16

COMMERCIAL EGG PRODUCTION WITHIN 50 MILES OF ST LUCIE UNIT 2[a]

County[b]	Number of Layers	Number of Eggs/Day
Brevard	405	244
Indian River	1,000	850

[a] 1980 data from the County Extension Agent for each county; no commercial egg production for other counties within 50 miles of St Lucie Unit 2.

[b] Accounts only for those portions of county within 50 miles of plant site; assumes equal distribution of layers throughout county.

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470.2

TABLE 2.1-17

FLORIDA COMMERCIAL VEGETABLE PRODUCTION
IN A 0-50 MILE RADIUS STUDY AREA[1]

County[3]	Principal Species	Production Center	Acres Harvested[2] 1978-1980
Highlands	Sweet Corn/Melon		17
	Watermelon		9
Martin	Cabbage	Stuart	500
	Potatoes		550
	Tomatoes		500
	Watermelon		200
Okeechobee	Tomatoes	Pahokee	208
	Watermelon		195
	Beans	Pompano	12,120
Palm Beach	Cabbage	Pahokee	576
	Celery		5,040
	Corn		12,432
	Cucumbers		408
	Eggplant		480
	Escarole		2,280
	Lettuce		5,904
	Peppers		1,248
	Radishes		10,560
	Squash		816
	Tomatoes		1,164
St. Lucie	Tomatoes	Fort Pierce	310

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Notes

(1) From "1978 Census of Agriculture - Preliminary Report" issued October 1980 and updated by Gerald Moody of the Florida Crop and Livestock Reporting Service, 1222 Woodward Street, Orlando, Florida. May 1981.

(2) Acres harvested are recounted each time a crop is put in.

(3) Brevard, Glades and Indian River Counties are not indicated as producing commercial vegetables within 50 miles of St Lucie Unit 2 (see (1)).

TABLE 2.1-18

FLORIDA COMMERCIAL VEGETABLE ACREAGE AND PRODUCTION - SOUTHEAST COUNTIES 1978-79(1)

Commodity	Acreage Planted	Acreage Harvested	Yield Per Acre (Lbs)	SE Production 1,000 Units	State Production 1,000 Units
Beans (Snap)	39,400	34,500	3,060	3,519	4,140
Cabbage*	1,100	1,100	31,005	643	8,408
Celery*	1,750	1,450	41,100	993	8,135
Corn (Sweet)	13,100	12,500	7,770	2,313	12,112
Cucumbers	1,500	1,100	16,032	367	4,823
Eggplant	1,350	1,260	21,549	823	1,639
Escarole*	1,550	1,350	13,350	721	3,348
Lettuce*	1,900	1,700	18,900	322	2,562
Peppers (Green)	4,200	3,900	11,350	1,771	8,056
Potatoes (Winter)	7,000	6,000	18,900	1,134	6,008
Radishes(2)	-	-	-	-	10,067
Squash	6,350	6,000	5,670	810	1,860
Strawberries	100	100	13,838	135	3,746
Tomatoes	4,000	4,000	22,020	2,936	33,340
Watermelon*	8,800	7,400	15,500	1,147	6,450

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*Since data not provided by individual county but by region, regional estimate given.

(1) From: Vegetable Summary 1979 - Florida Agricultural Statistics, Reporting Service, Orlando, Florida. 3/80

(2) Since data not provided by individual county but by state, state production total given only.

TABLE 2.1-19

FLORIDA COMMERCIAL VEGETABLE PRODUCTION, CROP YEAR 1976-77[a]

Commodity	Unit	Net Wt. lb/Unit	Acreage Planted	Acreage Harvested	Average Yield per Acre Units	Average Yield per Acre lb	Average Yield per Acre kg	Production 1,000 Units
Beans	Bushel	30	39,600	29,500	125	3,750	1,701	3,680
Cabbage	Crate	50	17,100	16,300	453	22,650	10,274	7,385
Celery	Crate	60	10,700	10,100	578	34,680	15,731	5,833
Sweet Corn	Crate	42	63,300	50,300	238	9,996	4,534	11,990
Cucumbers	Bushel	48	16,100	15,000	253	12,144	5,509	3,802
Eggplant	Bushel	33	2,250	1,950	701	23,133	10,493	1,367
Escarole	Crate	25	6,900	6,000	513	12,825	5,817	3,080
Lettuce	Cwt.	100	11,700	9,500	151	15,100	6,849	1,430
Peppers	Bushel	25	21,100	16,800	400	10,000	4,536	6,720
Potatoes	Sack	100	30,500	30,100	206	20,600	9,344	6,207
Radishes	Carton	11.5	31,000	27,300	291	3,347	1,578	7,933
Squash	Bushel	42	12,600	12,000	158	6,636	3,010	1,893
Strawberries	Flat	10.25	1,500	1,500	1,418	14,535	6,593	2,127
Tomatoes	Carton	30	43,200	34,000	751	22,530	10,220	24,210
Watermelons	Cwt.	100	65,000	51,000	175	17,500	7,938	8,925

(a) From "Vegetable Summary 1977 - Florida Agricultural Statistics", Florida Crop and Livestock Reporting Service, 1222 Woodward Street, Orlando, Florida 31803

TABLE 2.1-20 Sheet 1 of 2

FLORIDA CITRUS ACREAGE AND PRODUCTION 1979-80[a]

County	Fruit	Harvest Unit	Unit Wt, lb	Est. Prod. 1,000 Boxes	Total Acreage
Brevard[b]	All Oranges[1]	Box	90	353	1,134
	Early & Mids	Box	90	203	610
	Valencias	Box	90	150	502
	All Grapefruit[1]	Box	85	92	308
	Seedy	Box	85	3	22
	Seedless	Box	85	89	281
	Specialty Fruit[2]	Box	90	19	90
	All Citrus	Box		464	1,532
Glades[b]	All Oranges[1]	Box	90	43	222
	Early & Mids	Box	90	29	84
	Valencias	Box	90	14	40
	All Grapefruit[1]	Box	85	4	6
	Seedy	Box	85	0	0
	Seedless	Box	85	4	6
	Specialty Fruit[2]	Box	90	1	11
	All Citrus	Box		48	239
Hendry* Highlands[b]	All Oranges[1]	Box	90	303	827
	Early & Mids	Box	90	99	215
	Valencias	Box	90	204	567
	All Grapefruit[1]	Box	85	72	125
	Seedy	Box	85	22	45
	Seedless	Box	85	50	76
	Specialty Fruit[2]	Box	90	36	107
	All Citrus	Box		411	1,059
Indian River	All Oranges[1]	Box	90	5,498	23,201
	Early & Mids	Box	90	2,893	10,511
	Valencias	Box	90	2,605	11,114
	All Grapefruit[1]	Box	85	9,276	32,658
	Seedy	Box	85	36	233
	Seedless	Box	85	9,240	29,527
	Specialty Fruit[2]	Box	90	495	2,403
	All Citrus	Box	90	15,269	58,262
Okeechobee[b]	All Oranges[1]	Box	90	586	1,939
	Early & Mids	Box	90	325	943
	Valencias	Box	90	261	933
	All Grapefruit[1]	Box	85	286	646
	Seedy	Box	85	2	4
	Seedless	Box	85	284	626
	Specialty Fruit[2]	Box	90	57	199
	All Citrus	Box		929	2,784

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TABLE 2.1-20

County	Fruit	Harvest Unit	Unit Wt, lb	Est. Prod. 1,000 Boxes	Total Acreage
Martin	All Oranges[1]	Box	90	6,866	31,571
	Early & Mids	Box	90	2,950	11,854
	Valencias	Box	90	3,916	17,798
	All Grapefruit[1]	Box	85	1,925	5,749
	Seedy	Box	85	46	242
	Seedless	Box	85	1,879	5,464
	Specialty Fruit[2]	Box	90	307	3,448
	All Citrus	Box		9,098	40,768
Osceola* Palm Beach (b)	All Oranges[1]	Box	90	993	3,695
	Early & Mids	Box	90	577	2,165
	Valencias	Box	90	416	1,526
	All Grapefruit[1]	Box	85	527	1,362
	Seedy	Box	85	19	76
	Seedless	Box	85	508	1,286
	Specialty Fruit[2]	Box	90	270	1,663
	All Citrus	Box		1,790	6,720
St Lucie	All Oranges[1]	Box	90	9,034	36,460
	Early & Mids	Box	90	4,324	14,212
	Valencias	Box	90	4,710	19,753
	All Grapefruit[1]	Box	85	9,163	32,691
	Seedy	Box	85	45	288
	Seedless	Box	85	9,118	29,787
	Specialty Fruit[2]	Box	90	1,218	5,989
	All Citrus	Box		19,415	75,140

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* Not citrus production assumed since that portion of county within 0-50 miles of site is water or wetland.

[1]Includes unidentified variety acreage

[2]Includes lemons, limes, tangelos and tangerines

(a) From "Citrus Summary 1980 - Florida Agricultural Statistics", Florida Crop and Livestock Reporting Service, Orlando, Florida 1/81.

(b) Estimated from county citrus data for 0-50 mile radius excluding wetland areas and equal distribution of citrus throughout county.

TABLE 2.1-21

SUGARCANE PRODUCTION WITHIN 50 MILES OF ST LUCIE UNIT 2[a]

County	Acres Harvested		Yield Per Acre (tons)		Production (tons)	
	1978	1979	1978	1979	1978	1979
Glades	1,225	1,309	30.4	31.0	37,240	40,600
Martin	5,000	5,500	29.8	28.0	149,000	154,000
Palm Beach	90,400	95,600	30.5	31.3	2,757,200	2,992,400

(a) From "Field Crops Summary 1979 - Florida Agricultural Statistics", Florida Crop and Livestock Reporting Service, Orlando, Florida 8/80.

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470.2

TABLE 2.1-22 Sheet 1 of 5

FLORIDA MARINE LANDINGS: FOOD FISH, SHRIMP AND SHELLFISH MARINE LANDINGS BY COUNTY, 1976[a]

County	Fish	Weight (kg)	Shellfish, et al	Weight (kg)
Brevard	Amberjack	6,804	Clams	22,928
	Angelfish	1,242	Crab, Blue (Hard)	715,338
	Blue Runner	526	Crab, Blue (Soft)	107
	Bluefish	70,760	Crab, Stone	1,378
	Bonito	1,437	Lobster, Spiny	1,558
	Catfish, Fresh-Water	710	Oysters	11,185
	Catfish, Sea	1,374	Scallops	193,460
	Cigarfish	9	Shrimp	237,673
	Cobia	642	Squid	1,275
	Crevalle (Jacks)	3,206	Total Shellfish, et al	1,184,902
	Croaker	865		
	Dolphin	3,081		
	Drum, Black	5,369		
	Drum, Red	10,293		
	Flounder	6,031		
	Goatfish	5,107		
	Grouper and Scamp	49,031		
	Grunts	1,569		
	Jewfish	6,752		
	King Mackerel	269,194		
	King Whiting	61,418		
	Menhaden	85,278		
	Mullet, Black	283,482		
	Mullet, Silver	57,654		
	Permit	1,090		
	Pigfish	1,393		
	Pompano	41,118		
	Sand Perch (Mojarra)	803		
	Scup	762		
	Sea Bass	2,356		
	Sea Trout	46,001		
	Sharks	1,179		
	Sheepshead	24,232		
	Snapper	49,198		
	Spanish Mackerel	195,972		
	Spot	34,031		
	Swordfish	37,486		
	Tenpounder	159		
	Tilefish	9,091		
	Trigger Fish	1,402		
	Tripletail	406		
	Wahoo	405		
	Warsaw	3,797		
	Unclassified for Food	17,948		

TABLE 2.1-22

County	Fish	Weight (kg)	Shellfish, et al	Weight (kg)
	Unclassified for Miscellaneous	29,778		
	Total Fish	1,430,449		
Indian River	Amberjack	321	Clams, Hard	2,922
	Angelfish	101	Crab, Blue (Hard)	4,137
	Blue Runner	1,165	Lobster, Spiny	258
	Bluefish	36,743	Oysters	452
	Bonito	306	Total Shellfish, et al	7,769
	Catfish, Sea	60		
	Cobia	1,482		
	Creville (Jack)	981		
	Croaker	15		
	Dolphin	1,005		
	Drum, Black	464		
	Drum, Red	2,805		
	Flounder	162		
	Goatfish	86		
	Grouper and Scamp	16,487		
	Jewfish	1,083		
	King Mackerel	374,212		
	King Whiting	3,043		
	Menhaden	373,970		
	Mullet, Black	105,069		
	Mullet, Silver	3,402		
	Permit	275		
	Pigfish	319		
	Pompano	49,539		
	Sea Bass	3,082		
	Sea Trout	27,850		
	Sheepshead	607		
	Snapper	28,589		
	Spanish Mackerel	79,510		
	Spot	77,787		
	Tilefish	5,582		
	Trigger Fish	236		
	Tripletail	88		
	Wahoo	49		
	Unclassified for Food	13,416		
	Total fish	1,209,890		
Martin	Amberjack	2,215	Lobster, Spiny	885
	Angelfish	327	Total Shellfish, et al	885
	Blue Runner	14,206		
	Bluefish	237,057		
	Bonito	47		
	Catfish, Fresh-Water	503		
	Catfish, Sea	5,644		

TABLE 2.1-22

County	Fish	Weight (kg)	Shellfish, et al	Weight (kg)
Martin (Cont'd)	Cigarfish	546		
	Cobia	391		
	Crevalle (Jack)	15,742		
	Croaker	20,513		
	Dolphin	129		
	Drum, Black	15,965		
	Drum, Red	580		
	Eel	14		
	Flounder	665		
	Goatfish	35,648		
	Grouper and Scamp	2,597		
	Grunts	1,178		
	Herring, Thread	26,095		
	Hogfish	20		
	Jewfish	7,161		
	King Mackerel	43,413		
	King Whiting	10,783		
	Menhaden	7,636		
	Mullet, Black	102,281		
	Mullet, Silver	6,660		
	Permit	521		
	Pigfish	290		
	Pompano	37,419		
	Sand Perch	47,342		
	Scup	10		
	Sea Bass	532		
	Sea Trout	7,549		
	Shark	1,393		
	Sheepshead	45,711		
	Snapper	5,948		
	Spanish Mackerel	1,441,118		
	Spanish Sardines	7,278		
	Spot	16,477		
	Swordfish	3,037		
	Tilapia (Nile Perch)	136		
	Tilefish	1,344		
	Trigger Fish	87		
	Tripletail	604		
	Warsaw	38		
	Unclassified for Food	12,699		
	Unclassified for Miscellaneous	51,165		
	Total Fish	2,238,715		
Palm Beach	Amberjack	1,464	Crab, Blue (Hard)	953
	Blue Runner	2,300	Lobster, Spiny	16,986
	Bluefish	50,612	Total Shellfish, et al	17,939
	Bonito	295		

TABLE 2.1-22

County	Fish	Weight (kg)	Shellfish, et al	Weight (kg)
Palm Beach (Cont'd)	Catfish, Fresh-Water	81		
	Catfish, Sea	78		
	Cigarfish	23		
	Cobia	249		
	Crevalle (Jack)	199		
	Croakes	560		
	Dolphin	854		
	Drum, Black	10,229		
	Drum, Red	726		
	Flounder	6		
	Goatfish	1,037		
	Grouper and Scamp	3,074		
	Grunt	363		
	Hogfish	11		
	Jewfish	35		
	King Mackerel	340,458		
	King Whiting	4,635		
	Mullet, Black	3,834		
	Mullet, Silver	1,316		
	Permit	106		
	Pigfish	11		
	Pompano	3,187		
	Sand Perch	4,458		
	Scup	20		
	Sea Bass	5		
	Sea Trout	477		
	Shark	81		
	Sheepshead	4,465		
	Snapper	23,792		
	Spanish Mackerel	933,340		
	Spot	2,337		
	Tilefish	507		
	Tripletail	24		
	Wahoo	434		
	Warsaw	34		
	Unclassified for Food	5,433		
	Unclassified for Miscellaneous	77		
	Total Fish	1,401,226		
St Lucie	Amberjack	15,895	Crab, Blue (Hard)	1,633
	Angelfish	489	Lobster, Spiny	3,110
	Barracuda	998	Total Shellfish, et al	4,743
	Blue Runner	10,795		
	Bluefish	125,705		
	Bonito	6,592		
	Cobia	2,294		
	Crevalle (Jack)	4,132		

TABLE 2.1-22

County	Fish	Weight (kg)	Shellfish, et al	Weight (kg)
St Lucie (Cont'd)	Croaker	1,067		
	Dolphin	6,032		
	Drum, Black	4,534		
	Drum, Red	1,227		
	Flounder	1,167		
	Goatfish	599		
	Grouper and Scamp	32,929		
	Grunts	52		
	Hogfish	12		
	Jewfish	2,642		
	King Mackerel	1,093,989		
	King Whiting	2,744		
	Menhaden	16,815		
	Mullet, Black	63,329		
	Mullet, Silver	18,629		
	Permit	1,220		
	Pigfish	336		
	Pompano	44,037		
	Sand Perch	3,843		
	Scup	341		
	Sea Bass	694		
	Sea Trout	13,866		
	Shad	66		
	Shark	72		
	Sheepshead	7,322		
	Snapper	24,859		
	Spanish Mackerel	1,636,766		
	Spot	31,125		
	Swordfish	3,701		
	Tenpounder	48,932		
	Tilefish	770		
	Tripletail	420		
	Wahoo	937		
	Warsaw	1,111		
	Unclassified for Food	22,497		
	Unclassified for Miscellaneous	323		
	Total Fish	3,255,905		

(a) From "Summary of Florida Commercial Marine Landings, 1976", Florida Department of Natural Resources, Division of Marine Resources, Tallahassee, Florida.

TABLE 2.1-23

COMMERCIAL MARINE LANDINGS OF
COUNTIES WITHIN 0-50 MILE RADIUS (10^3 kg)[a]

County	1976	1975	Percent Change
Brevard			
Fish	1,430.5	1,571.1	- 8.9
Shellfish	1,184.9	1,854.1	-36.1
Total	2,615.4	3,425.2	-23.6
Indian River			
Fish	1,209.9	1,155.5	+ 4.7
Shellfish	7.8	27.7	-71.8
Total	1,217.7	1,183.2	+ 2.9
St Lucie			
Fish	3,255.9	2,159.2	+50.8
Shellfish	4.7	7.2	-34.7
Total	3,260.6	2,166.4	+50.5
Martin			
Fish	2,238.7	1,380.7	+62.1
Shellfish	0.9	1.3	-31.8
Total	2,239.6	1,382.0	+62.1
Palm Beach[b]			
Fish	1,401.2	873.2	+60.5
Shellfish	17.9	36.2	-50.5
Total	1,419.1	909.4	+56.0
Grand Total	10,752.4	9,066.2	+18.6
Fish	9,536.2	7,139.7	+33.6
Shellfish	1,216.2	1,926.5	-36.9

(a) From "Summary of Florida Commercial Marine Landings, 1976", Florida Department of Natural Resources, Division of Marine Resources, Tallahassee, Florida.

TABLE 2.1-24

SUMMARY OF MARINE LANDINGS BY COUNTY, 1976[a]

County	Food Fish Weight (kg)	Non-Food Fish Weight (kg)	Shellfish (excluding Shrimp) Weight (kg)	Shrimp Weight (kg)	Total Weight (kg)
Brevard	1,147,852	282,597	947,229	237,673	2,615,351
Indian River	835,920	373,970	7,769	0	1,217,659
Martin	221,863	16,853	885	0	239,601
Palm Beach	1,401,123	103	17,939	0	1,419,165
St Lucie	3,239,018	16,887	4,743	0	3,260,648
Total	6,845,776	690,410	978,565	237,673	8,752,424

(a) From "Summary of Florida Commercial Marine Landings, 1976", Florida Department of Natural Resources, Division of Marine Resources, Tallahassee, Florida.

TABLE 2.1-25

J.W. CORBETT WILDLIFE MANAGEMENT AREA

HUNTING DATA (a)

Species Common Name	Number Taken Sept 9, 1977 - Jan 7, 1978	Number Taken Jan 8, 1978 - Mar 26, 1978
Deer	71	86
Dove	53	468
Duck	15	6
Hog	197	175
Quail	658	10,569
Rabbit	8	82
Raccoon	13	7
Snipe	226	661
Squirrel	50	43
Turkey	0	3

(a) From data provided by B. Lusander, J.W. Corbett Wildlife Management District, January, 1979.

TABLE 2.1-26

RECREATIONAL WATER USE WITHIN 50 MILES OF ST LUCIE UNIT 2

Recreational Activity	Average Daily per Capita Participation Rate: Residents(1)	Tourists(2)	Average Daily Recreational Saltwater Users within 50 miles of St Lucie Unit 2: 1981	1983	1990	2000	2010	2020	2030
Beach Activities (saltwater)	.1095	.3264	105,925	121,861	148,446	202,608	239,690	281,770	320,501
Fishing (saltwater)	.0403	.0221	26,017	29,512	36,281	46,816	55,944	67,433	77,940
Boating (saltwater)									
Power Boating	.0362	.0550	28,020	32,009	39,170	52,004	61,823	73,577	84,359
Sailing	.0018	.0157	3,108	3,260	4,375	6,256	7,342	8,455	9,487
Surfing	.0017	.0279	4,665	5,464	6,579	9,609	11,238	12,822	14,296
Population within 50 miles of St Lucie Unit 2 (see Section 2.1.2)									
Resident			573,048	646,499	797,597	1,006,452	1,207,647	1,470,390	1,710,139
Peak Daily Tourists and Seasonal Visitors (3)			132,280	156,464	187,222	283,092	329,204	369,984	408,213

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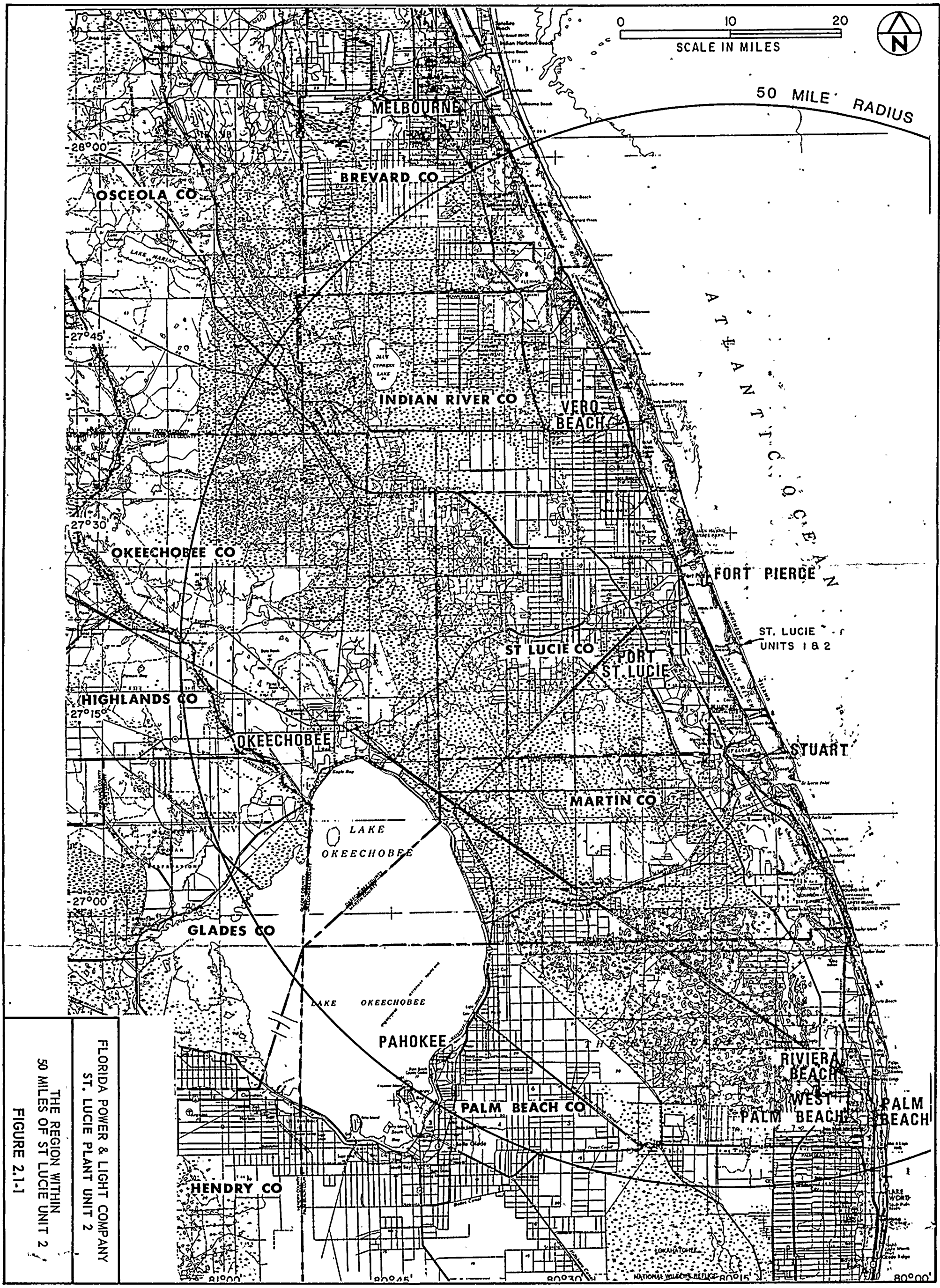
Notes:

(1) Assumes that daily usage of resident population is limited to weekends, May through October. Therefore, the annual per capita resident participation rate (e.g., 6.57 for beach activities) is divided by 60, the number of weekend days from May through October, to get the average daily per capita participation rate (e.g., 0.1095 for beach activities). Region X rates used.

(2) Assumes that tourists stay 13 days. Annual per capita rates are therefore divided by 13. Region X rates used.

(3) Figures from Table 2.1-5 extended to 50 miles by utilizing ratios of transient to resident population from Tables 2.1-1 and 2.1-5.

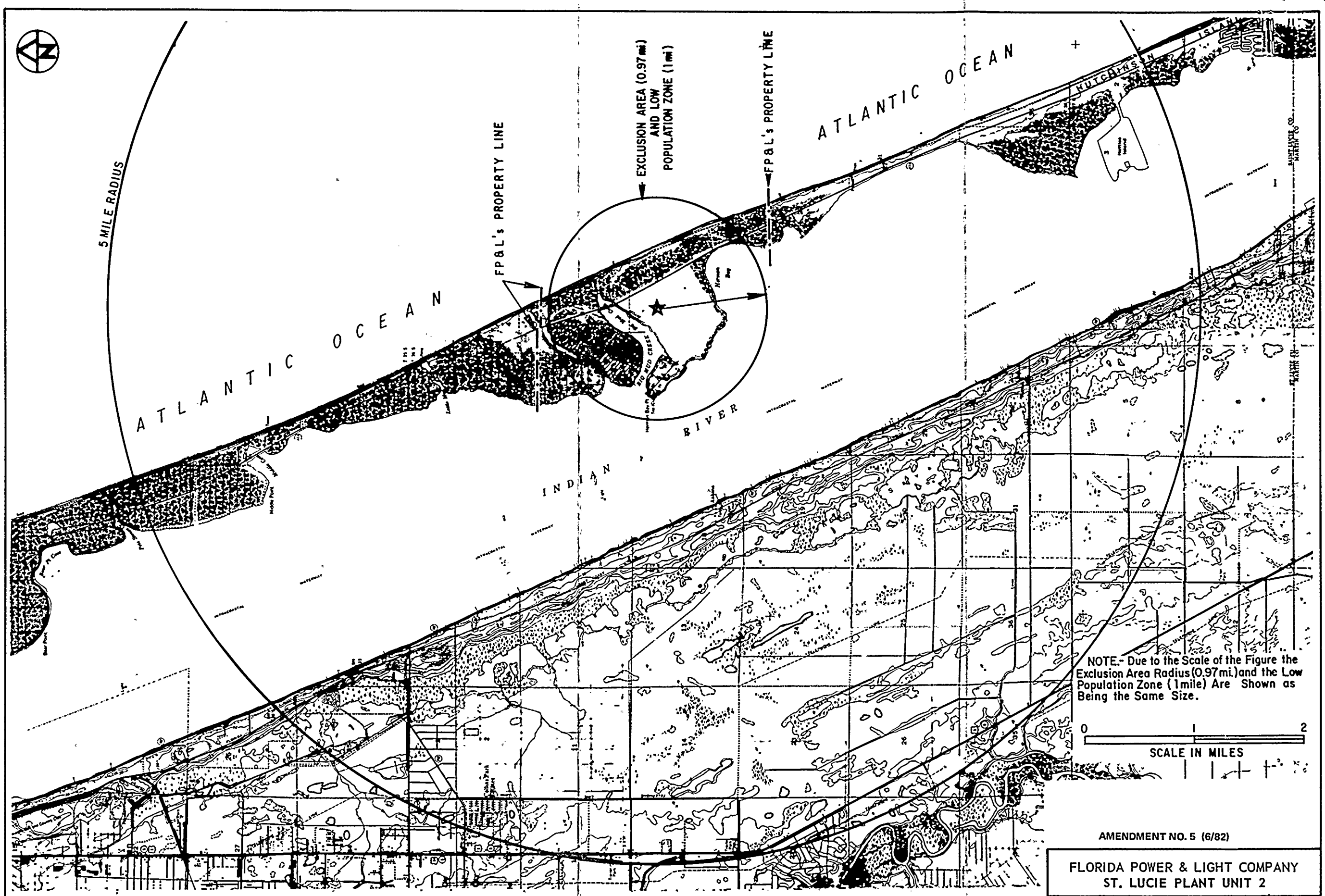
Sources: Outdoor Recreation in Florida 1976. State of Florida Dept of Natural Resources, Division of Recreation and Parks, Tallahassee, Florida, May, 1976.
1977 Florida Tourist Study, An Executive Summary, Florida Department of State, Division of Tourism, Tallahassee, Florida, 1977.



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

THE REGION WITHIN
50 MILES OF ST LUCIE UNIT 2

FIGURE 2.1-1

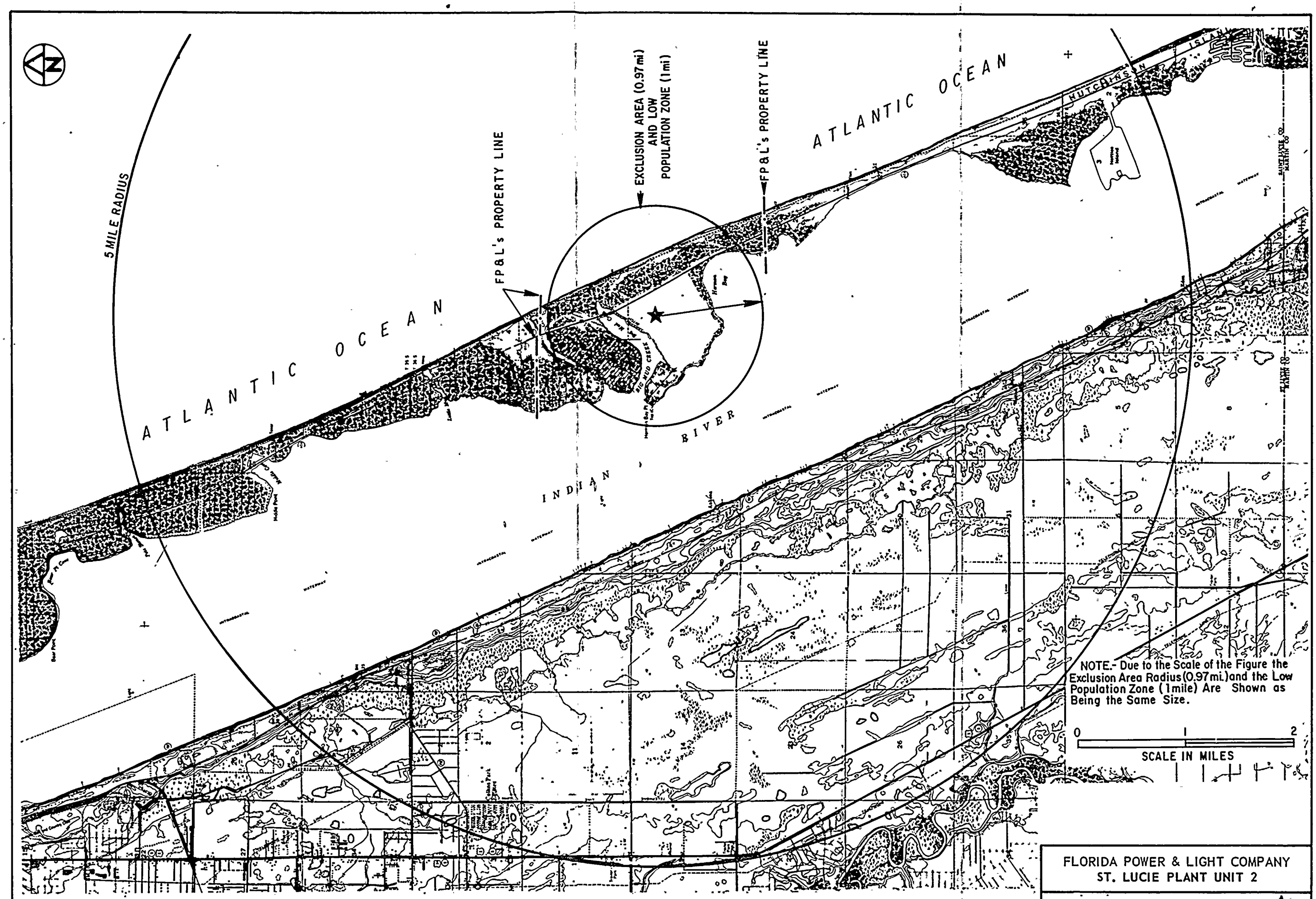


AMENDMENT NO. 5 (6/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

THE AREA WITHIN 5 MILES
OF ST LUCIE UNIT 2

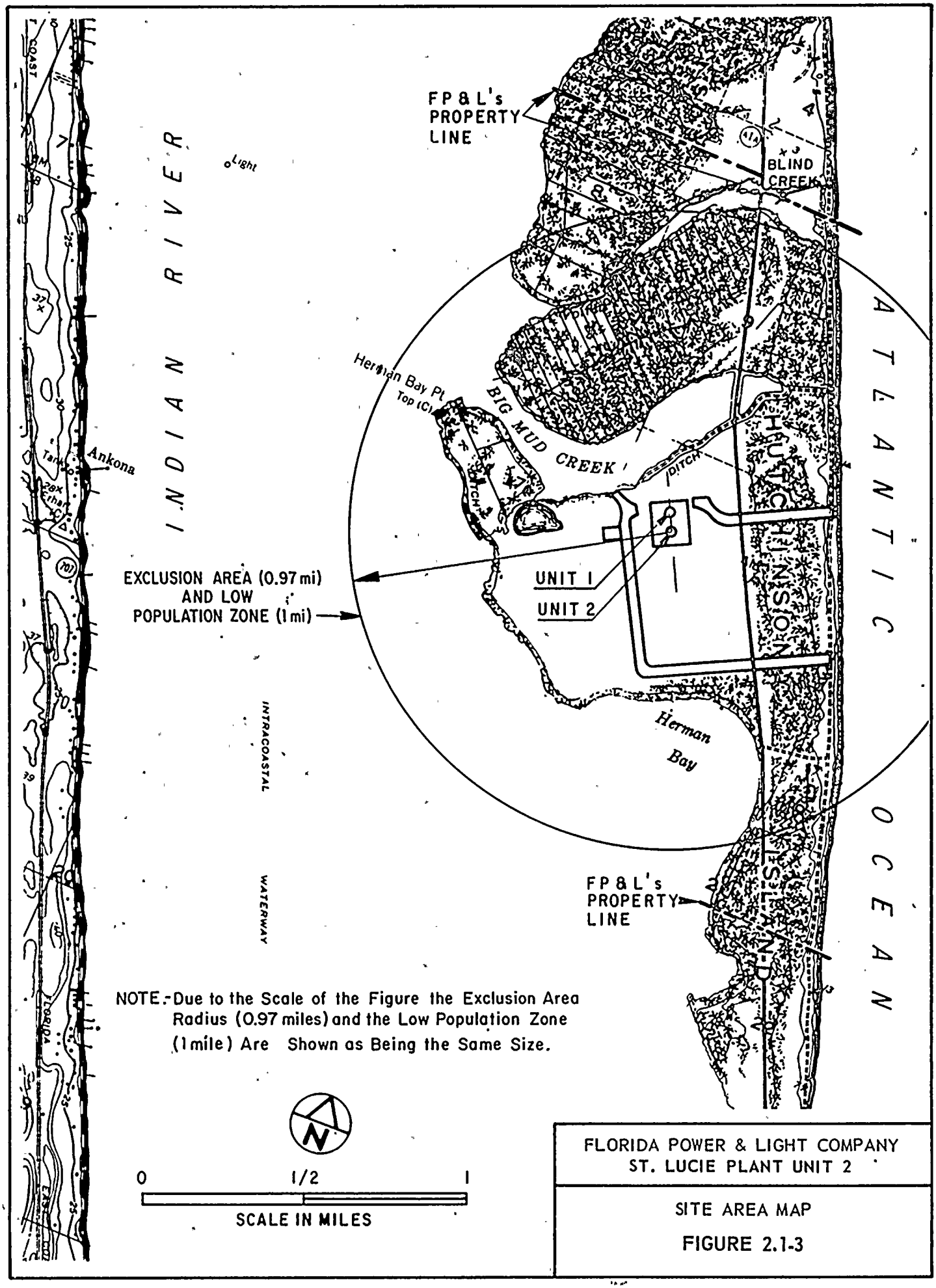
FIGURE 1



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

THE AREA WITHIN
5 MILES OF ST LUCIE UNIT 2

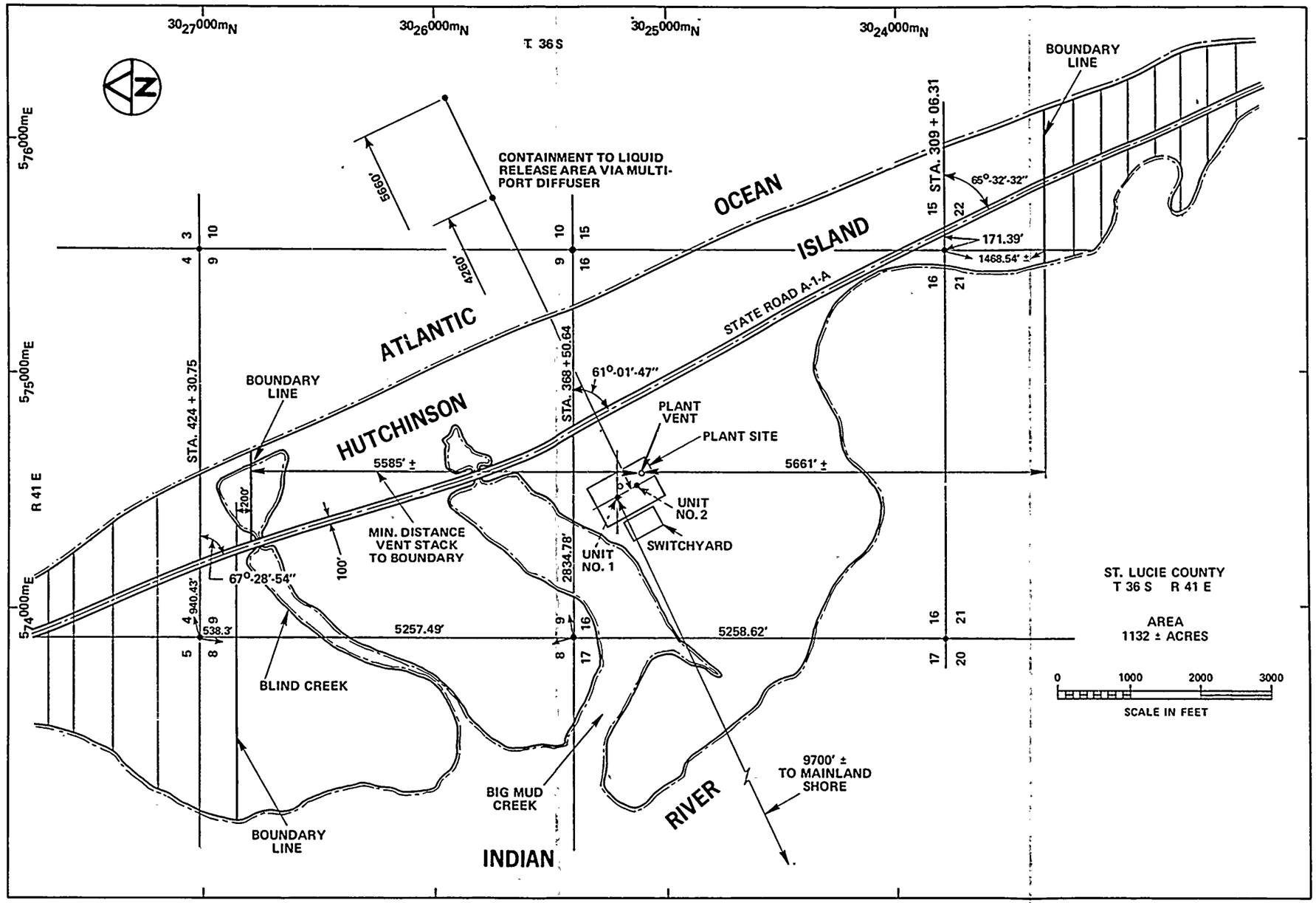
FIGURE 2.1-2



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

SITE AREA MAP

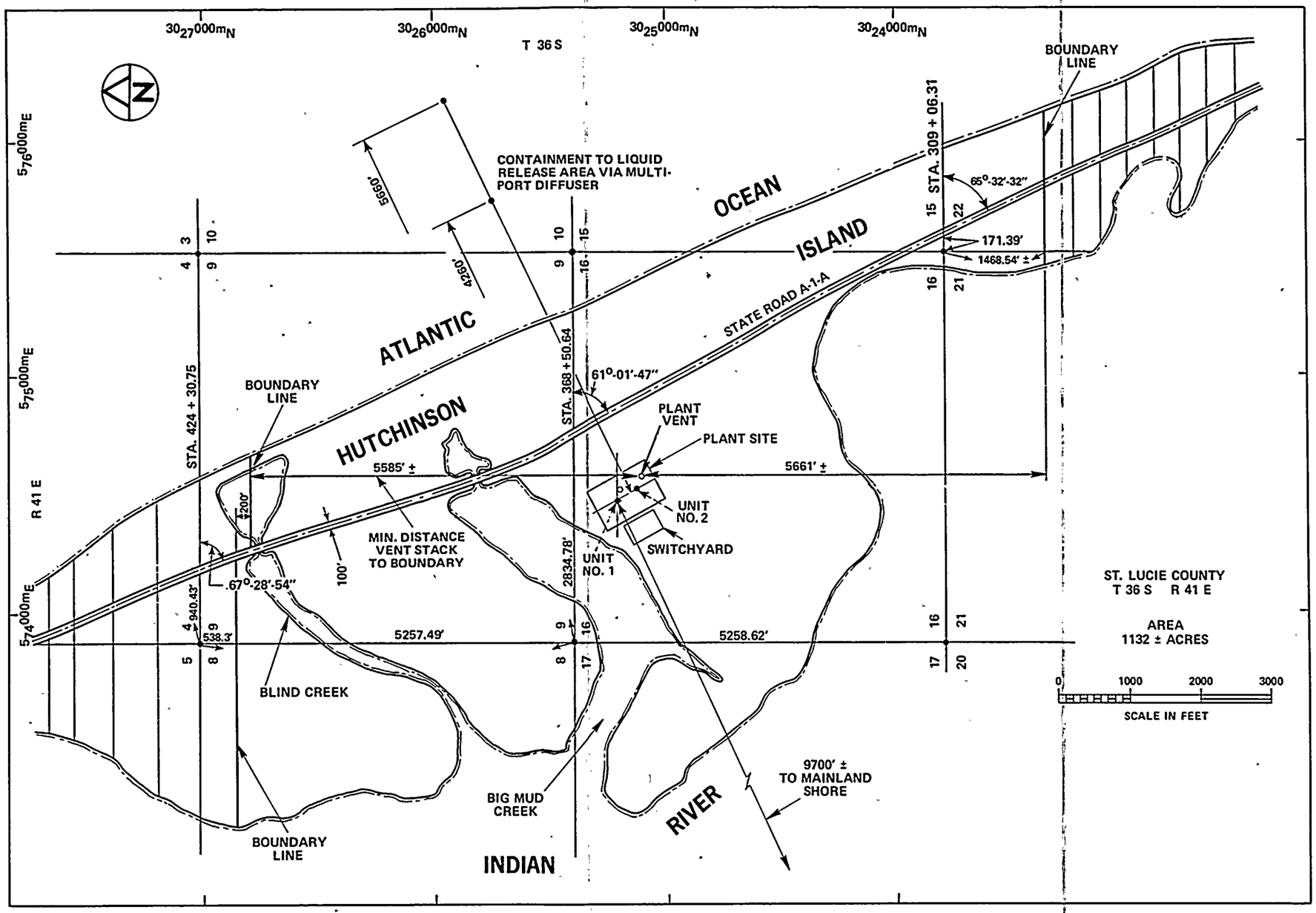
FIGURE 2.1-3



AMENDMENT NO. 5 (6/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

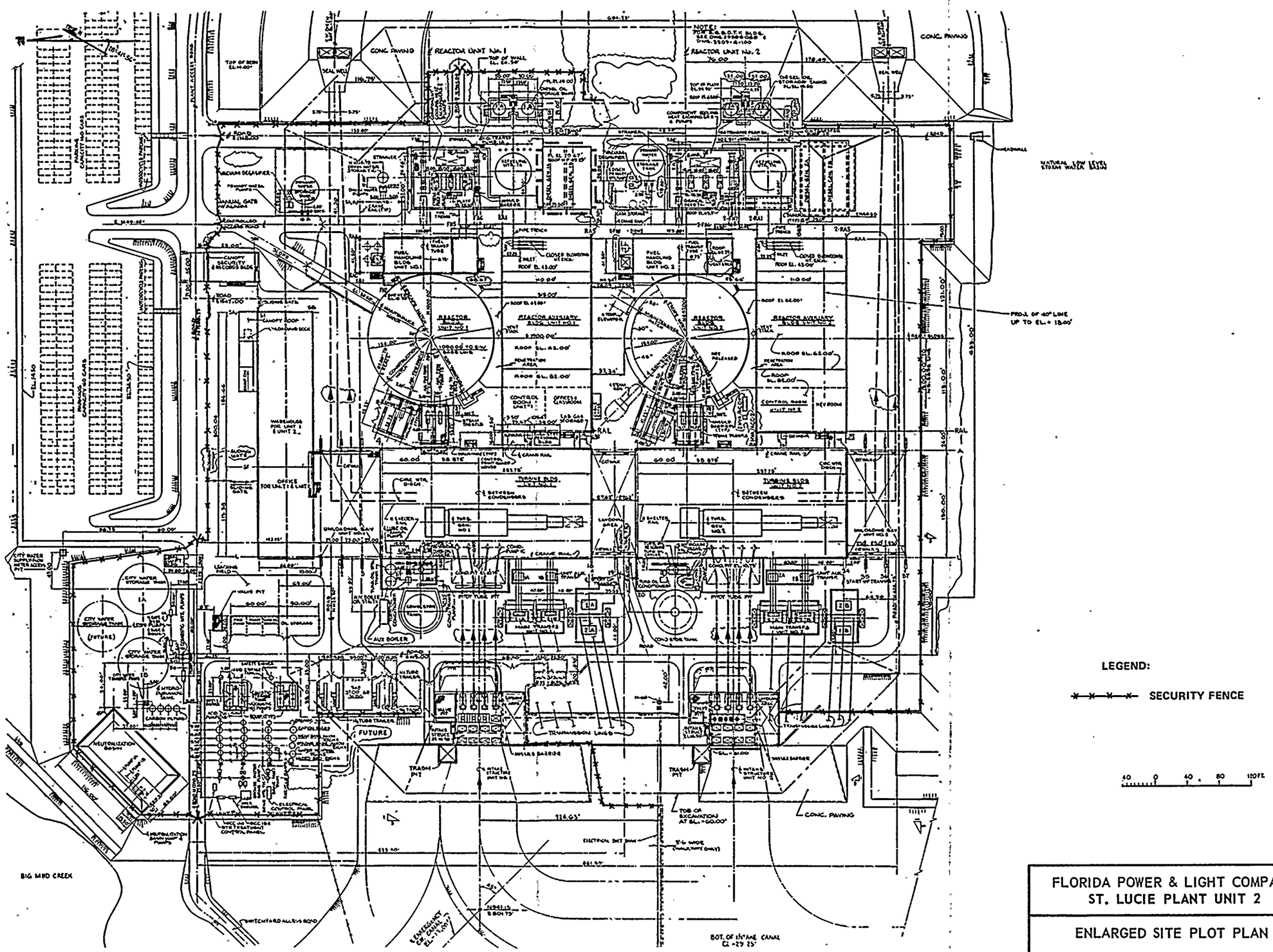
PROPERTY PLAN
FIGURE 2

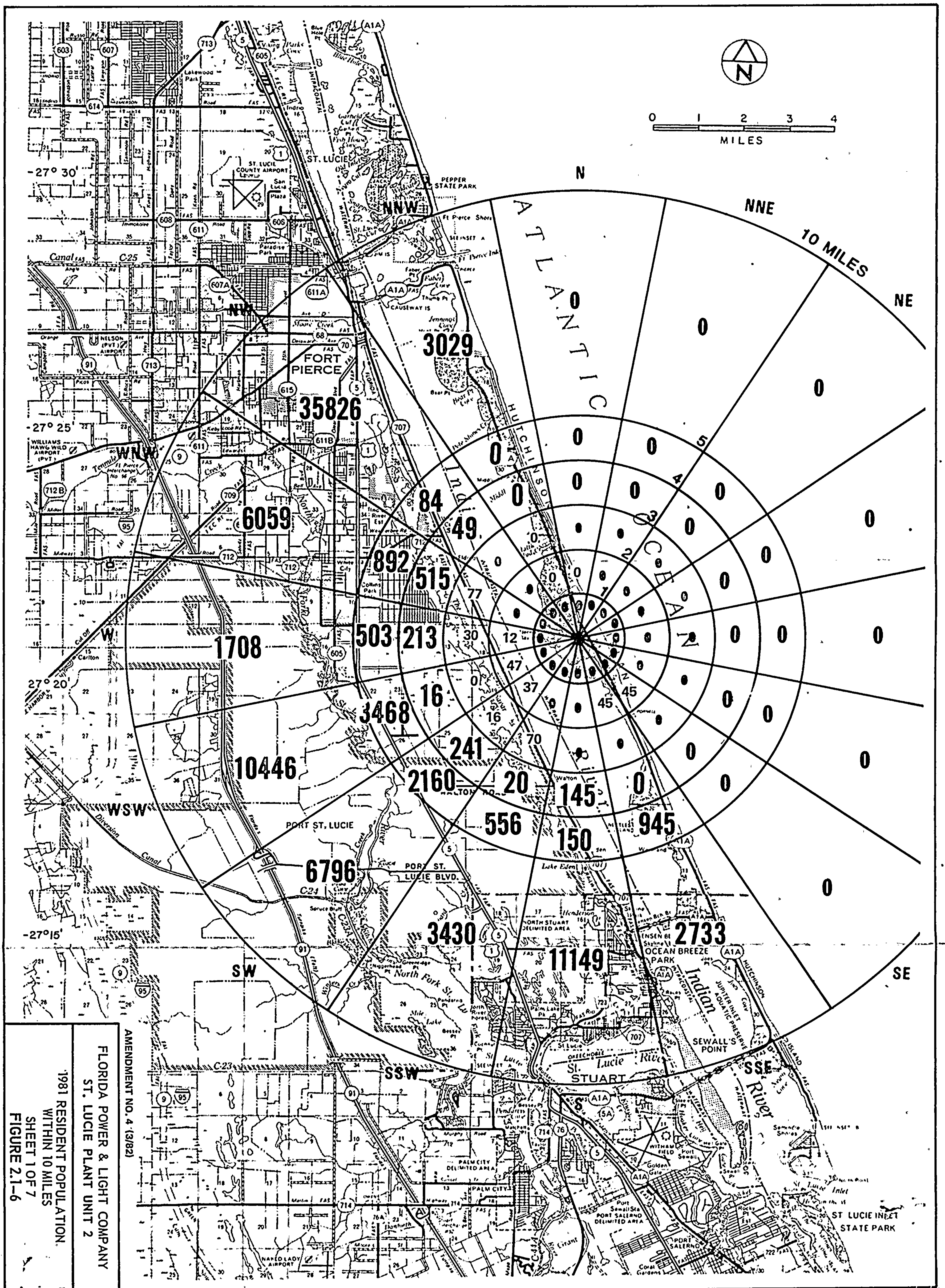


FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

PROPERTY PLAN

FIGURE 2.1-4

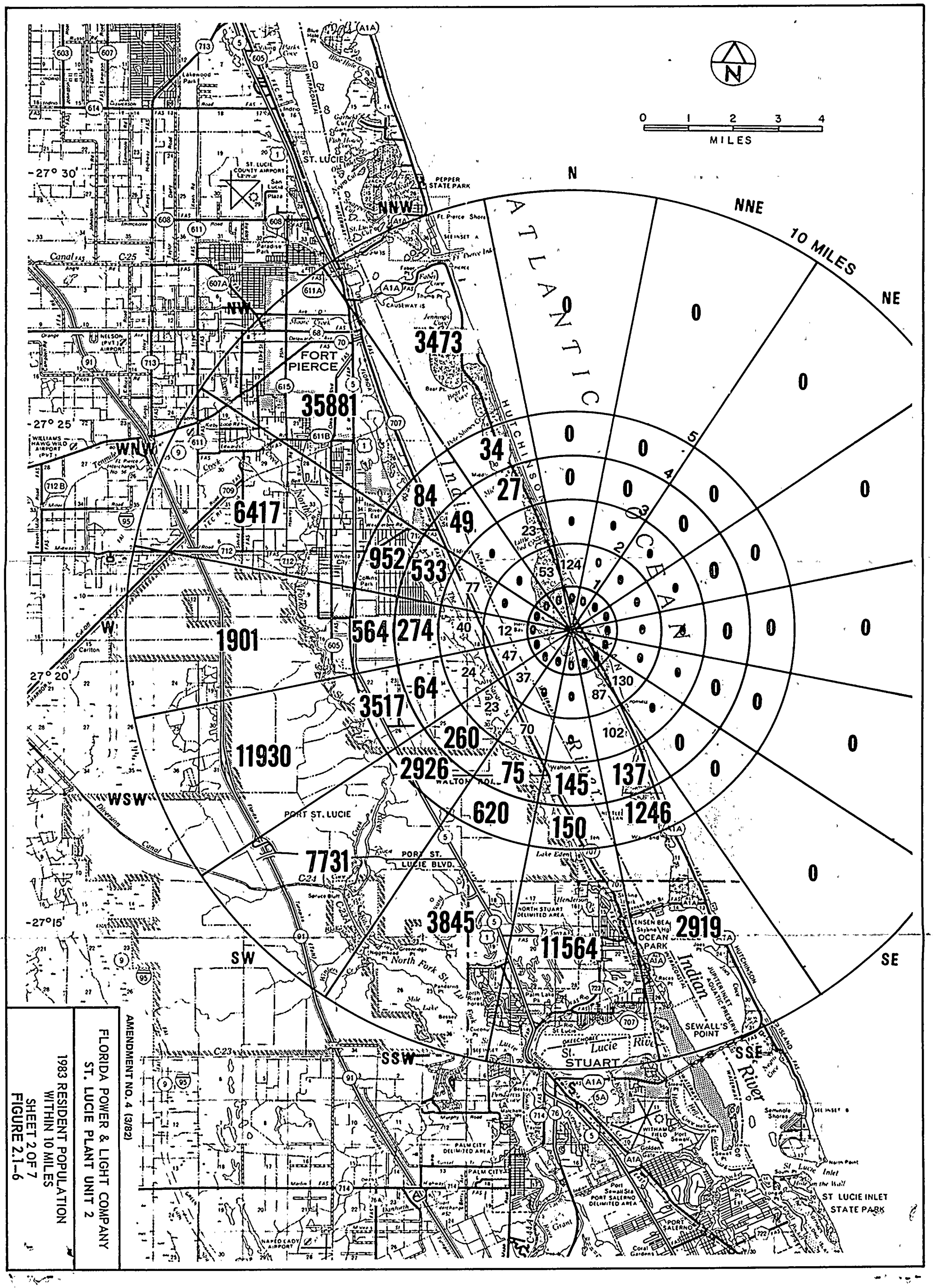

REACTOR UNIT No. 1
REACTOR UNIT No. 2
CONC. PAVING
NATURAL LOW LEVEL STORM WATER BASIN
PROJ. OF 40" LINE UP TO EL. + 18.00'
BIG MUD CREEK
FUTURE
LEGEND:
SECURITY FENCE
FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2
ENLARGED SITE PLOT PLAN
FIGURE 2.1-5
REF DWG: 2998-G-059 (REV. 3)



AMENDMENT NO. 4 (3/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

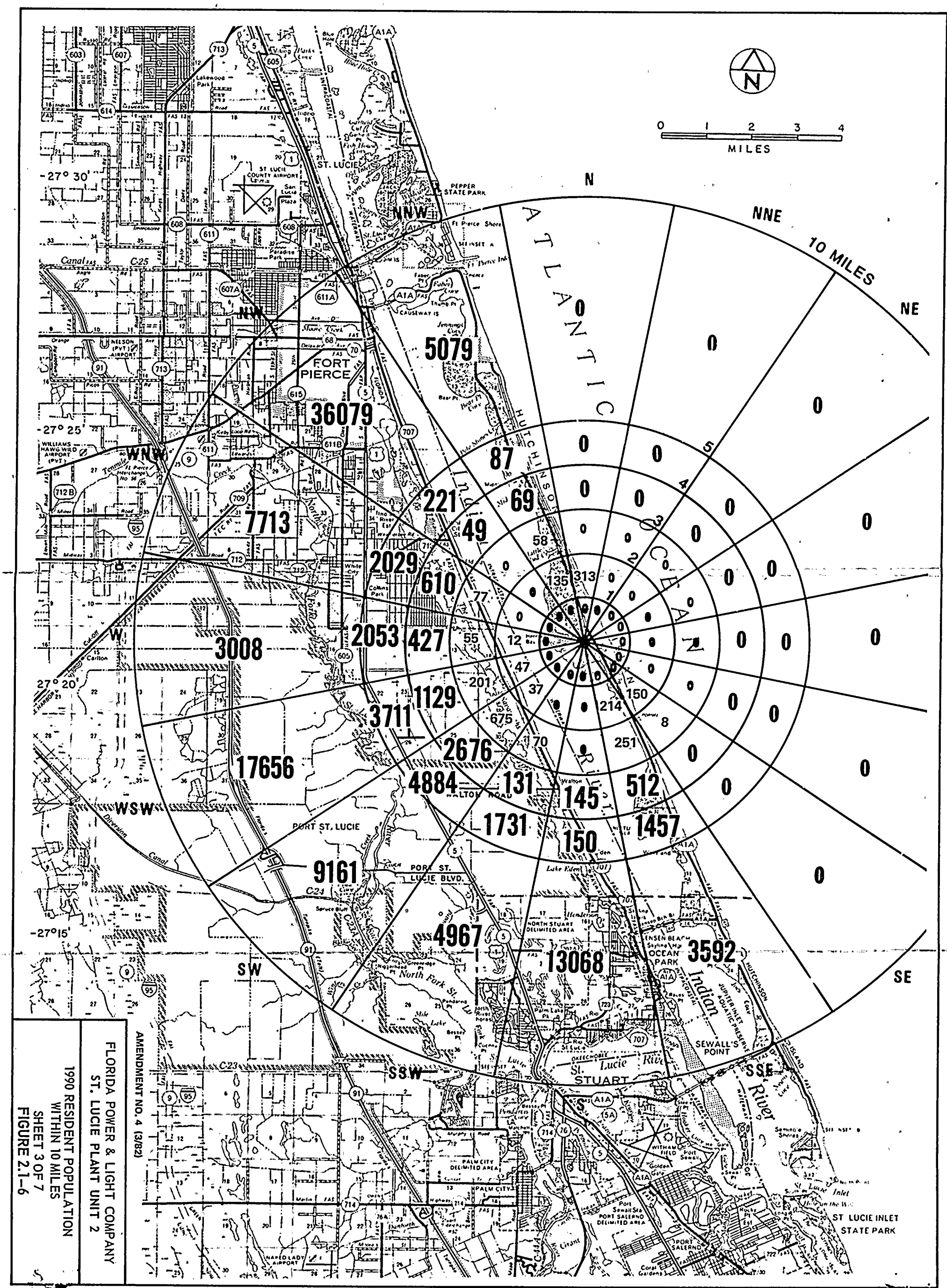
1981 RESIDENT POPULATION WITHIN 10 MILES
SHEET 1 OF 7
FIGURE 2.1-6



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

1983 RESIDENT POPULATION
WITHIN 10 MILES
SHEET 2 OF 7
FIGURE 2.1–6

AMENDMENT NO. 4 (3/82)

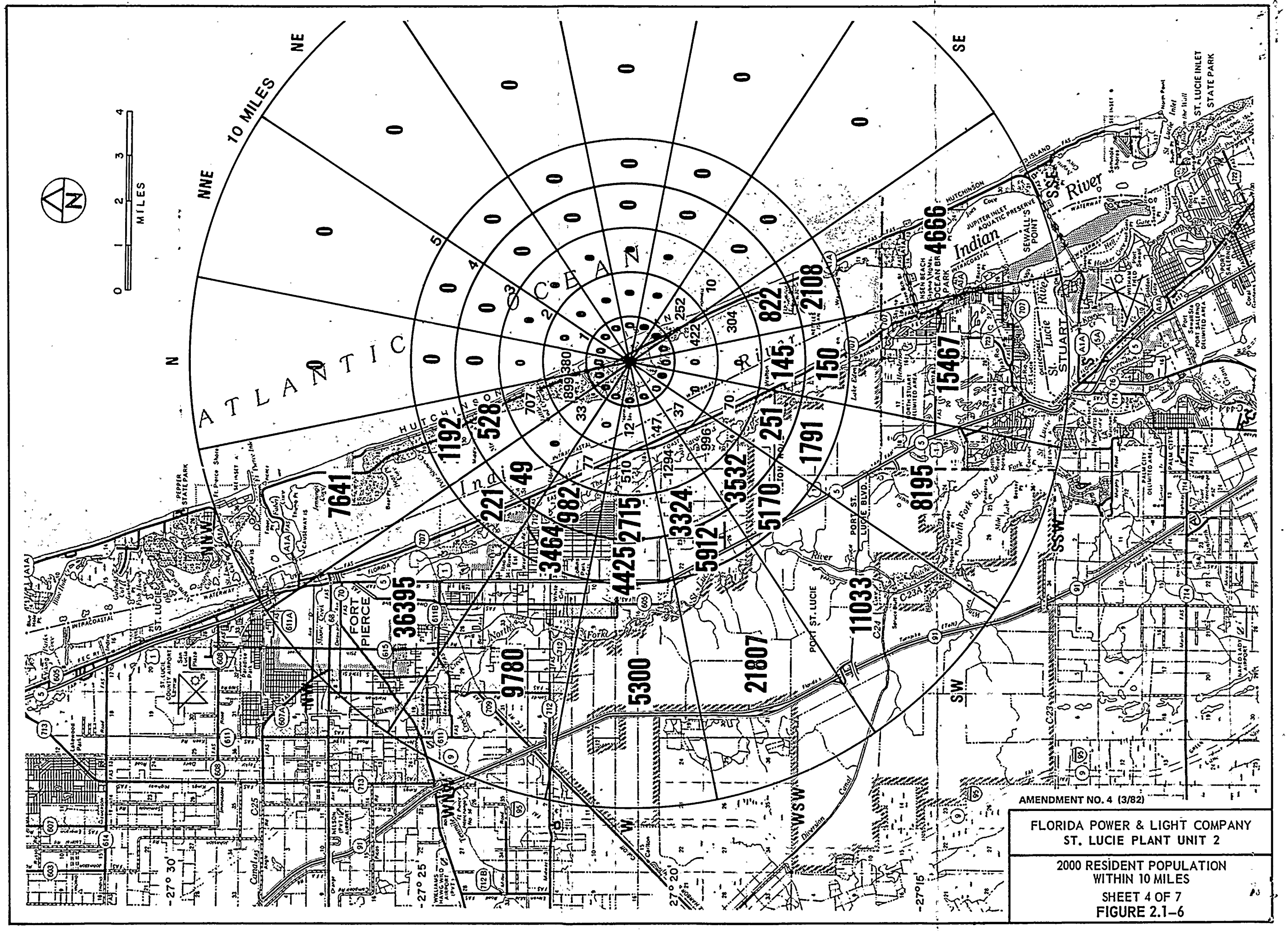


FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

1990 RESIDENT POPULATION
WITHIN 10 MILES

SHEET 3 OF 7
FIGURE 2.1-6

AMENDMENT NO. 4 (3/82)



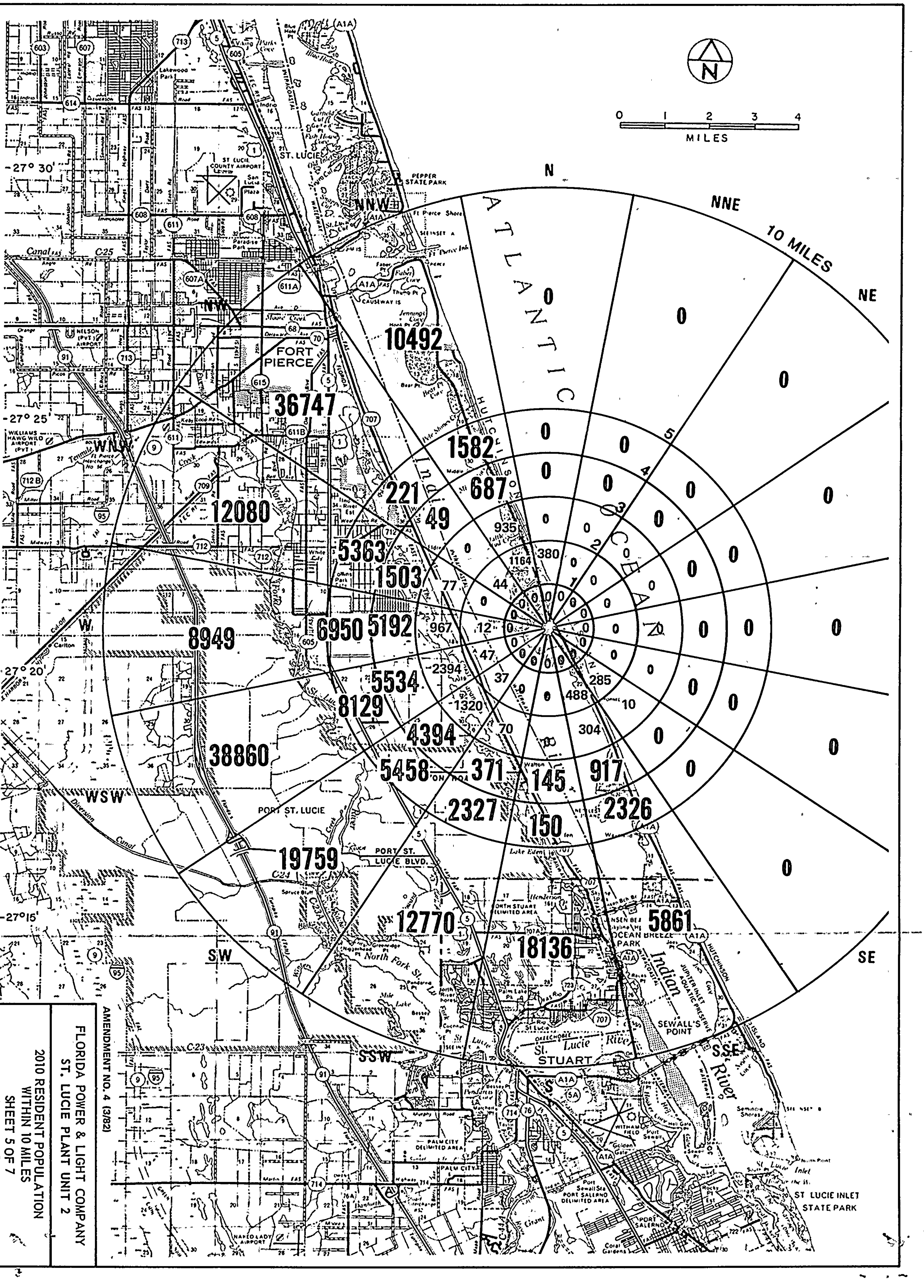
AMENDMENT NO. 4 (3/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

2000 RESIDENT POPULATION
WITHIN 10 MILES

SHEET 4 OF 7

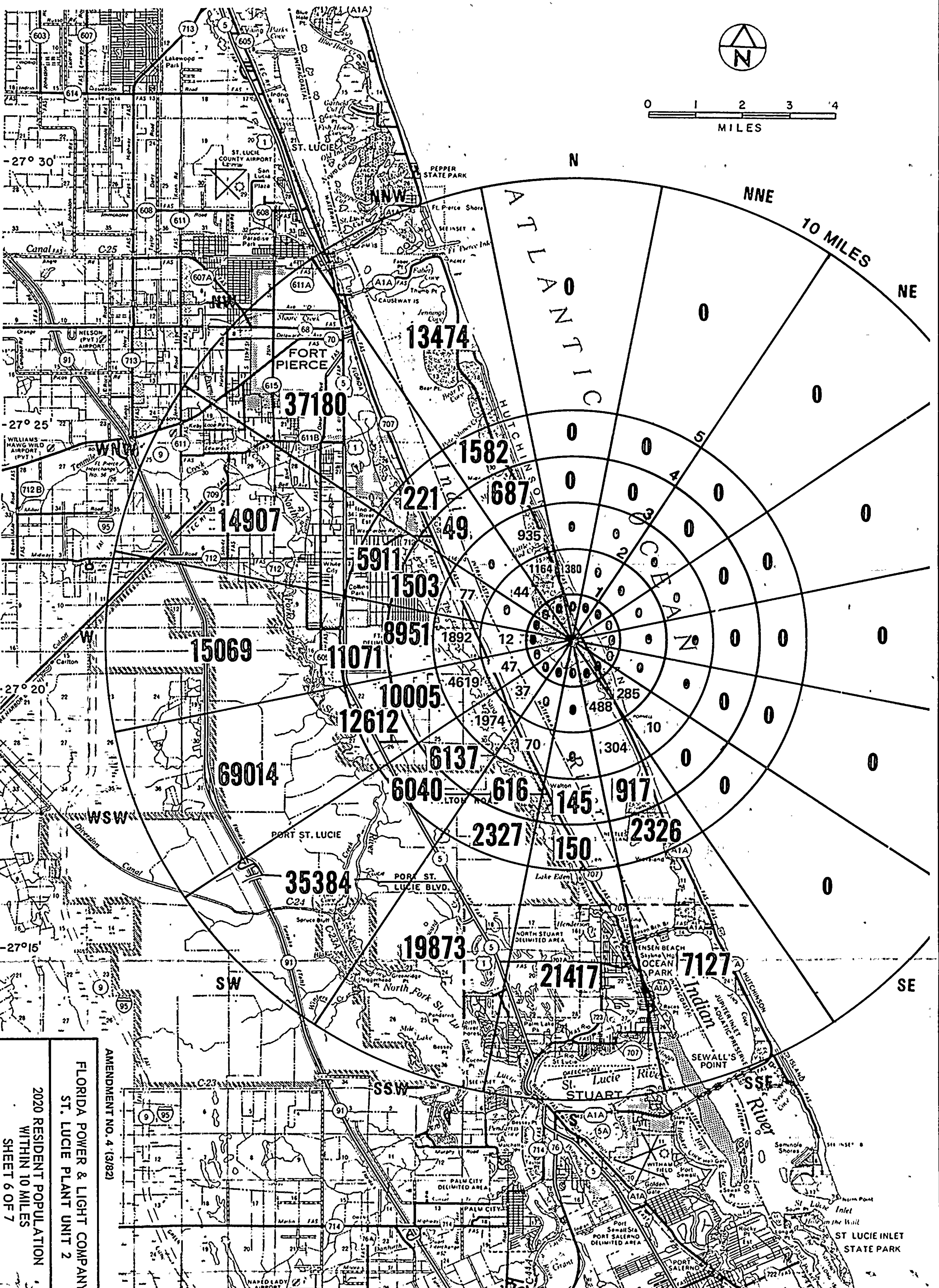
FIGURE 2.1–6



AMENDMENT NO. 4 (3/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

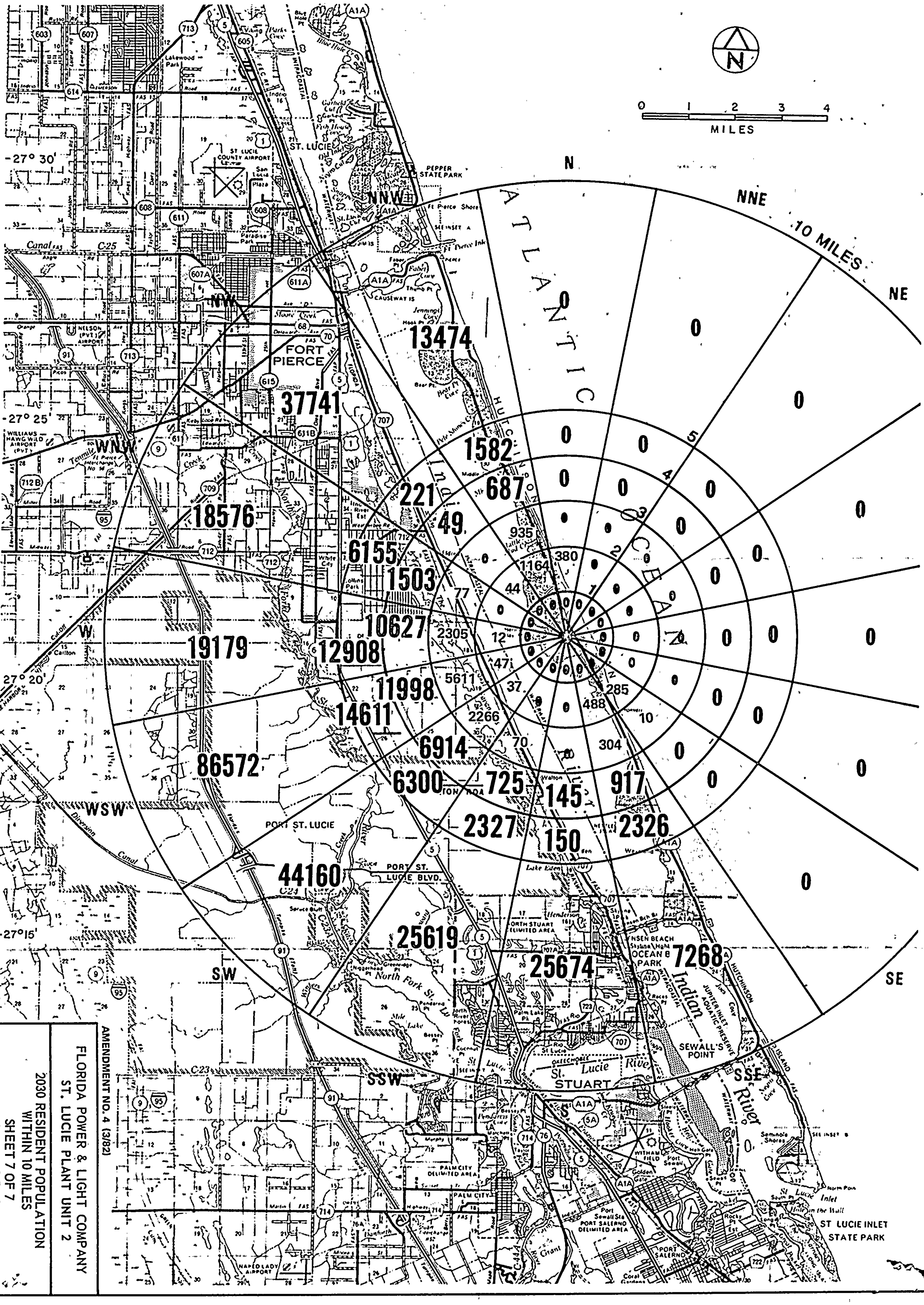
2010 RESIDENT POPULATION
WITHIN 10 MILES
SHEET 5 OF 7
FIGURE 2.1-6



AMENDMENT NO. 4 (3/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

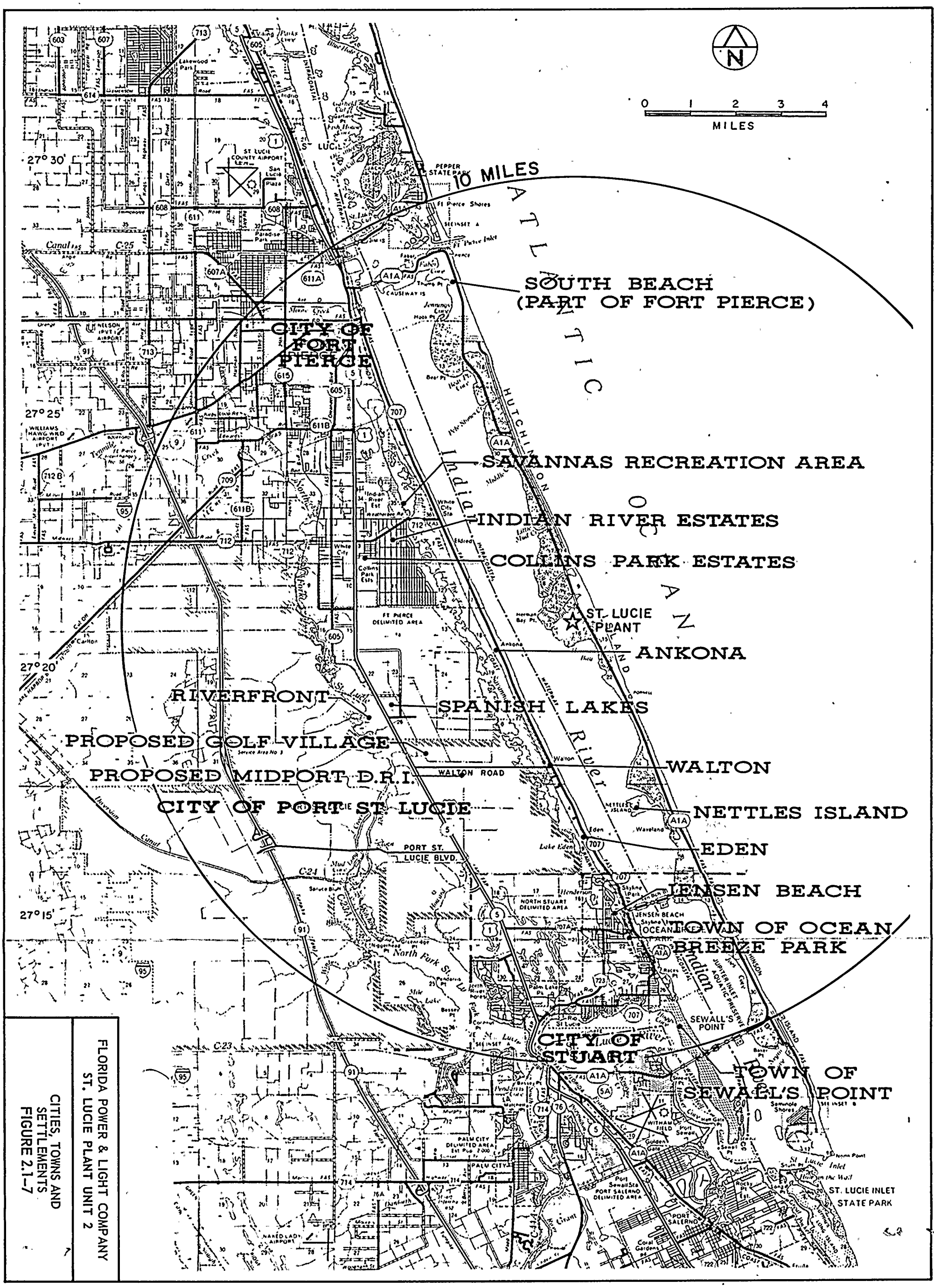
2020 RESIDENT POPULATION
WITHIN 10 MILES
SHEET 6 OF 7
FIGURE 2.1-6



AMENDMENT NO. 4 (3/82)

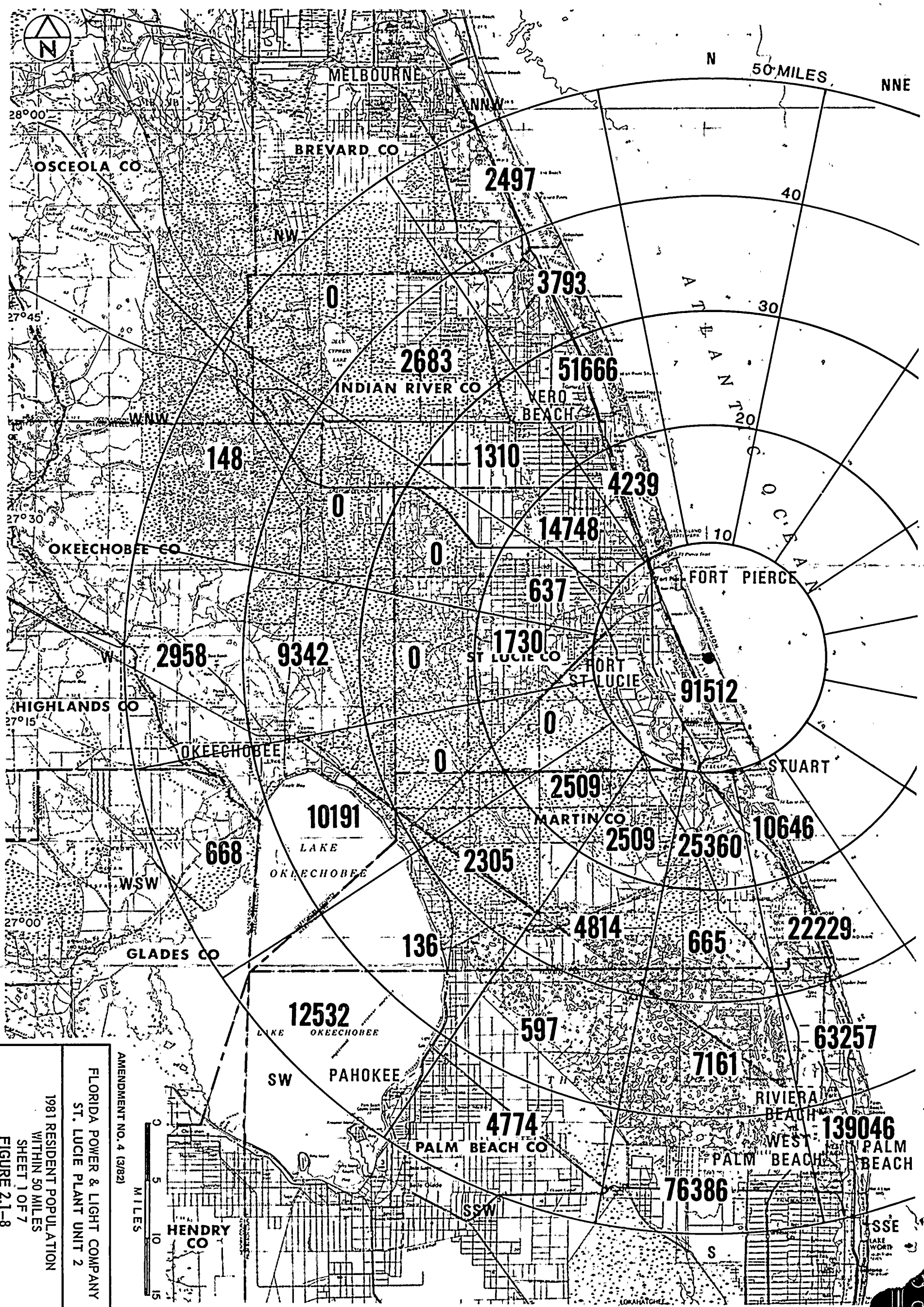
FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

2030 RESIDENT POPULATION
WITHIN 10 MILES
SHEET 7 OF 7
FIGURE 2.1-6



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

CITIES, TOWNS AND SETTLEMENTS
FIGURE 2.1-7

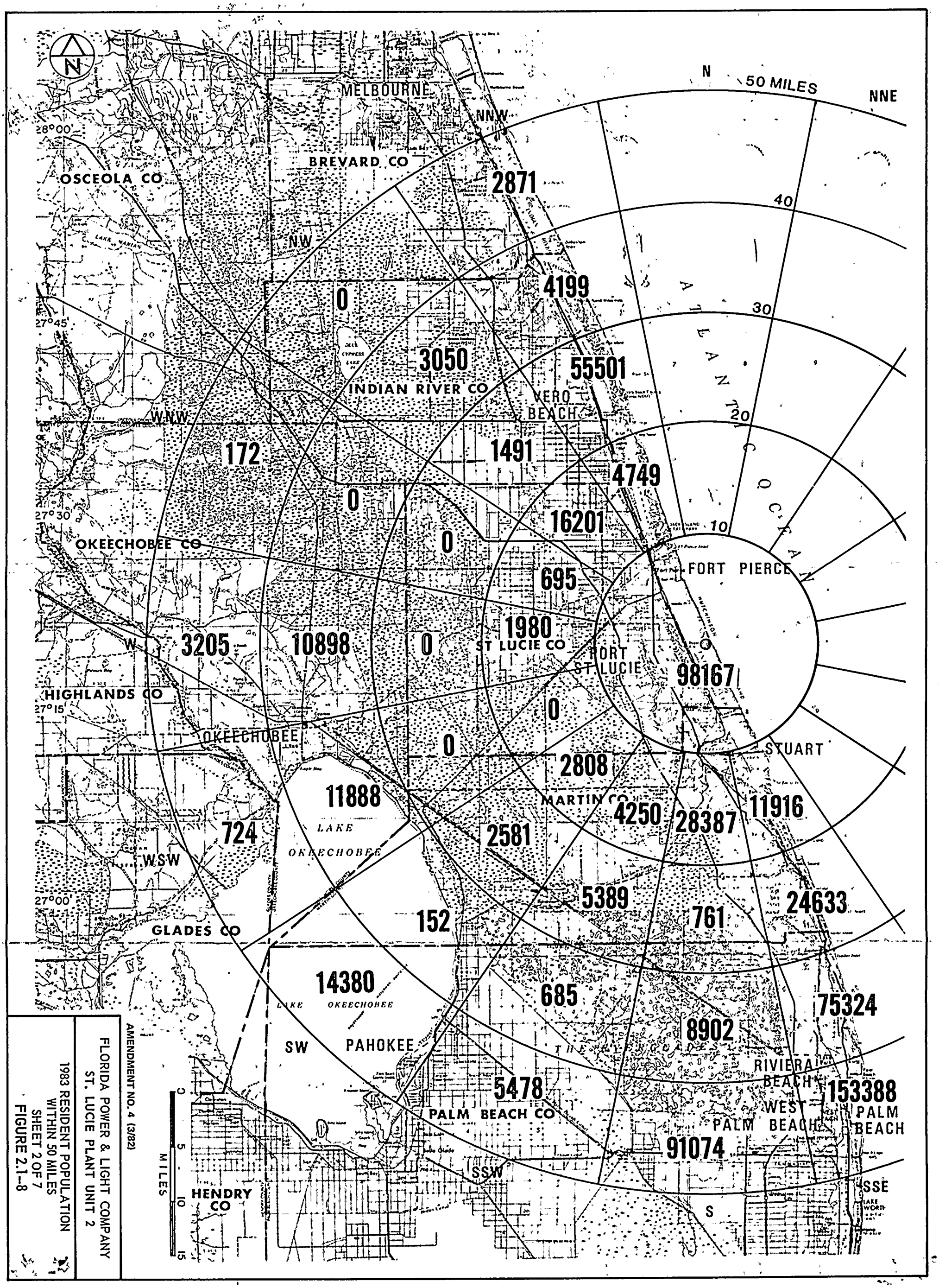


FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

1981 RESIDENT POPULATION
WITHIN 50 MILES
SHEET 1 OF 7

FIGURE 2.1–8

AMENDMENT NO. 4 (3/82)

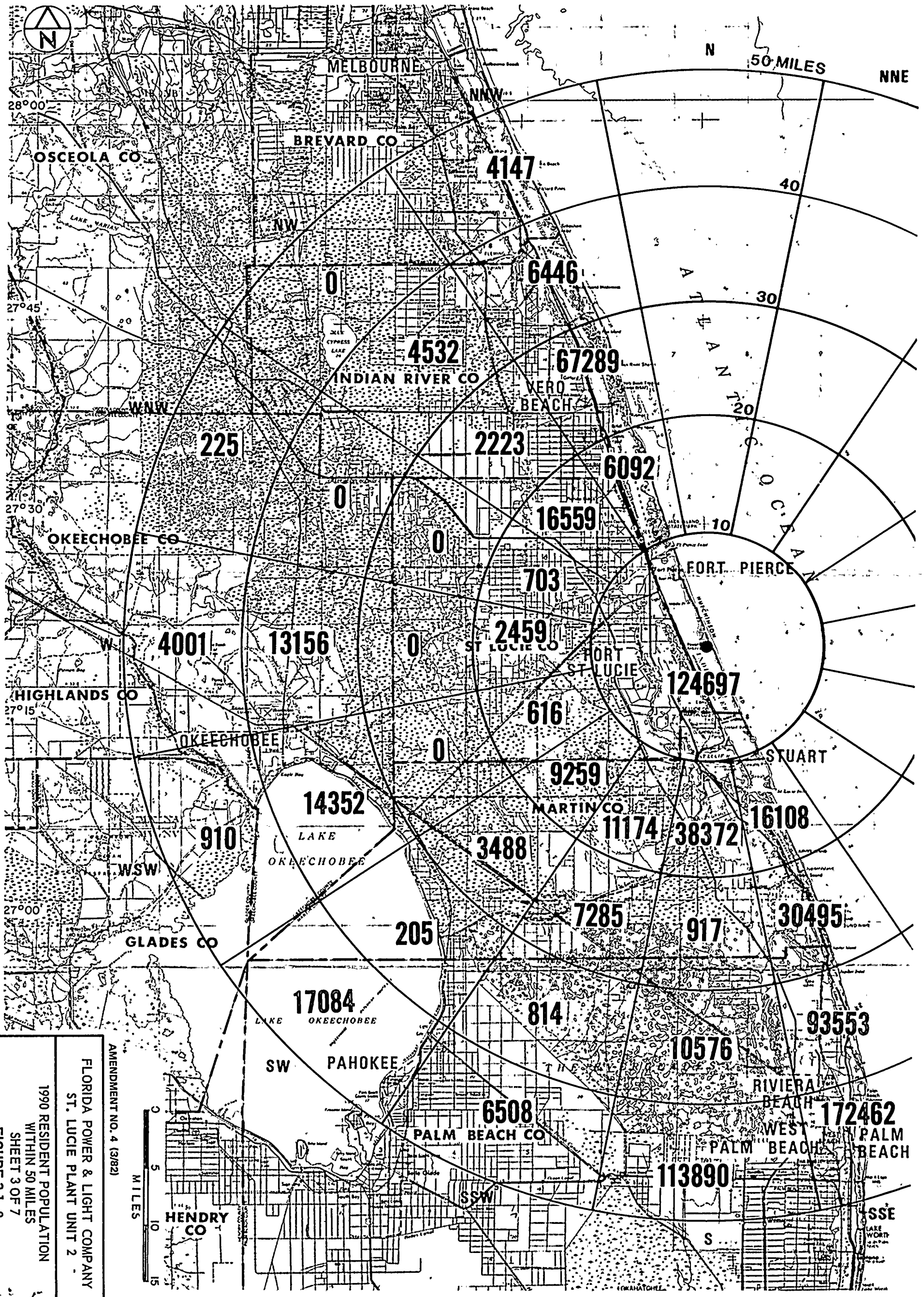


FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

1983 RESIDENT POPULATION
WITHIN 50 MILES
SHEET 2 OF 7

FIGURE 2.1-8

AMENDMENT NO. 4 (3/82)

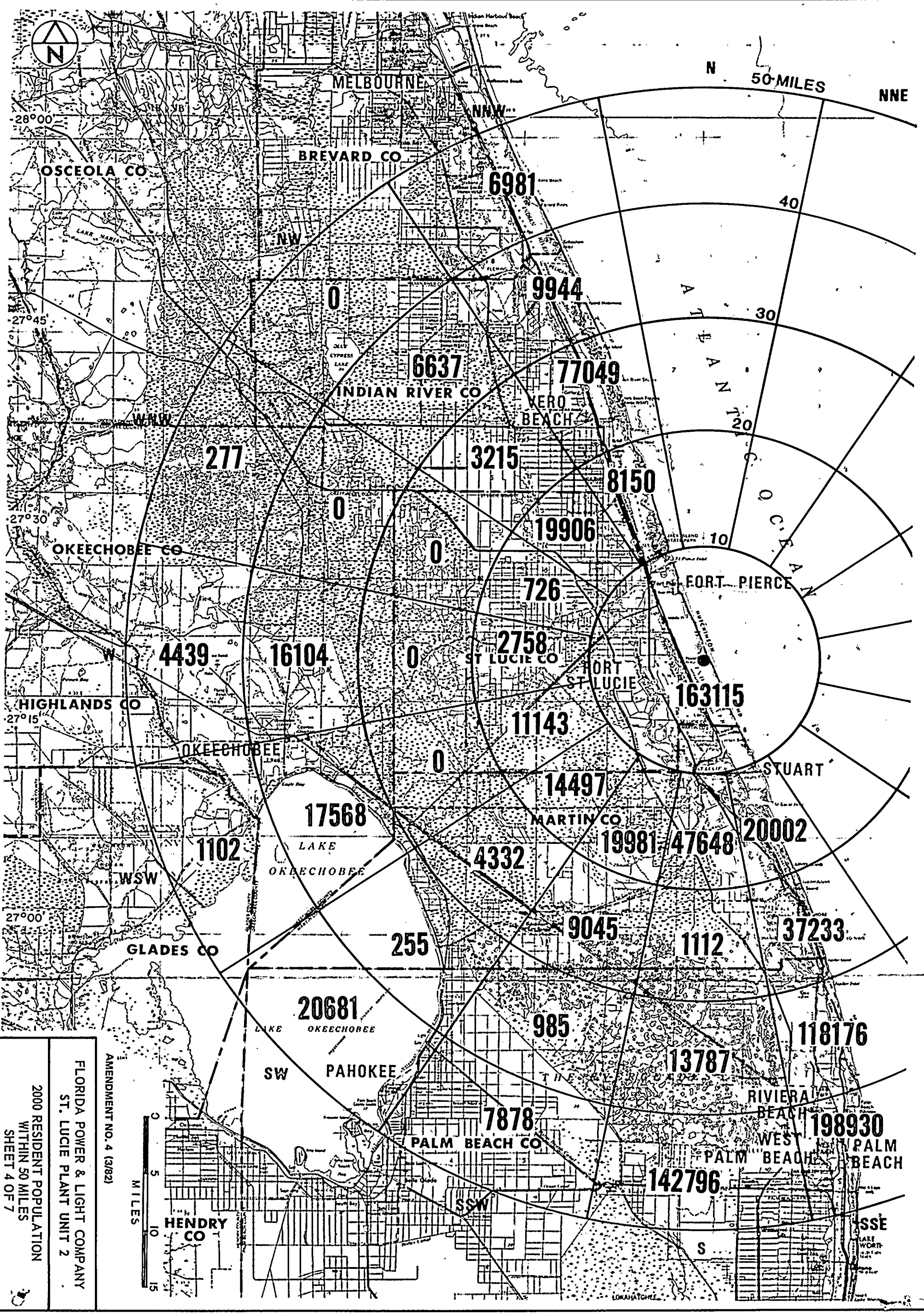


FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

1990 RESIDENT POPULATION
WITHIN 50 MILES
SHEET 3 OF 7

FIGURE 2.1-8

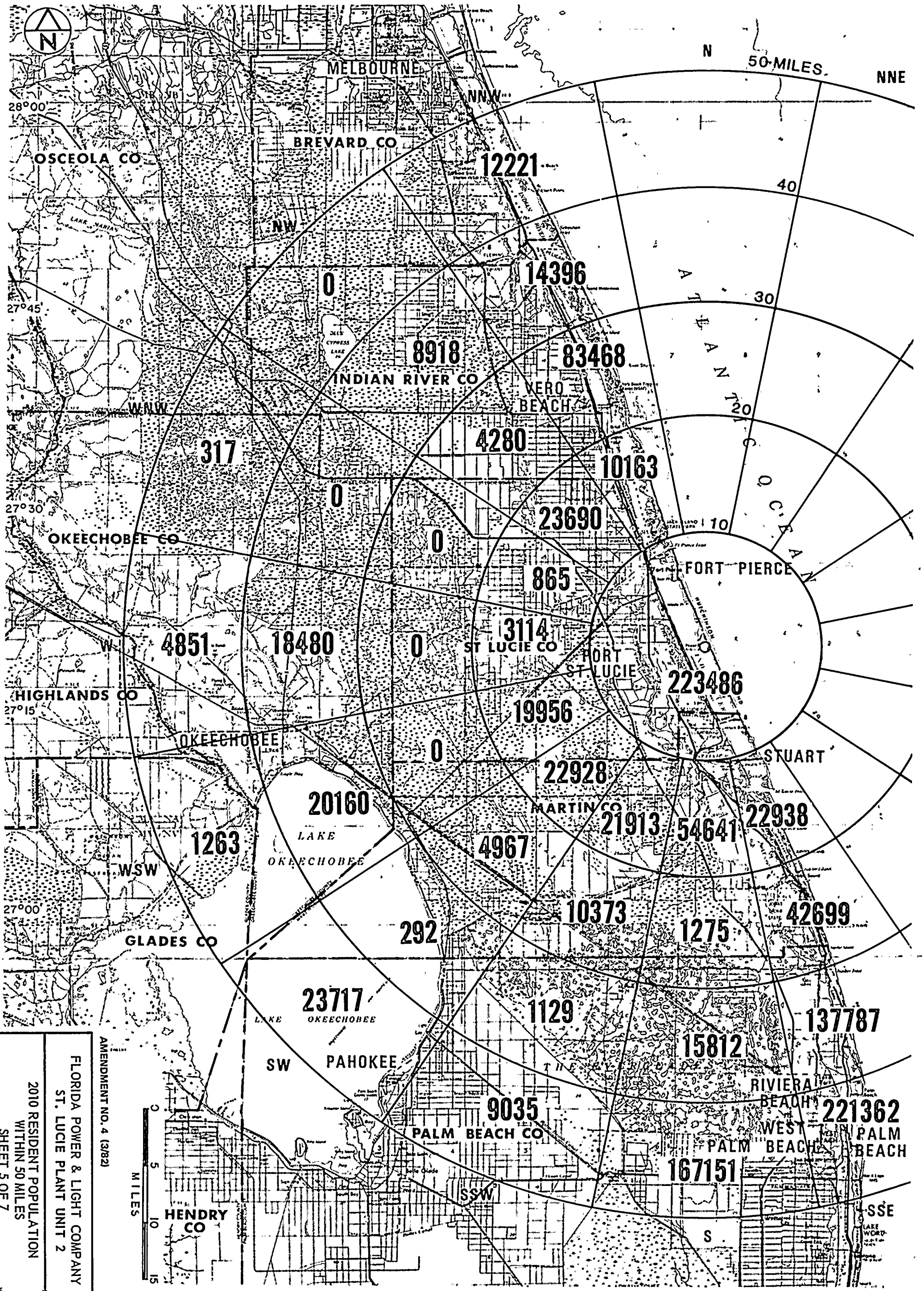
AMENDMENT NO. 4 (3/82)



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

2000 RESIDENT POPULATION
WITHIN 50 MILES
SHEET 4 OF 7

FIGURE 2.1-8

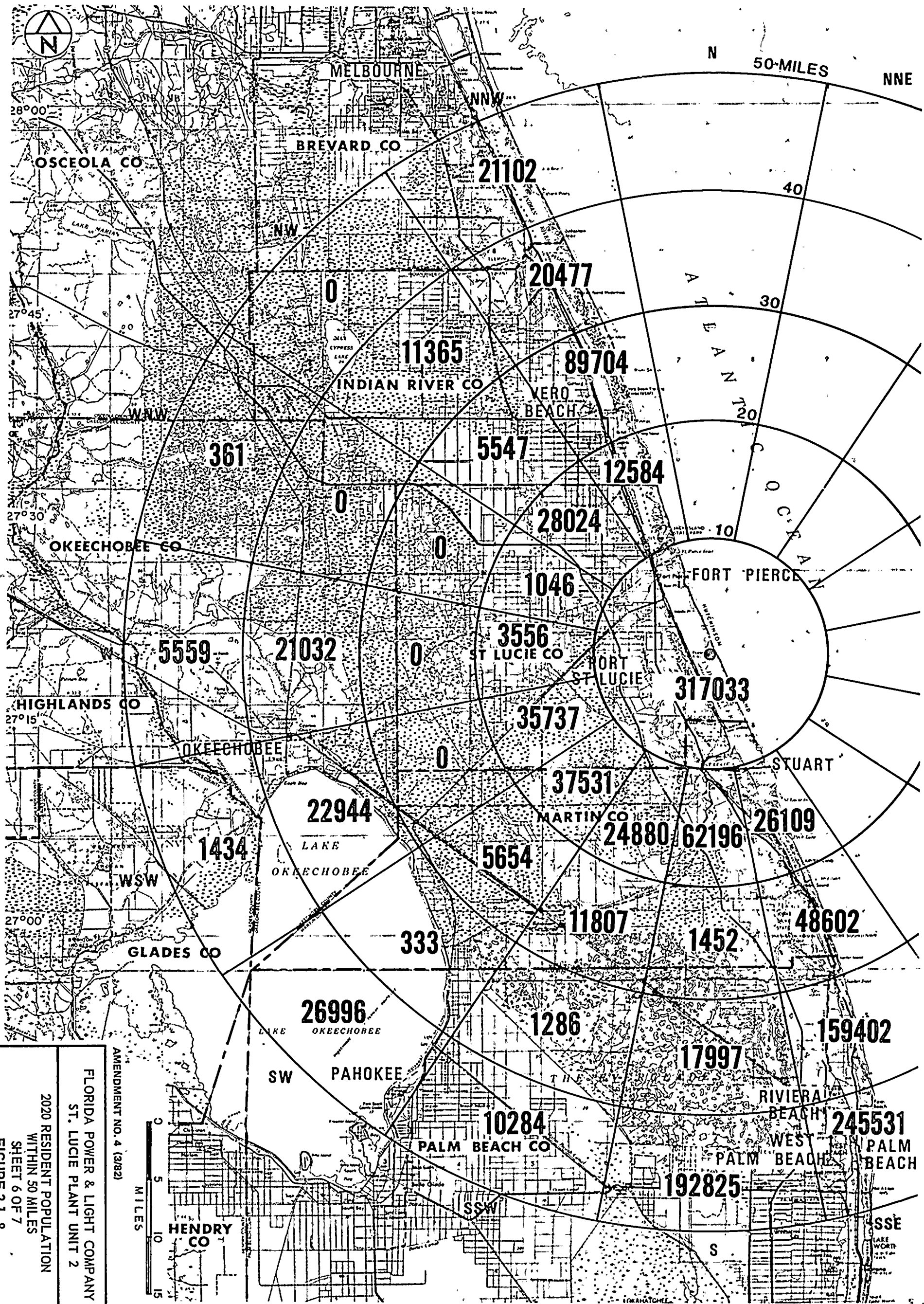


AMENDMENT NO. 4 (3/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

2010 RESIDENT POPULATION
WITHIN 50 MILES
SHEET 5 OF 7

FIGURE 2.1-8

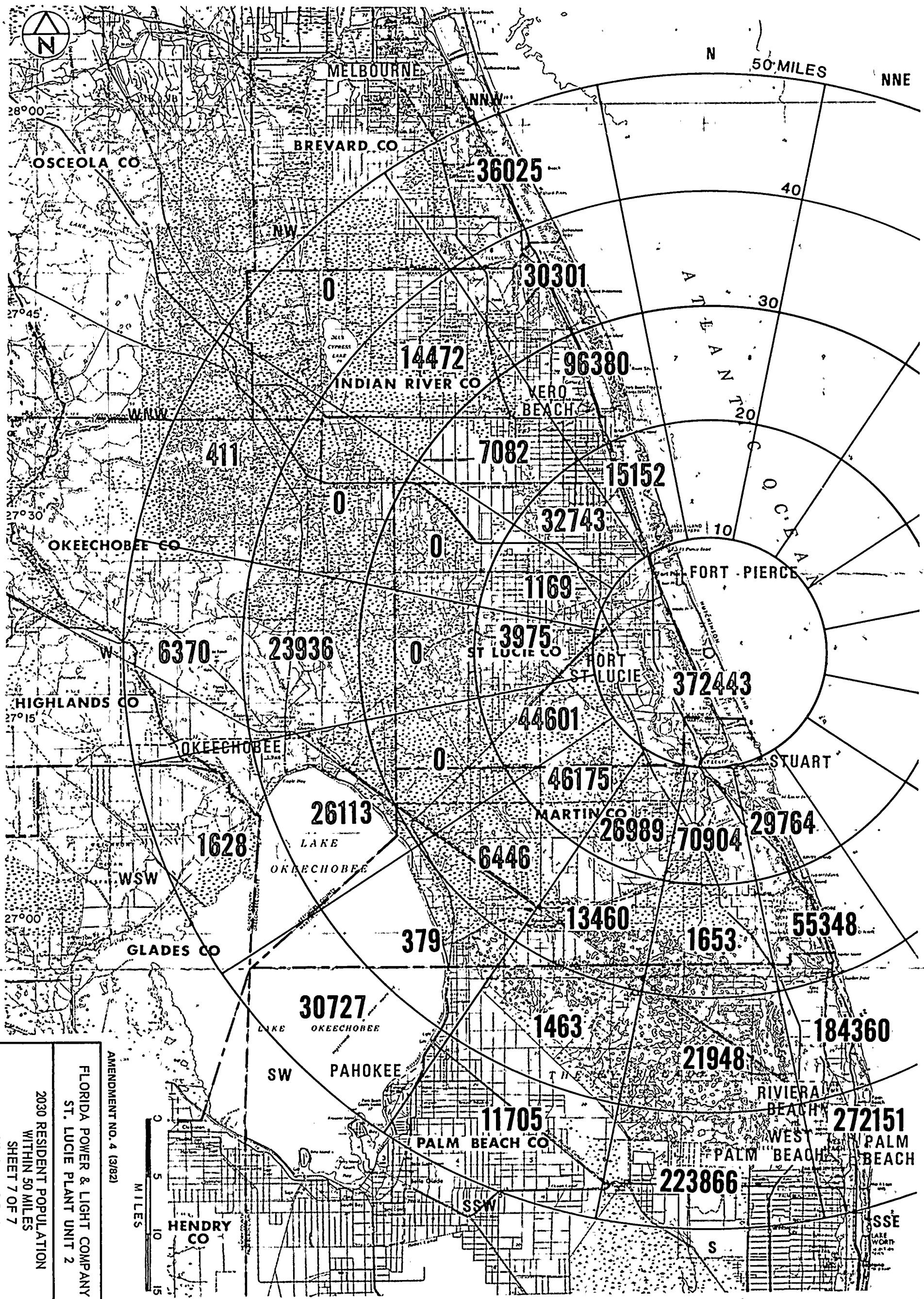


FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

2020 RESIDENT POPULATION
WITHIN 50 MILES
SHEET 6 OF 7

FIGURE 2.1-8

AMENDMENT NO. 4 (3/82)

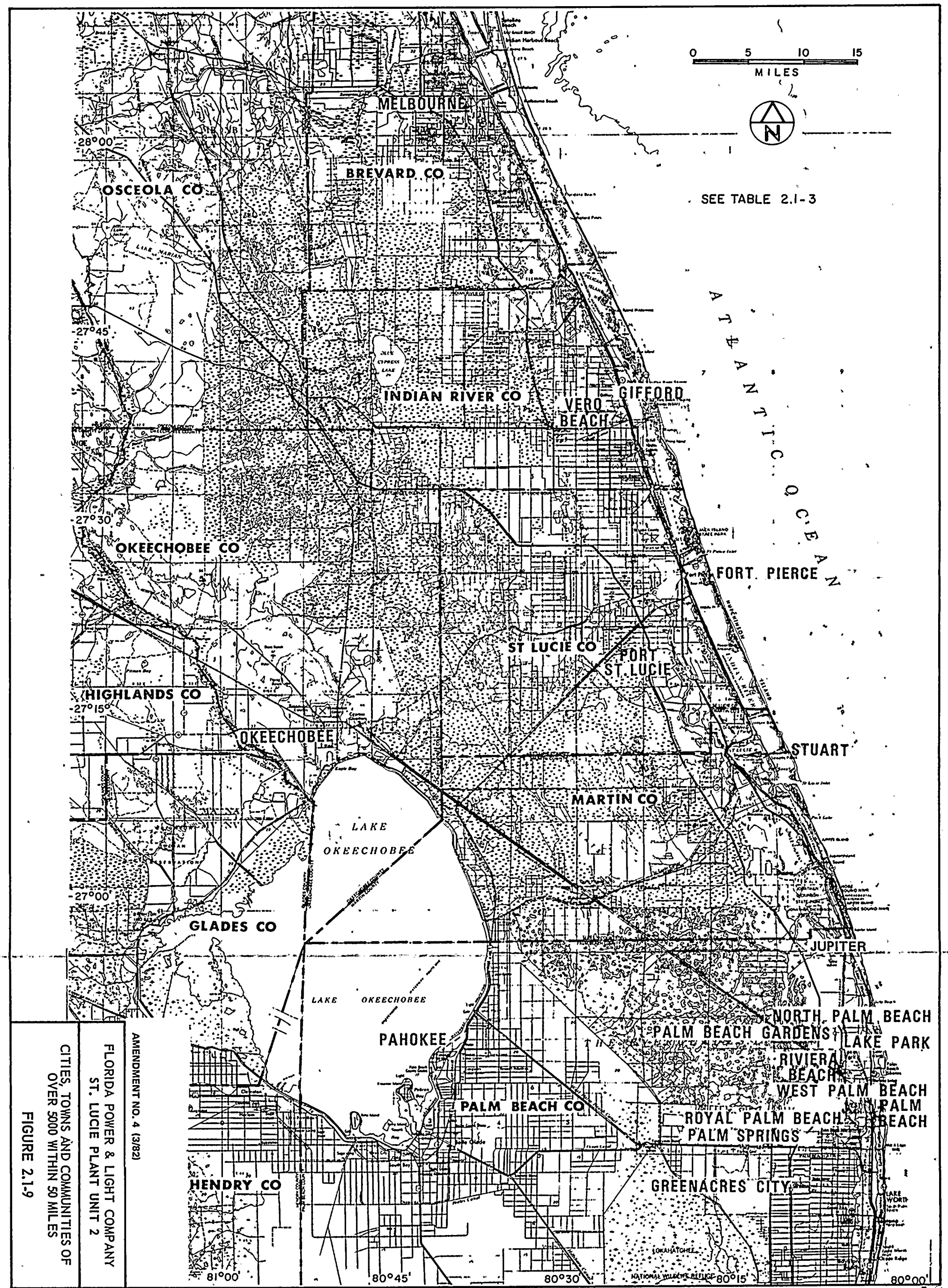


FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

2030 RESIDENT POPULATION
WITHIN 50 MILES
SHEET 7 OF 7

FIGURE 2.1–8

AMENDMENT NO. 4 (3/82)

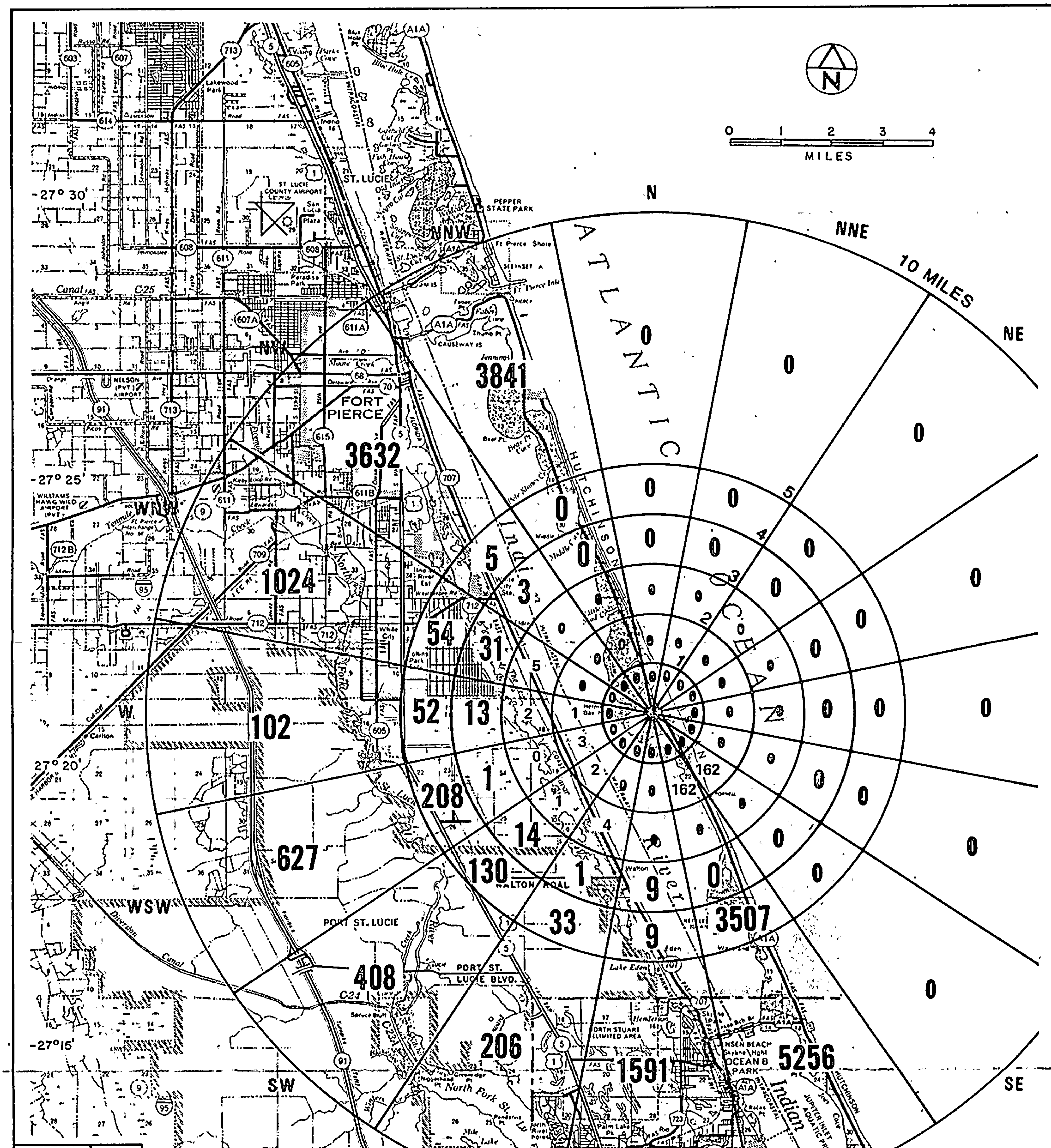


FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

CITIES, TOWNS AND COMMUNITIES OF OVER 5000 WITHIN 50 MILES

FIGURE 2.1-9

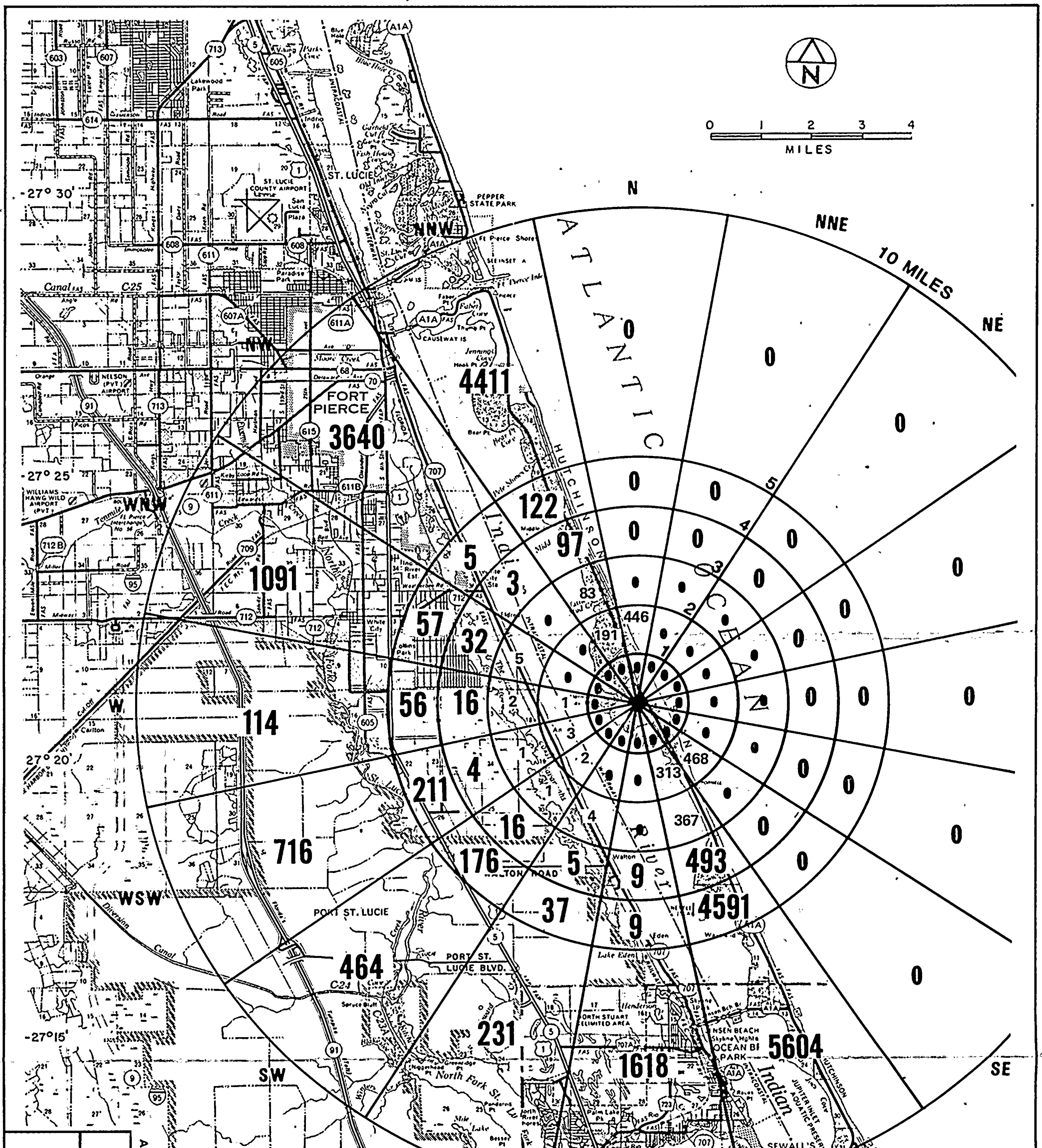
AMENDMENT NO. 4 (3/82)



AMENDMENT NO. 4 (3/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

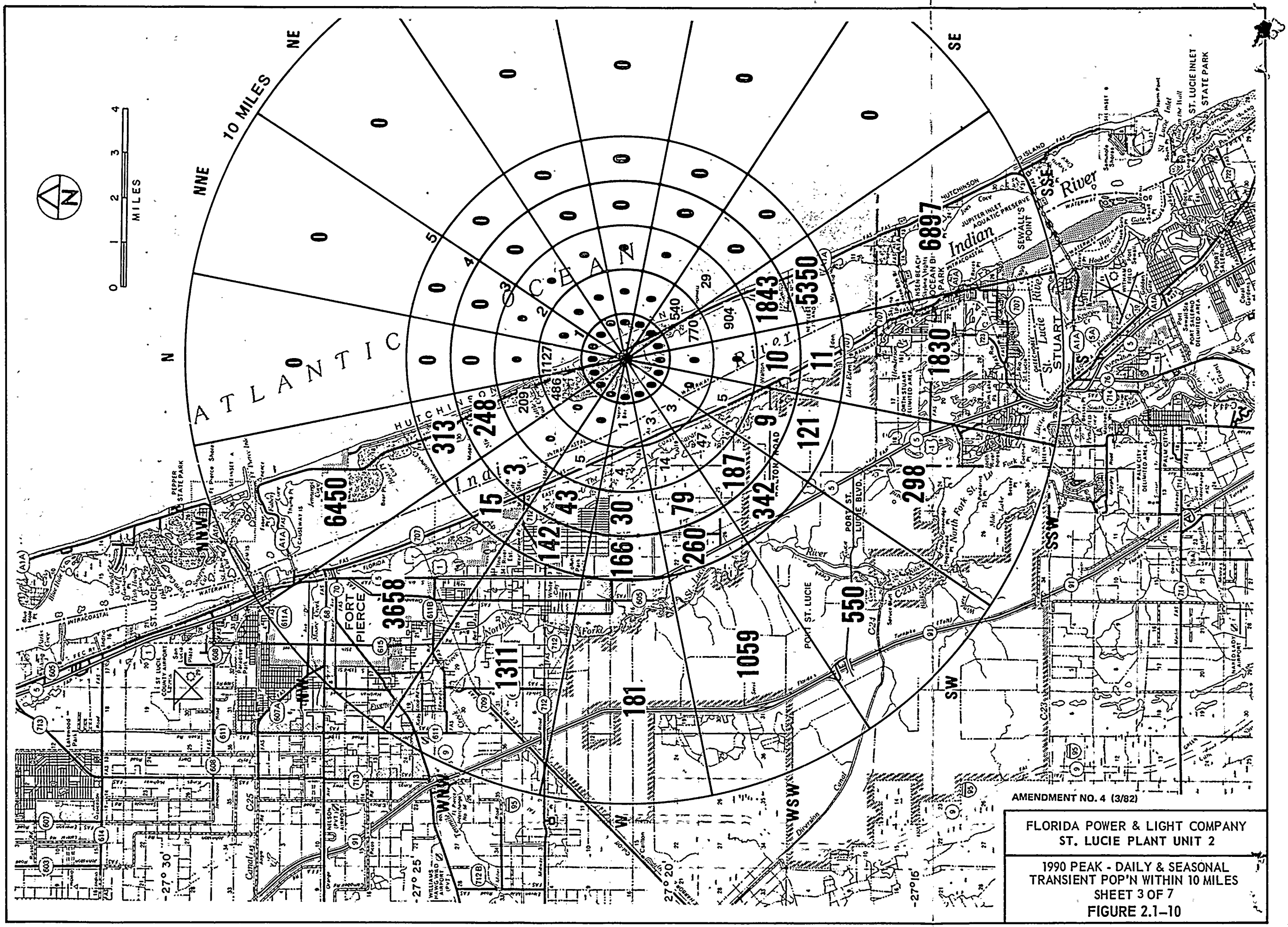
1981 PEAK - DAILY & SEASONAL
TRANSIENT POP'N WITHIN 10 MILES
SHEET 1 OF 7
FIGURE 2.1-10



AMENDMENT NO. 4 (3/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

1983 PEAK - DAILY & SEASONAL
TRANSIENT POP'N WITHIN 10 MILES
SHEET 2 OF 7
FIGURE 2.1-10

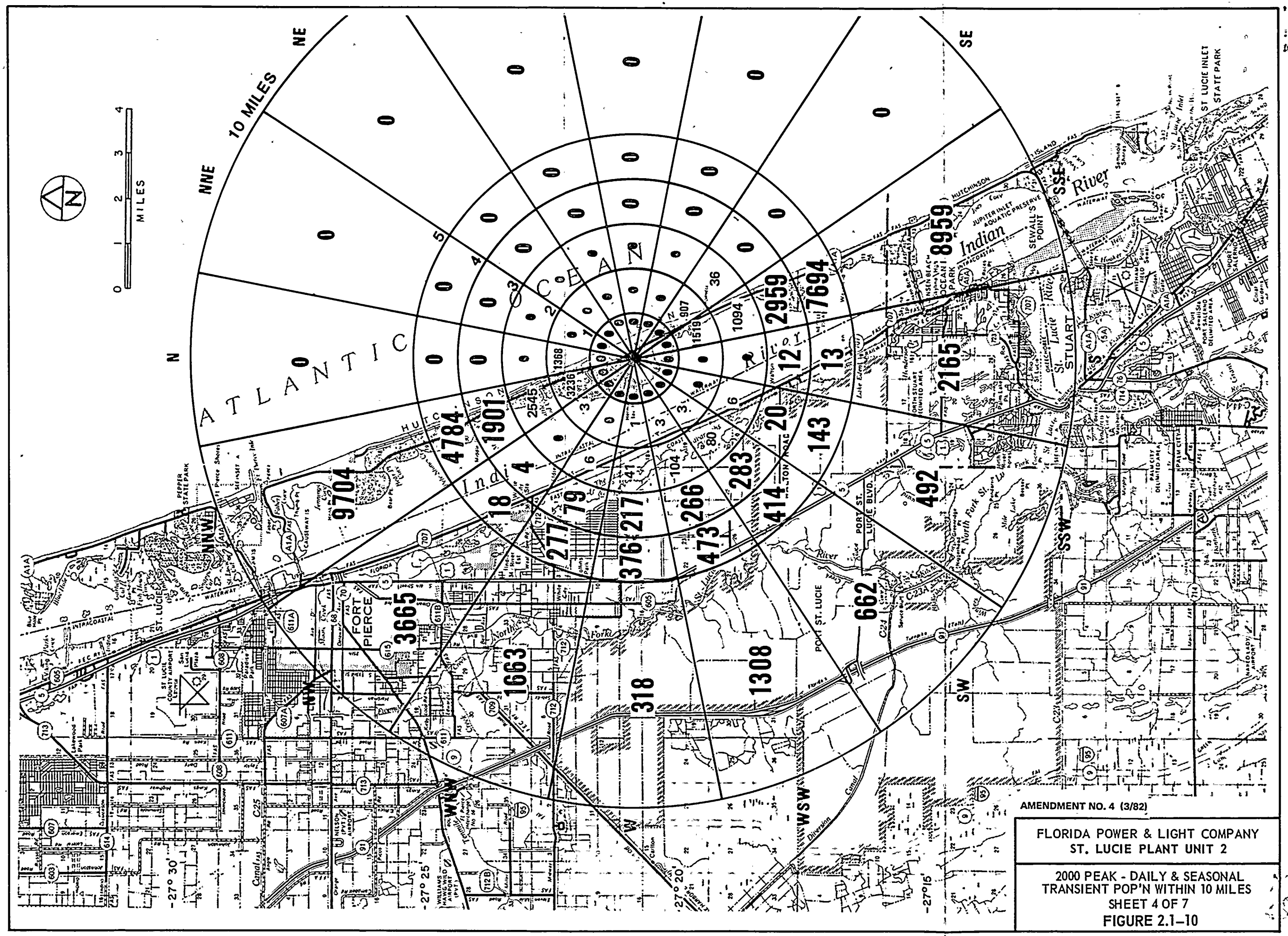


AMENDMENT NO. 4 (3/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

1990 PEAK - DAILY & SEASONAL
TRANSIENT POP'N WITHIN 10 MILES
SHEET 3 OF 7

FIGURE 2.1–10

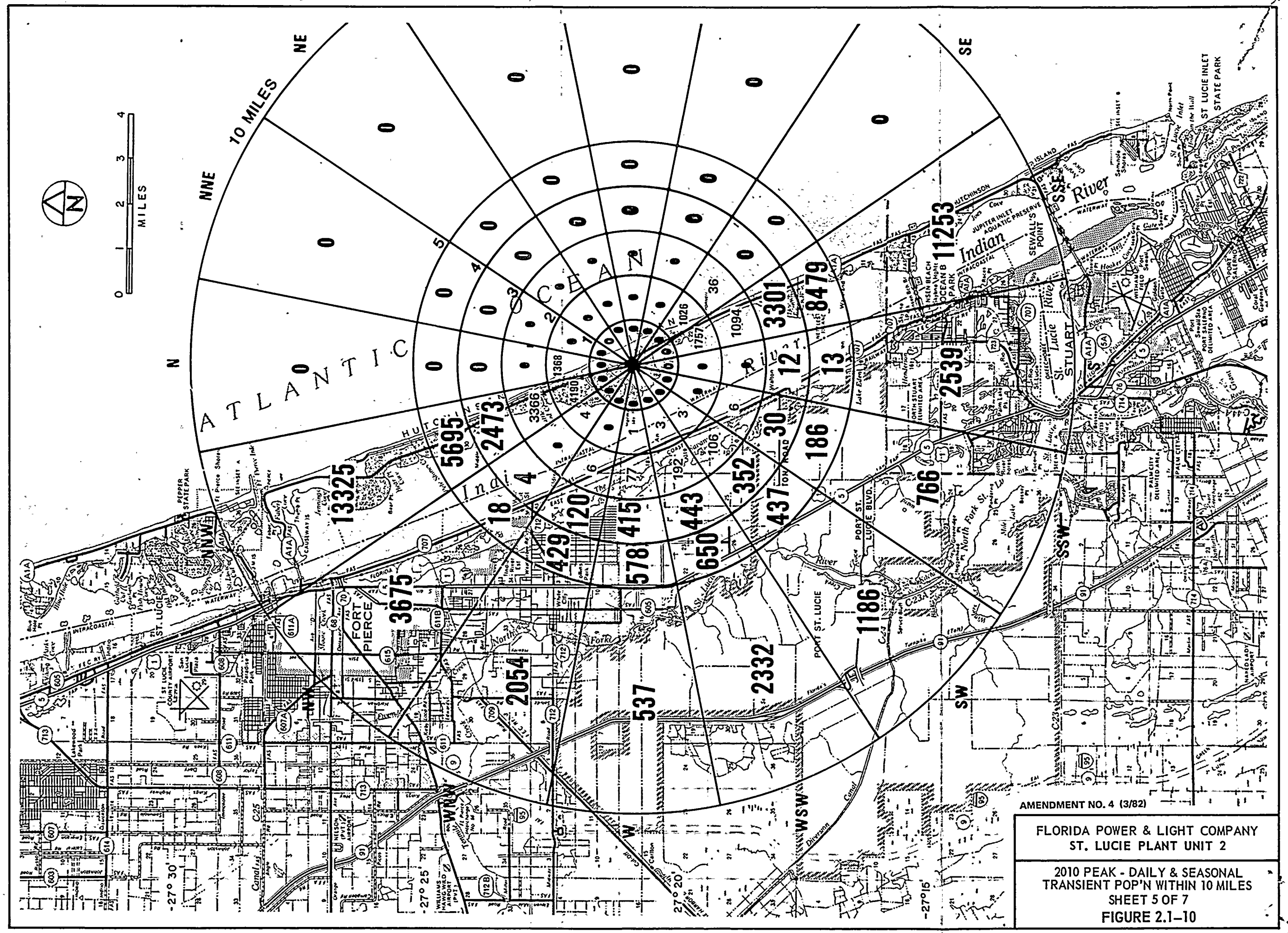


AMENDMENT NO. 4 (3/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

2000 PEAK - DAILY & SEASONAL
TRANSIENT POP'N WITHIN 10 MILES
SHEET 4 OF 7

FIGURE 2.1-10

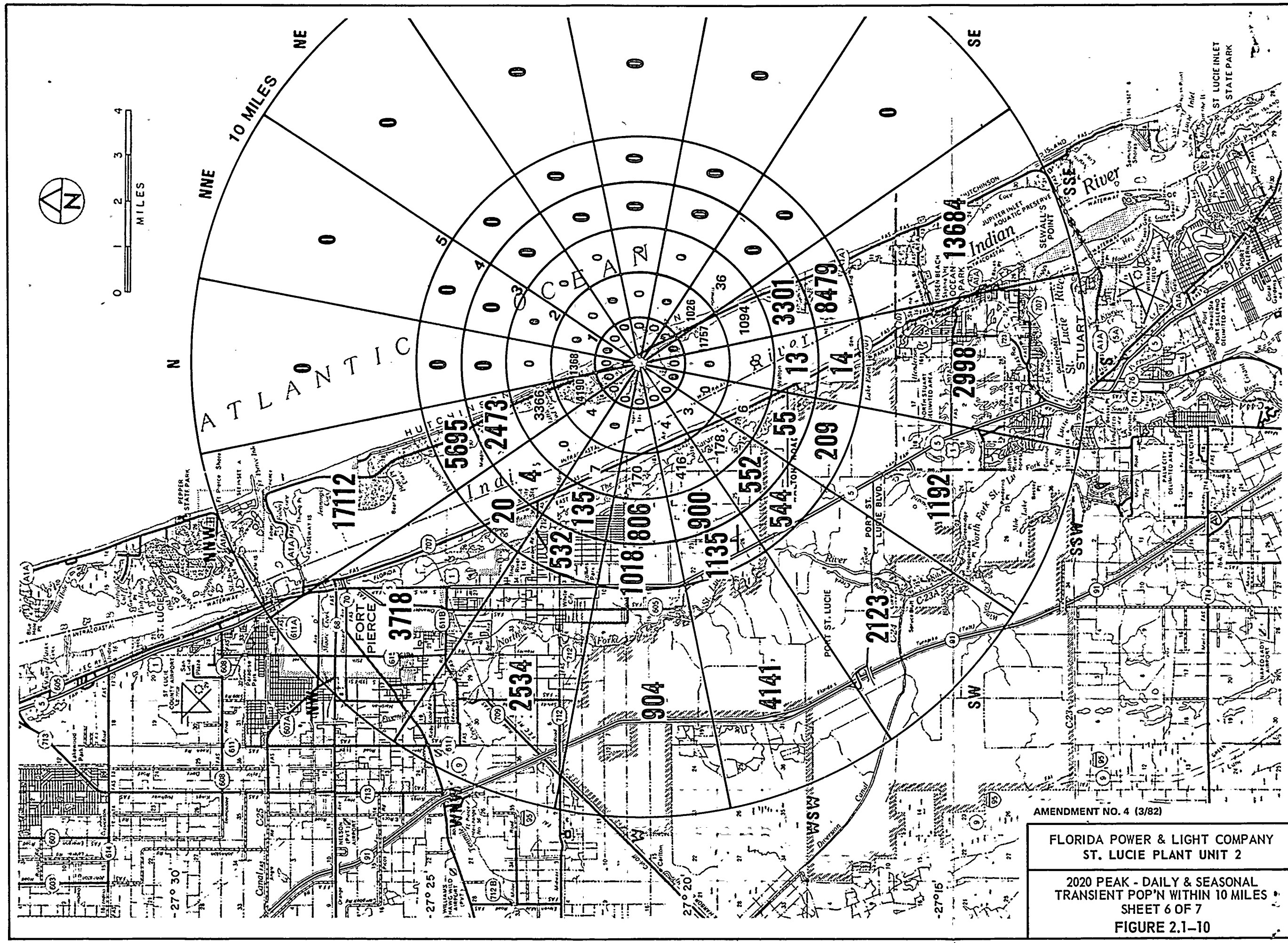


AMENDMENT NO. 4 (3/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

2010 PEAK - DAILY & SEASONAL
TRANSIENT POP'N WITHIN 10 MILES
SHEET 5 OF 7

FIGURE 2.1–10

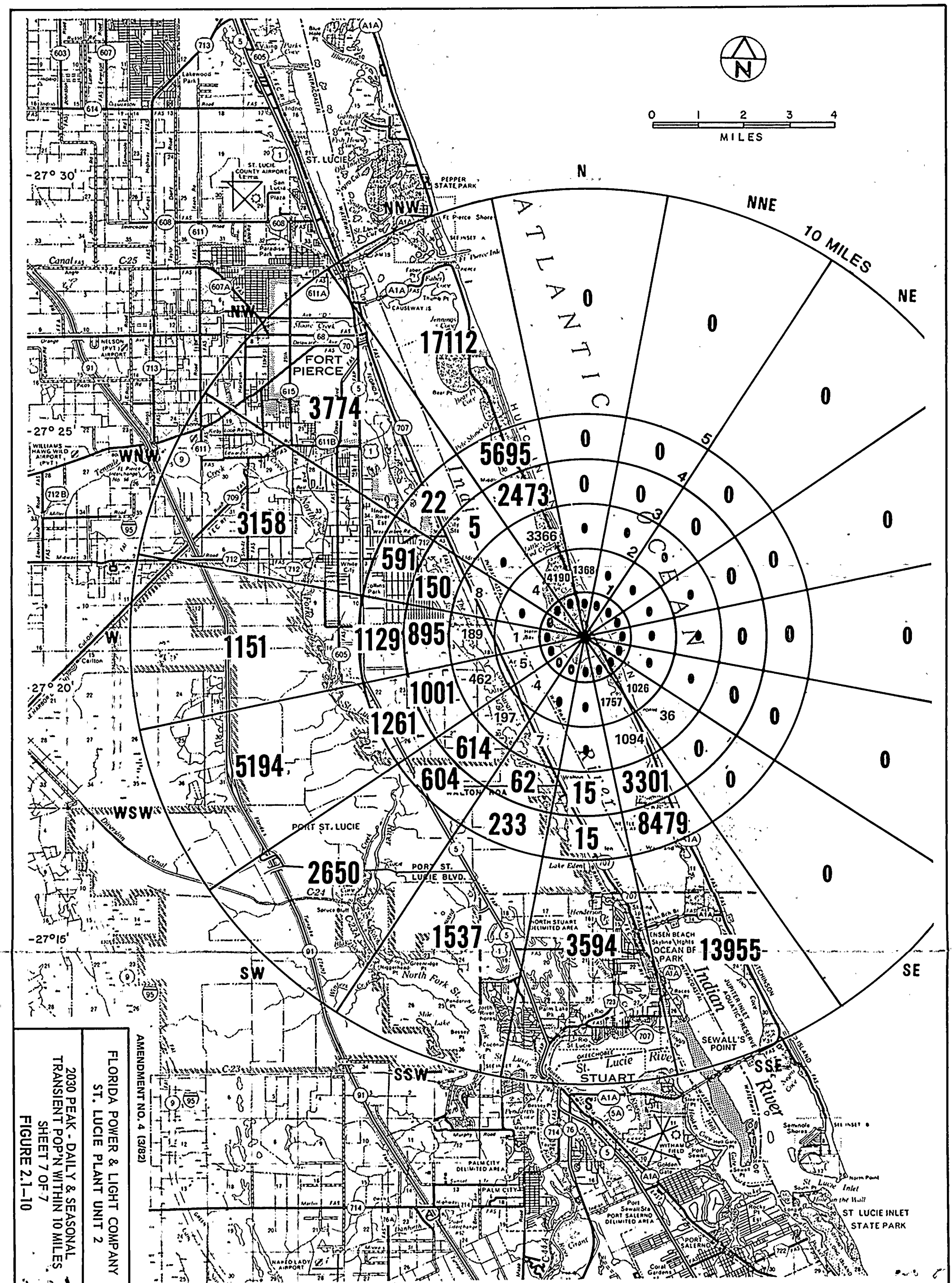


AMENDMENT NO. 4 (3/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

2020 PEAK - DAILY & SEASONAL
TRANSIENT POP'N WITHIN 10 MILES
SHEET 6 OF 7

FIGURE 2.1–10

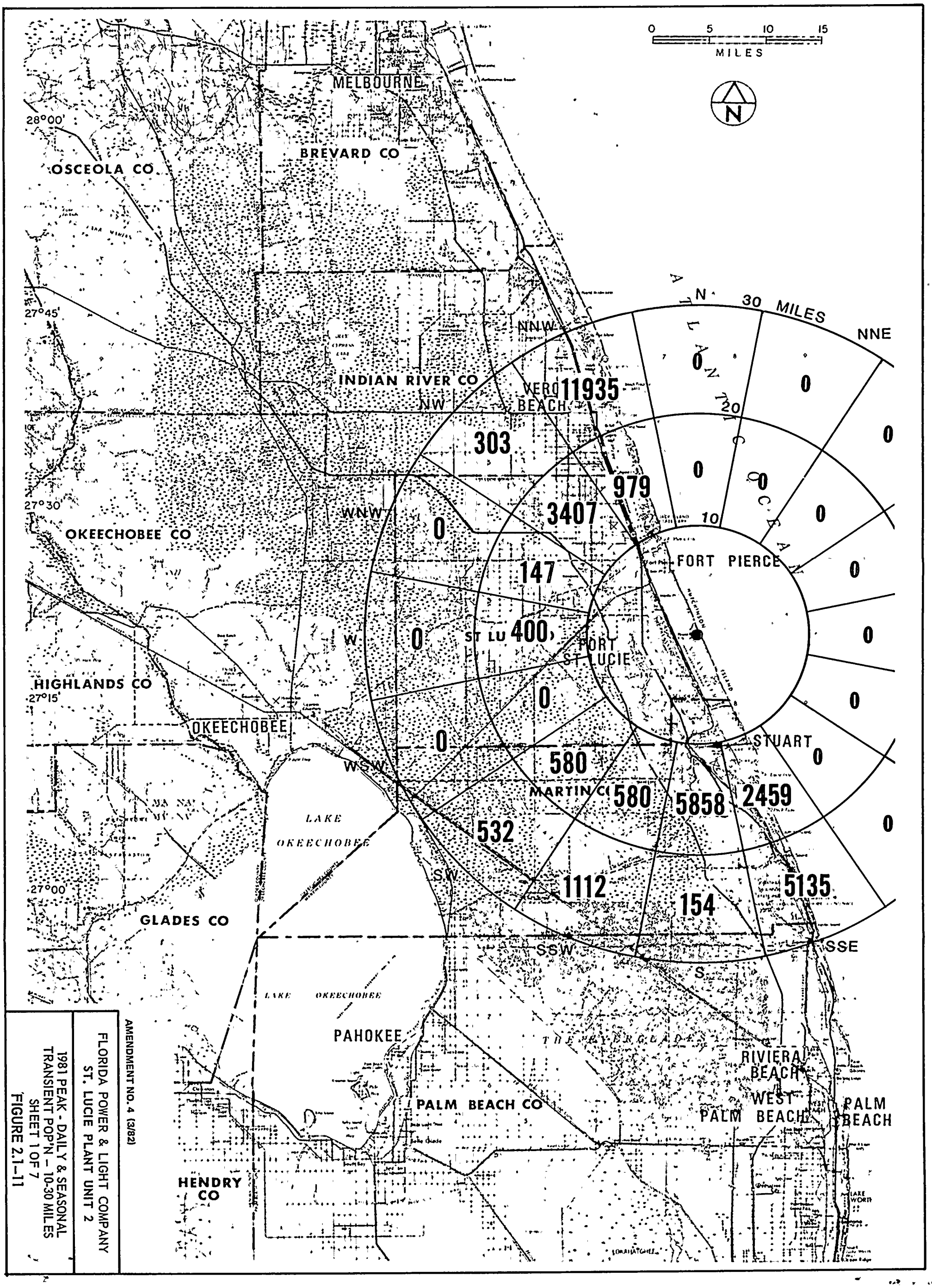


FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

2030 PEAK - DAILY & SEASONAL
TRANSIENT POP'N WITHIN 10 MILES
SHEET 7 OF 7

FIGURE 2.1–10

AMENDMENT NO. 4 (3/82)

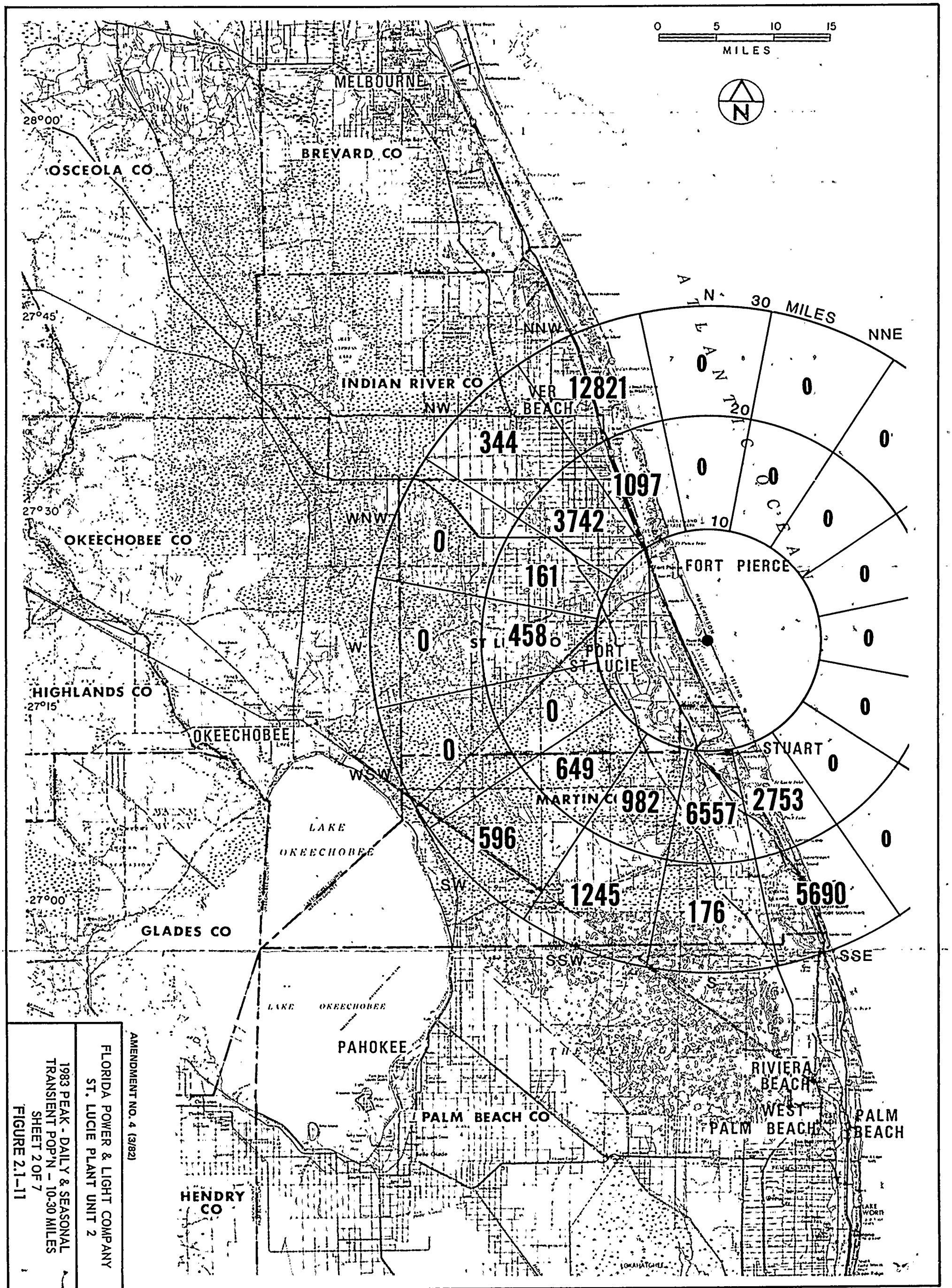


FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

1981 PEAK - DAILY & SEASONAL
TRANSIENT POP'N – 10-30 MILES
SHEET 1 OF 7

FIGURE 2.1–11

AMENDMENT NO. 4 (3/82)

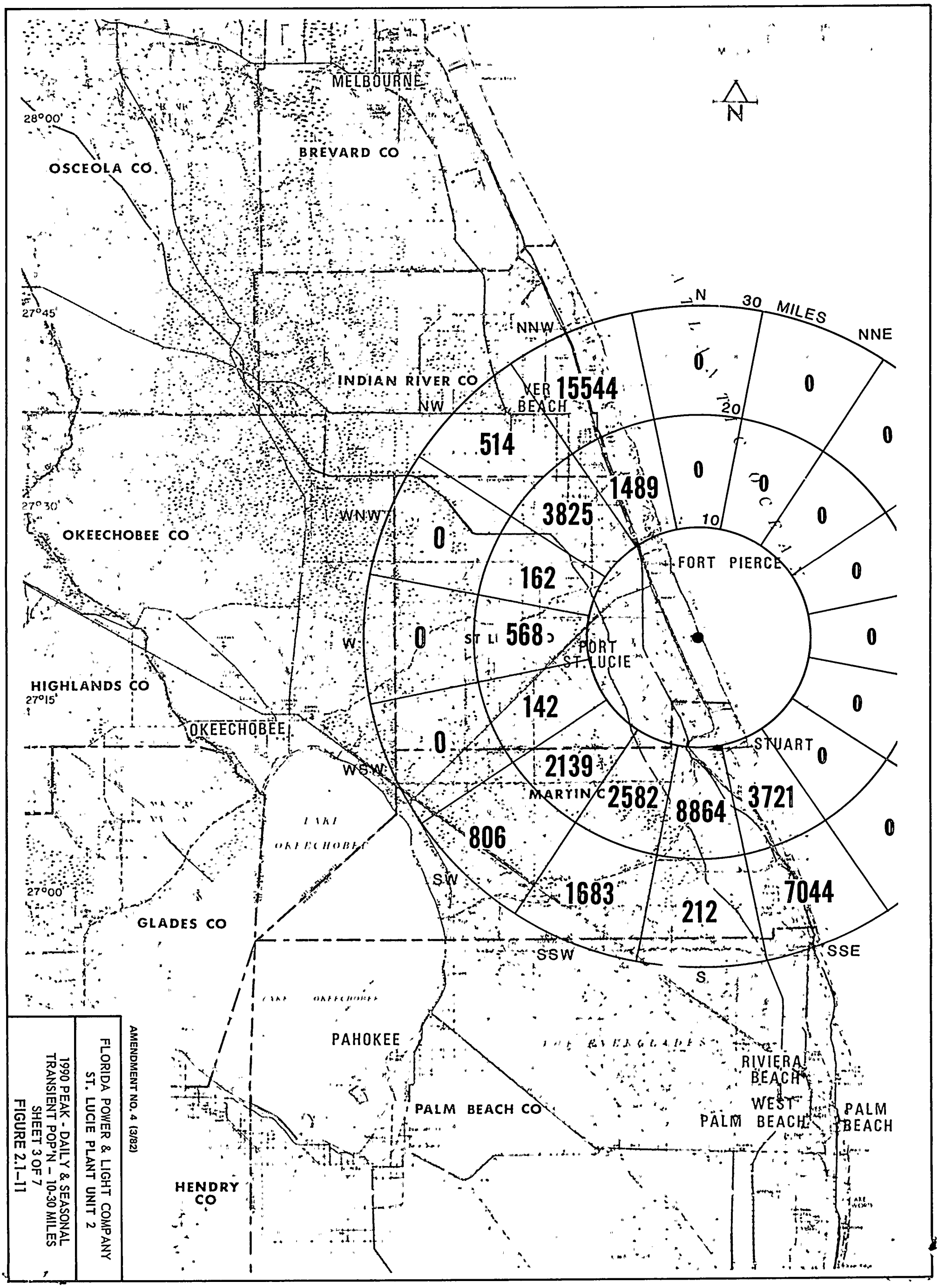


AMENDMENT NO. 4 (3/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

1983 PEAK - DAILY & SEASONAL
TRANSIENT POP'N – 10-30 MILES
SHEET 2 OF 7

FIGURE 2.1–11

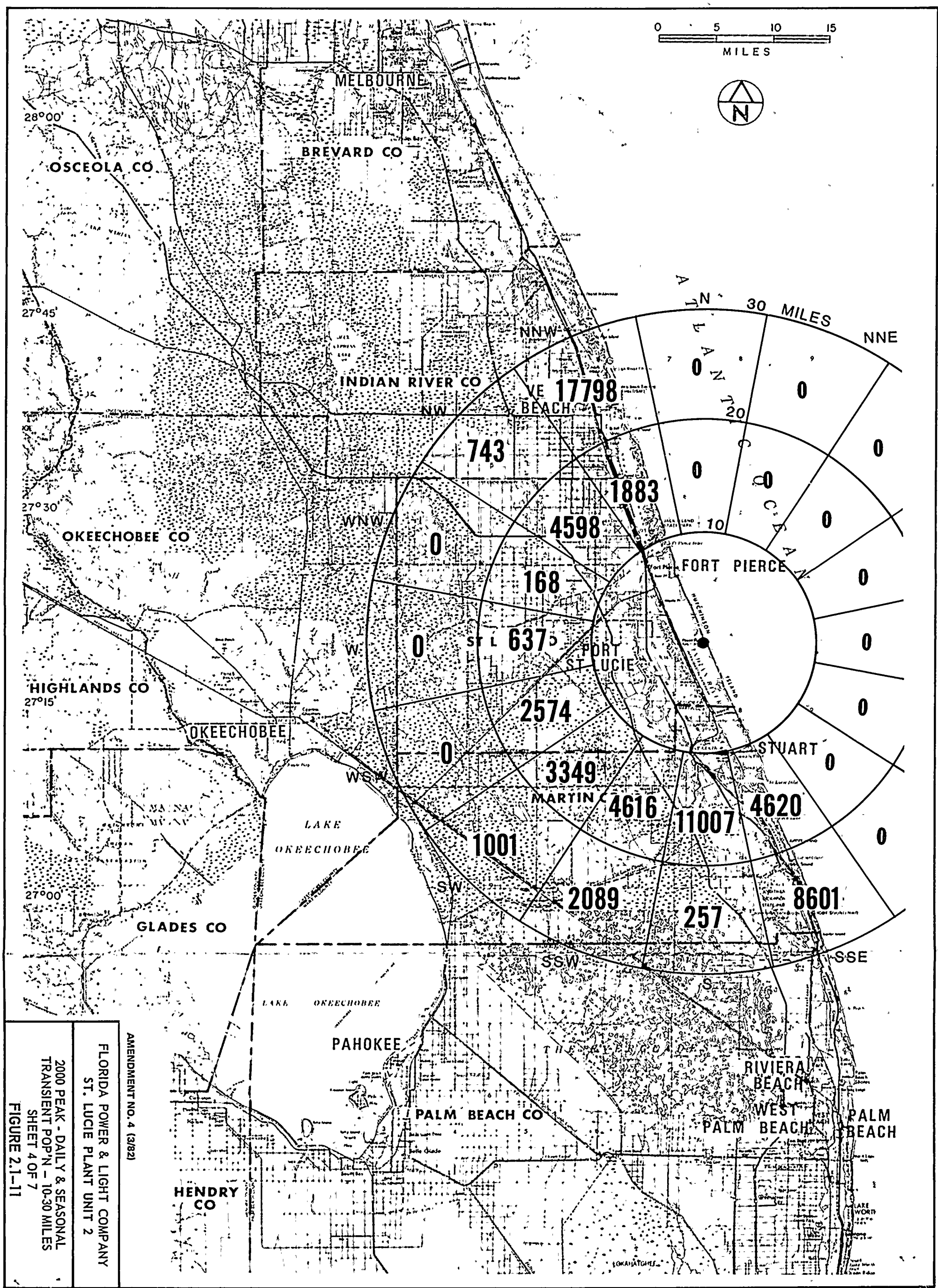


AMENDMENT NO. 4 (3/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

1990 PEAK - DAILY & SEASONAL
TRANSIENT POP'N – 10-30 MILES
SHEET 3 OF 7

FIGURE 2.1–11

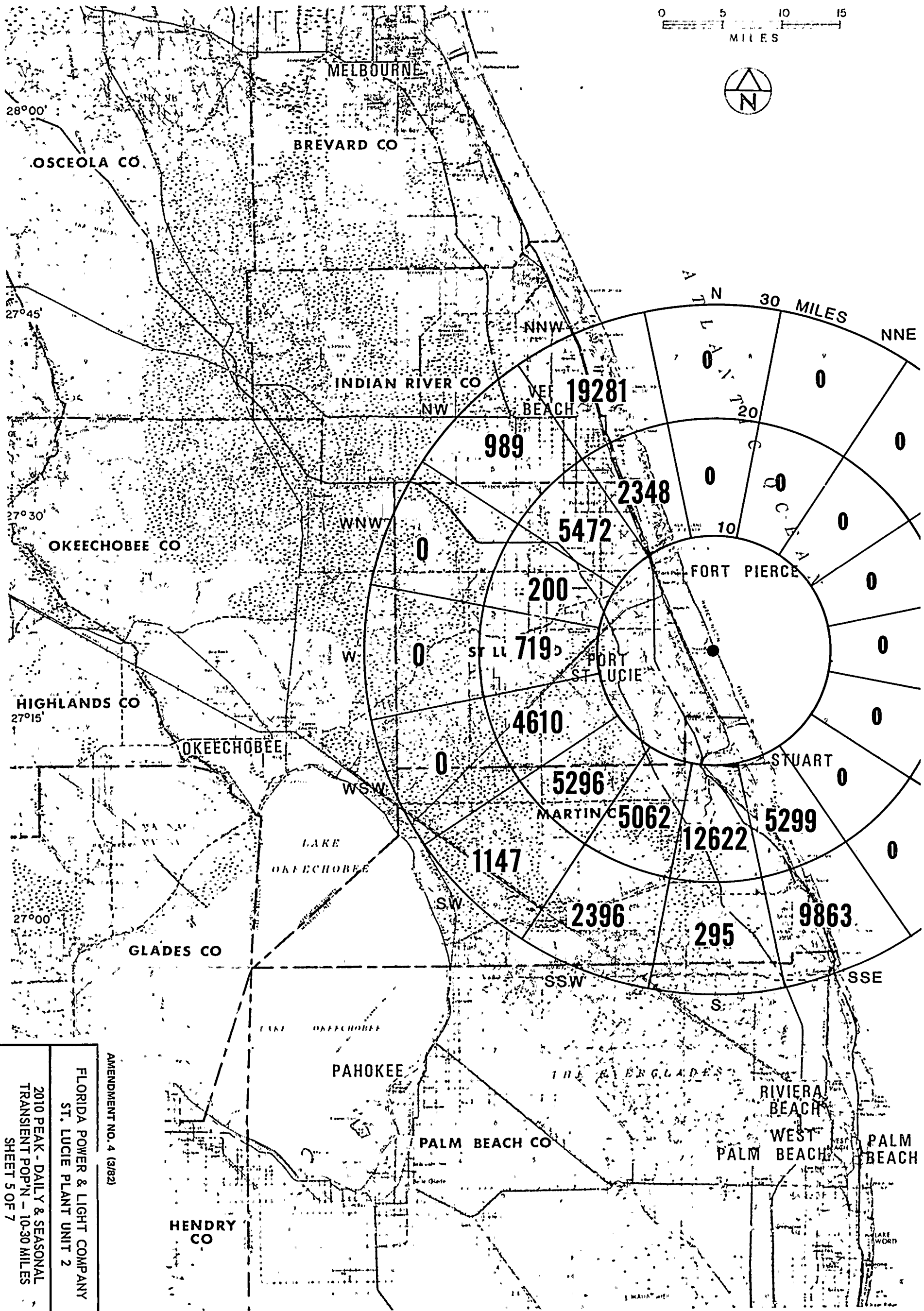


FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

2000 PEAK - DAILY & SEASONAL TRANSIENT POP'N – 10-30 MILES
SHEET 4 OF 7

FIGURE 2.1–11

AMENDMENT NO. 4 (3/82)

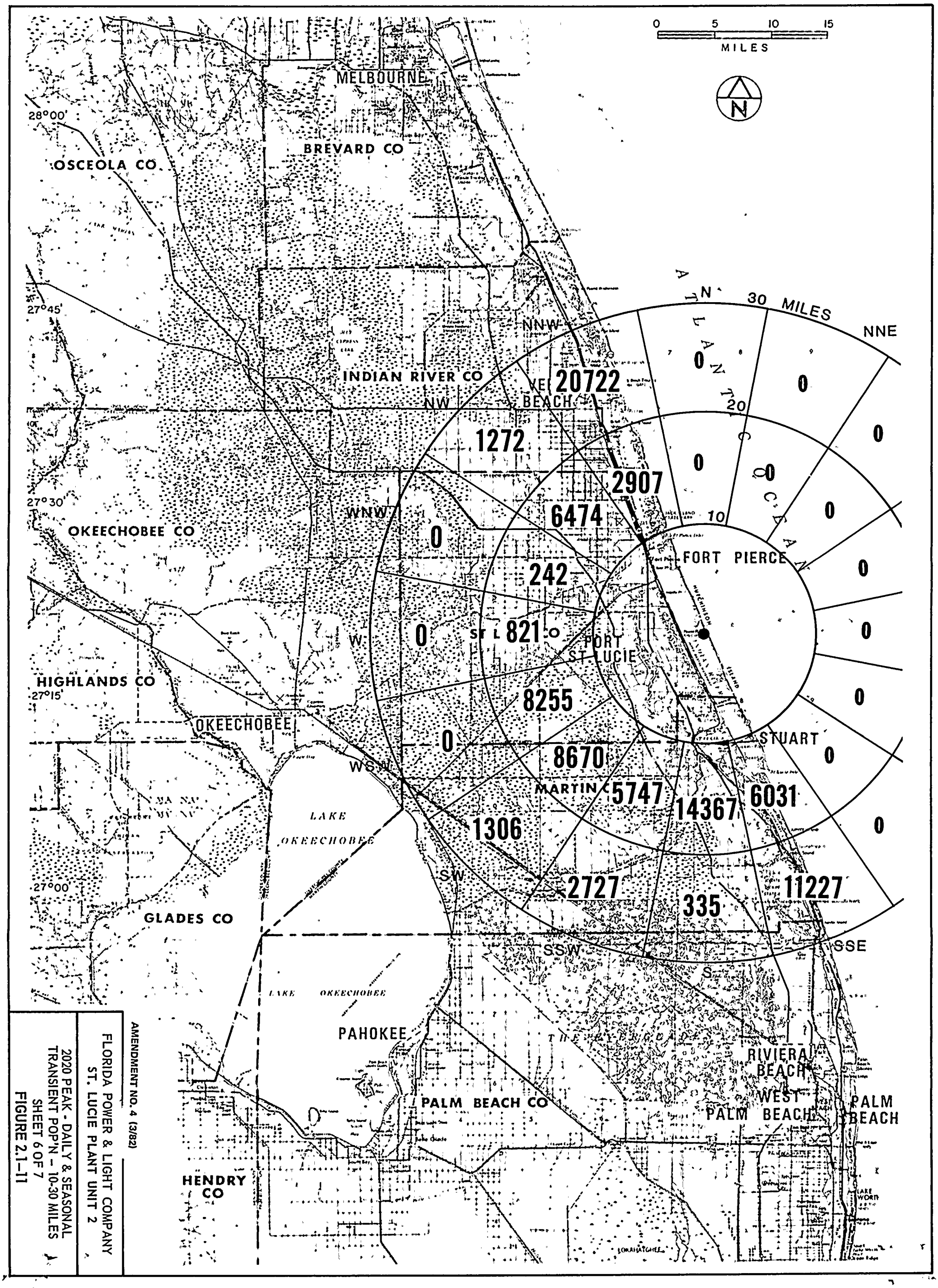


AMENDMENT NO. 4 (3/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

2010 PEAK - DAILY & SEASONAL
TRANSIENT POP'N – 10-30 MILES
SHEET 5 OF 7

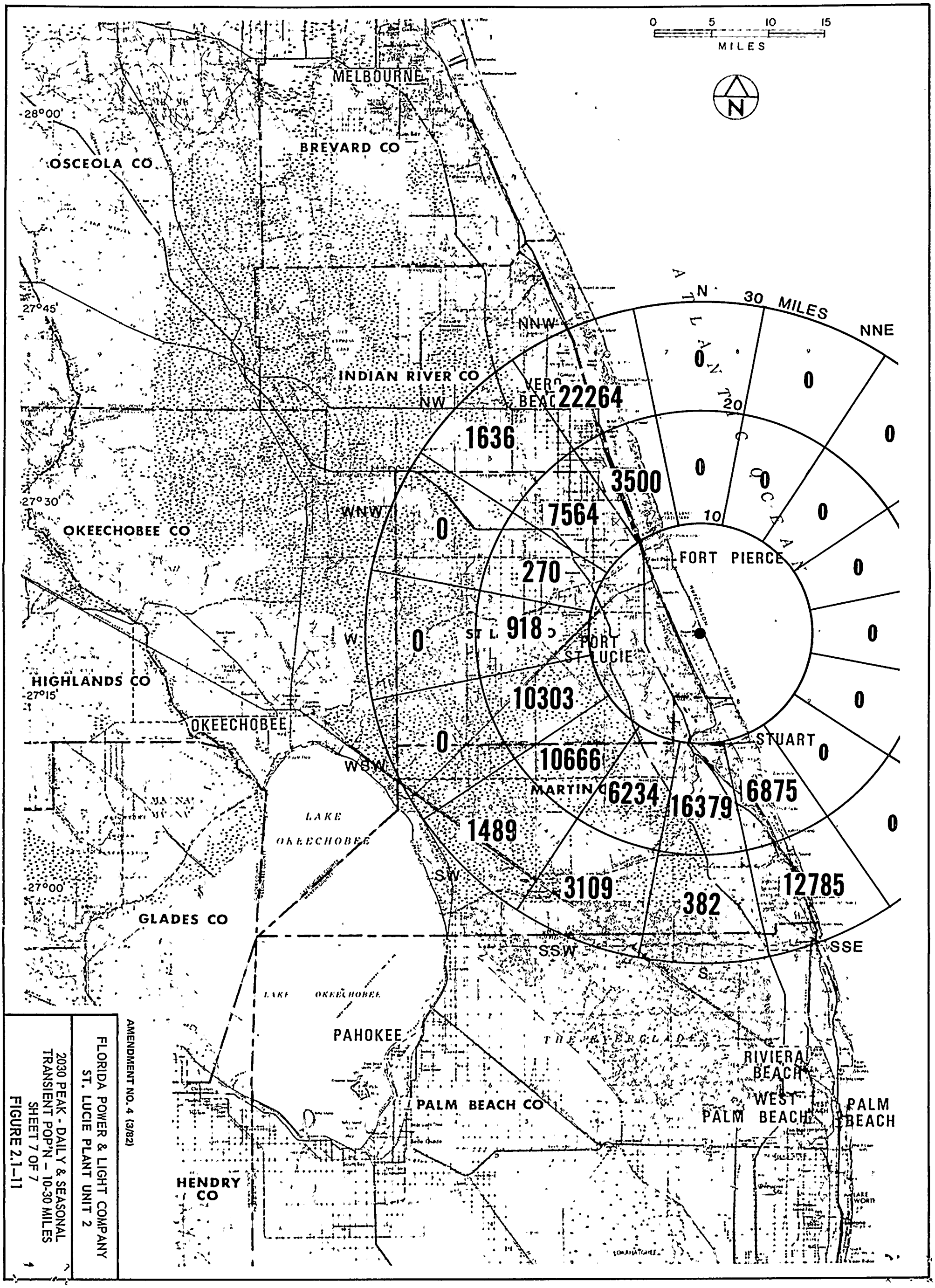
FIGURE 2.1–11



AMENDMENT NO. 4 (3/82)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

2020 PEAK - DAILY & SEASONAL
TRANSIENT POP'N – 10-30 MILES
SHEET 6 OF 7
FIGURE 2.1–11

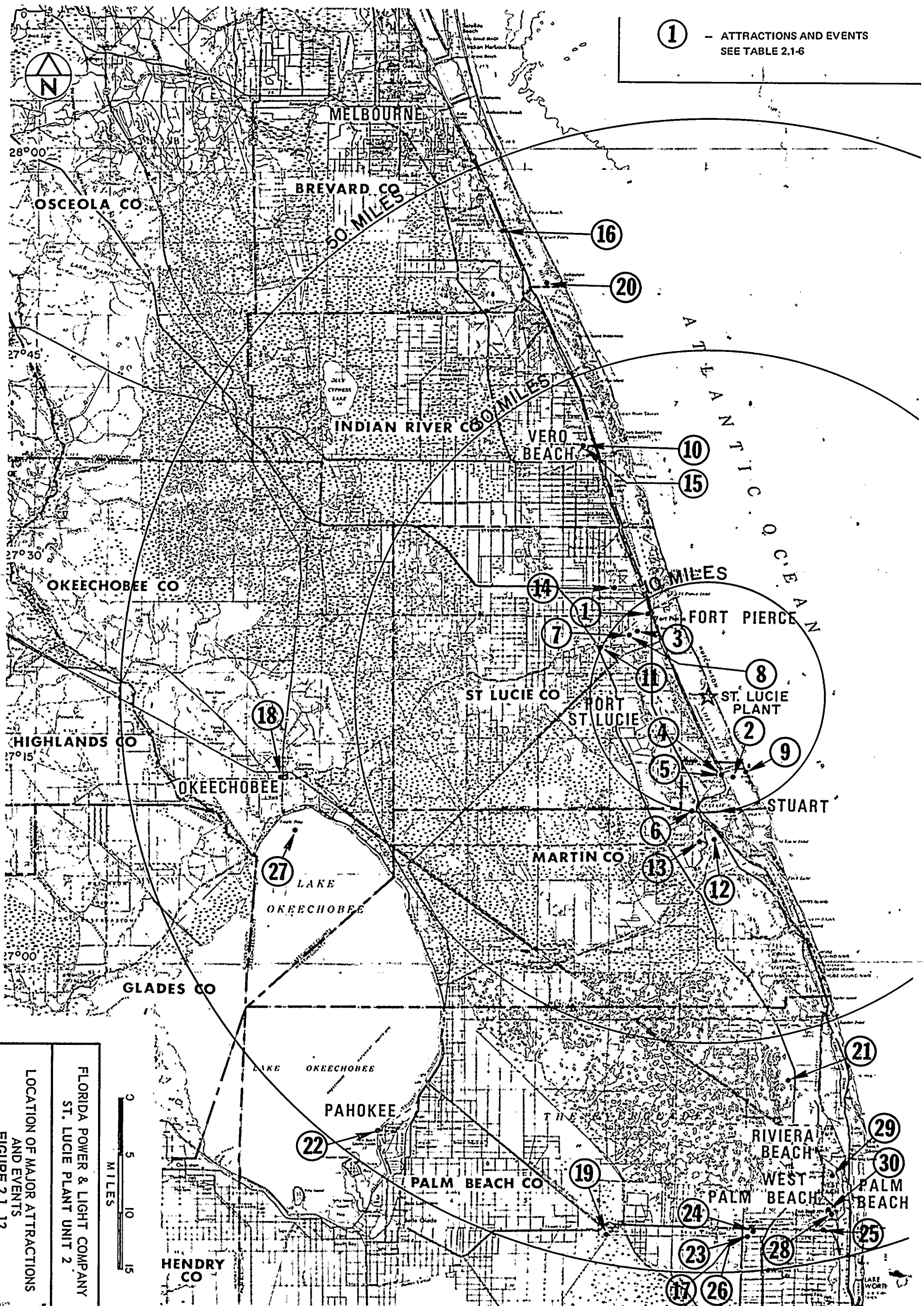


FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

2030 PEAK - DAILY & SEASONAL
TRANSIENT POP'N – 10-30 MILES
SHEET 7 OF 7

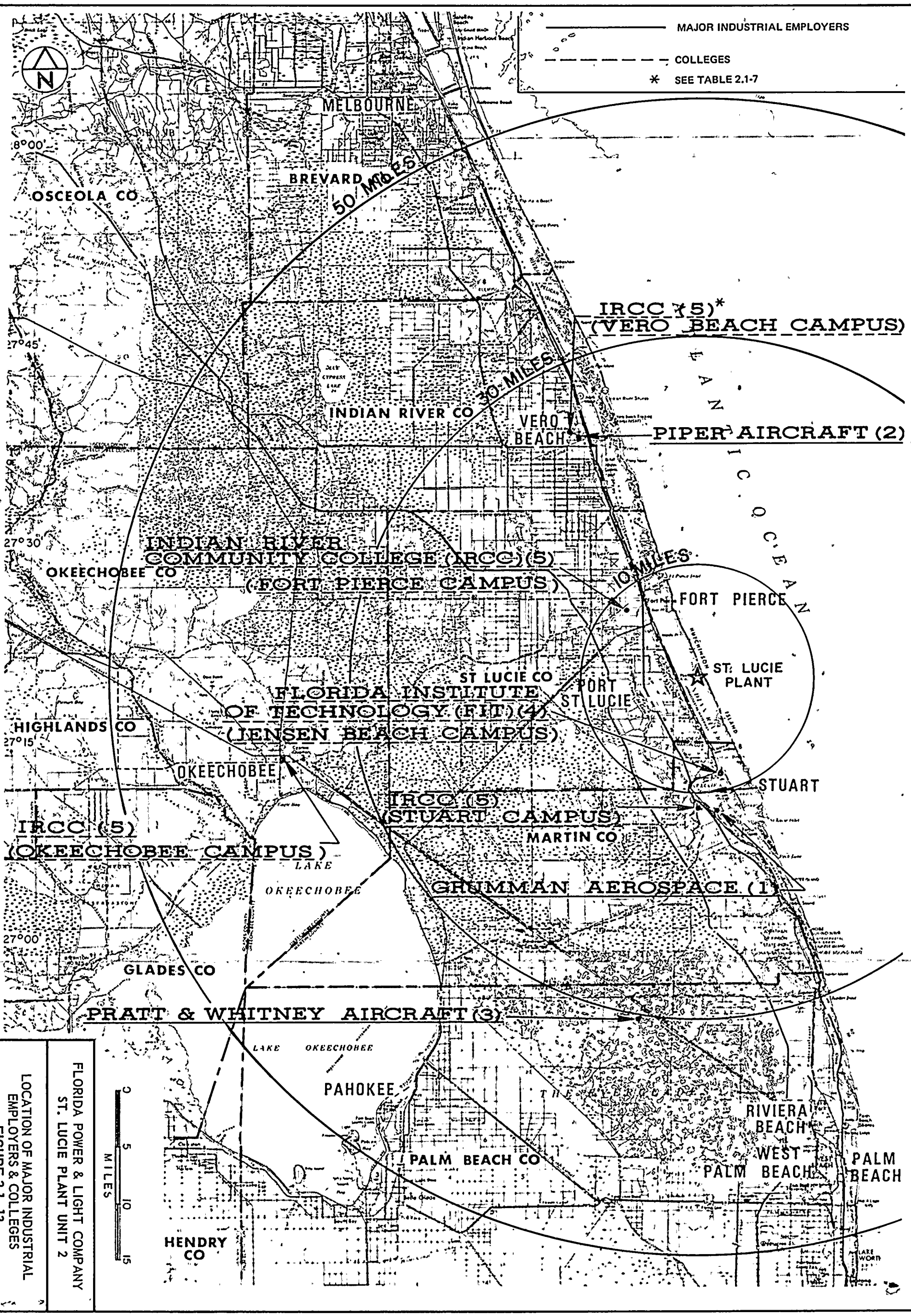
FIGURE 2.1–11

AMENDMENT NO. 4 (3/82)



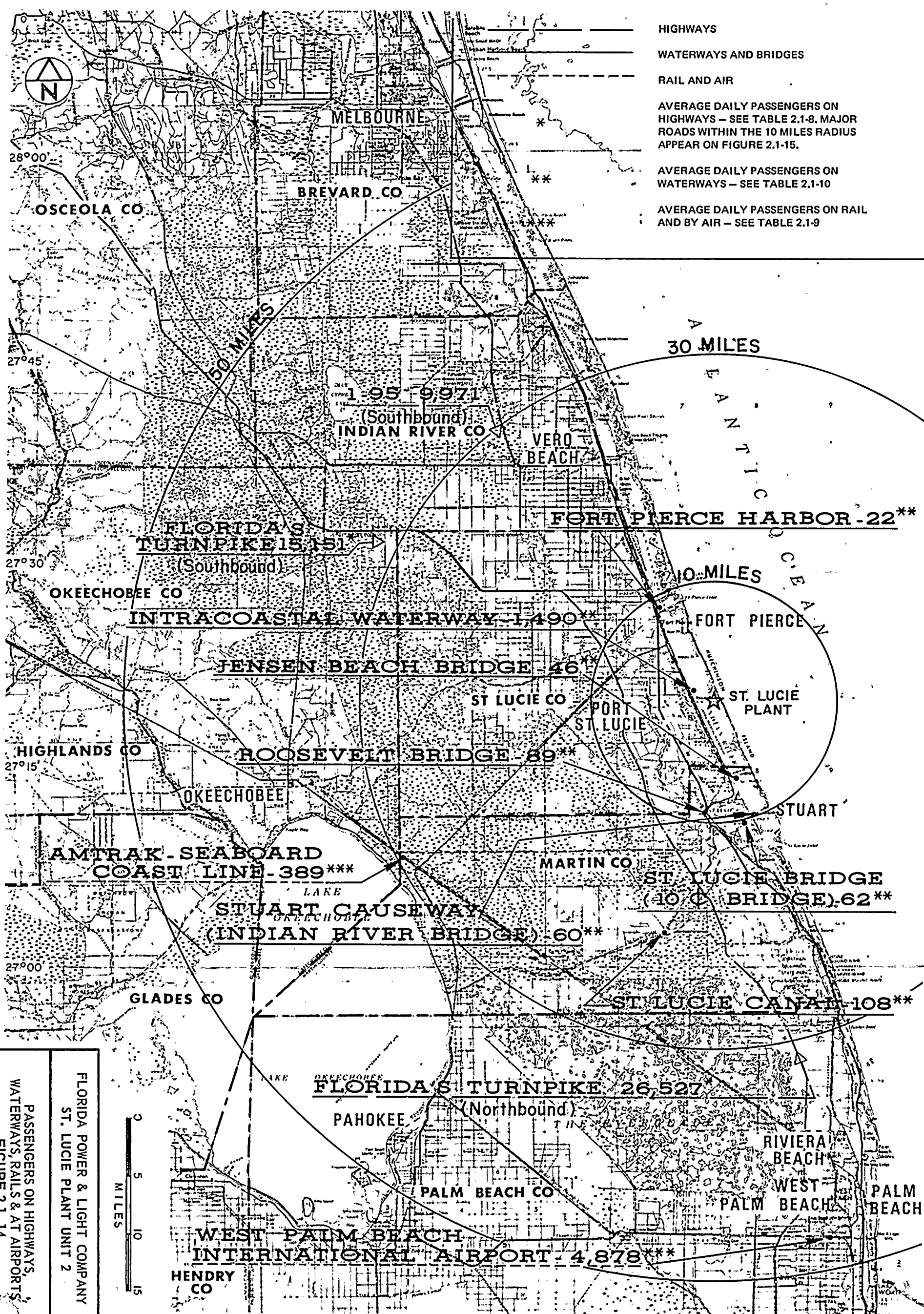
FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

LOCATION OF MAJOR ATTRACTIONS AND EVENTS
FIGURE 2.1–12



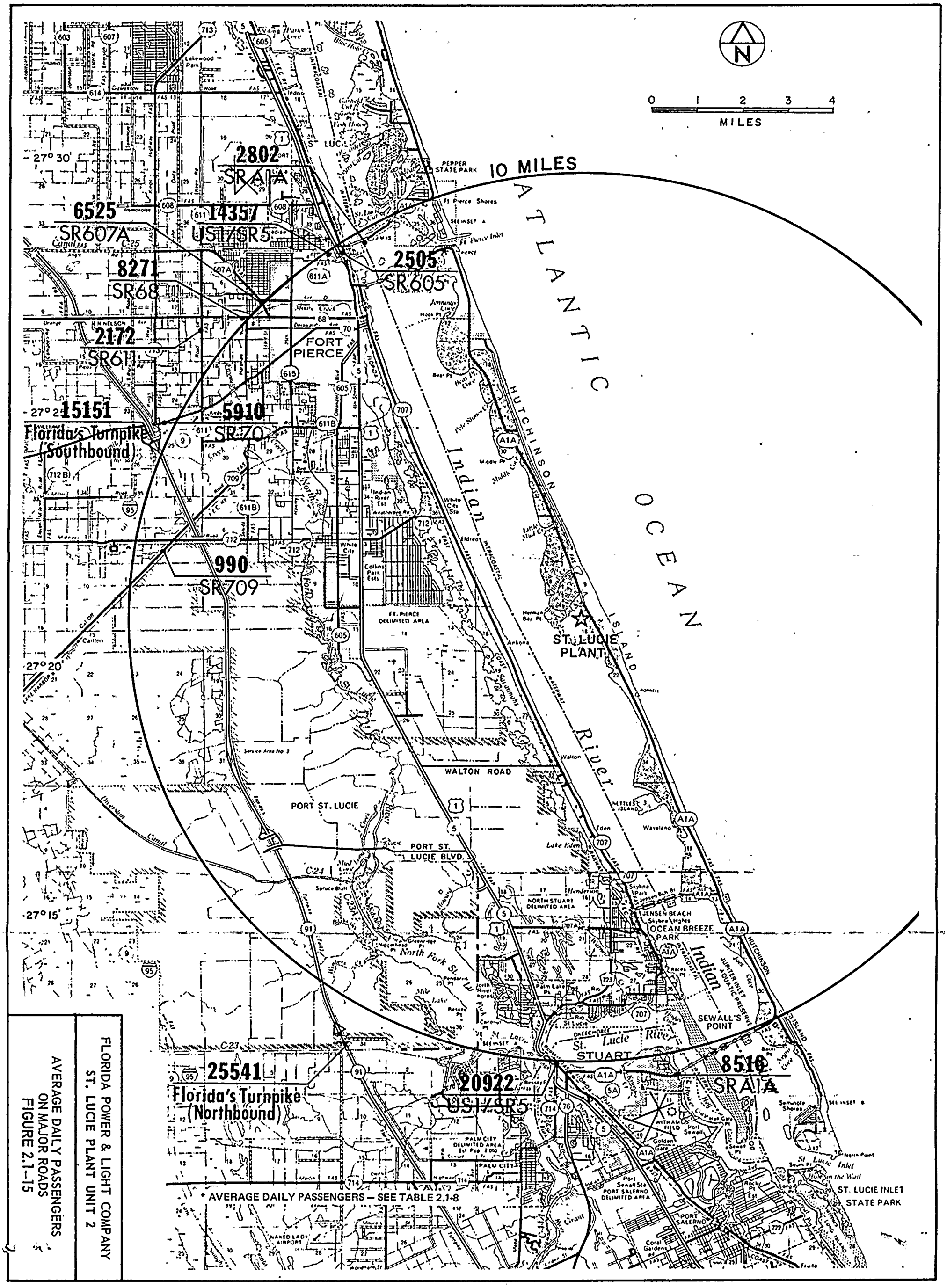
FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

LOCATION OF MAJOR INDUSTRIAL EMPLOYERS & COLLEGES
FIGURE 2.1–13



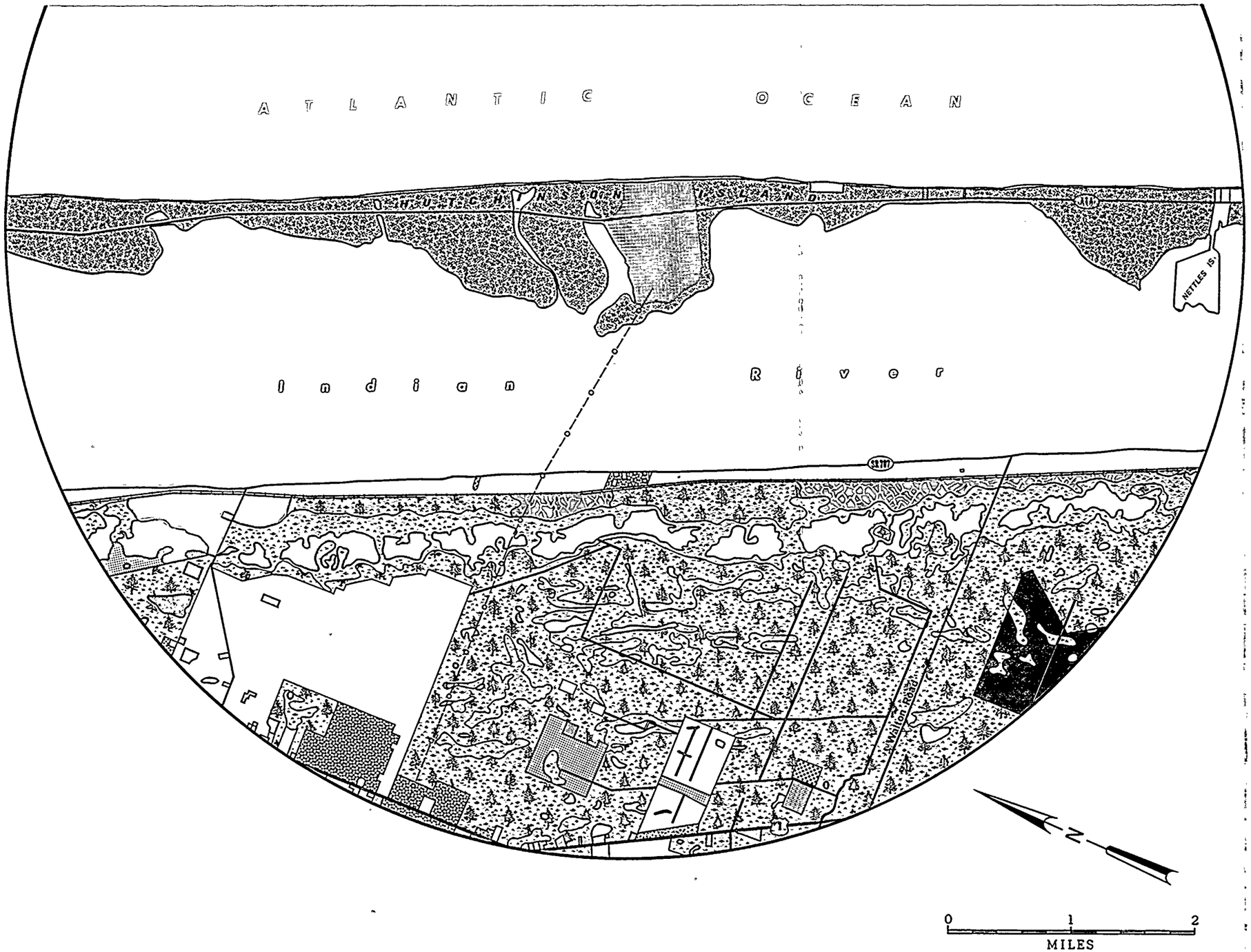
FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

PASSENGERS ON HIGHWAYS, WATERWAYS, RAILS & AT AIRPORTS
FIGURE 2.1–14



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

AVERAGE DAILY PASSENGERS ON MAJOR ROADS
FIGURE 2.1–15



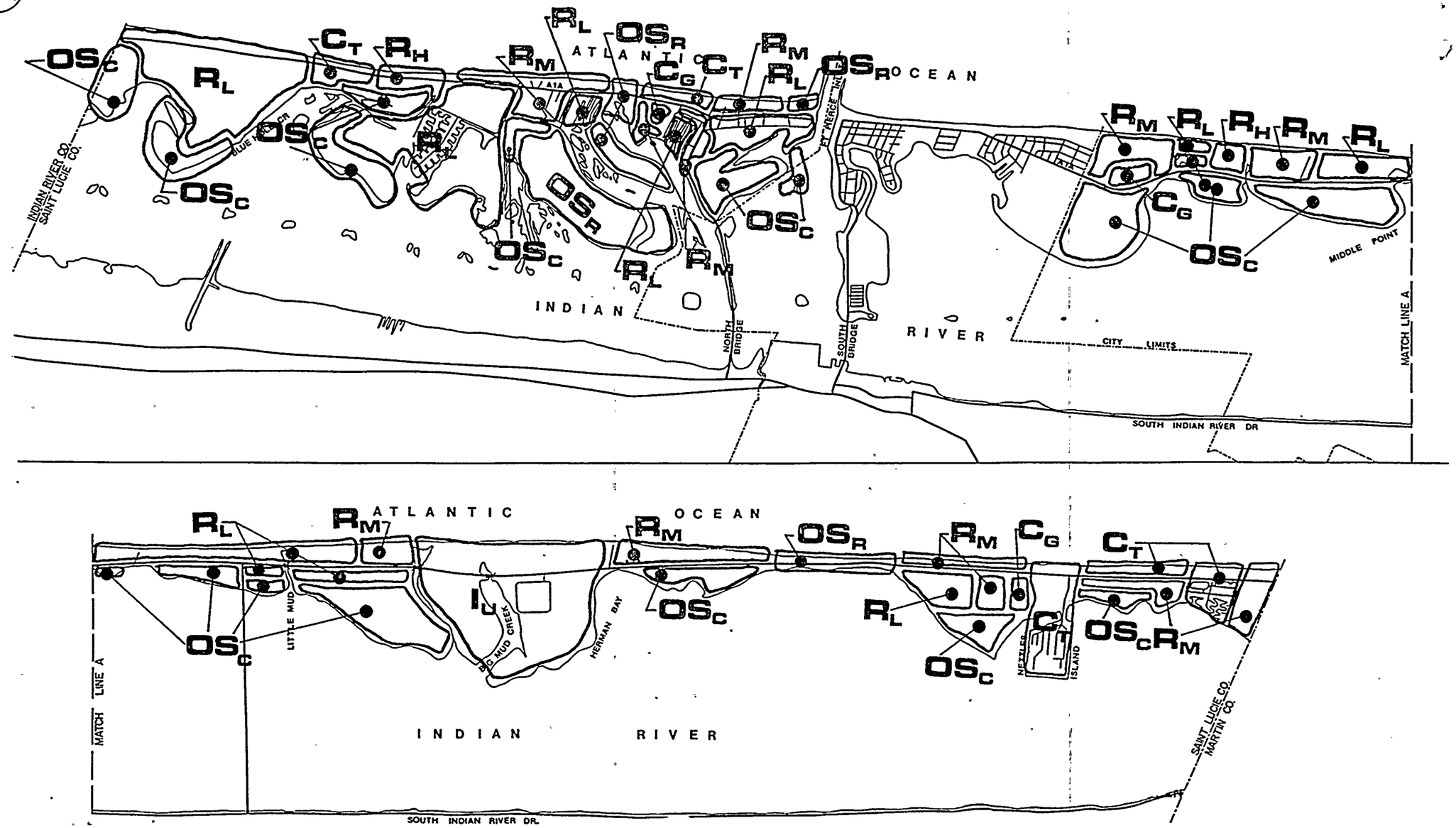
LEGEND

- SINGLE-FAMILY RESIDENCES
- MULTIPLE-FAMILY RESIDENCES
- TRANSIENT LODGINGS
- RETAIL COMMERCIAL SERVICES
- INSTITUTIONAL SERVICES
- LIGHT INDUSTRIAL
- HIGHWAY, PRINCIPAL ROAD
- RAILROAD
- ST. LUCIE 1 & 2 FACILITIES
- TRANSMISSION LINES
- UTILITY STORAGE
- CEMETERY
- UNDEVELOPED LAND
- RECREATION FACILITIES
- CITRUS GROVES
- NURSERIES
- OLD FIELD
- PINE FLATWOOD FOREST/ FRESHWATER MARSH
- FRESHWATER MARSH
- MANGROVE
- STREAMS AND CANALS
- LAKES
- ESTUARY
- OPEN MARINE WATER
- BEACHES
- TRANSITIONAL AREAS
- EXTRACTIVE

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

LAND USES WITHIN FIVE MILES OF ST. LUCIE UNIT 2

FIGURE 2.1-16



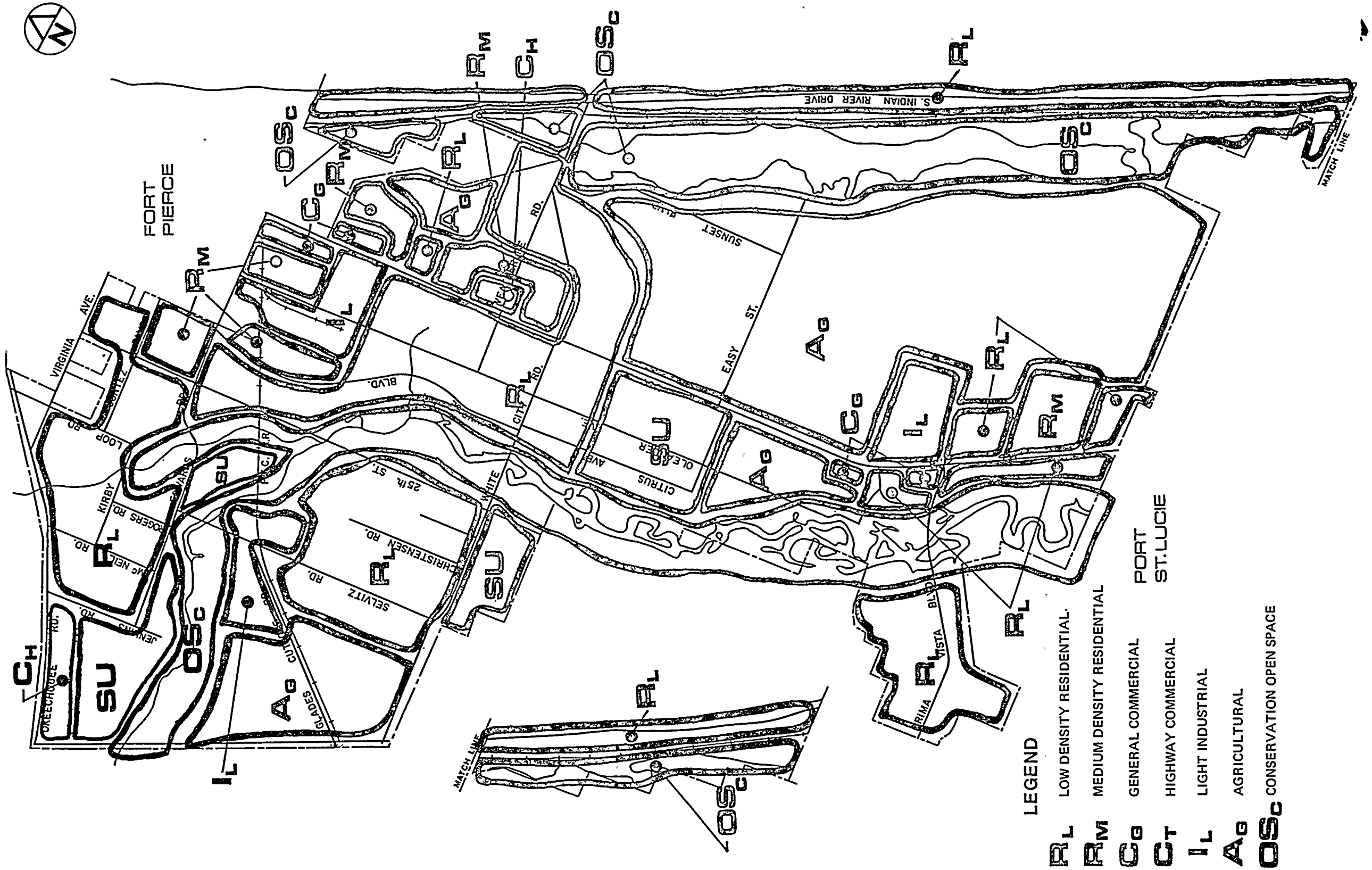
LEGEND

R_L	LOW DENSITY RESIDENTIAL		
R_M	MEDIUM DENSITY RESIDENTIAL	I_U	UTILITY INDUSTRIAL
R_H	HIGH DENSITY RESIDENTIAL	OS_C	CONSERVATION OPEN SPACE
C_G	GENERAL COMMERCIAL	OS_R	RECREATION OPEN SPACE
C_T	HOSPITALITY COMMERCIAL		

SOURCE: THE PLANNING/DESIGN GROUP, TAMPA, FLORIDA

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

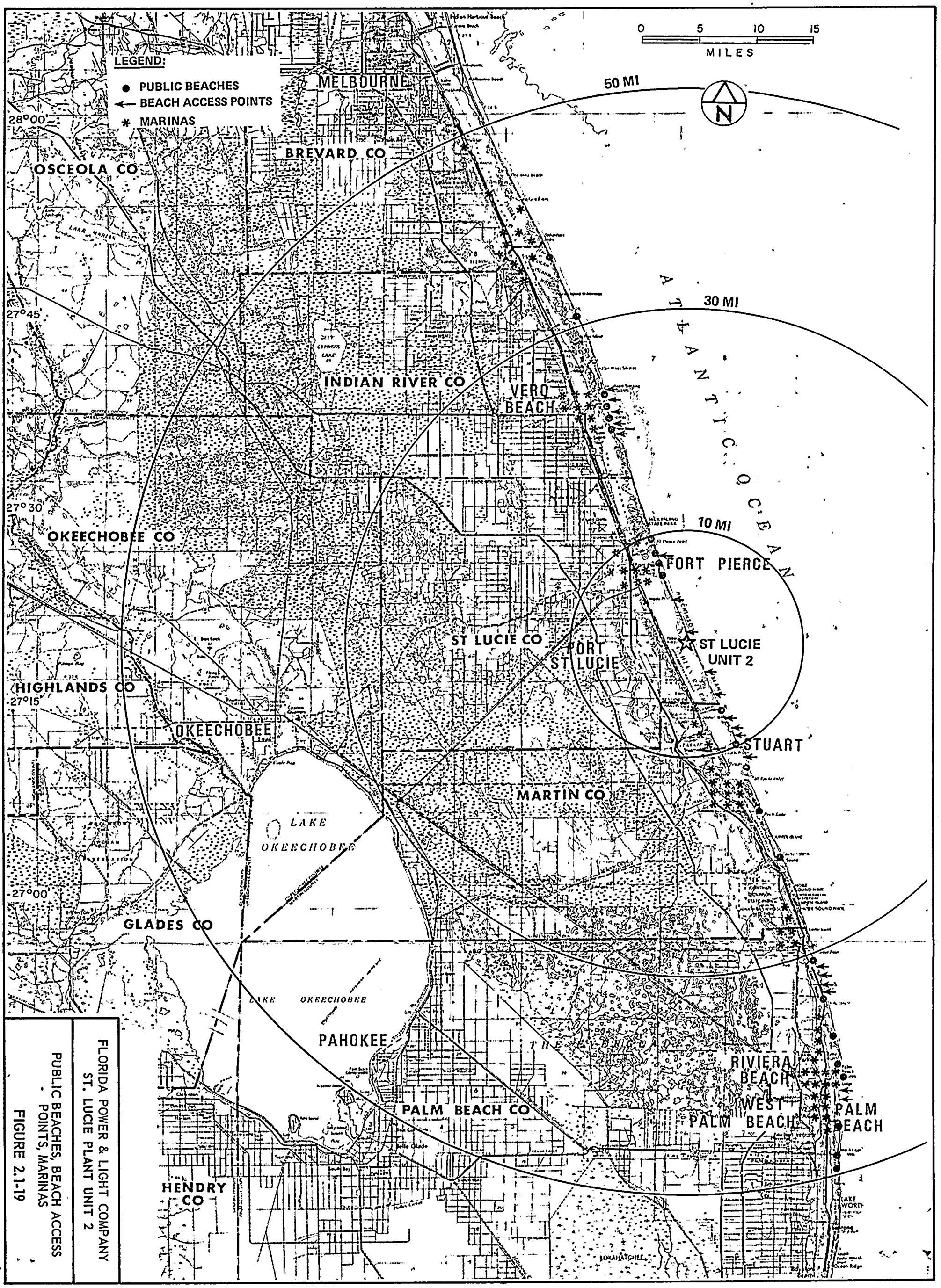
LAND USE PLAN
HUTCHINSON ISLAND PLAN
FIGURE 2.1-17



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

LAND USE PLAN
SAVANNAS AREA
FIGURE 2.1-18

SOURCE: THE PLANNING/DESIGN GROUP, TAMPA, FLORIDA



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

PUBLIC BEACHES, BEACH ACCESS POINTS, MARINAS

FIGURE 2.1-19

2.2 ECOLOGY

2.2.1 TERRESTRIAL VEGETATION AND WILDLIFE

2.2.1.1 Site Description

2.2.1.1.1 Soils

Soils belonging to the Palm Beach - Canaveral Association occupy the eastern side of Hutchinson Island. These are characterized as sandy, nearly level to sloping, and excessively to moderately well drained. The nearly level swamp soils of the west side of the island are poorly drained and subject to frequent flooding[1].

2.2.1.1.2 Vegetation

Vegetation cover types identified from color infra-red aerial photographs (November 1978; scale, approximately 1:9700) and field inspection of FP&L property are depicted in Figure 2.2-1, as are field observation stations. Corresponding acreages are presented in Table 2.2-1. Two thirds of the 1132 acre site, or approximately 750 acres, are mangrove swamp. The remaining land is coastal beach and dune (49 acres), Australian pine (9 acres) and 300 acres associated with the operation of St Lucie Units 1 and 2 which are cleared of vegetation except for isolated pockets of scrub vegetation. Fifty-two acres of the 300 acres originally cleared have not been utilized recently, and currently support disturbed field and shrub vegetation.

a) Mangrove Swamp

Swamps in the site and vicinity are a mosaic of dense mangrove thickets and areas of open water (Figure 2.2-1). The red mangrove, Rhizophora mangle, predominates. Of 43 systematically located stations in which mangrove were observed, R. mangle occurred in 42, white mangrove (Laguncularia racemosa) in 12, and black mangrove (Avicennia germinans) in seven stations. Laguncularia racemosa and A. germinans were more often observed along canal edges. Canopy height in the closed stands has attained 15 to 20 feet. Trunk diameters of red mangroves are generally less than five inches, while a few black mangroves with diameters as great as 15 inches have been observed.

Mangrove swamps cover approximately 2,700 acres within a five mile radius of the St Lucie site. Their occurrence on Hutchinson Island and absence on the mainland (Figure 2.1-16) reflects the ability of the three mangrove species to survive inundation by water of variable to high salinity. In Florida, mangrove swamps attain their best development in the Ten Thousand Island and Cape Sable regions where the warmer climate renders conditions more favorable than on Hutchinson Island[2].

The observed relative abundance of R. mangle onsite may reflect sucessional processes or external physical factors[3]. Generally, mangrove species distribution exhibits a deep water to shallow water

trend of R. mangle - A. germinans - L. racemosa/Conocarpus erecta (buttonwood)[2]. Rhizophora mangle, however, also typically dominates colonization of newly available habitat such as occurred in the Everglades after Hurricane Donna[4]. Past efforts to curb mosquito populations on Hutchinson Island through ditching, diking and flooding of swamps, may have eliminated all three species from some areas and consequently favored re-establishment by R. mangle.

Red mangrove stands on the site exhibited no obvious signs of defoliation or disease. Although tidal exchange is prevented or greatly reduced by encircling dikes, standing water is brackish to saline. No evidence was observed of invasion by freshwater flora.

A small area (2-4 acres) near the eastern edge of the mangrove swamp north of the discharge canal is elevated above surrounding terrain. Plant species observed there are noted in Table 2.2-2, Stations 3, 4 and 5. The presence of cabbage palm (Sabal palmetto) and the tropical hardwoods white stopper (Eugenia axillaris) and mastic Mastichodendron foetedissium) suggest that this area is an isolated stand of hammock forest.

Nielson and Nielson[7] reported the occurrence of a wide band of hammock forest at a site along SR A1A, four miles north of Fort Pierce (approximately 13 miles north of the St Lucie site). Hammock forest at their study site was transitional between beach and dune vegetation and mangrove swamp, and was briefly described as a "dense forest dominated by oaks and palms." Davis[8], however, states that the change from dune vegation to mangrove on offshore bars such as Hutchinson Island is typically abrupt; with little or no transitional hammock forest. An example of this sharp zonation can also be discerned in Table 2.2-2. Station 10, comprised entirely of red mangrove growing in approximately two inches of water, may be contrasted to Station 11, 60 feet seaward, where sandy soils, Australian pine and sea grape (Coccoloba uvifera) prevail. 2

b) Coastal Beach Dune

Much of the area depicted in Figure 2.2-1 as beach and dune vegetation is saw palmetto (Serenoa repens). Saw palmetto and Australian pine (Casuarina sp.), both abundant on sandy soils of the site, tend to prevent establishment of other plant species.

Cover/abundance values of dune plants were recorded along meter-wide transects in the vicinity of the intake and discharge canals. Measurements obtained from the area replanted after construction of St Lucie Unit 1, and from the area to be cleared for installation of a second discharge pipeline, are presented in Tables 2.2-3 and 2.2-4, respectively. Coccoloba uvifera, Yucca aloifolia, Myrsine guianensis, Lantana involucrata and Crotalaria pumila are all species of tropical affinity which probably range not much further north of the St Lucie site[5].

c) Disturbed Field and Shrub

The approximately 52 acres of disturbed field/shrub depicted in Figure 2.2-1 consist of a few dense stands of Brazilian pepper (Schinus terebinthifolius), and open field. The latter is characterized by invading shrubs such as black mangrove, false willow (Baccharis angustifolia) and Brazilian pepper. Roughly half of the ground surface is bare soil, perhaps due to frequent flooding, compacted soil and poor drainage. Common herbaceous plants include grasses, sedges and rushes.

2.2.1.1.3 Wildlife

The following description of terrestrial animal use of the site and vicinity is restricted in area to Hutchinson Island and its adjacent waters.

a) Mammals

Over 20 species of mammals have been observed on Hutchinson Island (Table 2.2-5). Mammals most common near the site are the Virginia opossum, eastern mole, marsh rabbit, old field mouse and raccoon. Because the site vicinity contains limited upland area and few habitat types, opportunities for greater species occurrence do not exist. Relative biological isolation from the mainland is also a barrier to the introduction of additional species to the island. Disturbed field/shrub habitat depicted in Figure 2.2-1 likely supports the cotton rat, old field mouse and possibly the least shrew. If this area is allowed to succeed to shrub and hammock forest, species composition may shift toward cotton mouse, wood rat, and gray squirrel.

b) Birds

From 150 to 200 species of birds conceivably occupy the site and vicinity at some time each year (Table 2.2-6), based on data from the St Lucie Unit 2 Environmental Report - Construction Permit (Table 2.2-3), a winter field visit (first week February 1979), and recent Christmas bird counts[9][10] near Ft Pierce, Florida, approximately 13 miles to the north. Limited available habitat types and upland land area reduce species occurrence near the site.

Several important species were observed in the site area during the 1979 winter field visit, including raptors and waterbirds (see Section 2.2.1.2.2). Mangrove stands immediately north of the discharge canal and Big Mud Creek were prominent roosting and feeding areas for wading birds. Mallards and blue-winged teal were seen at the plant island area in canals and in temporary bodies of water. The intake and discharge canals and offshore areas were visited by feeding royal terns, ring-billed gulls and several shorebird species. Bird species common to the mangrove stands and associated roads were ground doves, yellow-throated warblers, common yellowthroats, and blue-gray gnatcatchers. Osprey were frequently seen over waters adjacent to the site and American kestrels were common

in all upland habitat types. One Cooper's hawk was sighted about three miles south of the site.

c) Sea Turtles

Three species of sea turtles, loggerhead (Caretta caretta), green turtle (Chelonia mydas) and leatherback turtle (Dermochelys coriacea) nest on Hutchinson Island. The current status of these species is discussed in Section 2.2.1.2.2.

d) Domestic Livestock

Occurrence of domestic livestock within a five mile radius of the site is discussed in Section 2.1.3.

2.2.1.2 Species of Special Importance and Their Relation to the Environment

Important species are defined as those potentially affected by the proposed action and which are of recreational or commercial value, threatened or endangered, critical to the survival of species considered important for the previous reasons, or critical to the functioning of terrestrial systems.

2.2.1.2.1 Flora

a) Protected Flora

Verbena maritima is proposed for listing by the U S Fish and Wildlife Service as threatened[11], and occurs on sandy, open, disturbed habitat throughout the area east of SR A1A in the vicinity of the site and surrounding area. Two species classified by the State as threatened[12], Acrostichum aurium and Sabal palmetto, occur in several locations along mangrove swamp edge, onsite.

Many of the plants included on the Official Florida List occur in South Florida[12]; some of these can survive on Hutchinson Island and might occur onsite. Annona glabra and Scaevola plumieri, both threatened, occupy mangrove swamp or beach/dune habitat, respectively. Tillandsia fasciculata is endangered and occurs along mangrove swamp edge and hammock forest. Myrcianthes fragrans var Simpsonii is proposed for Federal status as threatened, and is also found associated with hammock flora. These species were not encountered while performing site vegetation mapping studies.

b) Mangroves

Mangroves are a critical component of an ecosystem which provides habitat for an abundance of organisms including rare fauna. Mangrove swamps are also important for their moderating influence on storm impact. Leaf litter and algae production in an established mangrove swamp support a detritus based food web comprised of a diverse number of species[2]. Primary consumers of detrital matter are in turn a major food source for marine fishes, wading

birds and waterfowl. Environmental factors which regulate mangrove primary productivity relate to tidal exchange and water chemistry, as summarized below (M R Carter, et al, 1973, cited in[3]).

Tidal Factors:

1) Oxygen transport to root system.

2) Removal of salt and toxic sulfides from soil water.

3) Tidal interaction with surface water particulate load affecting sediment deposition or erosion.

4) Vertical motion of the groundwater table possibly transporting detrital based nutrients to mangrove root zone.

Water Chemistry Factors:

1) Total salt content determines pressure gradient between soil solution and plant, thus affecting leaf transpiration.

2) Possible compensatory effect of high soil macronutrient content on root absorption of nutrients (which is impeded by seawater salinity).

3) Input of allochthonous macronutrients contained in wet season surface runoff.

c) Beach and Dune Flora

Beach and dune vegetation retard wind erosion. Stabilized dunes in turn diminish effects of wave action on areas further inland. Sea oats, Uniola paniculata, are an especially effective soil-binder. The tropical affinity of some dune species also renders them of special interest to botanists and naturalists.

2.2.1.2.2 Vertebrate Fauna

a) Endangered and Threatened Species

Vertebrates of special importance can be classified in terms of their level of scarcity, and sport or recreational value. Species scarcity is officially determined by the Federal government and the State of Florida. Endangered species on the Federal list[11] which occur on Hutchinson Island are the peregrine falcon (Falco peregrinus), bald eagle (Haliaeetus leucocephalus), brown pelican (Pelecanus occidentalis), West Indian manatee (Trichechus manatus), leatherback turtle and green turtle. Of these, only the leatherback turtle and green turtle are known to breed on the island. The loggerhead turtle is classified as threatened by the Federal government and also breeds on Hutchinson Island.

Several of the other species winter and migrate through the Hutchinson Island area and may be common wildlife components of the region

(such as the brown pelican). The wood stork (Mycteria americana) is common in the site area during the winter and has additionally been classified endangered by the State of Florida[13].

b) Marine Turtles

Sea turtles spend their entire life in the ocean except for brief excursions to the nesting beaches by the females. In general, nesting takes place on summer nights when the female crawls up the beach and digs a nest chamber. Over a hundred eggs are laid and covered with sand. Eggs hatch after approximately two months, at which time hatchings surface from the nest and crawl to the sea (usually during the night).

The beach along Hutchinson Island is a major nesting site for loggerhead turtles (Caretta caretta) and one of the few locations where the green turtle (Chelonia mydas) and leatherback turtle (Dermochelys coriacea) nest in Florida. Worldwide populations of marine turtles are declining. In the U.S. this decline has largely been attributed to a reduction in available and suitable nesting beaches due to costal development and usage[14]. To aid in the protection of these species, they have been listed under the Endangered Species Act of 1973 with the loggerhead turtles classified as threatened and the Florida population of green turtles and the leatherback turtle listed as endangered. Loggerhead turtles dominate the turtle nesting on the island[15,16].

Loggerhead Turtles

Loggerhead turtles represent the predominant nesting activity on Hutchinson Island. The nesting season is generally between late April and late August, with the maximum nesting activity occurring in June or July depending on ocean temperatures. Adult females may nest several times during the summer, with up to seven nests recorded for a single female. The nesting interval is approximately two weeks. Individual females are thought to breed in a two or three year cycle[17].

The total number of nests on Hutchinson Island was estimated by plotting number of nests for each of nine, 0.75 mile, sample regions (Figure 2.2-2) against distance along the beach and calculating the ratio of counted nests to beach length in the sample regions compared with total nests to total beach length. The results of the surveys were 4661 nests in 1971, 4234 in 1973, 4813 in 1975 and 2872 in 1977. Previous estimates for total nest density ranged from 3550[15] to 6067[16] for 1971 and 5359[16] in 1973. The discrepancy in estimates is largely caused by different treatments of weighted ratios and by various authors' consideration of the nine sample areas as representative of the rest of the island.

Beach characteristics including slope, width, erosion, silhouette, lighting, dune height and human activity are thought to influence the site specificity of nesting turtles[16]. Coincident with the

trend of increasing north-to-south beach stability and width is a trend of increased nesting activity. This characteristic was observed in all surveys (Figure 2.2-3). A positive correlation exists between nesting activity and topographical suitability of the beach[18]. At the present time these factors appear to influence the distribution of turtle nesting activity along the beach.

Since 1973, there has been an overall increase in the ratio of unsuccessful to successful nesting crawls. In the years studied, the percentage of unsuccessful nests in the nine sample regions was 30.4, 41.7, and 46.8 percent in 1973, 1975 and 1977, respectively. This general trend may reflect effects of development and of increased human activity on the island which deters crawling turtles from completing nests[16,17].

Emerging hatchlings are easily disoriented by bright lights and will often crawl toward lights rather than toward the ocean. This misdirection increases their exposure to predators and desiccation, and thousands of hatchlings have been killed on the roadways near nesting beaches. Heavy predation by raccoons reduces the effective reproductive rate of the turtles. Nest losses recorded during the four Hutchinson Island surveys have been locally as high as 82 percent (Figure 2.2-4). Predation destroyed 28 percent of the nests in 1971, 44 percent in 1973, 21 percent in 1975 and 39 percent in 1977. Lower predation rates in sample areas 6, 7 and 8 may be related to human activity and raccoon habitat loss to development. The highest predation rates were at the northern and southern portions of the island.

The total recruitment of loggerhead turtle hatchlings from the Hutchinson Island rookery is estimated using an average of 120 eggs per nest, the annual nest predation rate observed and a hatching rate of 64 percent of the eggs per nest[16]. Hatchling production for the years surveyed is estimated at 257,734 in 1971, 183,941 in 1973, 292,014 in 1975 and 134,547 in 1977. Mortality due to disorientation of hatchlings and predation by birds and mammals further reduce recruitment.

The world status of adult loggerhead turtle populations is poorly known, although considered to be declining[14]. An estimated 25,000 to 50,000 adult turtles constitute the Florida population[14,19]. Population decline has been largely attributed to nesting habitat destruction, predation and commercial exploitation[14].

St Lucie County ranked third in density of turtle tracks per mile and fourth in total tracks during a statewide aerial survey of nesting beaches in 1977. An estimate of 8254 nesting females was made for the State of Florida[19]. Using the same data base, the Hutchinson Island population of nesting females totaled 670 for the same period. Hutchinson Island, therefore, represents about eight percent of the total Florida nesting population.

Green Turtles

Green turtles have life history requirements similar to loggerheads; however green turtles are herbivorous and occupy a more southerly range. Compared to loggerhead turtles, green turtles are uncommon on Hutchinson Island. The numbers of their nests observed in the beach surveys were 22 in 1971, 26 in 1973, 37 in 1975 and five in 1977. 2

Green turtles produce about 100 eggs per nest. Using the predation and hatchability factors applied to loggerhead turtles, Hutchinson Island had a potential of 1014 hatchlings in 1971, 932 in 1973, 1871 in 1975 and 195 in 1977. In 1956, the House of Refuge Museum became active in nest transplanting, hatching, rearing and releasing green turtles. This effort has been aided by the FP&L beach surveys which locate nests for transplanting. The result of this program has been the near elimination of the predation factor in egg mortality and consequently increased the potential for survival of the Florida green turtle population. 2 2

The population of green turtles is estimated to be between 100,000 and 400,000 worldwide. The Florida population is estimated to be less than 50 adult females[14]. Assuming a two or three year breeding cycle, the 8-15 green turtles estimated to nest on Hutchinson Island[16] represent a major portion of the Florida population.

Leatherback Turtles

Leatherback turtles nest only incidentally in Florida. Hutchinson Island beach surveys have identified no more than three nests per year. 2

c) Game Animals

Several game species are common to this area. Marsh rabbits and gray squirrels, both upland game species, are present. Waterfowl such as blue-winged teal, mallards, American coots, and common gallinules were seen in the site vicinity during the 1979 winter survey.

2.2.1.3 Pre-existing Environmental Stresses

Trenches and dikes created in the past, for mosquito control, probably still affect mangrove swamp structure and function by partially controlling water flow. Examination of factors regulating mangrove primary productivity, tabulated in Section 2.2.1.2.1 b, indicates that all of the processes listed would be influenced by channelizing water movement and blocking tidal exchange. Tidal flow in an undisturbed system permits nutrient transport to coastal marine communities and access for marine fauna. Diking effectively prevents this nutrient flow and biotic movement, presumably decreasing species diversity and ecosystem productivity.

The site is periodically exposed to hurricanes and cold spells. The former may limit maximum tree height and favor periodic re-establishment of R.

mangle - dominated forest[3]. Cold spells cause defoliation[3] and may be a possible cause of perturbation on Hutchinson Island, which is near the northern range of mangrove distribution[2].

2.2.2 AQUATIC ECOLOGY

The biological communities in the inshore and nearshore marine environments of Hutchinson Island have been sampled in two different field programs. St Lucie Unit 1 preoperational (baseline) monitoring was conducted by the Florida Department of Natural Resources, September 1971 - September 1973. St Lucie Unit 1 operational monitoring, conducted by Applied Biology Inc, was initiated in March 1976 and is the St Lucie Unit 2 preoperational monitoring program. Currently available data from this program consists of results through December 1978. To provide consistency between the two sampling programs, stations sampled during St Lucie Unit 1 operational monitoring coincided with stations occupied during St Lucie Unit 2 preoperational monitoring (Figure 2.4-6).

The Applied Biology data[20-22], resulting from an extensive sampling program, which included detailed taxomic identification and statistical analyses, have been used to describe the salient features of spatial and temporal distributions of the biotic assemblages near the St Lucie site. Where appropriate, comparisons with results from the St Lucie Unit 1 preoperational monitoring are also presented.

2.2.2.1 Phytoplankton

The phytoplankton data resulting from St Lucie Unit 1 baseline and operational monitoring are summarized in Table 2.2-7. Significant results of statistical tests performed on phytoplankton data collected at the offshore stations during the operational monitoring (within years, 1976-1978), are presented in Table 2.2-8. Table 2.2-9 presents similar information from tests conducted on the pooled data set from these years. Figure 2.2-5 presents a time series of mean (off-shore stations 0-5) cell densities for the three year period. Mean cell densities for all stations and years in surface and bottom samples are presented in Figures 2.2-6 and 2.2-7, respectively.

Phytoplankton communities are classified into major taxonomic groups which are primarily based on photosynthetic pigments in addition to morphological features. Major groups found at St Lucie include Bacillariophyta (diatoms) Chlorophyta (green algae), Chrysophyceae (yellow-brown algae and silicoflagellates), Cryptophyta, Cyanophyta (blue-green algae), Euglenophyta, Haptophyceae (including coccolithophores), Prasinophyceae, Pyrrophyta (dinoflagellates), unidentified phytoflagellates, and Xanthophyta. Complete species lists are found in Appendix 2.2A.

Chlorophyll a is the primary photosynthetic pigment and is found in all phytoplankters. Concentrations of chlorophyll a, with additional information of available light, may be used to estimate productivity values[23]. Phaeopigments, the product of chlorophyll catabolism, result upon death of the organism. Variations in cell density, chlorophyll a, phaeopigments and the physical attributes of the water at the time of sampling were used

to examine the temporal and spatial fluctuations of phytoplankton populations off St Lucie.

2.2.2.1.1 Species Succession

Diatoms dominated the phytoplankton communities in all years of study. During the baseline monitoring, species of Nitzschia and Bellerochea, Thalassionema nitzschoides, and Skeletonema costatum were abundant throughout the study period. Diatoms constituted 57.5 percent, 42.2 percent, and 59.3 percent mean relative abundance in the operational monitoring years 1976, 1977, 1978, respectively, with Skeletonema costatum the dominant species in 1976 and 1977, and codominant with Nitzschia delicatissima in 1978. During the baseline study, blue-green algae dominated the communities collected at Station 3 in November 1971 and at Station 1 in November 1972. This phenomenon was not observed during the operational monitoring. The relative abundance of diatoms was consistently high during periods of peak abundance (54.2 percent in October 1976, 74.6 percent in November 1977, and 64.3 percent in November 1978). Dinoflagellates, which reached 50 percent relative abundance at Stations 3, 4, and 5 in July 1971, never represented more than 32 percent (and generally less than five percent) of the total community (pooled data from all stations) sampled during the operational monitoring.

The secondary components of the phytoplankton assemblages collected in 1976-1978 showed consistent patterns. The density of phytoflagellates, which were second in total abundance, peaked during the warmer months. The inverse relationship in peak occurrence of diatoms and phytoflagellates was noted by Smayda[28], and was attributed to group-specific temperatures required for optimum growth. The green algae exhibited slightly increased relative importance in May 1976, June 1977 and July 1978, but were not numerically dominant throughout the sampling years. The Pyrrophyta, Cryptophyta, Prasinophyceae, and Cyanophyta showed generally higher relative abundances in 1977 and 1978, as compared to 1976, but represented minor components of the phytoplankton community throughout the monitoring program.

2.2.2.1.2 Temporal Variations

Phytoplankton densities in the marine environment off Hutchinson Island are characterized by seasonal and annual fluctuations. Because of the ephemeral and transitory nature of phytoplankton, differences between years and seasons reflect the natural variability resulting from the dynamics of the nearshore environment and the inherent patchiness of phytoplankton distributions. The extreme disparity between cell densities recorded in the baseline studies and those observed during the operational monitoring (Table 2.2-7) are thought to reflect differences in sampling techniques. The chorophyll a concentrations from the two programs were measured by similar techniques and reflected consistent values from the two periods of sampling.

a) Among Years

Analysis of variance in cell densities from the three years of operational monitoring samples (Table 2.2-9) indicated that surface and bottom densities were greater in 1976, than in 1977 or 1978.

Although cell densities from 1977 surface samples were comparable to 1978 surface samples, cell densities from 1978 bottom samples were significantly greater than densities found in samples collected from bottom waters in 1977. Concentrations of chlorophyll a (surface and bottom) were greater in 1976 than in 1977 and concentrations from bottom samples collected in 1978 were significantly greater than concentrations in bottom samples collected in 1977. Chlorophyll a concentrations collected in surface and bottom samples from 1976 and 1978 were not significantly different. Phaeopigment concentrations in the 1976 bottom samples were also significantly greater than those found in the 1977 and 1978 bottom samples. Phaeopigment concentrations from 1976 surface samples were significantly greater than bottom samples collected in 1978. Because chlorophyll a is ubiquitous, and because phaeopigments are the ultimate form of degraded chlorophyll, consistent trends in cell density and these two pigments are not unusual.

Productivity estimates, calculated from the concentration of chlorophyll a and light transmittance data as proposed by Ryther and Yentsch[23], showed a mean value of o.49, 0.33, and o.42 g C/m^2/day in 1976, 1977, and 1978, respectively. Although this method of estimating productivity has a precision of $\pm$ 25 percent[24] the calculated mean annual productivity estimates (179 g C/m^2 in 1976, 121 g C/m^2 in 1977, and 156 g C/m^2 in 1978) all fall within the range of values expected from a nearshore environment[25]. The apparent higher productivity in 1976 may have resulted because only productivity estimates from March through November were used. Samples were not taken in January and February 1976 and these months tend to have low productivity rates (App. Table 2.2-4).

These variations in cell density, pigment concentration and productivity estimates among the years of study are similar to population changes observed in subtropical ecosystems which are not adjacent to power plants[26,27]. Changes in these parameters over time are considered to reflect the natural variability within phytoplankton populations.

b) Within Years

Phytoplankton populations observed in 1971-72, 1976, 1977, and 1978 all exhibited peak periods of abundance in late fall (October-November). Secondary peaks were observed in the baseline year of sampling, in 1976 and 1978. The secondary peaks varied in the month of occurrence - January 1972, March 1976, and May 1978. These variations in month of peak occurrence and unimodal versus bimodal abundance have also been observed in other subtropical environments, e.g., Tampa Bay[26] and Indian River[27].

2.2.2.1.3 Spatial Variations

Differences in cell densities between depths and among stations were observed throughout the sampling program. Cell densities measured in bottom samples were generally greater than surface densities at all stations, during all sampling periods. Concentrations of chlorophyll a and other pigments (App. Table 2.2-2 and 2.2-3) exhibited the same pattern. This trend was most pronounced in the case of phaeopigment, reflecting the continuous rain of dead phytoplankton to the bottom and subsequent resuspension of the material induced by bottom currents, a finding also reported by Roman[29] for Buzzard's Bay, Massachusetts.

Stations which exhibited significantly different concentrations of chlorophyll a and cell densities changed from year to year and varied between surface and bottom samples. Generally, nearshore stations (0 and 1) exhibited increased all density and chlorophyll a concentrations as compared to offshore stations (2-5), particularly the shoal station (3) (Table 2.2-8).

Although data analyzed for the three year period showed enhanced cell densities and concentrations of pigments at Stations 0 and 1 (Table 2.2-9), significant changes in the density of diatoms, the predominant component of the phytoplankton community, were not observed. However, some changes in the densities of some minor components were found to be significant in the 1978 data. Significant differences in the densities of prasinophytes, cryptophytes and unidentified phytoflagellates were found when these data from the control and/or discharge station samples were compared to data from offshore stations[22] samples. However, when the densities of the same taxa in samples from the discharge and control stations were compared no significant differences were found. Therefore, the differences in densities of the minor species could not be directly attributed to plant operation and are considered to reflect natural differences between the nearshore and offshore stations.

2.2.2.1.4 Factors Associated With Temporal and Spatial Variations

Results presented above suggest that phytoplankton are most abundant at the nearshore stations. These increases may be caused by increased availability of nutrients and light throughout the water column, characteristics associated with nearshore environments. The physical attributes of water masses are known to effect the growth of phytoplankton. However, it is unlikely that any single physical parameter caused the increased abundance of phytoplankton observed at the nearshore stations. Therefore, multiple regression analyses were used in an attempt to explain the variance in phytoplankton densities and chlorophyll a concentrations vis-a-vis physical parameters of sample water (Table 2.2-8). Analysis of the 1976 and 1977 data (Mar 1976 - Dec 1977), variance in temperature (T), nitrate (NO_3) and ammonia (NH_3) accounted for 26.7 percent of the variance in offshore cell densities whereas, for the same period, variance in T, NO_3, nitrite (NO_2) and silicates (SiO_2) explained 47 percent of the variance in offshore chlorophyll a concentrations. In 1978, 50 percent of the variance in surface cell densities could be explained by variance in T, salinity (S), dissolved oxygen (DO), NO_3, NO_2 and NH_3; variance in T, DO, NO_3, NO_2, NH_3 and SiO_2 accounted for 57 percent of the

variation in surface chlorophyll a concentrations. Bottom densities of cells in 1978 were correlated with T, DO, NO_3, NO_2, NH_3 and orthophosphate (PO_4), explaining 47 percent of the variation, whereas basically the same variables (T, S, NO_3 and PO_4) explained only 29 percent of the variance in chlorophyll a concentrations in bottom samples.

It is clear that the above variables bear some relationship to phytoplankton productivity. Nearshore stations generally have higher phytoplankton densities. Standing crop in the canals is consistently higher than that observed offshore. Therefore abundances at Stations 1 (near the St Lucie Unit 1 discharge) could be increased due in large part to discharge of phytoplankton from the canals.

2.2.2.2 Zooplankton

Results from the baseline and St Lucie Unit 2 preoperational monitoring sampling programs are summarized in Table 2.2-10. Data collected during the three years of monitoring have been analyzed and the results of the among and within year analyses for the three year period are presented in Table 2.2-11. Figure 2.2-8 is a time series of mean (Stations 0-5) zooplankton densities for this period. Appendix 2.2A provides the raw data and tables verifying statistical results used in the summary tables.

The zooplankton collected off Hutchinson Island were primarily composed of neritic (nearshore) forms. The neritic taxa, which prefer relatively warm waters and reduced salinities, normally extend only a limited distance offshore. Conversely, oceanic (open water) forms, which are characteristically holoplanktonic, are independent of their proximity to land and bottom substrates. Oceanic forms occurred rarely and in relatively low abundance in samples from Hutchinson Island waters. The species numerically dominating those oceanic forms collected included siphonophores, euphausids, salps, and certain chaetognaths.

The neritic holoplanktonic forms found most frequently were calanoid copepods (*Paracalanus aculeatus*, *Acartia spinata*, *Labidocera aestiva*, and *Temora turbinata*), chaetognaths, polychaetes, and the sergestid shrimp *Lucifer faxoni*. Cyclopoid copepods were also present and occurred throughout the sampling period. Meroplanktonic forms, which made significant contributions to the neritic community were decapod, echinoderm, gastropod, pelecypod, polychaete larvae and barnacle nauplii. Those organisms considered benthic in nature included nematodes, gammarid and caprellid amphipods and harpacticoid copepods.

2.2.2.2.1 Temporal Variations

Population estimates of sampled zooplankton were based on calculations of density (individuals/m^3) and measurement of biomass (ash-free dry weight/m^3). Density estimates are available from both sampling programs, however, biomass was not measured during the baseline monitoring period. These population estimates differed in their degree of annual fluctuation. Zooplankton biomass estimates from surface and bottom samples exhibited no significant differences between years. However, over the three year operational monitoring, zooplankton densities were significantly greater in 1977 and 1978 than in 1976, in both surface and bottom samples. The

range of densities over both sampling programs (17-51, 529 zooplankters/m^3) including the maximum density collected (August 1978; 51,529 zooplankters/m^3) appear normal for nearshore, subtropical water bodies[30,31].

A seasonal pattern of peak zooplankton densities in spring and late summer/fall was apparent in all years of study. The specific month of maximum densities fluctuated, occurring in May 1972, September 1976, March 1977 and August 1978. Secondary peaks were observed in January 1972, July 1977 and October 1978. The lack of a secondary peak in the 1976 data may have been due to the initiation date of sampling. Periods of maximum biomass were observed in July 1976, July 1977 and August 1978. A disparity between the periods of maximum density and maximum biomass is not uncommon and may reflect maturation of the zooplankton population or seasonal influx of larger forms. Periods of seasonal density minima also fluctuated between years and were observed in November 1971, May 1976, December 1977 November 1978. Depressed populations occurring in the spring may reflect heavy grazing pressure exerted by fish larvae while late winter is commonly a period of reduced zooplankton productivity.

2.2.2.2.2 Spatial Variations

Zooplankton density and biomass values were generally greater in bottom samples than surface samples at all stations through all years. Because all samples were collected during the day, this observed trend may be the result of the negative phototactic response of zooplankton. In 1978 (Table 2.2-11), Station 1 surface samples contained significantly greater numbers of zooplankton than samples from Station 3. Surface biomass was significantly greater at the discharge station (Station 1) than at Stations 0, 2, 3 and 4. Pooling data from all three years of sampling confirmed that increased densities and biomass occurred at the discharge station over the three year period (Table 2.2-11).

2.2.2.2.3 Factors Affecting Temporal and Spatial Variations

Correlation analyses showed significant covariance in zooplankton abundance (and biomass) with some water quality parameters (Table 2.2-11). In the data collected from March 1976 - December 1977, significant positive correlation was observed between zooplankton abundance and temperature in surface and bottom samples. The consistently positive correlation with temperature resulted from the pattern of seasonal increases in zooplankton abundance which parallelled increases in ambient water temperatures. Significant negative correlations of bottom zooplankton densities and surface biomass with dissolved oxygen, observed in data from March 1976 through December 1977, may reflect the inverse relationship between temperature and dissolved oxygen rather than a significant effet of dissolved oxygen on zooplankton distribution.

Multiple regression analysis indicated that temperature, salinity, and dissolved oxygen accounted for 34 percent and 42 percent of the variation in surface and bottom zooplankton densities, respectively (Table 2.2-11). Similarly, 17 percent and 14 percent of the variation in surface and bottom biomass was explained by the variance in these parameters. These results complement results from the correlation analyses.

These results reflect the physiological response of zooplankton to ambient water quality. However, because water quality parameters were not significantly different among stations (Section 2.4), these factors cannot totally account for the patchy distribution of zooplankton within the the water column and the observed interstation differences in density and biomass.

As discussed previously, all zooplankton samples were collected during the day. However, diurnal vertical migration of zooplankton to the surface at night, and to the bottom at dawn, is commonly observed. The increased bottom densities of zooplankton observed during the operational monitoring sampling program may reflect this phenomenon. Further, phytoplankton abundances were also consistently greater in bottom samples and the parallel occurrence of zooplankters may reflect their feeding habits.

Similarly, the significantly increased densities of zooplankton found at Station 1 suggest redistribution of zooplankton. However, it is not clear whether the increased zooplankton densities are due to increased productivities or result from migration into an area of higher food levels (Section 2.2.2.1), or both.

2.2.2.3 Macrophytes

Sampling of the macrophytic community off the St Lucie plant was part of the St Lucie Unit 2 preoperational monitoring program, initiated March 1976. Data resulting from this sampling program (through December 1978) are summarized in Table 2.2-12. No macrophyte data were collected during baseline monitoring, which was summarized in the St Lucie Unit 2 Environmental Report - Construction Permit.

Few macroalgae were collected in the St Lucie plant area because of the lack of suitably stable substrates. Macroalgae are primarily epilithic and epiphytic, i.e., growing on rock substrates or other plant life[32,33]. A limited number of large shell fragments found in the trough area (Stations 2, 4, and 5) may provide adequate attachment sites for the holdfast, which fixes the algae to the substrate. However, the scarcity of large rocks or extensive solid substrates in the area minimizes algal abundance. Because the abundance of the collected flora was limited no quantative analyses were performed on the data.

Rhodophytes, including Gracilaria spp, Hypnea spp, and Chondria spp dominated the collections all three years, representing 46 percent and 65 percent of the species collected in 1977 and 1978, respectively. This is consistent with the observed increase in abundance of red algae in tropical areas[32]. Phaeophytes, chlorophytes, and cyanophytes were poorly represented (in number of taxa and density) in collections made off Hutchinson Island.

2.2.2.3.1 Temporal Variations

a) Among years

Approximately 25 species of macroalgae were collected in 1976 and 1977. More than 88 species were collected in 1978. The marked increase in the number of taxa represented is explained by a large

influx of drifting algal communities which washed onshore in summer 1978. Drifting algal communities generally contain more algal species than do fixed communities[34]. Although the influx of large quantities of drifting algae could not definitely be associated with storm activity, such influxes are not uncommon in the Hutchinson Island area[35].

b) Within years

Seasonal variations were consistent within each sampling year, with the density and diversity of algal species increasing in the summer and early fall. September was the month of peak abundance in 1976 and 1977. More species were found in September 1978 (54 species) than in 1976 and 1977, but June was the month of peak abundance and diversity in 1978, when 64 species were collected. The algal community was least diverse in winter and early spring (March) in all years.

2.2.2.3.2 Spatial Variations

Differences among stations within years were minor. In 1976 and 1977, there was a tendency toward higher densities and diversity at shell hash stations (Stations 2-5). It is difficult to assess the source of algae collected in dredged samples (i.e., whether they were growing on the substrate or had just drifted over it when sampled), but many of these organisms require hard substrates, and it is suggested that increased densities at shell hash stations were a result of habitat availability. In 1978, more taxa were collected at nearshore stations. In this case, seasonal winds and water currents appear to have caused algae to drift onshore from more permanent sources offshore.

The temporal and spatial oscillations in the macroalgal community off Hutchinson Island observed over the period of operational monitoring appear to be the result of seasonal life history patterns and dispersion by physical forces.

2.2.2.4 Macroinvertebrates

Several factors determine the structure and composition of benthic macroinvertebrate communities. Water depth, chemical quality of water and sediment (e.g., levels of dissolved oxygen concentrations of organic materials) water currents, and food availability from overlying water masses are determinants of density and diversity of benthic communities. In particular, investigators have observed significant correlations between substrate characteristics (median grain size, porosity) and composition of the benthos[36,37]. Therefore, variations in sediments are described before examining spatial and temporal variations evidenced by biological populations resident on or within the substrate.

2.2.2.4.1 Sediment Samples

Sediment characteristics (mean particle size, particle class size distribution, and sorting coefficient) can be used to define three distinct zones in the oceanic area off Hutchinson Island. This zonation was apparent

throughout the sampling period of baseline (1971-1973) and operational (1976-1978) monitoring. The zones, which corresponded to distance offshore were defined as: beach terrace, including Station 1 throughout the three year study and Station 0 in 1977 and 1978; offshore trough, including Stations 2, 4 and 5 throughout the study period and Station 0 during 1976; and the shoal area, represented by Station 3. The movement of the control station from the offshore trough area to the beach terrace facilitated comparisons to the discharge station, which is located on the beach terrace.

Beach terrace sediments are composed of fine to very fine, moderately well sorted, gray, nonbiogenic (quartz) sand. Some temporal and spatial variations were observed during the baseline study by Gallagher[38], but the sediments remained relatively homogeneous. Textural changes at Station 1 occurred during 1976, and may have been caused by installation of the plant discharge pipeline for St Lucie Unit 1. These observations are discussed in Section 4.1. Samples collected in 1977 and 1978 reflected baseline conditions.

Offshore trough sediments consisted of poorly sorted, very coarse particles. The sediment type is termed "shell hash" because it is composed almost entirely of broken mollusc shells. Trough sediments were porous, characteristically exhibiting large variations in mean particle size and sorting coefficient. A significant quantity of gravel-size particles (>2.0 millimeters) was typical. Differences in substrate among stations and years could be attributed to changes in the gravel fractions which occurred at Station 5. Samples collected through 1978 indicated that the mean particle sizes of the sediment at the three trough stations remained unchanged from baseline observations.

The substratum at the offshore bar, Pierce Shoal, is well sorted medium sand, composed of calcareous material. Significant textural changes were rarely observed in these sediments. The shoal is formed by strong hydrological processes that continuously sort substrate particles. Continuity through years was the outstanding feature of sediment samples analyzed from this station.

2.2.2.4.2 Benthic Grab Samples

During baseline monitoring, benthic grab specimen analysis was limited to arthropods and lancelets. Therefore, comparisons with data from the operational monitoring programs are limited to these taxa. Results from Mann-Whitney U-Tests (nonparametric test of two samples; Appendix 2.2A) comparing pooled samples (1971-1973 versus 1976-1978) are summarized in Table 2.2-13. No significant differences in lancelet density were observed among stations between the two periods of study. However, significantly greater arthropod densities were observed at Stations 1, 2, 3 and 5 during the period of St Lucie Unit 2 preoperational monitoring. Similarly, diversity in species of arthropods was higher at Stations 1, 2, 4 and 5 in 1976-1978, compared to the baseline.

Descriptive results of the three years of St Lucie Unit 2 preoperational monitoring are summarized in Table 2.2-14. Results from statistical tests applied to grab data are presented in Table 2.2-15. Figures 2.2-9 and 2.2-10 present time series (three years) of density and diversity of macroinvertebrates collected by grab at Stations 0 and 1, and Stations 2-5, respectively.

a) Temporal Variations

The number of taxa and density (individual/meter^2) of organism varied at all stations throughout the year. Generally, variations in organism density were not attributable to seasonal fluctuations of any individual species or group of taxa, but resulted from cumulative fluctuations in large numbers of taxa. This observation is supported by the highly significant correlation found between the number of taxa and density at all stations through the three year period. The single exception to this correlation was observed at Station 3 in spring 1978. Annual maximum density, which occurred at this station, could be accounted for by a large population increase of a single species of mollusc, Crassinella duplinana.

Within year variations in the benthic communities could not be attributed to substrate characteristics, which were homogeneous (within stations). Attempts to correlate seasonal variations and density and species richness (number of taxa represented) with water temperature also yielded variable results. Independent correlation analyses (Spearmen ranks; Appendix 2.2A) of these two community descriptors against ambient water temperature were conducted on the pooled data for March 1976 - December 1978. (The pooled data included all stations except the control station which was moved from the trough area to the beach terrace in March 1977, necessitating its exclusion from the three year comparison). Significant correlation of species richness with temperature and density with temperature were observed at Stations 2, 3 and 4. The lack of significant correlation among these variables at Stations 1 and 5 may be due to the overlap of temperate and tropical patterns of spawning and larval recruitment which results in a continuous supply of young organisms throughout the year, regardless of water temperature.

The Kruskal-Wallis test (nonparametric test between two samples; Appendix 2.2A) was used to examine changes in grab efficiency, number of taxa and number of individuals collected at each station over the three year period. Although no significant changes were observed in the sediments at the beach terrace stations, grab efficiency decreased over the three years. A similar decrease was noted at Station 5; however, this change could partially be explained by the decrease in gravel fraction and increase in medium sand.

Decreases in both the number of taxa and number of individuals collected were observed at the control station. However, these changes were the direct result of moving the control from the trough area to the less rich beach terrace area. (The purpose of this move was to provide a control to compare with the discharge station, also

located on the beach terrace). Significant increases in taxa richness were observed at Stations 2 and 4 through the operational monitoring. Samples from Station 5 exhibited significant increases in both species richness and density. These stations (Stations 2, 4 and 5) contained the more diverse communities found in the site area, and annual variations may simply reflect natural population variability.

Rarefaction curves[39], which plot the number of taxa collected against the number of individuals collected, were also used to examine changes through years at individual stations (Appendix 2.2A). These figures suggest that Stations 3 and 4 were most similar within the three years of study, while variability in the benthic community at Station 5 was indicated by greater discrepancy in these plots among years. Stations 0, 1 and 2 exhibited intermediate year to year continuity. These observations corroborate the results of Kruskal-Wallis tests among year comparisons and suggest that the site area was characteristically variable and exhibited few apparent long term changes.

b) Spatial Variations

The Morisita Index[40] of community similarity was used to make interstation comparisons. This index compares the abundance of shared taxa among stations and the total density and diversity of organisms among stations and establishes a factor of interstation faunal similarity. Although the degree of interstation similarity (as derived from grab sample data) fluctuated through the years, the same basic groupings which corresponded to the substrate groupings prevailed throughout the period of operational monitoring.

Substrate at the deeper water, offshore trough stations (Stations 2, 4, and 5), consisted of heterogeneous, porous, shell hash sediments which are well oxygenated and provided microhabitats capable of supporting highly diverse fauna. Biomass levels, densities, and number of represented taxa were consistently higher at these stations than nearshore or shoal stations. Annelid species (worms) dominated (over 50 percent) other groups. Sipunculids, molluscs, and arthropods generally represented less than 17 percent of the groups at these stations. Echinoderms and lancelets generally comprised an even smaller percentage, usually less than six percent.

The tightly packed, homogeneous sands, found at the nearshore beach terrace stations (Stations 0 and 1) limited the number of species which could successfully exploit the environment. The sands are transitory and continually perturbed by surface water action. Consequently, community parameters describing the benthic fauna collected here were low in comparison to the remaining stations. Annelids dominated the species collected, but to a lesser extent than that observed at the trough station (approximately 40 percent). Arthropods were secondarily dominant at both beach terrace stations, with a large component of nemerteans represented at Station 1.

The homogeneous, well sorted sands, characteristic of the shoal station, contained no hard shells, but good porosity provided sufficient supplies of oxygen and food to support a comparatively diverse macroinvertebrate community. Molluscs were the major group of individuals collected (approximately 70 percent). This high dominance was primarily due to the recruitment of juvenile C. duplinana in 1976 and 1977. Annelids and arthropods were the second and third most frequently collected groups, respectively, at this station.

2.2.2.4.3 Trawl Samples

Data from trawl collections made during the St Lucie Unit 2 preoperational monitoring program are summarized in Table 2.2-16. Results of statistical analyses of the pooled data (1976-1978) are presented in Table 2.2-17 and utilized in the following discussion. Total numbers of macroinvertebrates collected by trawling through the three year period of study are presented in Figure 2.2-11.

a) Temporal Variations

Community descriptors derived from the trawl data exhibited little fluctuation through the period of St Lucie Unit 2 preoperational monitoring. The site area exhibited slightly increased species richness (number of taxa collected) over the three years when data from all stations were pooled (156, 164 and 182 taxa were collected in 1976, 1977, and 1978, respectively). These variations, in all probability, reflect the difference in sampling effort among years (ten months in 1976 versus 12 months in 1977 and 1978) and natural variation within benthic populations.

Similarly, no significant differences in species richness were observed through the three years of study at individual stations, when data were compared by Kruskal-Wallis tests. Mann-Whitney U-Tests applied to the same data indicated a slight increase in the number of species in samples collected at the control station in 1978. In this year, 50 percent of the organisms collected were trawled in the month of August. This increase in the number of individuals and the number of taxa collected was the direct result of the large influx of drift algal communities with associated macroinvertebrates (Section 2.2.2.3). Whittaker dominance-diversity graphs[41], which plot the number of individuals versus the rank of individual species (based on species abundance), indicate that Stations 1 and 2 were consistently dominated by a few species throughout the study period, and that Station 5, where species were more equitably distributed, showed consistent patterns of dominance through the three year period. The control station, characteristically more diverse with increased equitability (relative distribution or dominance), exhibited an increase in the dominance-diversity patterns, resulting from the influx of drifting algal communities. Station 4, generally dominated by only a few species, exhibited greater diversity in 1978 than in 1976 and in 1977.

Maximum species richness was generally observed during summer months (July-September). Water temperatures peaked in late summer and early fall when associated abundant food sources (phytoplankton, zooplankton, and infauna) could support an increased epifaunal population and allochthonous populations of invertebrates associated with drift algae wash ashore (2.2.2.3.1.a). However, two exceptions to this tendency were noted. Species richness was maximal in November 1978 at Station 5. No obvious cause for this variation was evident. In 1977, a drop in the number of taxa was observed at the discharge station (Station 1) during August and September. No comparable reduction was observed at the control station (Station 0) in the same year. The reduced collections at Station 1 might have resulted from the St Lucie Unit 1 discharge; however, this pattern was not observed in 1978, when St Lucie Unit 1 was on line for a comparable period.

McCloskey's Index[42] ranks species by dominance (the number of individuals within each species) and was used to compare species dominance among years. Results from the index indicated that dominant species were not constant from year to year at the shell hash stations 2, 4, and 5 (Table 2.2-17). The reverse was true at Station 0, 1, and 3, where Trachypeneaus constrictus consistently was the dominant species collected. Some commercially important invertebrates were collected by trawl in limited numbers. These organisms, their abundance and commercial importance, are discussed in Section 2.2.2.7.

b) Spatial Variation

Station differences were noted in all years. Collections made at Station 5 consistently contained the greatest number of taxa while Stations 0, 1, 2, and 4 showed intermediate levels of species richness. The shoal station (Station 3) exhibited the lowest numbers of taxa in all years. In 1978, a marked change in epifaunal abundance was observed at Station 3. In May and June, a large number of juvenile sand dollars, Mellita quinquiesperforata, were collected. This change was considered to reflect the natural process of species migration across the shoal[22]. Station grouping, derived from Morisita indices applied to the trawl data, generally confirmed groupings determined from the grab data. However, changes in species abundance collected in trawls caused changes in the degree of similarities within groups between years. The influx of M. quinquiesperforata at Station 3 in 1978 made this station more similar to Station 4 than in previous years. Increased species diversity at the control station in 1978 created a dissimilarity between the beach terrace stations, which had previously shown great similarity. These changes may have resulted from the influx of drift algae (2.2.2.3.1.a) and have been attributed to natural changes in the benthic community.

2.2.2.4.4 Summary

The benthic community sampled off Hutchinson Island exhibited consistent seasonal trends and station differences throughout the period of opera-

tional monitoring. Although no correlation of density and water temperature was evident in the trawl data, the grab data reflected the seasonal effects of bottom water temperatures on infaunal abundance. Station differences, observed in both trawl and grab data, were attributed to variations in substrate characteristics and were consistent through the three years of study. Variations in the number of taxa and individuals collected, and changes in species dominance, are considered to reflect the natural variation of the benthic fauna.

2.2.2.5 Fish and Shellfish

Fish collected in the St Lucie plant area include migratory species (which spend only portions of their lives off the southeast coast of Florida) and resident species. The Atlantic Ocean off southeast Florida is a transition zone (temperate/tropical), where ranges of temperate and tropical species overlap. Many of the fish species which are important to the commercial and sport fisheries have been found off Hutchinson Island.[20-22,43] Life histories of these species have been presented in the St Lucie Unit 2 Environmental Report - Construction Permit. The role played by St Lucie County and Martin County in Florida commercial and sport fisheries is described in Section 2.2.2.7.

Results from the baseline monitoring program have been discussed in Section 2.7 of the St Lucie Unit 2 Environmental Report - Construction Permit and are summarized in Table 2.2-18. Forty-two hours of sampling effort (33 and 9 hours of offshore trawl and beach seine sampling, respectively) collected 75 species of fish. Over 250 species of fish were collected during the three years of St Lucie Unit 2 preoperational monitoring. Sampling methods included beach seining, offshore gill nets, and bottom trawls. The results from each sampling method are presented and incorporated into a summary description of the fish populations found in the St Lucie plant area.

2.2.2.5.1 Beach Seine

Three areas of the nearshore environment were sampled by beach seine: Station 6, north of the discharge; Station 7, between the intake and discharge canals; and Station 8, south of the intake canal. Results of the three year beach seine St Lucie Unit 2 preoperational monitoring sampling program are summarized in Table 2.2-19.

a) Temporal Variation

The number of fish collected by beach seine over the three year sampling program fluctuated, with 1,211 finfish collected in ten months of sampling in 1976, and 819 and 1,203 finfish in 12 months of sampling in 1977 and 1978, respectively. The only shellfish collected were speckled crabs which were collected in small numbers (77, 51 and 54 speckled crabs in 1976, 1977 and 1978, respectively). Largest catches from beach seines occurred in September of 1976 and 1977, whereas in 1978 catches were largest in July. The variation and number of fish collected in peak periods of abundance are thought to result from natural variations in fish populations and the chance occurrence of schooling species in the sampled area.

Certain species were consistently dominant from year to year in beach seine samples. However, relative abundances changed among years. Anchovy and herring accounted for over 55 percent of all fish collected in 1976, but only 28 percent and 29 percent of fish collected in 1977 and 1978, respectively. No single species dominated in 1977 or 1978, and codominance of herring, kingfish, and sand drum occurred in 1977, with codominance of the same species plus spot occurring in 1978. Anchovy and herring are schooling species and, therefore, exhibit patchy spatial distributions. Observed changes in relative abundance of these species are thought to be the function of natural variations and schooling behavior, which affects ease of capture.

b) Spatial Variation

Interstation comparisons showed that samples from the northern station (Station 6) contained more fish than samples from the south stations (Stations 7 and 8) in 1976 and 1977. Analysis of variance showed this difference to be statistically significant in 1977. No significant differences were observed among stations in 1978. Combining all three years, 45.1 percent of the total catch was seined at the north station, while mid and south stations comprised 29.0 percent and 25.9 percent of the catch, respectively. The increased abundance at the north station may have been a sampling artifact, resulting from a smoother bottom at this station, facilitating efficiency in sampling.

2.2.2.5.2 Offshore Gill Nets

Results of offshore gill net samples collected during the three years of St Lucie Unit 2 preoperational monitoring are summarized in Table 2.2-20.

a) Temporal Variation

Annual trends in seasonal abundance and species dominance were consistent during the three years of operational monitoring. Seasonal peaks in abundance regularly occurred in the late fall (October/November). However, a secondary peak was observed in January 1977, attributable to a large influx of bluefish into the site area. Spanish mackerel and bluefish (92 percent of annual catch were captured in January) collectively accounted for over 60 percent of all fish captured by gill net in 1977. Although landings data are not yet available, increased commercial activity, particularly increased mackerel catches, was observed in 1977[21]. In 1976 and 1978, jacks, including Atlantic bumper, blue runner, and crevalle jack, dominated the gill net samples, constituting 66.7 percent and 71.0 percent, respectively of all fish collected with this sampling gear. Spanish mackerel, bluefish, and jacks school in large groups, and are caught, are usually captured in large numbers. Shellfish were rarely captured with this gear.[20-22]

b) Spatial Variation

Differences in numbers of fish captured by gill nets at different stations were noted throughout the study period. In general, nearshore stations (Stations 0 and 1) yielded higher fish captures with this gear type. Differences in numbers of fish captured among stations were statistically significant in 1978. In this year, catches at the control station (Station 0) were significantly greater than catches from Stations 3 and 4 and catches at the discharge station (Station 1) were significantly greater than all other stations except the control station. The dominant species captured by this gear (bluefish, Spanish mackerel, and jacks) are piscivores and may be attracted to nearshore areas in search of forage species.

2.2.2.5.3 Bottom Trawls

Table 2.2-21 summarizes results of trawl samples collected during St Lucie Unit 2 preoperational monitoring.

a) Temporal Variation

Between year fluctuations in fish populations sampled by trawl were observed over the three year study period. A slight increase in numbers of fish captured by this gear was noted. Periods of peak abundance were inconsistent and occurred in May 1976, November 1977, and September through November 1978.

Bottom trawling selects for bottom fish. Predominant fish collected by this gear included flatfish, cusk eels, drum, and sand perch. Relative abundances were similar in the three years, with the exception of an increased representation of sea trout in 1977 (29.6 percent relative abundance). However, this increased relative abundance was the result of a single catch of 606 individuals in November. No single species dominated in either the 1976 of 1978 collections although anchovy appeared in large numbers in 1978 (18.3 percent relative abundance). This observation is partially explained by the schooling behavior of anchovy, resulting in large catches when they are collected.

Numbers Versus Biomass

Species which were dominant numerically were not those which dominated samples by weight. For example, in 1978, anchovy were most abundant numerically (18.3 percent relative abundance) with flatfish, sea robin, and scorpionfish and grunts, represented by 12.0 percent 11.7 percent, and 10.5 percent of individuals captured, respectively. By biomass (weight), the following figures were derived: sea catfish (16.8 percent biomass), pigfish (14.2 percent), and snook (10.6 percent). This observation, that the species representing greatest numerical abundance did not coincide with the species accounting for the greatest biomass, was consistent among years, indicating that the majority of fish collected were small organisms.

b) Spatial Variations

Spatial variations were evident in the consistently higher numbers of fish captured at Stations 0, 1 and 5. However, interstation differences were never statistically significant when tested by analysis of variance.

2.2.2.5.4 Summary

The fish community observed off Hutchinson Island as a whole exhibited continuity through the years of operational monitoring. Although the relative abundance of major species collected by each gear type fluctuated among years, species collected (with each gear type) were consistent through the three years. The variation in numbers of fish collected exhibited no single trend of increased/decreased fish abundance. Therefore, variations are considered to reflect the natural variability of the fish species in time and space, and their susceptibility to capture in samples.

The community can be characterized by its association with three relatively distinct environments: the surf zone, the open bottom zone, and the neritic zone which are described by results from beach seine, bottom trawl and offshore gill net gear types, respectively.

The surf zone is characterized by highly turbulent water with a substrate of shifting sand. Few fish were habitual residents in the area: these included the bottom feeding carnivores; drum, threadfin and pompano, which feed on burrowing macroinvertebrates. Other species which were occasionally captured in the area included herring, anchovy, and jacks, are considered to be transients.

The open bottom zone, composed of porous shell hash (see Section 2.2.2.4.1) lacked extensive vegetation, but provided more stable substrate and supported a relatively abundant benthic community. These organisms, in turn, supported a diverse group of bottom feeding fish, including flat fishes (flounder, sole, and tonguefish), sea robins, and cusk eels.

The neritic zone, the open coastal waters beyond the surf zone and above the open bottom zone, supported the majority of fish species found in the St Lucie area. The waters off Hutchinson Island are subject to intrusion of Indian River estuarine waters, and influxes from the oceanic waters of the Florida Current, resulting in a high diversity of fish species, including species which are important components of commercial and sport fisheries.

2.2.2.6 Ichthyoplankton

Currently available data from the St Lucie Unit 2 preoperational monitoring ichthyoplankton sampling program formed the basis of the following description of ichthyoplankton assemblages found off Hutchinson Island[20-22]. These data are summarized in Tables 2.2-22 and 2.2-23 for fish eggs and larvae, respectively. Figure 2.2-12 presents mean density of fish eggs and larvae (Stations 0-5) as a continuous time series over the three year period of study.

2.2.2.6.1 Fish Eggs

Egg densities ranged from 0-88/m^3, 0-98/m^3, 0-169/m^3 in 1976, 1977, and 1978, respectively. Erratic variations in egg abundance are in part related to the range overlap of temperate and tropical species which spawn at different times and temperatures. However, peak abundances consistently occurred in the spring and early summer months.

When egg density data were pooled by season, significant interstation differences in egg densities were observed. In 1977, pooled data indicated that egg densities at the control station (Station 0) were greater than densities at offshore stations (2 and 5 which exhibited significantly greater densities than samples at stns. 1, 3 and 4) in the summer months (Appendix 2.2A). During the winter of 1978, significantly increased densities were found at Station 1. The control station is farther south than other stations, and the difference in egg densities could be the result of different circulation patterns which occur at this station. The increased abundance in egg densities (1978) collected at the discharge station may reflect increased spawning in the warmer discharge water or may have been coincidental[22].

Egg densities were not well correlated with physical parameters measured in this monitoring program (Appendix 2.2A). In 1976 and 1977, a significant negative correlation was found between egg densities and temperature. Maximal egg abundance occurred in March 1976 and February 1977. Because egg densities were apparently independent of plant operating mode[20,21], this correlation was considered to reflect the seasonal trend of increased egg densities in the cooler months of the year. There was no significant correlation between temperature and egg density in 1978, when maximum egg densities were observed in the spring and early summer. A significant positive correlation between egg density and dissolved oxygen was observed in all three years. However, the correlation was considered coincidental because dissolved oxygen concentrations were not limiting at any time during the three years of study[20-22]. In 1977, a negative correlation between egg density and turbidity was observed, but could not be explained. In 1978, egg densities were correlated positively with salinity. However, a stepwise regression model applied to the 1978 data, using the physical parameters of salinity, dissolved oxygen, and temperature as independent variables, explained little of the variation in egg densities (19 percent) and, therefore, had low predictive value (Appendix 2.2A).

2.2.2.6.2 Fish Larvae

Table 2.2.23 summarizes fish larvae collections from the three year St Lucie Unit 2 preoperational monitoring program[20-22]. Larval densities fluctuated through each individual year, ranging from 0-7.9/m^3, 0-8.6/m^3, and 0-11.0/m^3 in 1976, 1977, and 1978, respectively. The mean densities were 0.64/m^3, 0.70/m^3 (arithmetic) and 0.42/m^3 (geometric) over the same years. Larval densities were greater in samples collected in 1977 than in those collected in 1976 and 1978, despite the decreased densities of eggs collected in 1977 (Figure 2.2-12). The increased abundance resulted from increases in a large number of taxa and could not be attributed to a single family group. Clupeiform

larvae, including larval herring and anchovy, dominated the collections in all three years and accounted for 29.8 percent, 64.9 percent and 61.6 percent relative abundance in 1976, 1977, and 1978, respectively. The second most abundant family was Gerreidae in all years. This family includes mojarra larvae and accounted for 19.5 percent, 6.3 percent, and 7.6 percent relative abundance in the collection made in 1976, 1977, and 1978, respectively.

Interstation differences which occurred in the three years were inconsistent, and no trend was evident. In 1976, no single oceanic station or group of stations (nearshore versus offshore) had significantly greater densities of fish larvae. Observed differences between stations were attributed to the patchy distribution of fish larvae[20]. In 1977, interstation differences in larval abundance were observed when data were pooled by season. In the winter months (December 1976-February 1977), larval densities at Station 0 were greater than larval abundances found at Stations 2 and 3, which are offshore the discharge. During the fall (September through November 1977), collections made at Station 1 (the discharge station) showed higher densities of larvae than all other stations. These differences could not be attributed to plant operation, and probably reflected the patchy, spatial distribution of fish larvae.

In 1978, samples from Station 1 again exhibited higher densities of larvae than samples from all other stations. When 1978 data were pooled by season, the observed difference could be attributed to significant differences between stations during the spring sampling period, indicating that significantly higher densities of larval at Station 1 were found only during the spring. Significant differences in larval densities between stations were not noted in any other season. The increased abundance of fish larvae at Station 1 may have been coincidental, may reflect aggregation resulting from circulation patterns (onshore movement) or may have been related to higher food densities (phytoplankton and zooplankton), also found at Station 1[22].

Variation in densities of fish larvae did not consistently correlate with any physical parameters during the period of study. The 1976 data exhibited a positive correlation of larval density with temperature. However, because temperature differences were not significant between stations, operation of the plant could not explain the correlation. Peak larval densities occurred in April and September 1976. Therefore, the correlation probably reflected seasonal increased in larvae which paralleled increased water temperatures. A significant positive correlation of dissolved oxygen and larval densities was evident in results from larval sampling in 1976 and 1978. However, a significant negative correlation with larval densities was observed in 1977. Dissolved oxygen concentrations were not limiting at any time in the site area, and the significant correlations of larval density with dissolved oxygen concentrations were probably coincidental rather than suggestive of a significant relationship. A stepwise regression model of $\log_n$ larval density (1978 data) with dissolved oxygen and turbidity as independent variables could account for only six percent of the variance in larval densities (Appendix 2.2A).

2.2.2.7 Commercial, Threatened and Endangered, and Rare Species found Offshore Hutchinson Island

2.2.2.7.1 Commercial Species

Florida landing data for finfish and shellfish are summarized in Table 2.2-24. The most current summary report available is based on 1976 landing data[47].

In 1976, the dominant commercial finfish species landed in St Lucie and Martin counties were bluefish, king mackerel and Spanish mackerel. These three species accounted for 88 percent of the total catch from St Lucie County (50 percent Spanich mackerel, 34 percent king mackerel and four percent bluefish) and 77 percent of the total commercial catch in Martin County (64 percent Spanish mackerel, 11 percent bluefish and two percent king mackerel). Remaining commercial fish species accounted for five percent or less of total commercial landings.

Spanish mackerel landings from St Lucie and Martin counties represented 39 percent of the total Spanish mackerel landings in the state and 71 percent of the Spanish mackerel catch on the east Florida coast. Bluefish catch in the St Lucie and Martin counties accounted for 42 percent of the total Florida bluefish and 58 percent of the east Florida coast bluefish landings. King mackerel catches landed in these two counties represented 52 and 33 percent of total east Florida coast and total Florida landings, respectively. The exvessel prices of total St Lucie and Martin (1976) catches amounted to $123,339, $1,126,028, $1,231,154, for bluefish, Spanish and king mackerel, respectively.

Life histories of these three species were presented in the St Lucie Unit 2 Environmental Report - Construction Permit, Section 2.7.5.9. All three migratory species overwinter in the southeast Florida area. The northward migration of the Spanish mackerel occurs in the early spring, slightly before the migration of king mackerel. Similarly, bluefish populations peak during winter, before moving northward. The months of peak abundance of these fish as evidenced in commercial fisheries data (winter, early spring) corresponded to peaks in operational monitoring gill net sampling.

The role of St Lucie and Martin counties offshore waters in commercial shellfish catches is minor compared to its importance as major commercial and sport finfishing grounds. Florida shrimp landings are predominantly found along the Atlantic coast as far south as St Lucie inlet and the northwest coast to the Ochlockonee River (white and brown shrimp; *Penaeus fluviatilis* and *P. aztecus*), the Tortugas offshore grounds and the Sarasota-Tarpon Springs areas (predominantly pink shrimp; *P. duorarum*)[48,49]. Consequently, commercial shrimp landings from St Lucie and Martin counties are neglible (Table 2.2-24). Blue crab and spiney lobster were also captured commercially, although the total catch of both species in St Lucie and Martin counties was less than 0.3 percent of the total Florida catch of these species.

2.2.2.7.2 Endangered and Threatened Species

Marine turtles are the only organisms collected off Hutchinson Island which have been listed by U S Fish and Wildlife Service[50] as "threatened" or "endangered," and are discussed in Section 2.2.1.

2.2.2.7.3 Rare Species

A single fish species, the striped croaker (Bairdiella santaeluciae), collected off Hutchinson Island has been designated "rare" by the Florida Committee on Rare and Endangered Plants and Animals[51]. The preferred habitat of the striped croaker, in and beyond the surf between Sebastian and Ft Pierce inlets, is just north of the St Lucie site. Over the three years of operational monitoring, 230 specimens have been impinged, all of which were juveniles. In April 1978, three individuals were collected in trawls at the two nearshore stations. However, no specimens have been collected in beach seine sampling. It has been suggested[22] that the St Lucie area is at the southern extreme of the species' range and that the impinged juveniles reflect organisms already lost to the preferred habitat, displaced through longshore currents.

2.2.2.8 Preexisting Stress

Offshore effects of St Lucie Unit 1 operation are observable in samples collected from Station 1 (discharge station) when compared with samples collected at other stations. However, discernible changes are limited to the phytoplankton and zooplankton populations. Observed effects include modification in the relative abundances of minor taxonomic groups of phytoplankton, and increased density of phytoplankton and zooplankton. Differences in the relative abundance of phytoplankton between intake and discharge stations vary in the degree of change through the year. Further, species whose relative abundance increase or decrease change seasonally.

The observed increases in phytoplankton and zooplankton densities at the discharge may result from increased productivity due to increased temperature (phytoplankton) and increased food availability (zooplankton). Additionally, passive displacement of plankton-rich intake canal water (See Section 5.1.3) may also partially explain the increased densities observed at the discharge station.

These changes do not indicate that operation of St Lucie Unit 1 is stressing the offshore environment. The observed changes in species' relative abundance are limited to samples collected at the discharge station and the remaining offshore stations appear unaffected by plant operation. Similarly, increased productivity, which is not necessarily an adverse effect, has been observed only at the discharge station.

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TABLE 2.2-1

VEGETATIVE COMPOSITION OF

FP&L PROPERTY

Vegetation Cover Type	Acres	Hectares	Percent
Mangrove Swamp	750	305	66
Coastal Beach and Dune	49	20	4
Australian Pine	9	4	1
Utility-Developed Land			
St Lucie Unit 1 and 2 Facilities	248	99	22
Disturbed Field and Shrub[1/]	52	21	5
Road and Roadside	24	10	2
Total	1132	459	100

1/ Comprises part of St Lucie Units 1 and 2 fill/borrow area.

TABLE 2.2-2

COVER/ABUNDANCE ESTIMATES FOR PLANT SPECIES OCCURRING IN MANGROVE SWAMP HABITAT

	STATION[1/]												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Water depth (inches)	16	2	0	0	0	2	2	2	2	2	----beach------		
Species[2/]	Cover/Abundance[3/]												
Laguncularia racemosa (white mangrove)	4		2										
Rhizophora mangle (red mangrove)	1	5	4			5	4	7	6	7	1		
Avicennia germinans (black mangrove)		2											
Acrostichum aurium (leather fern)			2		2								
Casuarina sp (Australian pine)			2	4							4	6	4
Sabal palmetto (cabbage palm)			3	4	6								
Schinus terebinthifolius (Brazilian pepper)			3										
Ficus aurea (strangler fig)			3	3	1								
Forestiera segregata (Florida privet)				3									
Eugenia axillaris (White stopper)				3									
Tillandsia usneoides (Spanish moss)				1									
Mastichodendron foetedissium (wild mastic)				1									
Randia aculeata (White indigo berry)				2									
Calophyllum inophyllum					2						1		
Coccoloba diversifolia (tie tongue)					2								
Coccoloba uvifera (sea grape)					2								
Sesuvium portulacastrum													2

1/ Stations approximately 60 feet apart, 33 feet in diameter, and located along a transect in the swamp immediately north of discharge canal.

2/ Nomenclature of Long and Lakela[5]; voucher specimens collected for all species except Sabal palmetto, and identified at the University of Miami.

3/ 1 = solitary, cover less than 6 percent; 2 = few, cover less than 6 percent; 3 = numerous, cover less than 6 percent; 4 = 6-25 percent cover; 5 = 26-50 percent cover; 6 = 51-75 percent cover; 7 = 76-100 percent cover (Mueller - Dombois and Ellenberg[6]). All observations recorded January 30, 1979.

TABLE 2.2-3

COVER/ABUNDANCE ESTIMATES FOR DUNE FLORA: AREA OF UNIT 1 DISCHARGE PIPELINE

Species[3/]	STATION[1/]																											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
	COVER/ABUNDANCE[2/]																											
Uniola paniculata (sea oats)	4	5	7	7	7	4				6	7	7	5	3														
Panicum rhizomatum (panic grass)						7	7	4																				2
Cassuarina sp (Australian pine)								4	6	3													1	5				
Coccoloba uvifera (sea grape)								1							1					2	3	4	1	1	1			
Cenchrus incertus (burgrass)																	2	2		5	4		2	2	1	5		
Borrichia frutescens (sea daisy)																			2	2			2					
Juncus sp (rush)																					1							
Chamaesyce mesembryanthemifolia (spurge)																							1					
Bare Sand	7	5	3	2	2	2	3	7	4	4	2	2	7	2	2	7	7	7	7	4	7	6	7	7	7	7	7	7

1/ Stations located contiguously along transect perpendicular to coastline. Stations 1-9 occur on the east side of the foredune; transect terminated at FP&L fenceline (road) on west side of foredune. Each station one meter (3.3 feet) square.

2/ See scale presented in Table 2.2-2.

3/ Observations recorded January 30, 1979. Voucher specimens identified at the University of Miami. Nomenclature follows Long and Lakela (5).

TABLE 2.2-4

COVER/ABUNDANCE ESTIMATES FOR DUNE FLORA: AREA OF UNIT 2 DISCHARGE PIPELINE

Species[3/]	STATION[1/]																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	COVER/ABUNDANCE[2/]																	
Opuntia sp (prickly pear)	4																	
Uniola paniculata (sea oats)	1																	
Yucca aloifolia (Spanish bayonet)	1	3	4	6	5	7	5											
Helianthus debilis var debilis (sunflower)		2	1															
Croton punctatus			3															
Serenoa repens (saw palmetto)							6	7	7	7	7	7	7	7	7	7	7	
Cassuarina sp (Australian pine)																		5
Bare Sand	2	7	5	4	5	2	2	2	2	2	2	2	2	2	2	2	2	2

Additional species recorded from other shore transects:

Batis maritima (batis), Vitex trifolia, Myrsine guianensis, Lantana involucrata (lantana), Crotalaria pumila (rattle box)

1/ Stations located contiguously along transect perpendicular to coastline. Stations 1-9 occur on the east side of the foredune; transect terminated at FP&L fenceline (road) on west side of foredune. Each station one meter (3.3 feet) square.

2/ See scale presented in Table 2.2-2.

3/ Observations recorded January 30, 1979 Voucher specimens identified at University of Miami. Nomenclature of Long and Lakela [5].

TABLE 2.2-5

MAMMALS OF HUTCHINSON ISLAND
(Abundance proportional to number of "X's")

Species	Abundance, Location: Hutch. Island	Abundance, Location: Indian River	Habitat
Virginia opossum (*Didelphis virginiana*)	XXX		Varied types
Short-tailed shrew (*Blarina brevicauda*)	X		Varied types
Least shrew (*Crypotis florida*)	X		Fields, wetlands
Eastern mole (*Scalopus aquaticus*)	XX		Fields, sandy soils
Mississippi myotis (*Myotis austroriparius*)	XX	XX	Open water, field
Big brown bat (*Eptesicus fuscus*)	XX	XX	Open fields, buildings
Yellow bat (*Dasypterus floridanus*)	X	X	Woods
Evening bat (*Nycticeus humeralis*)	X	X	Trees, woodlands
Florida freetail bat (*Tadarida cynocephala*)	X	X	Buildings, open areas
Marsh rabbit (*Sylvilagus palustris*)	XX		Wetlands
Gray squirrel (*Sciurus carolinensis*)	X		Woods
Rice rat (*Oryzomys palustris*)	X		Wetlands
Old field mouse (*Peromyscus polionotus*)	XXX		Sandy fields
Cotton mouse (*Peromyscus gossypinus*)	XX		Woods
Cotton rat (*Sigmodon hispidus*)	XX		Fields, shrublands
Wood rat (*Neotoma floridana*)	X		Woods palmetto
Brown rat (*Rattus rattus*)	X		Dwellings
Porpoise (*Stenella frontalis*)		X	Ocean, estuaries
Gray fox (*Urocyon cinereoargenteus*)	X		Open woods
Raccoon (*Procyon lotor*)	XXX		Varied types
Mink (*Mustela frenata*)	X		Wetlands
Spotted skunk (*Spilogale ambarvalis*)	X		Fields, shrubs, open woods
River otter (*Lutra canadensis*)	X	X	River borders
Bobcat (*Lynx rufus*)	X		Forests, swamps
Manatee (*Trichechus manatus*)		X	Rivers
White-tailed deer (*Odocoileus virginianus*)	X	X	Varied types

Source: St Lucie Unit 2 Environmental Report - Construction Permit, 1973.

TABLE 2.2-6

LOCAL BIRD SPECIES

Below is a list of bird species that inhabit Hutchinson Island and the site vicinity. Species abundance and seasonal use of the area are indicated as follows:

R = Resident species
1 = Spring
2 = Summer
3 = Fall
4 = Winter

Abundance is given by:

r = Rare:	May not be found in site vicinity each year
o = Occasional:	Present in small numbers each season, hard to detect.
u = Uncommon:	Present in relatively small numbers in appropriate habitat types
c = Common:	Consistently observed; present in substantial numbers
a = Abundant:	Easily observed; present in large numbers.

Species	Abundance and Seasonal Occurrence
Common loon	u-3,4
Horned grebe	u-3,4
Pied-billed grebe	u-R
White pelican	u-4
Brown pelican	(c-a)-R
Gannet	r-4
Double-crested cormorant	c-R
Anhinga	(u-c)-R
Magnificant frigatebird	o-1,2,3,4
Great blue heron	c-R
Green heron	c-R
Little blue heron	(u-c)-R
Cattle egret	(c-a)-R
Reddish egret	o-R
Great egret	(c-a)-R
Snowy egret	c-R
Louisiana heron	c-R
Black-crowned night heron	u-R
Yellow-crowned night heron	u-R
Least bittern	u-4
Wood stork	c-R
Glossy ibis	u-R
White ibis	c-R
Brant	r-4
Snow goose	r-4

TABLE 2.2-6

Species	Abundance and Seasonal Occurrence
Mallard	u-3,4
Black duck	u-3,4
Pintail	u-3,4
Mottled duck	u-R
Green-winged teal	u-1,3,4;
Blue-winged teal	u-1,3,4;o-2
Gadwall	u-3,4
American wigeon	o-1,3;c,4
Northern shoveller	u-1,3,4;
Wood duck	u-R
Ringed-necked duck	u-4
Lesser scaup	(u-c)-4
Hooded merganser	u-4
Red-breasted merganser	c-4
Turkey vulture	c-R
Black vulture	c-R
Swallow-tailed kite	r-2
Coper's hawk	u-R
Red-tailed hawk	u-R
Red-shouldered hawk	u-R
Broad-winged hawk	r-3,4
Bald eagle	u-1,3,4
Marsh hawk	u-1,c-3,4
Osprey	u-1,2;c-3,4
Peregrine falcon	o-4,1,3
Merlin	o-4,1,3
American kestrel	c-3,4
Bobwhite	c-R
Virginia rail	u-1,3-4
Sora rail	c-1,3,4
King rail	r-1,3,4
Clapper rail	u-R
Purple gallinule	o-R
Common gallinule	c-R
American coot	c-1,3,4,r-2
Semipalmated plover	u-1,3,4
Piping plover	r-1,3,4
Wilson's plover	u-1,2,3; o-4
Killdeer	c-R
Black-bellied plover	u-1,3,4
Ruddy turnstone	u-2, c-3,4,1
American woodcock	o-3,4
Common snipe	u-3,4
Spotted sandpiper	u-3,4
Willet	u-1,2,3; c-4
Greater yellowlegs	u-1,4;c-3
Lesser yellowlegs	u-1,4,c-3

TABLE 2.2-6

Species	Abundance and Seasonal Occurrence
Least sandpiper	u-1,3,4
Dunlin	c-1,3,4
Short-billed dowitcher	c-3,4,1
Semipalmated sandpiper	c-1,3,u-4
Western sandpiper	c-1,3,4
Sanderling	(u-c)-3,4,1
Avocet	(r-o)-3,4
Great black-backed gull	(r-o)-4
Herring gull	c-1,3,4
Ring-billed gull	(c-a)-1,3,4
Laughing gull	(c-a)-R
Bonaparte's gull	(r-u)-1;c-3,4
Forster's tern	c-1,3,4
Common tern	(r-u)-3,4
Royal tern	c-R
Sandwich tern	u-c4,3,1,2
Caspian tern	u-c4,1,2,3,4
Black tern	c-3,u-1
Black skimmer	(u-c)-R
Mourning dove	c-R
Ground dove	c-R
Yellow-billed cuckoo	u-1,2,3
Smooth-billed ani	u-R
Barn owl	(r-u)-R
Screech owl	(u-c)-R
Great-horned owl	u-R
Short-eared owl	r-3
Barred owl	u-R
Chuck-wills widow	u-1,2;o-3,4
Common nighthawk	u-1,2
Ruby-throated hummingbird	u-1,3,4;r,2
Belted kingfisher	u-1,2;c-3,4
Common flicker	u-R
Pileated woodpecker	u-R
Red-bellied woodpecker	c-R
Red-headed woodpecker	r-R
Yellow-bellied sapsucker	u-3,4,1
Downy woodpecker	u-1,3,4;r-2
Eastern kingbird	(u-c)-1,3
Gray kingbird	r-1,2
Great crested flycatcher	u-1,2;o-3,4
Eastern phoebe	u-1;(u-c)-3,4
Tree swallow	o-1;a-3,4
Barn swallow	c-1,3
Purple martin	o-1,2,3
Blue jay	c-R
Scrub jay	r-R
Common crow	u-R

TABLE 2.2-6

Species	Abundance and Seasonal Occurrence
Fish crow	a-R
House wren	u-4,1,3
Carolina wren	u-R
Long-billed marsh wren	u-4,1,3
Mockingbird	c-R
Catbird	c-1,3,4
Brown thrasher	(u-c)-R
Robin	c-4
Hermit thrush	u-4
Swainson's thrush	u-1,3
Gray-checked thrush	u-1,3
Veery	u-1,3
Eastern bluebird	(r-u)-4
Blue-gray gnatcatcher	(u-c)-1,3,4
Ruby-crowned kinglet	u-4
Cedar waxwing	o-3,4,1
Loggerhead shrike	u-1,2,3,4
Starling	c-R
White-eyed vireo	(u-c)-R
Solitary vireo	(r-o)-4,3,1
Black-whiskered vireo	(r-o)-1,2
Red-eyed vireo	c-1,3
Black-and-white warbler	u-1,3;c,4
Worm-eating warbler	(o-u)-1,3
Orange-crowned warbler	o-3,u-4
Cape May warbler	c-1,u-3
Yellow-rumped warbler	c-3,4
Parula warbler	(r-o)-4,c-1
Yellow warbler	o-1,3
Black-throated blue warbler	c-1,3
Yellow-throated warbler	o-3,c-4,o-1
Blackpoll warbler	c-1,r-3
Pine warbler	u-R
Prairie warbler	u-R
Palm	o-1,c-3,4
Ovenbird	u-1,3,o-4
Northern waterthrush	o-1,3,4
Common yellowthroat	c-1,3,4
American redstart	c-1,3;r,4
House sparrow	c-R
Bobolink	u-1,3
Eastern meadowlark	u-R
Red-winged blackbird	c-R
Northern oriole	o-4
Rusty blackbird	r-3,4
Boat-tailed grackle	c-R
Common grackle	c-R
Brown-headed cowbird	(u-c)-3,4
Cardinal	c-R

TABLE 2.2-6

Species	Abundance and Seasonal Occurrence
Rose-breasted grosbeak	u-1,3
Indigo bunting	(o-u)-1,3,4
Painted bunting	(o-u)-1,3,4
Pine siskin	r-4
American goldfinch	u-3,4
Rufous-sided towhee	u-R
Savannah sparrow	c-1,3,4
Sharp-tailed sparrow	(r-o)-3,4
Seaside sparrow	(r-o)-3,4
Chipping sparrow	(o-u)-3,4
Field sparrow	r-3,4
White-throated sparrow	r-4
Lincoln's sparrow	r-1,3,4
Swamp sparrow	u-3,4
Song sparrow	o,1;u-3,4

Sources: Modified from St Lucie Unit 2 Environmental Report - Construction Permit, 1973.
References 9 and 10.
Reviewed by Dr. H.W. Kale II, Florida Audubon Society, 1979.

TABLE 2.2-7

SUMMARIZED RESULTS OF PHYTOPLANKTON SAMPLES FROM BASELINE[1] AND ST LUCIE UNIT 1 OPERATIONAL MONITORING PROGRAMS

	Baseline Monitoring Sep 1971 - Nov 1972[1]	Mar-Oct 1976[2]	Jan-Dec 1977[2]	Jan-Nov 1978[2]
Range of Cell Densities	1.0-30,533 cells/liter	282 x 10^3-9844 x 10^3 cells/liter	86 x 10^3-9723 x 10^3 cells/liter	99 x 10^3-24,249 x 10^3 cells/liter
Range of Chlorophyll - a Concentrations	0.08-7.7 mg/m^3	0.4-8.97 mg/m^3	0.21-12.2 mg/m^3	0.13-11.26 mg/m^3
Range of Phaeopigment Concentrations		0.0-3.41 mg/m^3	0.01-1.13 mg/m^3	0.0-1.19 mg/m
Primary Peak Period of Abundance (Secondary)	October	October (March)	November	November (May)
Taxa Observed	Bacillariophyta Chlorophyta Chrysophyta Pyrrophyta	Bacillariophyta Chlorophyta Chrysophyta Cryptophyta Cyanophyta Euglenophyta Haptophyceae Prasinophycease Pyrrophyta Xanthophyta Unidentified phyto-flagellates	Bacillariophyta Chlorophyta Chrysophyta Cryptophyta Cyanophyta Euglenophyta Haptophyceae Prasinophycease Pyrrophyta Unidentified phyto-flagellates	Bacillariophyta Chlorophyta Chrysophyta Cryptophyta Cyanophyta Euglenophyta Haptophyceae Prasinophycease Pyrrophyta Xanthophyta Unidentified phyto-flagellates
Dominant Taxa (Mean Annual Relative Abundance	Diatoms	Diatoms (57.5%) Unidentified Phyto-flagellates (32.9%)	Diatoms (42.2%) Unidentified Phyto-flagellates (38.3%)	Diatoms (59.3%) Unidentified Phyto-flagellates (25.0%)
Dominant Organisms	*Nitzschia* spp. *Chaetoceros* sp. *Bellerochea* sp. *Thalassionema nitzchioides* *Skeletonema costatum*	*Skeletonema costatum*	*Skeletonema costatum*	*Skeletonema costatum* *Nitzschia delicatissima*
Range of Productivity Estimates (Annual Rate)		0.14-1.39 g C/m^2/day (179 g C/m^2/year)	0.10-0.70 g C/m^2/day (121 g C/m^2/year)	0.04-2.24 g C/m^2/day (153 g·C/m^2/year)
Peak Period of Productivity		July	September	May
Period of Minimum Productivity		May	May	July

[1]Adapted from: Fla Dept Nat Res, Prelim Repts, Feb 1972, Jun 1972, Dec 1972 and Apr 1973.

[2]Adapted from: Applied Biology, Inc. Annual Rept of Biological Monitoring: St Lucie, 1977; 1978; 1979.

TABLE 2.2-8

RESULTS OF SIGNIFICANT STATISTICAL TESTS PERFORMED ON PHYTOPLANKTON DATA FROM ST LUCIE UNIT 1 OPERATIONAL MONITORING (MARCH 1976 - DECEMBER 1978)

	Mar-Oct 1976	Jan-Dec 1977	Jan-Nov 1978
ANOVA	Months: Cell Density Surface: Oct > all other months excluding March Bottom: Oct > all other months, May, > March Chlorophyll a Surface & Bottom: Oct > all other months Productivity July May	Months: Cell Density, Conc Chlorophyll a, Surface & Bottom: Nov > all other months Productivity Sept > May	Months: Tests not performed
	Stations: Chlorophyll a Surface: Station 1 > Station 3	Stations: Chlorophyll a Surface: Station 1 > Stations 3 & 4 Cell Density Bottom: Station 1 > Stations 2 & 3 Chlorophyll a & Phaeopigment Bottom: Station 0 > Station 3	Stations: Cell Density Surface: Stations 0 & 1 > Stations 3 & 4 Phaeopigment Surface: Station 1 > Station 5 Cell Density Bottom: Station 1 > Stations 3, 4 & 5 Chlorophyll a Bottom: Station 1 > Station 3 Phaeopigment: Bottom: Station 1 > Stations 2, 3 & 4

TABLE 2.2-8

	Mar-Oct 1976	Jan-Dec 1977	Jan-Nov 1978
CORRELATION	Chlorophyll a: + with Cell Density Cell Density & Chlorophyll a: + with temperature	Chlorophyll a: (March 1976-Dec 1977) + with Cell Density Bottom: Cell Density, Chlorophyll a & Phaeopigment (March 1976-Dec 1977): + with Phosphate - with Salinity Surface: Chlorophyll a (March 1976-Dec 1977): - with Salinity	Chlorophyll a: + with Cell Density
REGRESSION		Cell Density: Temperature, NO_2 & NH_3 account for 26.7% variance Chlorophyll a: Temperature, NO_3 & NO_2 & Silicate account for 47% variance	Cell Density: Surface: Temperature, Salinity, Dissolved O_2, NO_3, NO_2 & NH_3 account for 50% variance Bottom: Temperature Dissolved O_2, NO_3, NO_2, NH_3 & Phosphates account for 47% variancel Chlorophyll a: Surface: Temperature, Dissolved O_2, NO_3, NO_2, NH_3 & Silicate account for 57% variance Bottom: Temperature, Salinity, NO_2 & Phosphates account for 29% variance

TABLE 2.2-9

RESULTS OF SIGNIFICANT ANOVA PERFORMED ON ST LUCIE UNIT 1 OPERATIONAL PHYTOPLANKTON DATA (POOLED DATA INCLUDING MARCH 1976 - DECEMBER 1978)

Years	Surface Cell Density:	1976 > 1978, 1977
	Bottom Cell Density:	1976 > 1978 > 1977
	Surface Chlorophyll a:	1976 > 1977
	Bottom Chlorophyll a:	1976, 1978 > 1977
	Surface Phaeopigment:	1976 > 1978
	Bottom Phaeopigment:	1976 > 1977, 1978
Stations	Surface Cell Density:	Station 1 > Stations 3 & 4
	Bottom Cell Density:	Station 0 > Station 3
		Station 1 > Stations 3 & 4
	Surface & Bottom Chlorophyll a:	Station 1 > Station 3
	Surface Phaeopigment:	Station 1 > Stations 0, 2, 3, 4 & 5

TABLE 2.2-10

SUMMARIZED RESULTS OF ZOOPLANKTON SAMPLES FROM BASELINE AND ST LUCIE UNIT 1 OPERATIONAL MONITORING PROGRAMS

	Baseline Monitoring[1] Sep 1971 - Nov 1972	Mar-Oct 1976[2]	Jan-Dec 1977[2]	Jan-Nov 1978[2]
Represented Taxa		Annelida Arthropoda (primarily Crustacea) Bryozoa Chatognatha Chordata Coelenterata Echinodermata Mollusca Nematoda Protozoa Rotifera	Annelida Arthropoda (primarily Crustacea) Bryozoa Chatognatha Chordata Coelenterata Echinodermata Mollusca Nematoda Choronida Protozoa	Annelida Arthropoda (primarily Crustacea) Bryozoa Chatognatha Chordata Coelenterata Echinodermata Mollusca Nematoda Nemertina Phoronida Platyhelminthes Protozoa
Dominant Taxa (Annual mean relative abundance)	Copepods	Copepods (57.9%)	Copepods (63 %)	Copepods (62.6%)
Range of Densities	244-12,023 Zooplankters/m^3	31-20,206 zooplankters/m^3	17-28,913 zooplankters/m^3	110-51,529 zooplankters/m^3
Primary Period of Maximum Abundance (Secondary Peak)	May (January)	September	March (July)	August (October)
Period of Minimum Abundance	November 1971	May	December	November
Range of Biomass		0.04-167.5 mg/m^3	0.85-223.5 mg/m^3	0.98-95.5 mg/m^3
Period of Maximum Biomass		July	July	August
Period of Minimum Biomass		June	October	May

[1]Adapted from: Fla Dept Nat Res, Prelim Repts, Feb '72, Jun '72, Dec '72 and Apr '73.

[2]Adapted from: Applied Biology, Inc. Annual Rept of Biological Monitoring: St Lucie, 1977; 1978; 1979.

TABLE 2.2-11

RESULTS OF SIGNIFICANT STATISTICAL TESTS PERFORMED ON ZOOPLANKTON OPERATIONAL MONITORING DATA (March 1976 - December 1978)

	Within Years			Among Years
	1976	1977	1978	1976-1978
ANOVA	Months Density: Sept > other months	Months Density March & July > Jan, May, Oct, Dec	Months Not tested Stations Surface Density: Station 1 > Station 3 Surface Biomass: Station 1 > Stations 0, 2, 3 & 4	Stations Surface Density: Station 1 > Stations 0, 2, 3 & 4 Surface Biomass: Station 1 > Stations 0, 2, 3 & 4 Bottom Biomass: Station 2 > Station 0 Years, Bottom Surface Density: 1977, 1978 > 1976
CORRELATION		Density (Surface & Bottom, Mar 1976-1977: + with temperature Density (Bottom, Mar 1976-1977): - with dissolved oxygen Biomass (Surface, Mar 1976-1977): + with temperature - with dissolved oxygen		
REGRESSION		Surface Density (Biomass): 10.3% (10.6%) variance accounted for by temperature, dissolved O_2 and salinity Bottom Density (Biomass): 8.2% (0.7%) variance accounted for by temperature, dissolved O_2 and salinity.	Surface Density (Biomass): 34% (17%) variance accounted for by temperature, dissolved O_2 and salinity Bottom Density (Biomass): 42% (14%) variance accounted for by temperature, dissolved O_2 and salinity (temperature, salinity)	

TABLE 2.2-12

SUMMARIZED RESULTS OF MACROPHYTE OPERATIONAL MONITORING SAMPLES (MARCH 1976 - DECEMBER 1978)

	1976[1]	1977[2]	1978[3]
Numbers of Species Collected	23	28	88
Dominant Taxa	Rhodophyta	Rhodophyta (46% relative abundance)	Rhodophyta (65% relative abundance)
Period of Maximum Diversity	September	September	June (2° September)
Period of Minimum Diversity	March	March	March
Station Differences	-	-	Diversity nearshore diversity offshore

[1,2,3]Adapted from Applied Biology Inc. St Lucie Plant Operational Monitoring Reports, 1977; 1978; 1979

TABLE 2.2-13

MANN-WHITNEY U-TEST COMPARISONS BETWEEN 1971-1973[1] AND 1977-1978 GRAB DATA
ST LUCIE PLANT

Parameter	Station 1	2	3	4	5
Lancelet density (no./m^2)	NS[2]	NS	NS	NS	NS
Arthropod density (no./m^2)	*increase	*increase	*increase	NS	*increase
Arthropod diversity $\bar{(d)}$	*increase	*increase	NS	*increase	*increase

[1]Futch and Dwinell, 1977; Camp et al., 1977.

[2]NS = Not significant.
*Significant at p=0.05.

TABLE 2.2-14

SUMMARIZED RESULTS OF ST LUCIE UNIT 1 OPERATIONAL MONITORING DATA:

MACROINVERTEBRATE GRAB SAMPLES[1]

	1976[2]	1977[3]	1978[3]
Range of Number of Taxa Collected (Annual $\bar{X}$ per Station)	24.5-113.5	34.7-152.2	25.0-153.0
Range of Density: Organisms/m^2 (Annual $\bar{X}$ per Station)	556-16140 organisms/m^2	979-17463 organisms/m^2	616-19784 organisms/m^2
Range of Biomass: g/m^2 (Annual $\bar{X}$ per Station)	2.02-30.77 g/m^2	3.88-68.68 g/m^2	1.05-45.45 g/m^2
Range of Diversity Values (Annual $\bar{X}$ per Station)	3.305-4.821	3.473-5.489	3.602-5.331
Equitability (Annual $\bar{X}$ per station)	0.299-0.801	0.400-0.735	0.415-0.888
Quarter of Maximum Density	3rd	1st	2nd
Quarter of Maximum Species Richness	3rd	3rd	3rd
Quarter of Maximum Diversity	4th	1st	2nd
Quarter of Maximum Biomass	1st	4th	3rd

[1]Adapted from Applied Biology. St Lucie Unit 1, Operational Monitoring: Annual Reports, 1977; 1978; 1979.

[2]10 month sampling effort

[3]12 month sampling effort

TABLE 2.2-15

RESULTS OF STATISTICAL TESTS APPLIED TO UNIT 1 OPERATIONAL MONITORING DATA:

MACROINVERTEBRATE GRAB SAMPLES[1]

(Pooled data, 1976 - 1978)

Test	Results			
Kruskal - Wallis[2]	Grab Efficiency: Significant decrease at Stations 0, 1 & 5			
	Number of Taxa Collected: Significant decrease at Station 0			
	Significant increase at Stations 2, 4 & 5			
	Number of Organisms Collected: Decrease at Station 0			
	Increase at Station 5			
		1976	1977	1978
Morisita Index[2]	Stations Most Similar	2, 4 & 5	2 & 4	2 & 4
Rarefaction Curve[2]	Stations 3 & 4: Most consistent among years Station 5: Most divurgent among years			
Spearman Ranks[2]	Number of Taxa: + Correlation with Density (All Stations)			
	Number of Taxa: + Correlation with Temperature (Stations 2, 3 & 4; Pooled Stations excluding Control).			
	Density: + Correlation with Temperature (Stations 2, 3 & 4; Pooled Stations excluding Control).			

[1]Adapted from Applied Biology. St Lucie Unit 1, Operational Monitoring: Annual Reports, 1977; 1978; 1979.

[2]Description of statistical tests are found in Appendix 2.2A.

TABLE 2.2-16

SUMMARIZED RESULTS OF UNIT 1 OPERATIONAL MONITORING DATA: MACROINVERTEBRATE TRAWL SAMPLES[1]

	1976[2]	1977[3]	1978[3]
Number of Organisms Collected	9040	5923	18,804
Number of Taxa Collected	156	164	182
Period of Maximum Species Richness	August	Summer	July-September
Station of Maximum Species Richness	Stations 0 & 5	Station 5	Stations 0 & 5
Station of Minimum Species Richness	Station 3	Station 3	Station 3
Dominant Taxa	Stations 0, 1, 3: *Trachypenaeus constrictus*	Stations 0, 1, 3: *Trachypenaeus constrictus*	Stations 0, 1, 3: *Trachypenaeus constrictus*
	Stations 2, 4, 5: Molluscs	Stations 2, 4, 5: Molluscs	Stations 2, 4, 5: Molluscs

[1] Adapted from Applied Biology Inc., St Lucie Unit 1, Operational Monitoring: Annual Reports, 1977; 1978; 1979.

[2] 10 month sampling effort

[3] 12 month sampling effort

TABLE 2.2-17

RESULTS OF STATISTICAL TESTS APPLIED TO UNIT 1 OPERATIONAL MONITORING DATA: MACROINVERTEBRATE TRAWL SAMPLES[1]

Test	Results
Kruskal - Wallis[2]	Years not significantly different in number of taxa collected at each individual Station.
Mann-Whitney U-Test[2]	In 1978: Increase in species' richness at Station 0 Species' richness at Station 0, Station 1 1977-1978 Comparison: Increased similarity between Stations 3 & 4 Decreased similarity between Stations 0 & 1
Whittaker Diversity[2]	Stations 1, 2, 3 & 4: Dominated by a few species Stations 0 & 5: More equitable dominance - distribution 1978: Increased diversity at Stations 0 & 4 No change at Stations 1, 2 & 5

[1] Adapted from Applied Biology Inc. St Lucie Unit 1, Operational Monitoring: Annual Reports, 1977; 1978; 1979.

[2] Descriptions of nonparametric statistical tests are found in Appendix 2.2A.

TABLE 2.2-18

SUMMARIZED RESULTS OF FISH SAMPLING CONDUCTED FOR BASELINE MONITORING
(September 1971 - July 1973)[1]

	Beach Seine	Offshore Trawl			Total
Sampling Effort	9 hours	33 hours			42 hours
Period of Peak Abundance					September to November
		Stations 2, 4 and 5	Station 1	Station 3	
Number of Species Collected (% species caught only at this area)	35 (71%)	30 (42%)	29 (38%)	13 (15%)	
Dominant Fish	Florida pompano Gulf kingfish Sand drum Sardines	Leopard sea-robin Lizardfish	Anchovy Lizardfish	Flounder Snakefish	

[1] Adapted from Futch and Dwinnell; Reference 43.

TABLE 2.2-19

SUMMARIZED RESULTS OF BEACH SEINE SAMPLING
ST LUCIE UNIT 1 OPERATIONAL MONITORING (MARCH 1976 - DECEMBER 1978)[1]

	1976[2]		1977[3]		1978[3]	
Number of fish collected	1,211		819		1,203	
Period of Maximum Abundance	September		September		July	
Dominant Fish: Relative Abundance (% Annual Catch)	Anchovy:	13.1%	Anchovy:	7.3%	Anchovy:	0.0%
	Atlantic bumper:	2.3%	Atlantic bumper:	5.4%	Atlantic bumper:	0.1%
	Other jacks:	6.0%	Other jacks:	5.1%	Other jacks:	1.9%
	Florida pompano	3.6%	Florida pompano	2.7%	Florida pompano	2.2%
	Herring:	42.1%	Herring:	20.9%	Herring:	28.3%
	Kingfish:	8.9%	Kingfish:	21.0%	Kingfish:	14.3%
	Mojarra:	0.7%	Mojarra:	9.9%	Mojarra:	23.3%
	Sand drum:	8.7%	Sand drum:	21.1%	Sand drum:	16.1%
	Spot:	8.3%	Spot:	0.0%	Spot:	12.2%
Station Differences	north > south > mid Stn 6 > Stn 8 > Stn 7		Stn 6 > Stn 8*		mid > south > north Stn 7 > Stn 8 > Stn 6	

[1] Adapted from Applied Biology Inc. St. Lucie Unit 1 Operational Monitoring Reports, 1977; 1978; 1979

[2] 10 month sampling

[3] 12 month sampling

* Significance at = 0.05.

TABLE 2.2-20

SUMMARIZED RESULTS OF OFFSHORE GILL NET SAMPLING
ST LUCIE UNIT 1, OPERATIONAL MONITORING (MARCH 1976 - DECEMBER 1978)[1]

	1976[2]		1977[3]		1978[3]	
Number of fish collected	1,734		1,223		874	
Primary Period of Maximum Abundance	October		October		November	
Dominant Fish: Relative Abundance (% Annual Catch)	Bluefish:	5.2%	Bluefish:	27.1%	Bluefish:	1.4%
	Jacks:	66.8%	Jacks:	23.4%	Jacks:	70.8%
	Atlantic bumper:	32.2%	Atlantic bumper:	17.2%	Atlantic bumper	55.1%
	Blue runner:	15.7%	Blue runner:	5.8%	Blue runner:	10.4%
	Crevalle jack:	18.9%	Crevalle jack:	0.4%	Crevalle jack:	5.3%
	Spanish mackerel:	10.3%	Spanish mackerel:	33.3%	Spanish mackerel:	7.0%
Station Differences (Results of ANOVA)	Stns 0 & 1 > Stns 2-5		NS		Stn 0 > Stns 3 & 4* Stn 1 > Stns 2-5*	

[1] Adapted from Applied Biology Inc, St Lucie Unit 1 Operational Monitoring Reports, 1977; 1978; 1979

[2] 10 month sampling

[3] 12 month sampling

* Significance at = 0.05

NS indicates no significant differences among stations.

TABLE 2.2-21

SUMMARIZED RESULTS OF FISH TRAWL SAMPLING
ST LUCIE UNIT 1 OPERATIONAL MONITORING (MARCH 1976 - DECEMBER 1978)[1]

		1976[2]		1977[3]		1978[3]	
Number of fish collected		656		2,048		2,513	
Period of Maximum Abundance		May		November		September - November	
Dominant Fish:	Relative Abundance (% Annual Catch)	Anchovy:	2.7%	Anchovy:	1.1%	Anchovy:	18.3%
		Cusk eel:	11.0%	Cusk eel:	2.3%	Cusk eel:	8.0%
		Flatfish (flounder, sole, tonguefish):	19.6%	Flatfish (flounder, sole, tonguefish):	10.7%	Flatfish (flounder, sole, tonguefish):	12.0%
		Grunt:	9.3%	Grunt:	8.7%	Grunt	10.5%
		Sant perch:	13.1%	Sand perch:	6.9%	Sand perch:	3.4%
		Sea robin and scorpion fish:	19.6%	Sea robin and scorpion fish:	8.3%	Sea robin and scorpion fish:	11.7%
		Sea trout:	0.0%	Sea trout:	29.6%	Sea trout:	7.0%
		Other croaker:	2.0%	Other croaker:	12.2%	Other croaker:	4.5%
Station Differences (Results of ANOVA)		NS		NS		NS	

[1] Adapted from Applied Biology Inc, St Lucie Unit 1 Operational Monitoring Reports, 1977; 1978; 1979

[2] 10 month sampling

[3] 12 month sampling

NS indicates no significant differences among stations.

TABLE 2.2-22

SUMMARIZED RESULTS OF FISH EGG DATA FROM ICHTHYOPLANKTON MONITORING PROGRAM, MARCH 1976 - DECEMBER 1978 (APPLIED BIOLOGY, 1977, 1978 AND 1979)

	1976	1977	1978
Number of Samples Collected	450	400	370
Period of Peak Abundance	March and June	February and April	Spring and Early Summer
Range of Densities	0-87.8 eggs/m^3	0-98.3 eggs/m^3	0-168.5 eggs/m^3
Significant Statistical Tests (at = 0.05)			
ANOVA	Stations: NS	Stations: NS Pooled Data: Stn 0 >Other Stations (Summer)	Stations: NS Pooled Data: Stn 1 >Other (Winter)
Correlation	Negative with T Positive with DO	Negative with T Positive with DO Negative with Turbidity	- Positive with DO Positive with Salinity
Regression			Salinity, Temperature DO and Ind; Egg Density as Dep, r^2 = .19

NS indicates no significant differences.

TABLE 2.2-23

SUMMARIZED RESULTS OF LARVAL DATA FROM ICHTHYOPLANKTON MONITORING PROGRAM, MARCH 1976 - DECEMBER 1978

	1976	1977	1978
Period of Peak Abundance	September and April	January and July	Spring and Early Summer
Range of Densities	0-7.9 larval/m^3	0-8.6 larval/m^3	0-11.0 larval/m^3
Dominant Organisms	Clupiforme; $\bar{X}$ = 29.8%	Clupiforme; $\bar{X}$ = 64.9%	Clupiforme; $\bar{X}$ = 61.6%
	Gerreidae; $\bar{X}$ = 19.5%	Gerreidae; $\bar{X}$ = 6.3%	Gerreidae; $\bar{X}$ = 7.6%
Significant Statistical Tests (at = 0.05)			
ANOVA	Stations: NS*	Stations: NS* Pooled Data, Stations: Winter: Stn 0 > 2&3 Fall: Stn 1 > 2&4	Stations: Stn 1 > 0,2-5 All Others, Pooled Data, Spring: Stn 1 > 0,2-5
Correlation	Positive with DO	Negative with DO	Positive with DO
	Positive with DO	Positive with Turbidity	
Regression			DO and Turbidity as ind; larval dens. as dep: r^2 = .06

* NS indicates no significant differences

TABLE 2.2-24

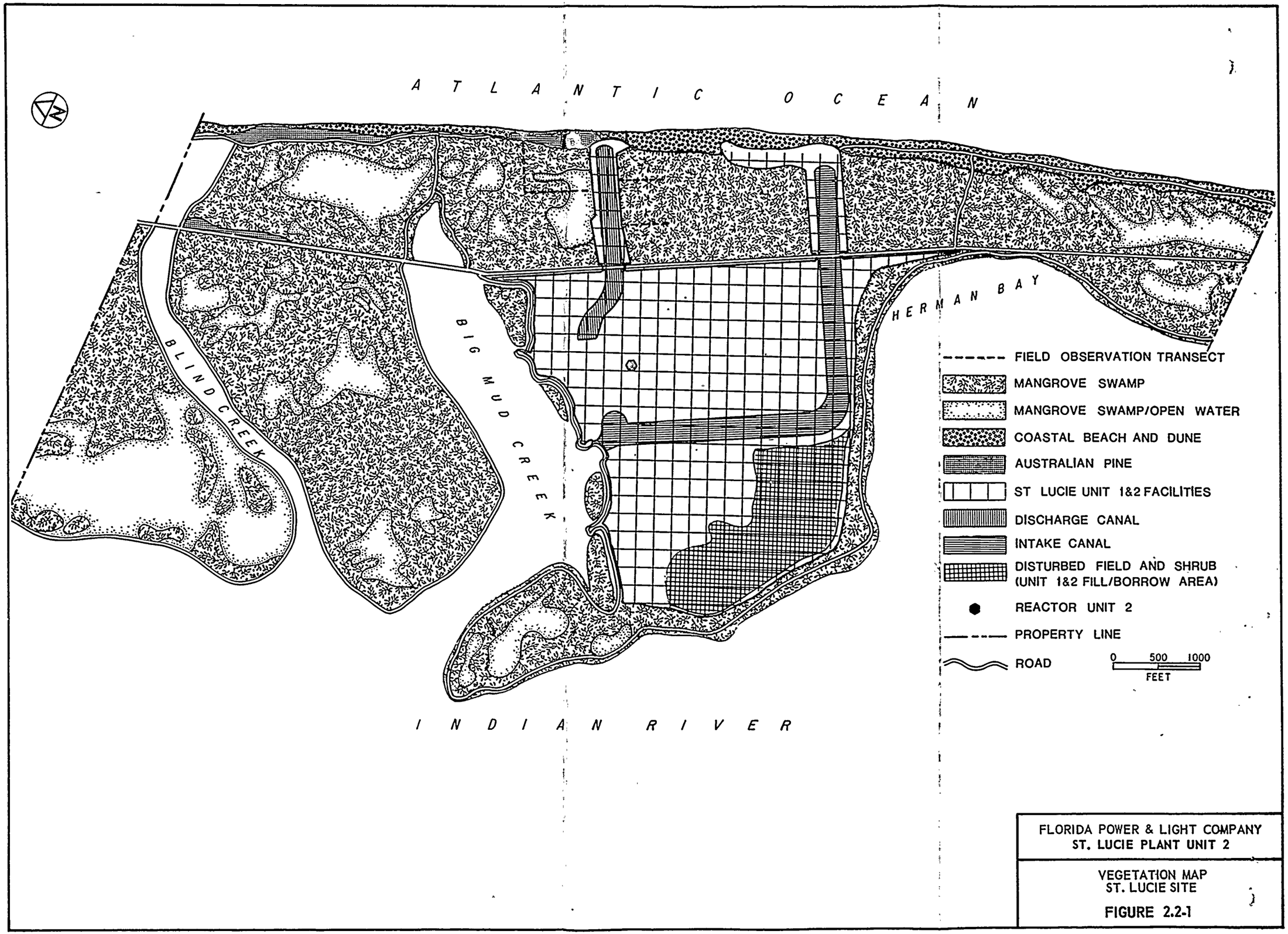
FLORIDA COMMERCIAL FISHERIES DATA

Finfish	East Fla Coast[2]	West Fla Coast[2]	St Lucie Co[2]	% of St Lucie County Landings	Martin County[2]	% of Martin County Landings	% East Fla Coast Catch Landed in St Lucie & Martin Counties	% Total Fla Catch Landed in St Lucie & Martin Counties	Price/Kg[3]
Black mullet	877,314	7,614,637	63,461	2	102,495	5	19	2	$0.36
Bluefish	627,188	239,816	125,705	4	237,057	11	58	42	0.34
Goatfish	43,691	-	600	.01	35,723	2	95	95	0.82
King mackerel	2,191,314	1,273,435	1,093,989	34	43,413	2	52	33	0.99
Mojarra	57,120	60,986	3,851	0.1	47,441	2	90	43	0.29
Pompano	201,938	430,842	44,129	0.1	37,497	2	40	13	2.99
Sheepshead	105,398	118,807	7,337	0.2	45,806	2	50	24	0.33
Spanish mackerel	4,358,440	3,537,654	1,636,766	50	1,441,118	64	71	39	0.40
Shellfish									
Blue crab	1,829,155	5,476,565	1,636	34	-		0.1	0.1	0.37
Shrimp	1,267,356	11,444,997	-	-	-		-	-	
Spiney lobster	448,752	1,981,030	3,116	66	886	100	0.8	0.2	3.53

[1] Adapted from: Florida Landings, Annual Summary, 1976
NOAA, NMFS, 1978

[2] Kilograms

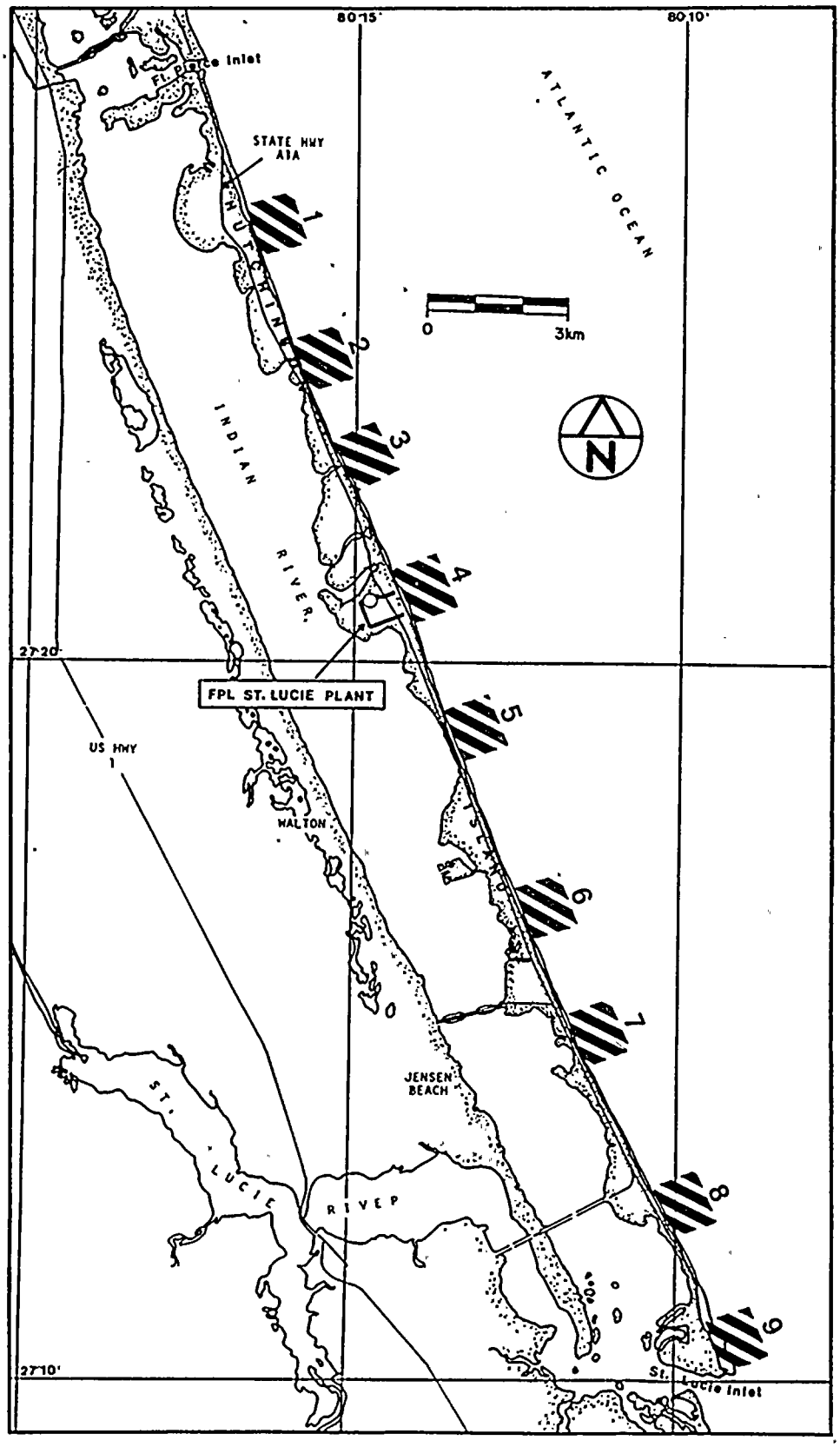
[3] Exvessel Price



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

VEGETATION MAP
ST. LUCIE SITE

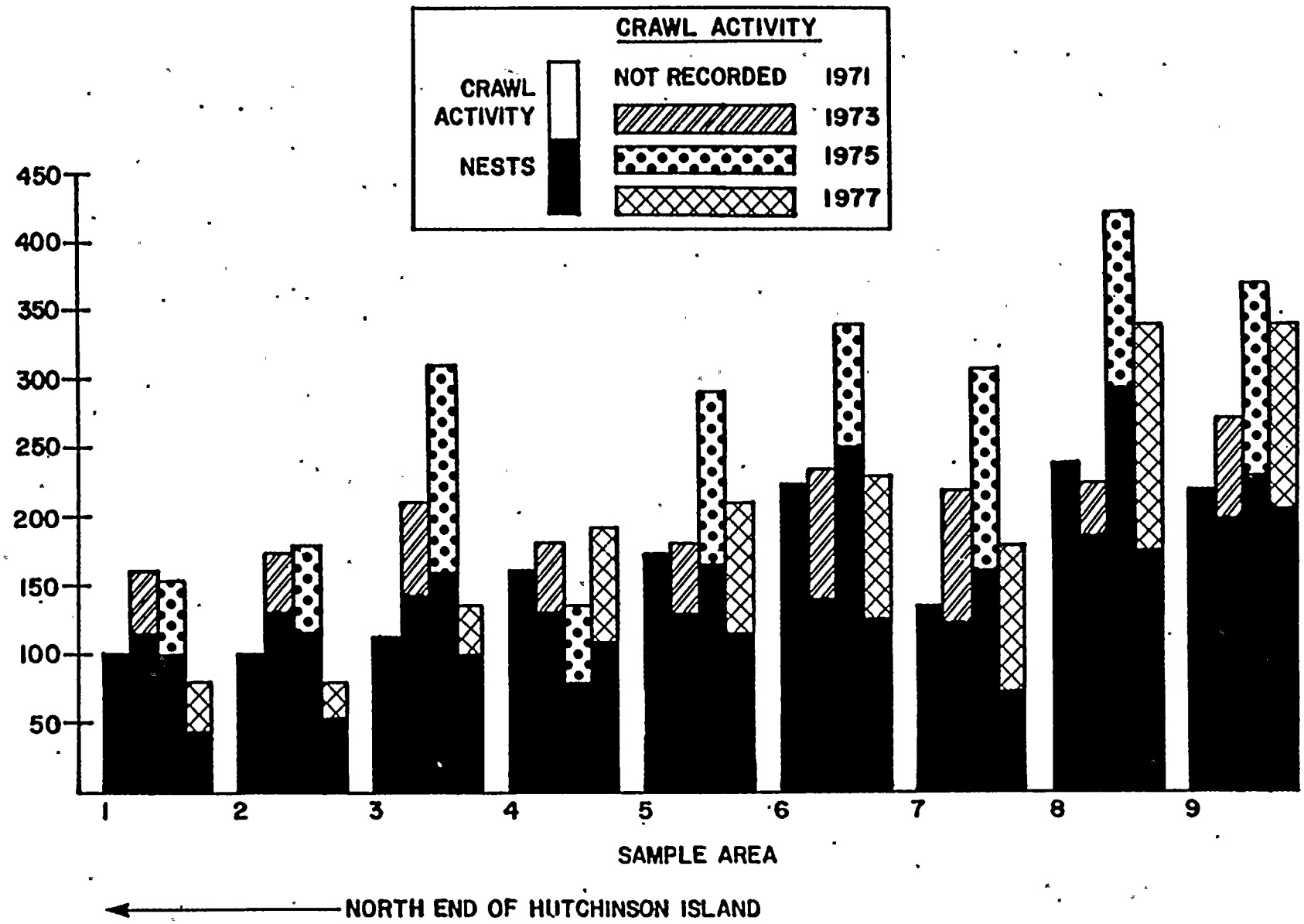
FIGURE 2.2-1



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

LOCATIONS OF TURTLE SAMPLE AREAS

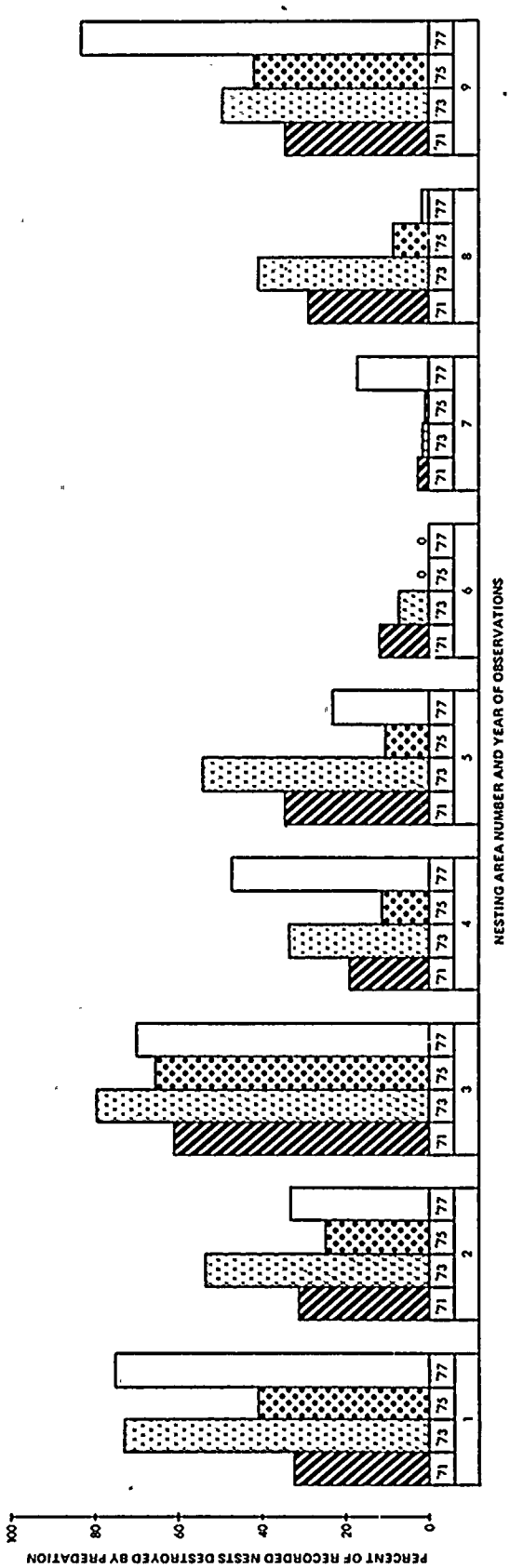
FIGURE 2.2-2



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2.

NUMBER OF LOGGERHEAD TURTLE NESTS AND CRAWLS

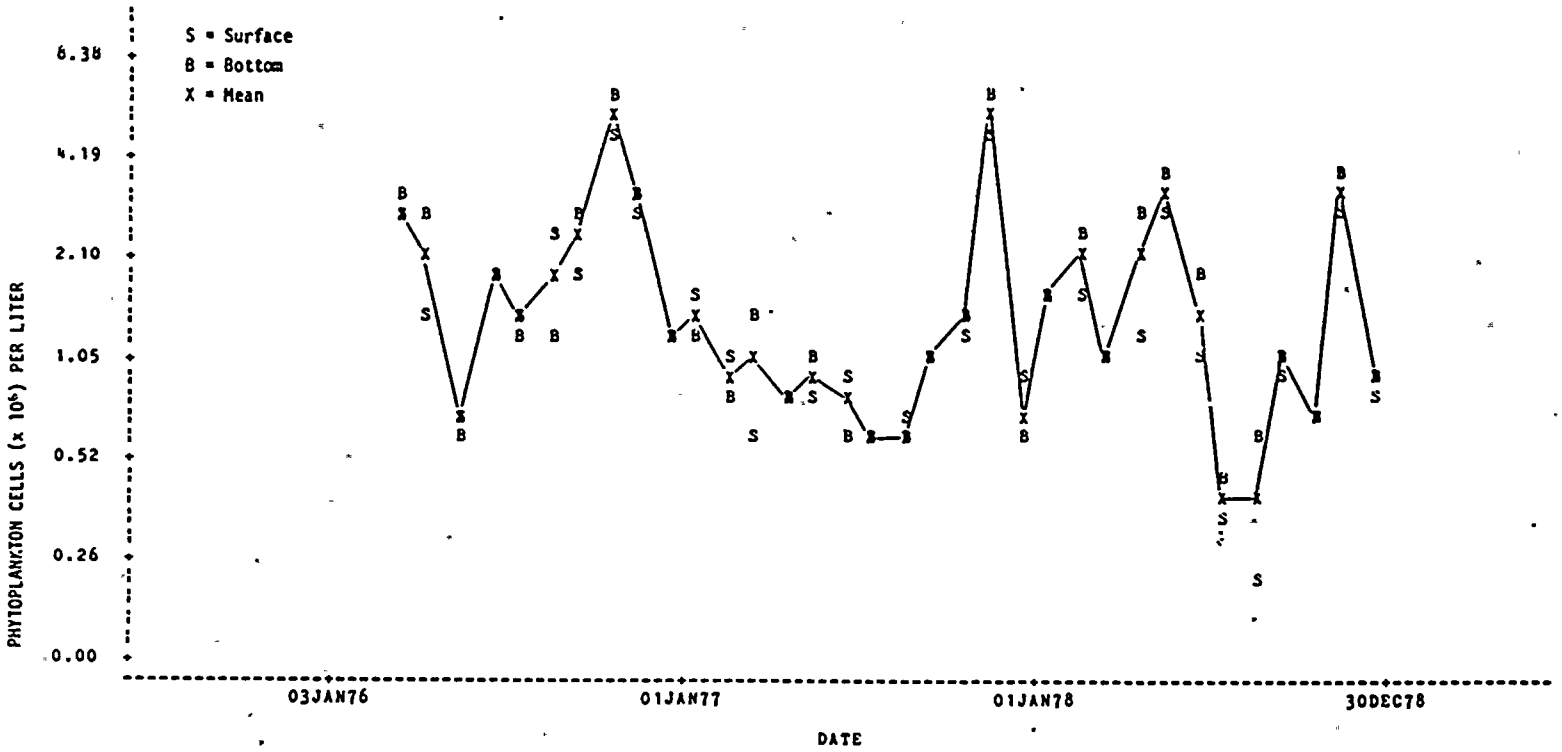
FIGURE 2.2-3



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

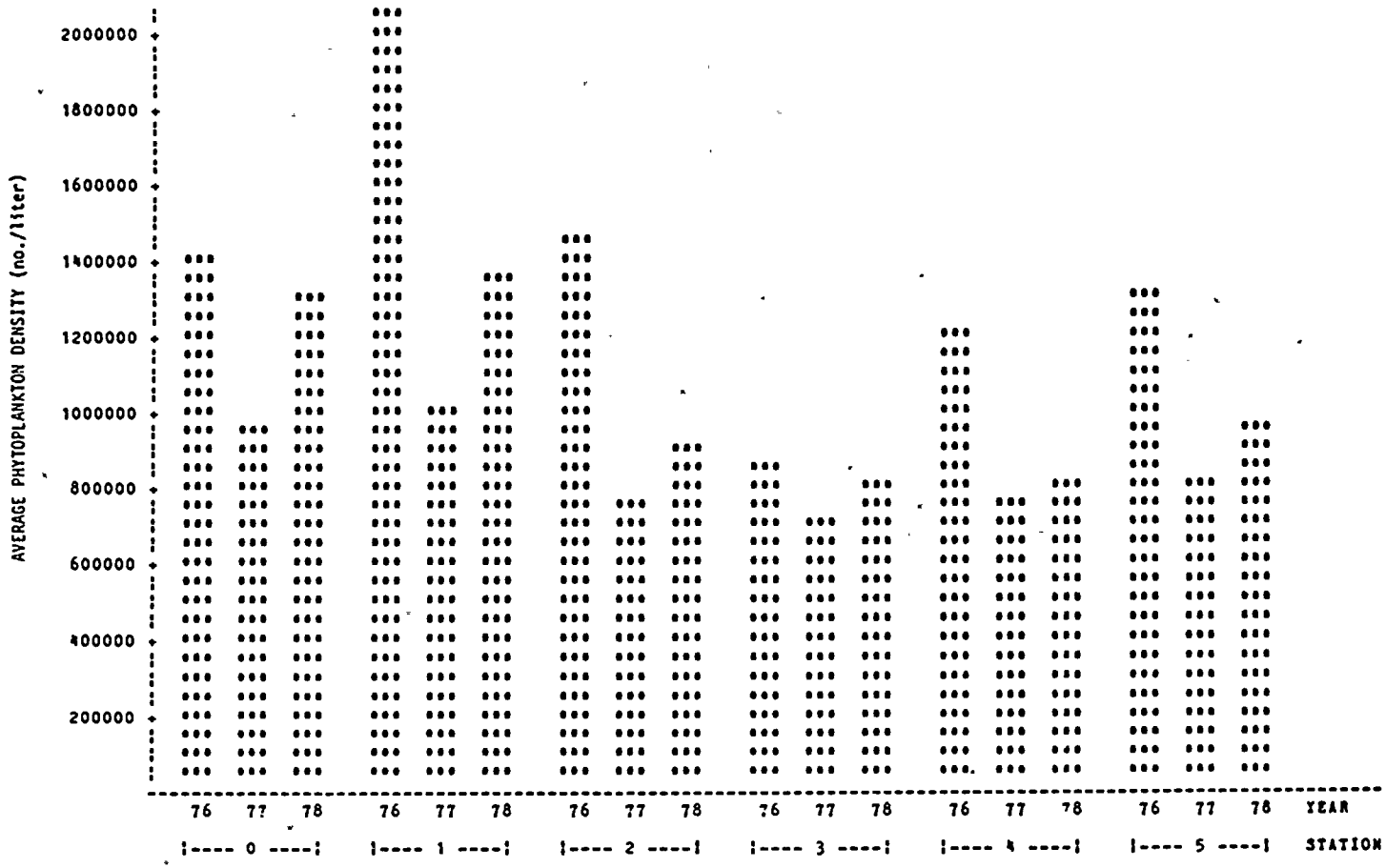
PERCENTAGE OF MARINE TURTLE NESTS DESTROYED BY PREDATION

FIGURE 2.2-4



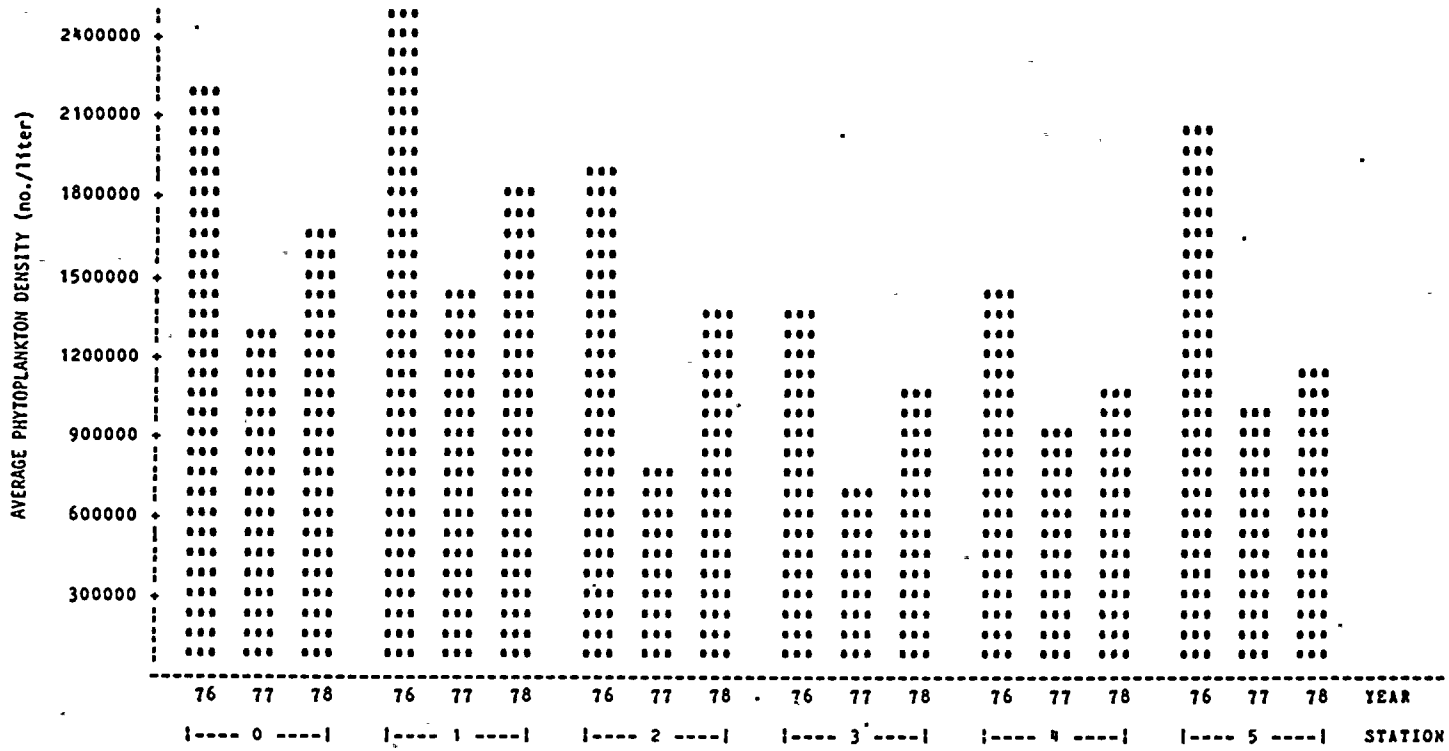
FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

AVG. MONTHLY PHTOPLANKTON DENSITY & MEAN OF SURFACE & BOTTOM OFFSHORE STATIONS
FIGURE 2.2-5



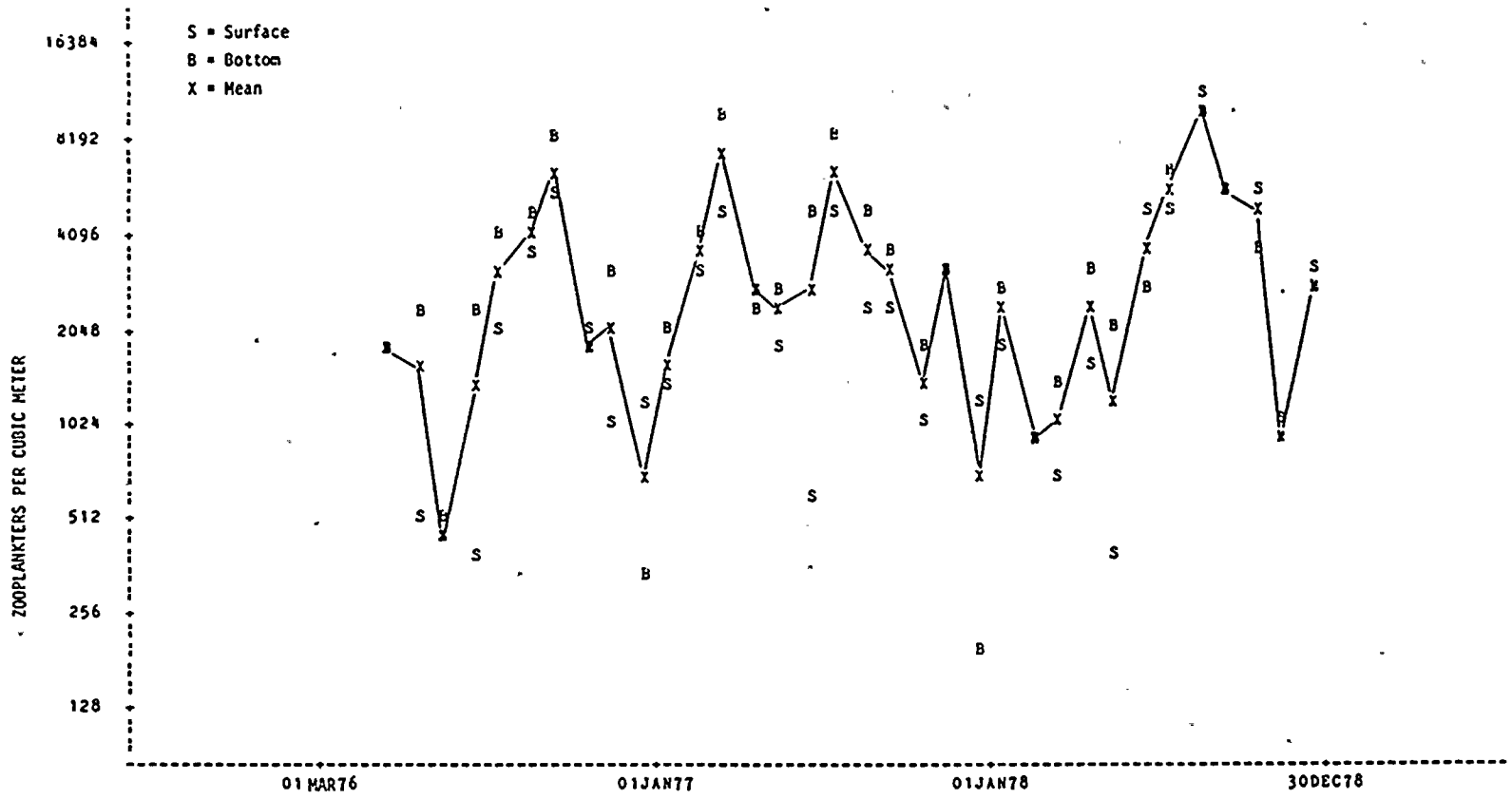
FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

COMPARISON OF ANNUAL MEAN PHYTOPLANKTON DENSITY AT OFFSHORE SURFACE STATIONS
FIGURE 2.2-6



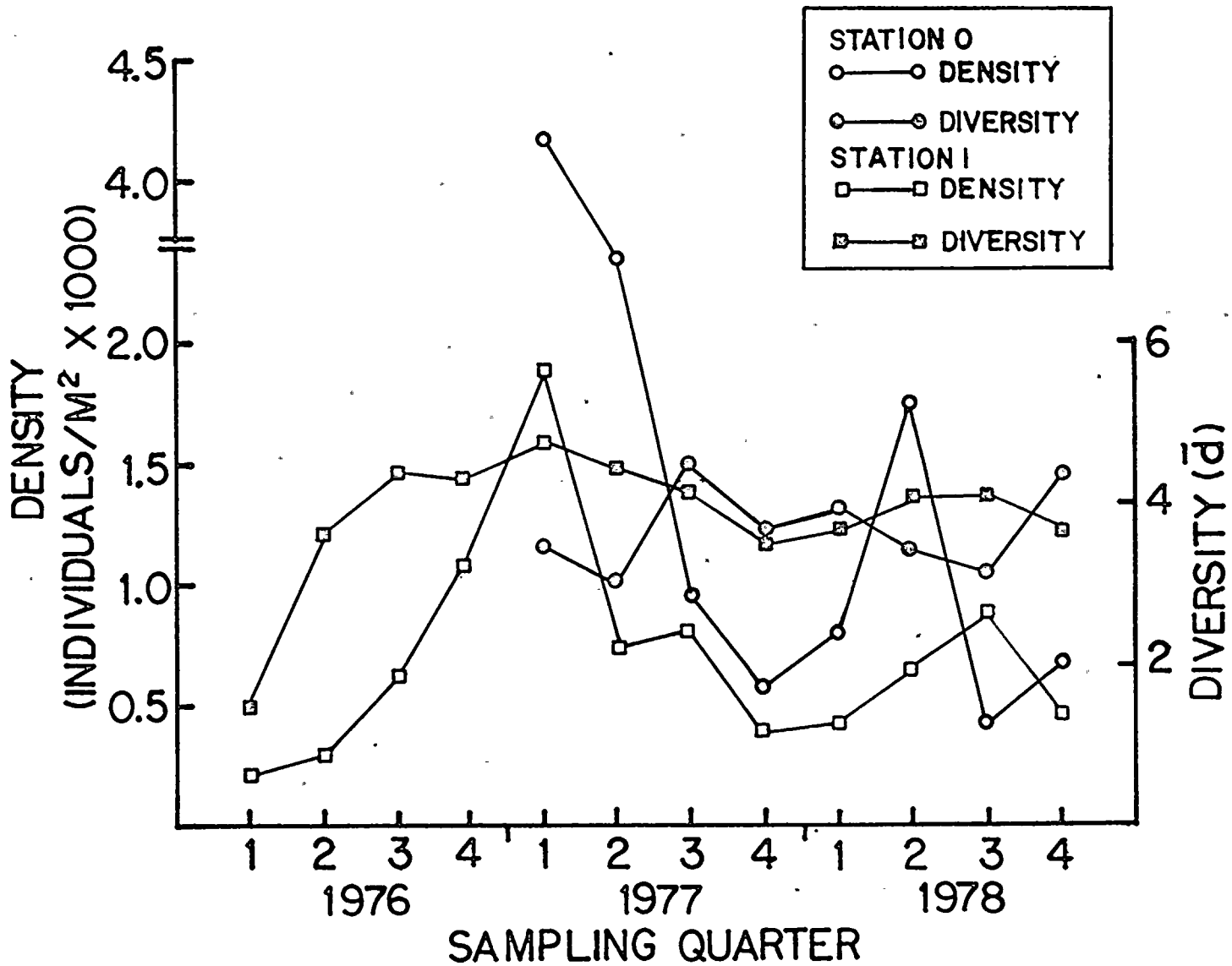
FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

COMPARISON OF ANNUAL MEAN PHYTOPLANKTON DENSITY AT OFFSHORE BOTTOM STATIONS
FIGURE 2.2-7



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

AVG. ZOOPLANKTON DENSITY AT OFFSHORE STATIONS
FIGURE 2.2-8

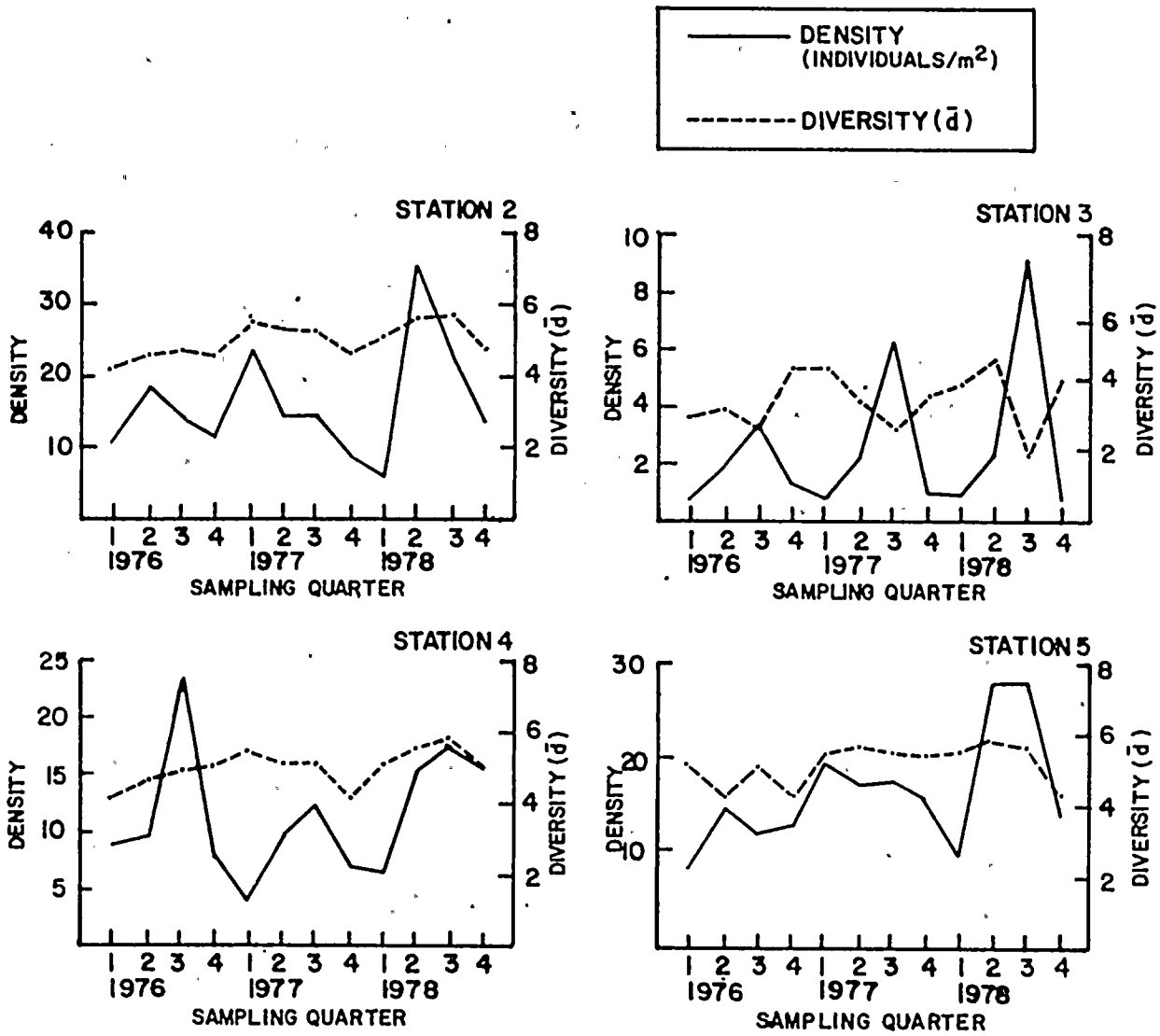


NOTE: STATION 0 WAS RELOCATED IN MARCH 1977 – PRIOR DATA ARE NOT INCLUDED.

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

DENSITY & DIVERSITY OF BENTHIC MACROINVERTEBRATES COLLECTED BY GRABS AT STATIONS 0 & 1

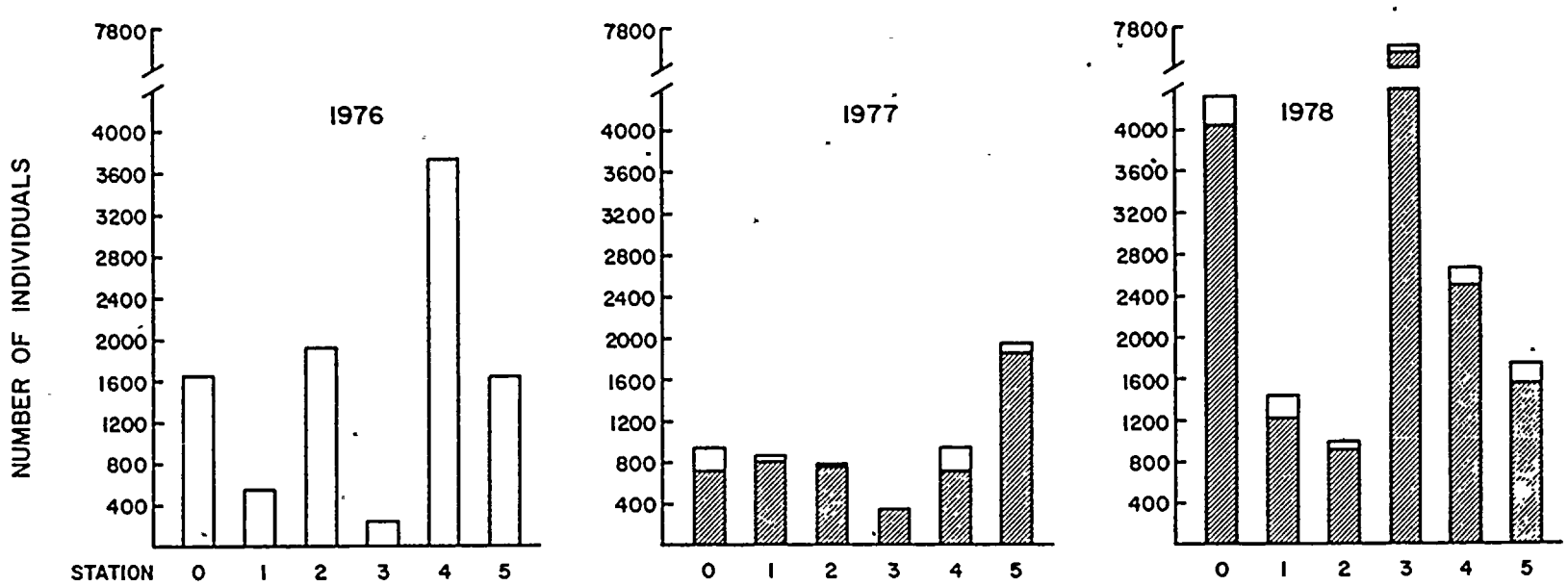
FIGURE 2.2–9



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

DENSITY & DIVERSITY OF BENTHIC MACROINVERTEBRATES COLLECTED BY GRABS AT STATIONS 2,3,4 & 5

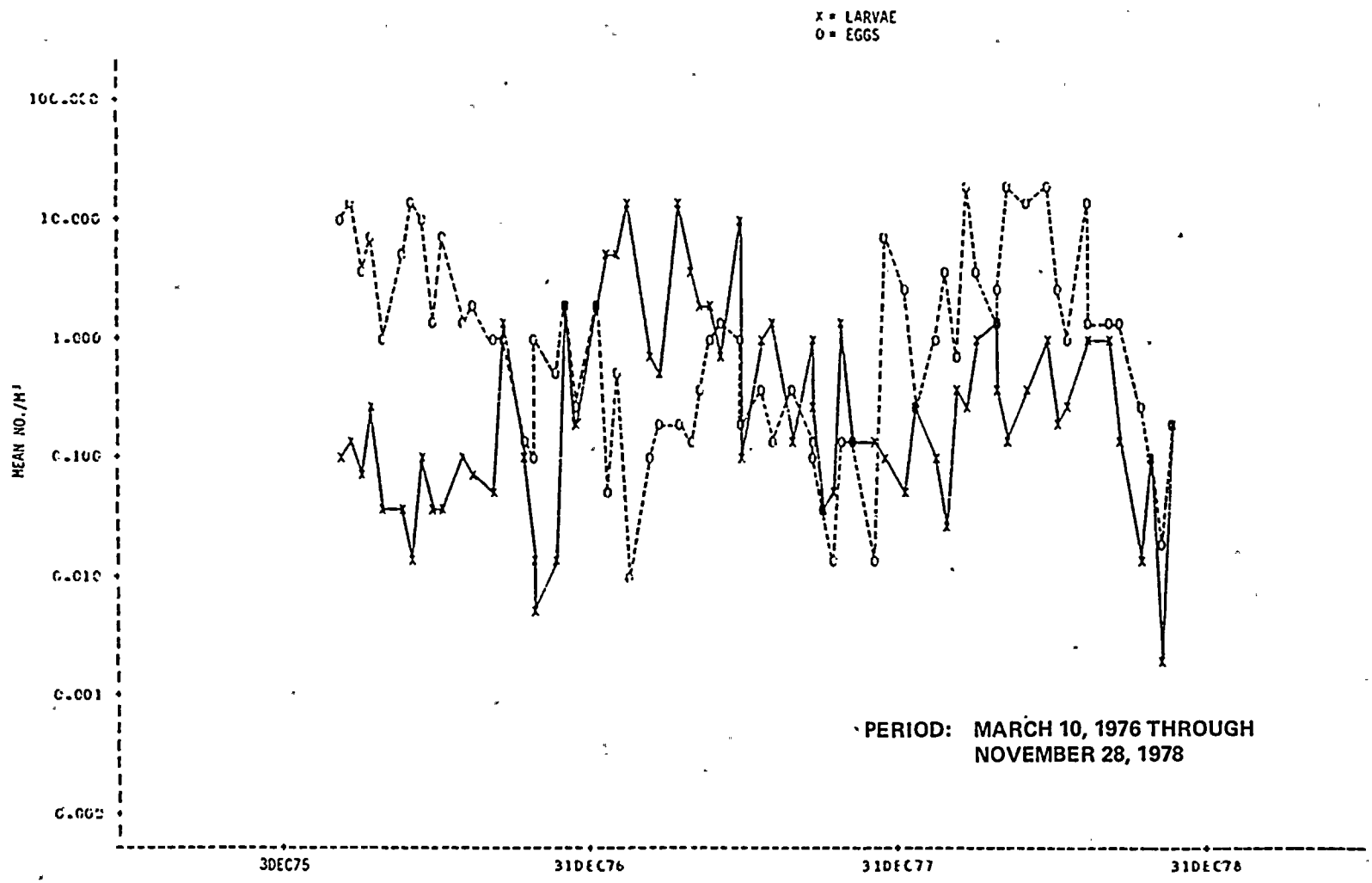
FIGURE 2.2–10



NOTE: 1. 1976: MARCH THROUGH DECEMBER
2. 1977: ALL MONTHS (MARCH THROUGH DECEMBER ARE SHADED FOR COMPARISON WITH 1976)

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

TOTAL NO. OF MACROINVERTEBRATES COLLECTED BY OTTER TRAWL AT EACH OFFSHORE STATION
FIGURE 2.2–11



FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT 2

MEAN FISH EGG & LARVAL DENSITIES
(NUMBER/M^3), STATIONS 0 THROUGH 5

FIGURE 2.2–12

APPENDIX 2.2A:AQUATIC ECOLOGY

TABLES AND FIGURES FOR APPENDIX 2.2A ARE REPRODUCED FROM THE FOLLOWING:

APPLIED BIOLOGY. 1977 ECOLOGICAL MONITORING AT THE FLA POWER CO. ST LUCIE PLANT ANNUAL REPORT 1976

APPLIED BIOLOGY. 1978 ECOLOGICAL MONITORING AT THE FLA POWER & LT CO , ST. LUCIE PLANT ANNUAL REPORT 1977

APPLIED BIOLOGY 1979 ECOLOGICAL MONITORING AT THE FLA POWER & LT CO ST. LUCIE PLANT ANNUAL REPORT 1978

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APPENDIX 2.2A

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FIGURE 2.2A-2 BENTHIC GRAB: MORISITA INDICES

FIGURE 2.2A-3 BENTHIC GRAB: MEAN DENSITY AND AMBIENT TEMPERATURE, STATIONS 2-5

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FIGURE 2.2A-7 DOMINANCE DIVERSITY CURVES: STATION 1

FIGURE 2.2A-8 DOMINANCE DIVERSITY CURVES: STATION 2

FIGURE 2.2A-9 DOMINANCE DIVERSITY CURVES: STATION 3

FIGURE 2.2A-10 DOMINANCE DIVERSITY CURVES: STATION 4

FIGURE 2.2A-11 DOMINANCE DIVERSITY CURVES: STATION 5

FIGURE 2.2A-12 BENTHIC TRAWL: MORISITA INDICES

FIGURE 2.2A-13 BENTHIC TRAWL: ABUNDANCE OF *Trachypenaeus constrictus*

FIGURE 2.2A-14 BENTHIC TRAWL: STATION COMPARISONS OF *T. constrictus* ABUNDANCE

FIGURE 2.2A-15 BENTHIC TRAWL: STATION COMPARISONS OF MACROINVERTEBRATE TAXA

Table 2.2A-1

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
26 MARCH 1976

Taxon	Station and depth[c]															
	11		12		0		1		2		3		4		5	
	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	3,598,237.8 (98)	3,041,148.7 (99)	2,303,438.6 (96)	3,736,226.8 (99)	138,286.8 (50)	753,880.3 (95)	1,244,447.8 (88)	1,329,892.1 (93)	2,319,795.2 (90)	3,950,679.4 (94)	2,828,768.7 (93)	3,864,863.2 (94)	4,348,337.1 (94)	3,058,286.0 (93)	2,456,698.6 (89)	6,555,433.4 (91)
Pyrrhophyta (dinoflagellates)	18,462.2 (1)	12,789.3 (<1)	2,845.0 (<1)	2,127.4 (<1)	425.5 (<1)	614.6 (<1)	26,946.8 (2)	11,396.0 (1)	39,723.3 (2)	16,073.4 (<1)	41,141.6 (1)	38,292.5 (1)	39,710.8 (1)	4,018.4 (<1)	46,802.0 (2)	14,182.4 (<1)
Chlorophyta (green algae)	25,528.4 (<1)	4,254.8 (<1)	41,128.9 (2)	19,855.4 (1)	133,683.3 (48)	15,789.8 (2)	95,022.1 (7)	60,984.4 (4)	165,934.1 (6)	205,172.0 (5)	134,732.7 (4)	172,316.1 (4)	190,044.1 (4)	224,791.0 (7)	168,061.4 (6)	567,295.7 (8)
Cyanophyta (blue-green algae)											187.5 (<1)			62.5 (<1)		
Euglenophyta (euglenoids)				2,127.4 (<1)									5,673.0 (<1)			
Cryptophyta (cryptophytes)							1,418.3 (<1)			5,673.0 (<1)					6,382.1 (<1)	
Xanthophyta (xanthophytes)					3,488.9 (1)	13,851.5 (2)	2,836.5 (<1)					7,091.2 (<1)				
Chrysophyceae (yellow-brown algae and silicoflagellates)																
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	25,528.3 (<1)	8,509.5 (<1)	9,927.8 (<1)		127.7 (<1)	1,560.1 (<1)	19,855.4 (<1)	2,826.5 (<1)	11,346.0 (<1)						2,127.4 (<1)	
Unidentified phytoflagellates	14,182.5 (<1)	17,019.1 (1)	38,292.5 (2)	21,273.7 (1)	808.4 (<1)	9,738.6 (1)	28,364.8 (2)	18,437.1 (1)	35,456.0 (1)	11,345.9 (<1)	30,492.0 (1)	41,838.0 (1)	42,547.3 (1)	16,546.3 (1)	57,438.7 (2)	85,094.4 (1)
Other								1,418.3 (<1)							12,764.2 (<1)	
Total phytoplankton	3,681,974.4	3,083,719.6	2,395,632.5	3,781,610.8	276,819.3	795,434.9	1,418,891.4	1,424,963.6	2,572,254.6	4,188,943.9	3,035,321.6	4,124,401.1	4,626,312.1	3,303,704.2	2,750,274.2	7,222,005.9

[a] Values are expressed as cells per liter and represent the mean of two replicates.

[b] Percentage values are given in parentheses.

[c] S = Surface; B = Bottom.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
21 APRIL 1976

Taxon	Station and depth[c]															
	11		12		0		1		2		3		4		5	
	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	1,436,892.3 (83)	1,974,317.4 (85)	1,038,425.6 (80)	1,349,685.4 (87)	1,729,276.1 (91)	2,592,560.6 (92)	1,965,228.3 (88)	3,658,539.8 (88)	903,972.7 (92)	2,222,643.0 (85)	431,724.4 (88)	1,622,949.1 (91)	1,378,486.6 (90)	2,219,250.8 (91)	553,948.8 (80)	2,421,397.8 (91)
Pyrrhophyta (dinoflagellates)	18,720.9 (1)	39,727.6 (2)	23,233.3 (2)	15,372.0 (1)	17,514.0 (1)	6,390.6 (<1)	14,891.5 (1)	27,443.1 (1)	13,051.3 (1)	21,982.8 (1)	7,968.7 (2)	6,854.9 (<1)	16,090.3 (1)	5,654.0 (<1)	29,130.8 (4)	19,188.0 (1)
Chlorophyta (green algae)	173,167.0 (10)	150,333.4 (6)	107,153.4 (8)	72,261.6 (5)	123,859.7 (7)	176,570.9 (6)	176,570.8 (8)	336,122.8 (8)	44,816.4 (5)	190,044.1 (7)	32,822.1 (7)	102,113.2 (6)	56,256.9 (4)	95,541.6 (4)	52,002.1 (8)	105,658.8 (4)
Cyanophyta (blue-green algae)		50.0 (<1)			313.9 (<1)	62.5 (<1)	62.5 (<1)	44.5 (<1)		183.4 (<1)					88.6 (<1)	116.7 (<1)
Euglenophyta (euglenoids)																
Cryptophyta (cryptophytes)			1,329.6 (<1)							7,091.2 (<1)	283.7 (<1)					
Xanthophyta (xanthophytes)	1,560.1 (<1)				3,782.0 (<1)											
Chrysophyceae (yellow-brown algae and silicoflagellates)											632.5 (<1)		3,782.0 (<1)			
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	17,160.8 (1)	8,509.5 (<1)	30,226.3 (2)	4,872.4 (<1)	2,363.8 (<1)	7,800.4 (<1)	14,891.5 (1)	8,509.5 (<1)			851.0 (<1)	4,491.1 (<1)	14,182.4 (<1)		14,820.7 (2)	2,836.5 (<1)
Unidentified phytoflagellates	93,603.9 (5)	141,824.0 (6)	96,174.5 (7)	107,603.2 (7)	26,473.9 (1)	45,383.7 (2)	55,311.4 (2)	117,241.2 (3)	22,691.9 (2)	161,679.3 (6)	10,602.2 (2)	49,638.4 (3)	56,729.6 (4)	111,934.9 (5)	37,441.6 (5)	98,567.6 (4)
Other								2,127.4 (<1)			5,956.6 (1)	4,491.2 (<1)	2,836.5 (<1)	14,182.4 (1)	4,420.2 (1)	3,545.6 (<1)
Total phytoplankton	1,741,104.0	2,314,760.4	1,296,541.6	1,549,793.6	1,903,581.2	2,828,768.7	2,226,956.1	4,150,028.3	984,531.5	2,603,623.8	490,840.7	1,790,538.0	1,528,364.5	2,446,563.7	691,852.8	2,651,311.0

[a] Values are expressed as cells per liter and represent the mean of two replicates.

[b] Percentage values are given in parentheses.

[c] S = Surface: B = Bottom.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
12 MAY 1976

	Station and depth[c]															
	11		12		0		1		2		3		4		5	
Taxon	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	157,087.1 (29)	576,636.1 (43)	220,343.0 (21)	161,390.7 (25)	99,148.7 (22)	154,581.5 (31)	136,123.7 (15)	140,490.0 (21)	155,433.6 (22)	122,077.2 (18)	101,633.3 (22)	148,037.8 (23)	210,328.4 (35)	182,826.5 (23)	209,730.6 (28)	130,396.9 (20)
Pyrrhophyta (dinoflagellates)	63,348.1 (12)	87,297.0 (7)	78,003.4 (7)	49,091.4 (7)	76,224.9 (17)	51,379.2 (10)	30,973.4 (3)	32,473.8 (5)	42,116.1 (6)	37,819.8 (6)	17,798.9 (4)	26,494.6 (4)	23,961.5 (4)	39,685.0 (5)	19,825.1 (3)	23,435.3 (4)
Chlorophyta (green algae)	64,529.9 (12)	205,644.7 (15)	143,951.4 (13)	35,622.7 (5)	41,568.7 (9)	59,377.0 (12)	211,081.3 (23)	198,470.5 (29)	99,513.1 (14)	96,440.3 (14)	86,512.6 (19)	102,428.4 (16)	120,795.7 (20)	140,499.3 (18)	276,715.8 (37)	166,828.5 (25)
Cyanophyta (blue-green algae)		83.4 (<1)		41.7 (<1)												
Euglenophyta (euglenoids)			1,418.3 (<1)		421.7 (<1)	1,197.7 (<1)		984.0 (<1)								
Cryptophyta (cryptophytes)			1,418.3 (<1)	1,418.3 (<1)		4,727.5 (1)	6,854.8 (1)		2,600.1 (<1)	6,618.5 (1)	3,403.8 (1)			945.5 (<1)		709.1 (<1)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)					421.7 (<1)			1,546.2 (<1)						1,265.1 (<1)		709.1 (<1)
Haptophyceae (haptophytes including coccolithophores)	65,239.0 (12)	81,548.8 (6)	31,910.3 (3)	45,667.4 (7)	61,025.3 (13)	111,316.1 (22)	72,330.2 (8)	109,215.3 (16)	57,438.7 (8)	83,203.4 (12)	51,226.8 (11)	66,184.5 (10)	90,592.4 (15)	90,912.0 (12)	60,848.2 (8)	59,552.5 (9)
Prasinophyceae (prasinophytes)	41,838.1 (8)	36,165.2 (3)	65,239.0 (6)	34,321.5 (5)	68,042.3 (15)	30,192.8 (6)	59,329.7 (6)	96,283.8 (14)	21,510.0 (3)	15,127.9 (2)	13,331.2 (3)	11,345.9 (2)	5,852.0 (1)	32,505.8 (4)	16,251.5 (2)	34,574.7 (5)
Unidentified phytoflagellates	143,951.3 (27)	333,995.4 (25)	525,457.8 (49)	313,714.6 (48)	109,117.2 (24)	84,968.4 (17)	404,670.9 (44)	79,557.1 (12)	335,177.2 (47)	322,413.2 (47)	184,030.9 (40)	276,399.1 (44)	140,470.0 (24)	286,988.1 (37)	162,038.6 (22)	245,912.5 (37)
Other	6,382.2 (1)	11,346.0 (1)	4,964.0 (<1)	14,749.7 (2)		630.4 (<1)	4,963.9 (1)	20,100.2 (3)	3,309.2 (<1)	945.5 (<1)	567.3 (<1)	1,575.9 (<1)	945.5 (<1)	3,156.1 (<1)	7,676.8 (1)	1,721.2 (<1)
Total phytoplankton	542,375.7	1,332,715.3	1,072,706.3	656,018.0	455,970.6	498,370.3	926,327.9	679,121.4	717,098.4	684,644.9	453,505.1	631,836.0	592,945.7	778,782.8	753,094.7	664,169.8

[a] Values are expressed as cells per liter and represent the mean of two replicates.

[b] Percentage values are given in parentheses.

[c] S = Surface; B = Bottom.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
8 JUNE 1976

Taxon	Station and depth[c]															
	11		12		0		1		2		3		4		5	
	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	1,469,874.3 (66)	1,281,739.2 (68)	2,150,362.9 (65)	2,547,242.7 (78)	2,064,582.3 (88)	2,672,707.4 (74)	2,461,424.4 (87)	3,479,906.1 (87)	1,026,243.4 (70)	1,032,572.4 (86)	213,544.8 (76)	481,956.1 (74)	534,118.3 (82)	246,906.3 (86)	739,091.6 (82)	1,361,832.2 (88)
Pyrrhophyta (dinoflagellates)	13,190.2 (1)	15,475.5 (1)	34,619.9 (1)	16,446.0 (1)	8,564.4 (<1)	40,440.0 (1)	5,262.8 (<1)	26,960.0 (1)	29,593.3 (2)	10,533.9 (1)	5,270.4 (2)	6,620.4 (1)	5,271.2 (1)	1,824.6 (1)	17,159.5 (2)	1,265.1 (<1)
Chlorophyta (green algae)	113,147.8 (5)	137,790.7 (7)	197,350.8 (6)	141,434.7 (4)	51,311.2 (2)	269,599.9 (7)	80,233.5 (3)	102,448.0 (3)	100,838.1 (7)	44,732.9 (4)	18,403.8 (7)	50,918.7 (8)	17,761.6 (3)	11,528.8 (4)	58,754.2 (7)	73,173.4 (3)
Cyanophyta (blue-green algae)		13.9 (<1)								16.7 (<1)						
Euglenophyta (euglenoids)	2,631.4 (<1)		2,741.0 (<1)	3,289.2 (<1)						2,631.4 (<1)	657.0 (<1)		1,315.7 (<1)		3,373.5 (<1)	
Crytophyta (crytophytes)			2,741.0 (<1)	6,578.4 (<1)												
Xanthophyta (Xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)			2,741.0 (<1)			13,480.0 (<1)			2,875.8 (<1)							1,265.1 (<1)
Haptophyceae (haptophytes including coccolithophores)	10,525.4 (<1)	2,811.2 (<1)	2,741.0 (<1)	6,578.4 (<1)		13,480.0 (<1)	5,392.0 (<1)		5,751.5 (<1)		1,971.9 (1)				1,686.7 (<1)	
Prasinophyceae (prasinophytes)		5,622.4 (<1)		3,289.2 (<1)	13,156.8 (1)		5,392.0 (<1)	16,176.0 (<1)	2,875.8 (<1)	3,947.0 (<1)	1,314.9 (<1)	3,285.1 (1)	3,289.2 (1)	809.1 (<1)	12,369.3 (1)	20,714.8 (1)
Unidentified phytoflagellates	623,628.4 (28)	444,170.1 (23)	932,482.4 (28)	549,293.1 (17)	203,271.4 (9)	566,159.9 (16)	255,020.8 (9)	388,223.9 (10)	285,353.8 (19)	103,938.1 (9)	37,475.5 (13)	108,407.5 (17)	88,150.1 (14)	25,484.8 (9)	66,625.5 (7)	164,610.0 (8)
Other	10,525.4 (<1)	2,811.2 (<1)		6,578.4 (<1)	7,236.2 (<1)	26,960.0 (1)	10,654.7 (<1)		12,574.3 (1)	3,947.1 (<1)	3,946.2 (1)					
Total phytoplankton	2,243,521.4	1,890,434.3	3,325,780.0	3,280,730.1	2,348,122.5	3,602,826.5	2,823,378.6	4,013,714.0	1,466,104.3	1,202,317.7	282,582.2	651,185.8	649,906.5	286,553.6	899,060.3	2,122,860.6

[a] Values are expressed as cells per liter and represent the mean of two replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface: B = Bottom.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
14 JULY 1976

Taxon	Station and depth[c]															
	11		12		0		1		2		3		4		5	
	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	354,123.5 (21)	357,040.5 (23)	382,769.5 (17)	426,755.0 (20)	406,393.5 (30)	601,597.3 (39)	94,729.8 (11)	105,789.1 (11)	482,813.3 (36)	601,197.4 (37)	699,493.0 (55)	803,224.6 (59)	660,175.2 (62)	589,291.3 (55)	292,764.2 (16)	578,323.9 (58)
Pyrrhophyta (dinoflagellates)	182,773.5 (11)	45,320.0 (3)	57,116.7 (3)	7,615.6 (<1)	41,885.6 (3)	68,017.6 (4)	49,341.5 (6)	54,210.6 (6)	20,625.6 (2)	30,145.0 (2)	37,246.0 (3)	25,374.6 (2)	62,717.7 (6)	30,703.1 (3)	71,078.8 (4)	64,732.2 (7)
Chlorophyta (green algae)	97,098.5 (6)	109,455.1 (7)	102,810.1 (5)	121,849.1 (6)	80,725.0 (6)	102,287.5 (7)	97,579.0 (11)	81,742.2 (8)	172,143.5 (13)	136,445.6 (9)	108,402.7 (9)	101,398.2 (8)	36,467.7 (3)	24,015.4 (2)	172,619.5 (9)	15,231.1 (2)
Cyanophyta (blue-green algae)		25.0 (<1)			16,754.2 (1)	33.3 (<1)								8.3 (<1)	15,231.1 (1)	
Euglenophyta (euglenoids)					4,188.6 (<1)			1,072.0 (<1)				2,668.4 (<1)			2,538.5 (<1)	
Cryptophyta (cryptophytes)	68,540.1 (4)	37,779.1 (2)	28,558.4 (1)	15,231.1 (1)	40,743.3 (3)	109,679.1 (7)	5,847.5 (1)	2,168.4 (<1)	15,072.5 (1)	14,279.2 (1)	13,897.8 (1)	4,002.6 (<1)	69,822.5 (7)	102,732.4 (10)	71,078.7 (4)	30,462.3 (3)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)					4,188.6 (<1)	3,807.8 (<1)	2,192.8 (<1)	1,072.0 (<1)	2,379.9 (<1)	1,586.6 (<1)			3,557.9 (<1)	1,334.2 (<1)		3,807.8 (<1)
Haptophyceae (haptophytes including coccolithophores)				7,615.6 (<1)	4,188.6 (<1)				2,379.9 (<1)							3,807.8 (<1)
Prasinophyceae (prasinophytes)	28,558.3 (2)	56,444.8 (4)	102,810.7 (5)	7,615.6 (<1)	8,377.2 (<1)	18,964.3 (1)	19,004.2 (2)	28,823.0 (3)	15,865.8 (1)	15,865.8 (1)	52,811.5 (4)	20,012.8 (2)	14,676.0 (1)	14,676.0 (1)	17,769.7 (1)	11,423.3 (1)
Unidentified phytoflagellates	976,696.3 (57)	968,670.1 (61)	1,507,882.1 (69)	1,538,344.3 (72)	753,560.3 (55)	628,433.5 (41)	578,895.5 (67)	688,047.6 (71)	613,211.8 (46)	810,740.5 (50)	351,891.9 (28)	401,590.3 (30)	213,470.0 (20)	304,194.7 (29)	1,185,489.8 (65)	274,160.4 (28)
Other	5,711.7 (<1)	7,615.6 (<1)	11,423.3 (1)		11,804.1 (<1)	3,807.8 (<1)	12,791.2 (2)	5,067.8 (1)	1,586.6 (<1)	3,173.1 (<1)	6,115.0 (<1)	1,334.2 (<1)	889.5 (<1)	1,334.2 (<1)	7,615.6 (<1)	7,615.6 (1)
Total phytoplankton	1,713,502.0	1,582,350.6	2,193,370.6	2,125,026.3	1,372,809.0	1,536,628.0	860,381.5	967,992.6	1,326,078.2	1,613,433.2	1,269,858.0	1,359,605.8	1,061,776.6	1,068,289.6	1,836,185.5	989,564.3

[a] Values are expressed as cells per liter and represent the mean of three replicates.

[b] Percentage values are given in parentheses.

[c] S = Surface; B = Bottom.

SL2=ER-OL

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
11 AUGUST 1976

Taxon	Station and depth[c] 11 S	11 B	12 S	12 B	0 S	0 B	1 S	1 B	2 S	2 B	3 S	3 B	4 S	4 B	5 S	5 B
Bacillariophyta (diatoms)	1,749,122.3 (30)	1,725,251.1 (42)	1,105,124.0 (32)	1,280,532.0 (37)	329,460.2 (39)	463,901.2 (42)	606,252.7 (32)	717,894.4 (56)	152,539.3 (20)	320,300.6 (19)	123,588.4 (19)	155,089.9 (18)	105,348.9 (17)	168,771.2 (16)	401,042.1 (20)	514,546.7 (33)
Pyrrhophyta (dinoflagellates)	465,128.9 (8)	45,693.4 (1)	129,531.3 (4)	83,771.3 (2)	22,697.9 (3)	27,581.5 (3)	74,797.8 (4)	18,011.5 (1)	38,116.8 (5)	45,700.2 (3)	28,633.3 (4)	28,558.3 (3)	37,052.2 (6)	11,744.0 (1)	91,386.9 (4)	36,174.0 (2)
Chlorophyta (green algae)	74,251.8 (1)	45,693.4 (1)	30,462.3 (1)	68,540.1 (2)	84,053.8 (10)	131,639.8 (12)	192,123.0 (10)	64,040.9 (5)	30,462.2 (4)	57,878.3 (3)	45,693.3 (7)	28,558.4 (3)	71,868.2 (12)	67,243.0 (6)	154,215.2 (8)	53,309.0 (3)
Cyanophyta (blue-green algae)					25.0 (<1)	8.3 (<1)	16.7 (<1)	37.5 (<1)							25.0 (<1)	
Euglenophyta (euglenoids)	15,231.1 (<1)			7,615.6 (<1)			2,668.4 (<1)	2,001.3 (<1)								
Cryptophyta (cryptophytes)	586,398.6 (10)	106,617.9 (3)	167,542.5 (5)	106,617.9 (3)	45,362.4 (5)	71,156.6 (6)	186,786.2 (10)	100,064.0 (8)	27,923.7 (4)	198,004.7 (12)	19,990.9 (3)	19,990.8 (2)	37,713.0 (6)	140,890.2 (13)	39,981.7 (2)	41,885.6 (3)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)				7,615.6 (<1)	1,334.2 (<1)	1,778.9 (<1)		4,002.5 (<1)					2,134.7 (<1)	13,875.5 (1)		
Haptophyceae (haptophytes including coccolithophores)	15,231.1 (<1)	15,231.1 (<1)	15,231.1 (<1)	53,309.0 (2)					2,538.5 (<1)	12,184.9 (1)	2,855.8 (<1)	5,711.7 (1)			28,558.4 (1)	5,711.7 (<1)
Prasinophyceae (prasinophytes)	9,519.5 (<1)		60,924.6 (2)	22,846.7 (1)	22,681.2 (3)	16,010.2 (1)	133,418.7 (7)	8,005.1 (1)	7,615.6 (1)	18,277.3 (1)		17,135.0 (2)	11,385.0 (2)	22,414.3 (2)	17,135.0 (1)	
Unidentified phytoflagellates	2,842,510.1 (49)	2,162,820.8 (53)	1,934,353.8 (56)	1,789,658.1 (52)	328,210.1 (39)	391,806.3 (35)	717,792.7 (37)	376,240.8 (29)	515,320.0 (67)	1,011,347.2 (60)	436,943.1 (66)	608,293.3 (70)	315,223.9 (52)	629,736.4 (60)	1,313,685.1 (64)	923,387.4 (59)
Other				15,231.1 (<1)	5,336.8 (1)	6,226.2 (1)	8,005.1 (<1)	4,002.6 (<1)		12,184.9 (1)			25,260.6 (4)			
Total phytoplankton	5,757,393.4	4,101,307.7	3,443,169.6	3,435,737.4	839,161.6	1,110,109.0	1,921,861.2	1,294,300.6	774,516.1	1,675,878.1	657,704.8	863,337.9	605,986.5	1,054,674.6	2,046,029.4	1,575,014.4

[a] Values are expressed as cells per liter and represent the mean of three replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface; B = Bottom.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
14 SEPTEMBER 1976

	Station and depth[c]															
	11		12		0		1		2		3		4		5	
Taxon	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	1,570,710.6 (51)	607,370.4 (63)	188,510.1 (9)	354,223.8 (20)	937,114.8 (62)	2,315,353.8 (75)	1,797,523.9 (56)	3,491,689.8 (70)	705,575.3 (45)	1,303,182.8 (64)	460,060.2 (33)	1,091,842.3 (46)	779,540.4 (43)	1,549,590.1 (65)	438,311.6 (33)	1,505,574.6 (57)
Pyrrhophyta (dinoflagellates)	14,841.8 (<1)	11,423.4 (1)	165,663.6 (8)	125,656.8 (7)	22,959.2 (2)	64,753.3 (2)	114,283.6 (4)	38,133.4 (1)	29,342.7 (2)	12,007.7 (1)	33,541.9 (2)	11,448.4 (<1)	32,045.5 (2)	10,706.7 (<1)	45,734.9 (3)	19,039.0 (1)
Chlorophyta (green algae)		13,327.2 (1)		11,423.3 (1)	5,711.7 (<1)	34,270.0 (1)	7,615.6 (<1)	38,077.8 (1)	56,017.9 (4)	68,043.5 (3)		28,558.4 (1)	101,398.2 (6)	117,408.4 (5)	7,615.6 (1)	9,519.5 (<1)
Cyanophyta (blue-green algae)					62.5 (<1)	75.0 (<1)	66.7 (<1)	333.3 (<1)	283.3 (<1)	250.0 (<1)	73.3 (<1)	400.0 (<1)	200.0 (<1)	400.0 (<1)	191.7 (<1)	41.7 (<1)
Euglenophyta (euglenoids)	42,837.6 (1)		5,711.7 (<1)	5,711.7 (<1)					2,667.5 (<1)							
Cryptophyta (cryptophytes)	314,142.1 (10)	19,038.9 (2)	342,700.5 (17)	382,682.2 (21)	79,963.5 (5)	78,059.6 (3)	152,311.3 (5)	114,233.5 (2)	136,043.5 (9)	116,074.3 (6)	57,378.3 (4)	74,251.7 (3)	122,745.2 (7)	112,071.7 (5)	64,732.3 (5)	47,597.3 (2)
Xanthophyta (xanthophytes)					12.5 (<1)											
Chrysophyceae (yellow-brown algae and silicoflagellates)								25,385.2 (1)	5,335.0 (<1)	4,002.6 (<1)	82,248.1 (6)	85,675.1 (4)	5,336.7 (<1)			
Haptophyceae (haptophytes including coccolithophores)	42,837.6 (1)	3,807.8 (<1)	5,711.7 (<1)	17,135.0 (1)			7,615.6 (<1)						13,341.9 (1)			
Prasinophyceae (prasinophytes)	14,279.2 (<1)	3,807.8 (<1)	182,773.6 (9)	137,080.1 (8)	11,423.3 (1)		99,002.4 (3)	12,692.6 (<1)	77,358.1 (5)	28,017.9 (1)	33,508.5 (2)		48,030.7 (3)	10,673.5 (<1)	60,924.5 (5)	9,519.5 (<1)
Unidentified phytoflagellates	1,056,659.8 (35)	297,007.1 (31)	1,096,641.6 (55)	765,364.4 (42)	451,222.4 (30)	582,590.9 (19)	1,043,332.6 (32)	1,269,261.1 (25)	544,174.1 (35)	516,330.5 (25)	725,001.9 (52)	1,062,371.5 (45)	688,440.6 (38)	565,695.4 (24)	696,824.3 (52)	1,018,582.0 (39)
Other		3,807.8 (<1)		5,711.7 (<1)	5,711.7 (<1)				13,337.6 (1)				13,341.8 (1)	26,683.7 (1)	15,231.1 (1)	9,519.5 (<1)
Total phytoplankton	3,056,308.7	959,590.4	1,987,712.8	1,804,989.0	1,514,181.7	3,075,102.6	3,221,751.7	4,989,806.7	1,570,135.0	2,047,909.3	1,392,312.2	2,354,547.4	1,804,421.0	2,393,229.5	1,329,566.0	2,619,393.1

[a] Values are expressed as cells per liter and represent the mean of three replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface; B = Bottom.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
15 OCTOBER 1976

Taxon	Station and depth[c]															
	11		12		0		1		2		3		4		5	
	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	2,364,536.2 (51)	6,120,022.1 (62)	3,431,215.3 (53)	2,299,797.3 (53)	2,657,252.8 (64)	5,969,679.9 (70)	4,813,648.7 (62)	4,973,342.5 (59)	1,658,338.0 (40)	1,594,753.5 (52)	1,159,285.3 (38)	3,498,266.4 (60)	1,146,814.3 (41)	4,718,720.1 (64)	1,221,924.3 (43)	3,716,765.3 (57)
Pyrrhophyta (dinoflagellates)		45,693.4 (<1)	57,200.0 (1)		30,462.2 (1)	19,038.9 (<1)	53,534.2 (1)	26,683.7 (<1)	50,770.3 (1)	7,615.6 (<1)	72,096.2 (2)	133.3 (<1)	57,116.8 (2)	22,846.7 (<1)	91,386.9 (3)	45,693.4 (1)
Chlorophyta (green algae)	19,038.9 (<1)			38,077.8 (1)	15,231.1 (<1)	38,077.8 (<1)	13,341.9 (<1)	53,367.5 (1)	15,231.1 (<1)	15,231.1 (<1)	32,020.5 (1)			159,926.9 (2)		22,846.7 (<1)
Cyanophyta (blue-green algae)	250.0 (<1)	297,007.1 (3)	83.3 (<1)	83.3 (<1)		166.7 (<1)	666.7 (<1)	166.6 (<1)	555.5 (<1)	66.7 (<1)	575.0 (<1)	333.3 (<1)	312.5 (<1)	400.0 (<1)	10,365.6 (<1)	400.0 (<1)
Euglenophyta (euglenoids)											4,002.6 (<1)				7,615.6 (<1)	
Cryptophyta (cryptophytes)	437,895.1 (9)	228,467.0 (2)	285,583.7 (4)	228,467.0 (5)	76,155.7 (2)	152,311.3 (2)	400,256.1 (5)	466,965.5 (6)	360,470.1 (9)	198,004.8 (6)	280,179.3 (9)	245,490.4 (4)	276,064.3 (10)	251,313.7 (3)	182,773.6 (6)	182,773.6 (3)
Xanthophyta (xanthophytes)		22,846.7 (<1)			66.7 (<1)				66.7 (<1)		25.0 (<1)		104.2 (<1)		16.7 (<1)	200.0 (<1)
Chrysophyceae (yellow-brown algae and silicoflagellates)							26,683.7 (<1)	13,341.9 (<1)			12,007.7 (<1)	10,673.5 (<1)		22,846.7 (<1)		
Haptophyceae (haptophytes including coccolithophores)	38,077.8 (1)	91,386.8 (1)	95,194.6 (1)	19,038.9 (<1)	45,693.4 (1)	133,272.4 (2)			25,385.2 (1)	22,846.7 (1)			28,558.4 (1)	22,846.7 (<1)		114,233.5 (2)
Prasinophyceae (prasinophytes)	38,077.8 (1)	45,693.4 (<1)	57,116.7 (1)	114,233.5 (3)	60,924.5 (1)	76,155.6 (1)	66,709.3 (1)	106,735.0 (1)	319,853.8 (8)	53,309.0 (2)	104,066.6 (3)		152,311.3 (5)	91,386.8 (1)	205,620.3 (7)	22,846.7 (<1)
Unidentified phytoflagellates	1,770,619.1 (38)	2,970,070.8 (30)	2,551,214.7 (39)	1,675,424.5 (38)	1,233,721.7 (30)	1,865,813.7 (22)	2,441,562.6 (31)	2,641,690.7 (31)	1,634,808.1 (40)	1,134,719.3 (37)	1,348,863.3 (44)	1,857,188.6 (32)	1,123,296.0 (40)	1,941,969.4 (26)	1,127,103.8 (39)	2,033,356.2 (31)
Other		22,846.7 (<1)	38,077.8 (1)		15,231.1 (<1)	228,466.9 (3)		133,418.7 (2)	30,462.3 (1)	38,077.9 (1)	76,048.7 (2)	256,163.9 (4)	28,558.4 (1)	114,233.5 (2)	7,615.6 (<1)	342,700.5 (5)
Total phytoplankton	4,668,494.9	9,844,034.0	6,515,686.4	4,375,122.3	4,134,739.2	8,482,983.2	7,816,403.2	8,415,712.1	4,095,941.1	3,064,624.6	3,089,170.2	5,868,249.4	2,813,136.2	7,346,490.5	2,854,422.4	6,481,815.9

[a] Values are expressed as cells per liter and represent the mean of three replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface; B = Bottom.

Table 2.2-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION [b]
ST. LUCIE PLANT
10 NOVEMBER 1976

Taxon	Station and depth[c]															
	11		12		0		1		2		3		4		5	
	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	765,123.4 (42)	3,451,626.9 (56)	1,192,428.3 (46)	2,630,161.9 (44)	2,816,598.1 (61)	4,724,764.2 (61)	1,563,075.6 (77)	2,977,970.9 (74)	1,509,339.0 (60)	2,103,505.1 (62)	415,473.8 (39)	622,821.3 (53)	1,115,806.3 (55)	1,018,354.8 (50)	715,055.5 (55)	1,427,357.9 (55)
Pyrrhophyta (dinoflagellates)	15,964.4 (1)	57,241.7 (1)	45,726.6 (2)	76,155.6 (1)	8,255.1 (<1)	53,450.8 (1)	23,013.5 (1)	69,040.2 (2)	20,162.9 (1)	26,716.8 (1)	11,556.6 (1)	30,706.6 (3)	45,793.4 (2)	45,693.4 (2)	19,088.9 (2)	19,205.7 (1)
Chlorophyta (green algae)	30,462.3 (2)	19,038.9 (<1)			16,010.2 (<1)	80,051.2 (1)	30,462.3 (2)	22,846.7 (1)	40,025.6 (2)	32,020.5 (1)	3,807.8 (<1)	15,231.1 (1)	7,615.6 (<1)			9,519.5 (<1)
Cyanophyta (blue-green algae)	66.7 (<1)	291.7 (<1)			3,650.0 (<1)	2,833.3 (<1)	433.3 (<1)	233.3 (<1)	3,925.0 (<1)	2,000.0 (<1)	1,816.7 (<1)	2,288.9 (<1)	9,816.6 (1)		6,633.3 (1)	2,333.4 (<1)
Euglenophyta (euglenoids)																
Cryptophyta (cryptophytes)	91,386.8 (5)	437,895.1 (7)	106,617.9 (4)	456,934.0 (8)	368,235.7 (8)	653,751.8 (9)	38,077.8 (2)	190,389.2 (5)	224,143.4 (9)	224,143.5 (7)	79,963.5 (7)	25,385.2 (2)	137,080.2 (7)	45,693.4 (2)	106,617.9 (8)	76,155.7 (3)
Xanthophyta (xanthophytes)												5,077.0 (<1)				
Chrysophyceae (yellow-brown algae and silicoflagellates)					16,010.3 (<1)		7,615.6 (<1)	15,231.1 (<1)	4,002.6 (<1)	10,673.4 (<1)	7,615.6 (1)					9,519.5 (<1)
Haptophyceae (haptophytes including coccolithophores)				38,077.8 (1)			7,615.6 (<1)	30,462.3 (1)		5,336.7 (<1)		5,077.0 (<1)	7,615.6 (<1)			
Prasinophyceae (prasinophytes)		209,428.1 (3)		133,272.4 (2)	64,041.0 (1)	53,367.5 (1)	53,309.0 (3)	106,617.9 (3)	52,033.3 (2)	42,694.0 (1)	68,540.1 (6)	20,308.2 (2)	30,462.3 (2)	45,693.4 (2)	15,231.1 (1)	19,038.9 (1)
Unidentified phytoflagellates	913,867.9 (50)	1,903,891.6 (31)	1,233,721.7 (48)	2,703,526.0 (45)	1,256,804.3 (27)	2,001,280.8 (26)	312,238.2 (15)	586,393.6 (15)	644,412.4 (25)	885,900.3 (26)	475,972.9 (44)	441,702.8 (38)	670,169.9 (33)	891,021.3 (44)	418,856.2 (32)	1,037,620.9 (40)
Others		76,155.6 (1)			48,030.7 (1)	160,102.5 (2)	7,615.6 (<1)	15,231.1 (<1)	36,023.1 (1)	80,051.2 (2)	15,231.1 (1)	5,077.0 (<1)	7,615.6 (<1)		11,423.3 (1)	
Total phytoplankton	1,816,871.5	6,155,569.6	2,578,494.5	6,038,127.7	4,597,635.5	7,729,602.0	2,043,456.5	4,014,421.3	2,534,066.7	3,413,041.5	1,079,978.1	1,173,675.1	2,031,975.5	2,046,456.3	1,292,906.2	2,600,751.5

[a] Values are expressed as cells per liter and represent the mean of three replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface; B = Bottom.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
13 DECEMBER 1976

TAXON	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
	S	B	AVG.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	623,284.7 (59)	2,349,061.1 (74)	1,486,172.9 (70)	800,059.1 (64)	1,037,650.5 (63)	1,190,678.5 (68)	1,273,612.8 (67)	1,540,408.9 (62)	353,040.5 (38)	562,290.5 (49)	166,896.9 (63)	223,768.1 (51)	187,627.2 (49)	214,356.7 (51)	285,801.5 (53)	408,375.0 (58)
Pyrrhophyta (dinoflagellates)	22,871.6 (2)		11,435.8 (1)	7,615.6 (1)	34,319.9 (2)	15,231.1 (1)	21,397.0 (1)	32,220.6 (1)	5,345.1 (1)	10,673.5 (1)	16.7 (<1)	15,252.0 (3)	5,728.4 (2)	13,343.8 (3)	8,173.8 (2)	7,632.2 (1)
Chlorophyta (green algae)	5,711.7 (1)		2,855.9 (<1)	15,231.1 (1)	15,297.8 (1)	30,528.9 (2)	32,020.5 (2)	24,015.4 (1)	13,341.9 (1)	21,513.7 (2)	7,615.6 (3)	15,231.1 (3)	15,231.1 (4)	3,807.8 (<1)	4,895.7 (1)	7,615.6 (1)
Cyanophyta (blue-green algae)	325.0 (<1)		162.5 (<1)	33.3 (<1)	333.3 (<1)		4,000.0 (<1)	125.0 (<1)	100.0 (<1)	50.0 (<1)	166.7 (<1)	379.2 (<1)	20.8 (<1)	275.0 (<1)	1,028.5 (<1)	158.4 (<1)
Euglenophyta (euglenoids)						3,807.8 (<1)										
Cryptophyta (cryptophytes)	51,405.1 (5)	106,617.9 (3)	79,011.5 (4)	49,501.2 (4)	110,425.7 (7)	102,810.1 (6)	80,051.2 (4)	136,087.1 (5)	117,408.5 (13)	82,719.6 (7)	1,903.9 (1)	17,135.0 (4)	22,846.7 (6)	28,558.4 (7)	34,270.0 (6)	51,405.1 (7)
Xanthophyta (xanthophytes)						3,807.8 (<1)										
Chrysophyceae (yellow-brown algae and silicoflagellates)				3,807.8 (<1)	7,615.6 (<1)	3,807.8 (<1)	2,668.4 (<1)	12,007.7 (<1)	2,668.4 (<1)	2,668.4 (<1)		3,807.8 (1)		3,807.8 (1)		
Haptophyceae (haptophytes including coccolithophores)															1,631.9 (<1)	
Prasinophyceae (prasinophytes)	17,135.0 (2)	30,462.3 (1)	23,798.7 (1)	30,462.2 (2)	49,501.2 (3)	15,231.1 (1)	42,694.0 (2)	56,035.8 (2)	32,020.5 (3)	21,347.0 (2)	3,807.8 (1)	5,711.7 (1)	17,135.0 (4)	15,231.1 (4)	13,055.2 (2)	13,327.2 (2)
Unidentified phytoflagellates	339,844.6 (32)	654,938.7 (21)	497,391.7 (24)	319,853.8 (26)	380,778.3 (23)	380,778.3 (22)	440,281.8 (23)	684,438.1 (27)	389,582.7 (42)	445,618.5 (39)	85,675.1 (32)	154,215.2 (35)	131,368.5 (34)	137,080.2 (33)	181,141.7 (34)	220,851.4 (31)
Others		30,462.3 (1)	15,231.1 (1)	19,038.9 (2)			13,341.9 (1)	12,007.7 (<1)	13,341.9 (1)	8,005.1 (1)		3,807.8 (1)	1,903.9 (<1)	1,903.9 (<1)	8,159.5 (2)	
Total phytoplankton	1,060,577.7	3,171,542.3	2,116,060.1	1,245,602.9	1,635,922.3	1,746,680.9	1,910,067.6	2,497,346.3	926,849.4	1,154,886.3	266,082.7	439,307.7	381,861.6	418,364.7	538,157.8	709,368.9

[a] Values are expressed as cells per liter and represent the mean of three replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface; B = Bottom; Avg. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON ABUNDANCE AND COMPOSITION IN CELLS PER LITER[a]
ST. LUCIE PLANT
13 DECEMBER 1976

SPECIES	STATION AND DEPTH[b]														
	11		12	0		1		2		3		4		5	
	S	B	S	S	B	S	B	S	B	S	B	S	B	S	B
BACILLARIOPHYTA (diatoms)															
Amphiprora spp.									2668.4		1903.9				
Amphora spp.	2855.8		3807.8		3807.8	13341.9	56035.9							3263.8	1903.9
Asterionella japonica		15231.1	7615.5					2668.4		3807.8	11423.4	24750.6	19038.9	3263.8	3807.8
Biddulphia alternans		45693.4	3807.8		7615.6	13341.9	20012.8	2668.4		5711.7	[illegible]		1903.9	1631.9	
B. aurita						5336.7									3807.8
B. longicruris	2855.8	15231.1													
B. mobiliensis										1903.9					
B. rhombus	8567.5	60924.5	11423.3	3807.8	3807.8					1903.9		1903.9	3807.8	3263.8	
Biddulphia spp.															
Campylosira cymbelliformis	5711.7	441702.8	129468.6		15231.1	29352.1	20012.8	2668.4	21347.0	5711.7				19582.9	13327.2
	12.5					50.0		25.0		20.8			20.8		
Cerataulina bergonii					3807.8										
Chaetoceros laevis															7615.6
C. wighami	22846.7			26654.5	49501.2	16010.2	24015.4	40025.6	2668.4	1903.9	9519.5	3807.8	1903.9	4895.7	15231.1
Chaetoceros spp.				3807.8											
Corethron hystrix		15231.1									3807.8		1903.9		
Coscinodiscus lineatus	75.0	666.7	100.0	66.7	50.0	183.3	200.0	400.0	400.0	33.3	25.0	20.8	29.2	21.4	25.0
C. radiatus	5711.7	30462.3				2668.4			2668.4	1903.9	1903.9				1903.9
Coscinodiscus spp.		30462.3													
Cyclotella sp. 1		15231.1	3807.8			5336.7									
Cyclotella spp.													19[illegible]		
Cymbella spp.	17135.0	45693.4	11423.3			10673.5	[illegible]	[illegible]	[illegible]	11423.3	[illegible]	1903.9		[illegible]	[illegible]
Diploneis sp. 1					[illegible]										
Eunotogramma marinum		60924.5													
Fragilaria ? sp.						66.7	50.0		16.7	33.3			12.5		
Guinardia flaccida		133.3													
Gyrosigma terryanum		200.0	25.0												
Gyrosigma spp.												4.2			
Isthmia enervis								2668.4	10673.5				1903.9	4895.7	
Leptocylindrus danicus			7615.6	3807.8			4002.6								
Melosira sulcata															
Navicula lyra v. *lyra*		66.7	8.3												
	137.5			150.0	133.3	133.3	275.0	131.7	283.3	8.3	4.2	25.0	4.2	150.0	91.7
N. wawrikae							4002.6								
Navicula sp. 6															
Nitzschia acicularis v. *closterioides*	5711.7		3807.8	3807.8	15231.1							9519.4		4895.7	9519.5
	22846.7	30462.3	15231.1	38077.8	45693.4	32020.5	40025.6	21347.0	40025.6	5711.7	15231.1	17135.0	24750.6	27742.4	32366.1
N. closterium		15231.1			3807.8	2668.4			5336.7	1903.9	1903.9	1903.9			1903.9
N. constricta	34270.0	76155.7	30462.2	26654.5	26654.5	106735.0	44028.2	66739.4	[illegible]	7615.6	15231.1	5711.7	9519.5	27742.4	5711.7
N. delicatissima	2855.8	15231.1				2668.4		2668.4		3807.8				3263.8	5711.7
N. longissima			191.7	1416.7	2133.3	2250.0	2175.0	2541.7	3116.7	1075.0	916.7	941.7	987.5	1450.0	2016.7
N. paradoxa						13341.9									
N. pungens v. *atlantica*		133.3			16.7				33.3				4.2	14.3	8.3
N. sigmoidea															1903.9
N. spathulata		133.3	8.3		16.7							4.2		14.3	8.3
Nitzschia sp. 1			8.3												
Nitzschia sp. 2	8567.5	121849.1	7615.5		3807.8			2668.4	2668.4	15231.1	7615.6	1903.9	13327.2	6527.6	
Rhaphoneis surirella				50.0				25.0	16.7		16.7		4.2	7.1	25.0
Rhizosolenia alata							25.0	8.3							
R. alata f. *indica*	25.0			33.3		133.3		41.7	33.3	41.7	45.8	37.5	25.0	21.4	50.0
R. calcar avis							4002.6								
R. fragilissima															

[a] Values are mean of three replicates.

[b] S = Surface; B = Bottom.

† See Table M-15 for synonomous name.

Table 2.2A-1
cont'd

PHYTOPLANKTON ABUNDANCE AND COMPOSITION IN CELLS PER LITER[a]
ST. LUCIE PLANT
13 DECEMBER 1976

SPECIES	STATION AND DEPTH[b]														
	11		12	0		1		2		3		4		5	
	S	B	S	S	B	S	B	S	B	S	B	S	B	S	B
OTHERS															
Unidentified coccoid [c]		30462.3	19038.9			13341.9	12007.7	13341.8	8005.1		[illegible]	903.9	1903.9	8159.5	
TOTAL OTHERS		30,462.3	19,038.9			13,341.9	12,007.7	13,341.8	8,005.1		3,607.8	1,903.9	1,903.9	8,159.5	
TOTAL PHYTOPLANKTON	1,060,577.7	3,171,542.3	1,245,602.9	1,635,922.3	1,746,680.9	1,910,067.6	2,497,346.3	926,849.4	1,154,836.3	266,082.7	439,307.7	381,861.6	418,364.7	538,157.8	709,368.9

[a] Values are mean of three replicates.
[b] S = Surface; B = Bottom.
[c] See Table M-15 for synonomous name.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
25 JANUARY 1977

TAXON	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
	S	B	AVG.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	635,652.3 (41)	2,057,591.9 (44)	1,346,622.9 (43)	1,046,036.5 (51)	512,492.6 (24)	467,422.6 (25)	335,695.2 (32)	434,972.8 (32)	178,419.6 (30)	182,368.9 (23)	188,381.4 (23)	90,363.4 (19)	276,941.9 (22)	769,339.8 (30)	96,302.9 (14)	245,814.6 (30)
Pyrrhophyta (dinoflagellates)	20,330.4 (1)	76,155.6 (2)	48,243.0 (2)	11,423.4 (1)	24,165.2 (1)	16,035.3 (1)	25,714.9 (2)	25,201.3 (2)	9,158.7 (2)	27,446.1 (3)	17,185.0 (2)	8,732.0 (2)	10,706.9 (1)	12,032.7 (<1)	7,682.2 (1)	7,657.2 (1)
Chlorophyta (green algae)	40,616.4 (3)	50,770.4 (1)	45,693.4 (1)	34,270.0 (2)	50,699.1 (2)	100,064.0 (5)		27,416.0 (2)	13,708.0 (2)	22,846.7 (3)	32,366.2 (4)	15,231.1 (3)	48,030.7 (4)	76,048.7 (3)	26,654.5 (4)	28,558.4 (4)
Cyanophyta (blue-green algae)	88.9 (<1)	611.1 (<1)	350.0 (<1)			175.0 (<1)		20.0 (<1)	260.0 (<1)	140.0 (<1)		85.7 (<1)	183.3 (<1)	325.0 (<1)		58.3 (<1)
Euglenophyta (euglenoids)					5,336.7 (<1)		2,855.8 (<1)									
Cryptophyta (cryptophytes)	198,004.7 (13)	533,089.6 (11)	365,547.2 (12)	234,178.7 (11)	320,204.9 (15)	352,225.4 (19)	128,512.7 (12)	182,773.6 (13)	66,255.4 (11)	132,510.9 (17)	79,963.4 (10)	52,221.0 (11)	181,449.4 (14)	376,240.8 (15)	97,098.5 (15)	102,810.1 (13)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)	15,231.1 (1)		7,615.6 (<1)	5,711.7 (<1)			2,855.8 (<1)	15,992.7 (1)	2,284.7 (<1)	2,284.7 (<1)	1,903.9 (<1)		2,668.4 (<1)	4,002.6 (<1)	5,711.7 (1)	1,903.9 (<1)
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	35,539.3 (2)	152,311.3 (3)	93,925.3 (3)	45,693.3 (2)	93,393.1 (4)	104,066.6 (5)	42,837.5 (4)	52,547.4 (4)	20,562.0 (3)	43,408.7 (6)	66,636.2 (8)	30,462.3 (6)	90,724.7 (7)	124,079.4 (5)	49,501.2 (7)	47,597.2 (6)
Unidentified phytoflagellates	578,783.1 (37)	1,726,195.0 (37)	1,152,489.1 (37)	645,419.2 (31)	1,083,360.1 (51)	812,520.1 (43)	491,204.0 (47)	603,152.9 (44)	303,861.2 (50)	347,269.8 (44)	418,856.2 (52)	274,160.4 (58)	635,073.1 (51)	1,112,712.2 (44)	386,490.0 (58)	369,355.0 (46)
Others	30,462.2 (2)	50,770.4 (1)	40,616.3 (1)	39,981.7 (2)	34,688.9 (2)	40,025.6 (2)	8,567.5 (1)	18,277.3 (1)	9,138.7 (2)	29,700.7 (4)	3,807.8 (<1)	4,351.8 (1)	8,005.1 (1)	56,035.9 (2)		3,807.8 (<1)
Total phytoplankton	1,554,708.4	4,647,495.3	3,101,102.8	2,062,714.5	2,124,340.6	1,892,534.6	1,038,243.4	1,360,354.0	603,648.3	787,976.5	809,100.1	475,607.7	1,253,783.8	2,530,817.1	669,441.0	807,562.5

[a] Values are expressed as cells per liter and represent the mean of three replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface; B = Bottom; Avg. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]

ST. LUCIE PLANT
15 FEBRUARY 1977

TAXON	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
	S	B	AVG.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	354,561.3 (35)	345,705.9 (32)	350,133.6 (33)	594,363.8 (45)	400,706.1 (30)	260,577.3 (28)	572,198.8 (41)	627,667.8 (44)	269,847.6 (35)	275,717.9 (33)	176,825.5 (29)	144,488.6 (32)	235,173.1 (30)	189,293.5 (28)	289,404.2 (29)	320,162.5 (38)
Pyrrhophyta (dinoflagellates)	2,855.8 (<1)	8,567.5 (1)	5,711.7 (1)	3,807.8 (<1)	21,347.1 (2)	17,789.1 (2)	29,385.4 (2)	21,347.0 (1)	14,680.3 (2)	16,014.4 (2)	9,626.0 (2)	7,484.7 (2)	23,491.6 (3)	16,030.2 (2)	22,846.4 (2)	26,439.6 (3)
Chlorophyta (green algae)	17,135.0 (2)	17,135.0 (2)	17,135.0 (2)	15,231.0 (1)	53,367.5 (4)	42,694.0 (5)	21,347.0 (2)	24,015.4 (2)	48,030.7 (6)	56,035.9 (7)	51,232.8 (9)	23,481.6 (5)	45,896.0 (6)	52,300.1 (8)	21,214.8 (2)	31,220.0 (4)
Cyanophyta (blue-green algae)	137.5 (<1)	212.5 (<1)	200.0 (<1)	166.7 (<1)	200.0 (<1)	72.2 (<1)		100.0 (<1)	29.2 (<1)	25.0 (<1)	93.3 (<1)	10.0 (<1)	90.0 (<1)	90.0 (<1)	407.1 (<1)	45.0 (<1)
Euglenophyta (euglenoids)					2,668.4 (<1)										1,631.9 (<1)	
Cryptophyta (cryptophytes)	108,521.8 (11)	145,647.7 (13)	127,084.8 (12)	83,771.2 (6)	234,816.9 (17)	122,745.2 (13)	154,765.7 (11)	141,423.9 (10)	86,722.2 (11)	81,385.4 (10)	61,906.3 (10)	36,289.9 (8)	87,522.7 (11)	65,108.3 (10)	97,914.4 (10)	103,266.1 (12)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)	5,711.6 (1)	5,711.6 (1)	5,711.6 (1)		5,336.7 (<1)	5,336.7 (1)	2,668.4 (<1)	8,005.1 (1)			1,067.3 (<1)	1,067.3 (<1)	1,067.3 (<1)	2,134.7 (<1)	8,159.5 (1)	7,204.7 (1)
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	34,270.0 (3)	65,684.3 (6)	49,977.2 (5)	34,270.0 (3)	64,041.0 (5)	58,704.2 (6)	37,357.2 (3)	34,688.9 (2)	12,007.7 (2)	21,347.0 (3)	23,481.6 (4)	14,942.8 (3)	34,155.1 (4)	39,491.9 (6)	39,165.7 (4)	52,833.9 (6)
Unidentified phytoflagellates	491,203.9 (48)	485,492.3 (45)	488,348.1 (46)	571,167.5 (43)	563,027.0 (42)	398,477.2 (43)	571,032.2 (41)	565,695.4 (39)	328,210.0 (43)	378,909.2 (45)	274,308.8 (46)	220,941.4 (49)	346,888.6 (45)	306,329.3 (45)	520,578.4 (52)	304,995.2 (36)
Others	8,567.5 (1)	5,711.7 (1)	7,139.6 (1)	11,423.3 (1)	5,336.7 (<1)	16,010.2 (2)	16,010.2 (1)	16,010.2 (1)	4,002.6 (1)	5,336.8 (1)	1,067.3 (<1)	1,067.3 (<1)	2,134.7 (<1)	3,202.0 (<1)	4,895.7 (<1)	
Total phytoplankton	1,022,964.4	1,079,868.5	1,051,416.5	1,314,201.3	1,350,847.4	922,406.1	1,404,764.9	1,438,953.6	763,530.3	834,771.6	599,608.9	449,773.6	776,419.1	673,980.0	1,006,218.3	846,167.0

[a] Values are expressed as cells per liter and represent the mean of three replicates.

[b] Percentage values are given in parentheses.

[c] S = Surface; B = Bottom; Avg. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
11 MARCH 1977

TAXON	STATION AND DEPTH[c]															
	11			12		0		1		2		3		4		5	
	S	B	AVG.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	412,448.8 (58)	323,584.2 (53)	368,016.5 (56)	255,428.8 (45)	544,776.4 (58)	1,283,491.0 (76)	491,273.0 (59)	890,484.5 (61)	209,189.8 (38)	617,407.8 (58)	215,398.4 (50)	235,055.3 (54)	319,181.5 (51)	1,709,985.3 (80)	365,953.6 (45)	1,629,665.4 (70)
Pyrrhophyta (dinoflagellates)	11,431.7 (2)	8,579.9 (1)	10,005.8 (2)	2,954.1 (1)	24,075.3 (3)	16,110.2 (1)	22,984.1 (3)	23,021.7 (2)	10,370.8 (2)	16,043.7 (1)	16,071.6 (4)	14,270.6 (3)	20,903.2 (3)	18,678.6 (1)	8,679.9 (1)	38,111.1 (2)
Chlorophyta (green algae)	17,226.7 (2)	17,135.0 (3)	17,180.9 (3)	2,929.1 (1)	12,808.2 (1)	10,006.4 (1)	5,711.7 (1)	22,846.7 (2)	6,861.5 (1)	5,336.7 (<1)	14,231.3 (3)	14,231.3 (3)	6,404.1 (1)	5,370.0 (<1)	8,567.5 (1)	22,846.7 (1)
Cyanophyta (blue-green algae)	666.7 (<1)		333.4 (<1)	50.0 (<1)	60.0 (<1)	187.5 (<1)	125.0 (<1)		1107.2 (<1)		66.7 (<1)	16.7 (<1)	10.0 (<1)	66.7 (<1)		
Euglenophyta (euglenoids)					3202.0 (<1)											
Cryptophyta (cryptophytes)	19,038.9 (3)	11,423.3 (2)	15,231.1 (2)	38,077.8 (7)	46,429.7 (5)	52,033.3 (3)	28,558.3 (3)	22,846.7 (2)	67,471.8 (12)	56,035.8 (5)	17,789.2 (4)	12,452.4 (3)	44,828.7 (7)	56,035.9 (3)	42,837.5 (5)	64,732.3 (3)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)						4002.5 (<1)			1143.6 (<1)		1778.9 (<1)		1601.0 (<1)		2855.8 (<1)	
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	9,519.5 (1)	8,567.5 (1)	9,043.5 (1)	8,787.2 (2)	16,010.2 (2)	14,009.0 (1)	8,567.5 (1)		17,153.9 (3)	2,668.4 (<1)	5,336.8 (1)	889.5 (<1)	9,606.1 (2)	5,336.7 (<1)	19,990.8 (2)	7,615.6 (<1)
Unidentified phytoflagellates	226,563.1 (32)	231,322.9 (38)	228,943.0 (35)	254,828.6 (45)	296,189.6 (31)	286,183.2 (17)	265,592.8 (32)	479,780.7 (33)	231,005.0 (42)	373,572.4 (35)	158,323.6 (37)	159,213.0 (37)	216,138.4 (35)	325,541.7 (15)	354,123.8 (44)	536,897.4 (23)
Others	11,423.4 (2)	5,711.7 (1)	8,567.6 (1)	2,929.1 (1)	1,601.0 (<1)	16,010.2 (1)	5,711.7 (1)	11,423.3 (1)	1,143.6 (<1)		1,778.9 (<1)		4,803.1 (1)	18,678.6 (1)	5,711.7 (1)	34,270.0 (1)
Total phytoplankton	708,318.8	606,324.5	657,321.7	565,984.7	945,152.4	1,682,033.3	828,523.9	1,450,403.6	545,447.2	1,071,064.8	430,775.4	436,128.8	623,476.1	2,139,693.5	808,720.6	2,334,138.5

[a] Values are expressed as cells per liter and represent the mean of three replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface; B = Bottom; Avg. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
19 APRIL 1977

TAXON	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
	S	B	AVG.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	721,579.4 (62)	521,645.8 (59)	621,462.6 (61)	836,923.5 (55)	455,239.8 (63)	1,044,082.4 (71)	597,479.1 (51)	719,617.1 (57)	247,509.1 (50)	194,727.6 (45)	89,096.3 (12)	143,817.9 (20)	171,125.4 (41)	191,947.3 (47)	245,253.2 (39)	239,435.7 (49)
Pyrrhophyta (dinoflagellates)	12,714.7 (1)	30,487.3 (3)	21,601.0 (2)	35,550.4 (2)	14,459.2 (2)	18,728.6 (1)	26,767.1 (2)	38,099.3 (3)	14,969.4 (3)	23,198.4 (5)	14,969.4 (2)	26,703.6 (4)	17,104.3 (4)	17,090.9 (4)	13,935.5 (2)	21,366.8 (4)
Chlorophyta (green algae)	43,299.2 (4)	64,732.3 (7)	54,015.8 (5)	96,463.8 (6)		16,010.2 (1)	21,347.0 (2)	12,007.7 (1)	17,077.5 (3)	11,562.9 (3)	12,808.2 (2)	39,491.9 (6)	22,414.3 (5)	8,538.8 (2)	6,404.1 (1)	23,481.7 (5)
Cyanophyta (blue-green algae)	166.7 (<1)	66.7 (<1)	116.7 (<1)	344.5 (<1)	190.0 (<1)	266.7 (<1)	150.0 (<1)	125.0 (<1)		666.7 (<1)	126.7 (<1)	26.7 (<1)			13.3 (<1)	1,093.3 (<1)
Euglenophyta (euglenoids)				2,538.5 (1)		2,668.4 (<1)	2,668.4 (<1)			889.5 (<1)						
Cryptophyta (cryptophytes)	30,462.3 (3)	26,654.5 (3)	28,558.4 (3)	48,231.9 (3)	46,429.7 (6)	74,714.5 (5)	96,061.5 (8)	88,056.4 (7)	28,818.4 (6)	43,583.4 (10)	60,838.9 (8)	74,714.5 (10)	13,875.5 (3)	27,751.1 (7)	43,761.3 (7)	45,896.0 (9)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silico-flagellates)				2,538.5 (<1)	4,803.1 (1)				53,367.5 (11)	1,778.9 (<1)	294,588.5 (39)	1,067.3 (<1)		7,471.4 (2)	67,243.0 (11)	
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	30,462.3 (3)	11,423.4 (1)	20,942.9 (2)	38,077.8 (3)	6,404.1 (1)	10,673.5 (1)	5,336.8 (<1)	34,021.7 (3)	5,336.7 (1)	11,562.9 (3)	22,414.3 (3)	18,144.9 (3)	3,202.0 (1)	3,202.0 (1)	12,808.1 (2)	4,269.4 (1)
Unidentified phytoflagellates	317,315.2 (27)	230,370.9 (26)	273,843.1 (27)	436,625.8 (29)	168,107.6 (23)	296,189.5 (20)	400,256.1 (34)	358,229.3 (28)	120,610.5 (25)	139,645.0 (32)	261,500.6 (34)	406,660.2 (57)	183,584.1 (44)	147,294.2 (36)	232,682.2 (37)	139,822.8 (29)
Others		3,807.8 (<1)	1,903.9 (<1)	15,231.1 (1)	22,414.3 (3)	2,668.4 (<1)	13,341.8 (1)	10,006.4 (1)	4,269.4 (1)	3,557.8 (1)	2,134.7 (<1)	6,404.1 (1)	5,336.7 (1)	4,269.4 (1)	6,404.1 (1)	13,875.5 (3)
Total phytoplankton	1,155,999.8	889,188.7	1,022,444.4	1,512,525.8	718,047.8	1,466,002.2	1,163,407.8	1,260,162.9	491,958.5	431,173.1	758,477.6	717,031.1	416,642.3	407,565.1	628,504.8	489,241.2

[a] Values are expressed as cells per liter and represent the mean of three replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface; B = Bottom; Avg. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
10 MAY 1977

TAXON	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
	S	B	AVG.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	169,504.7 (15)	288,127.9 (30)	228,816.3 (22)	304,756.0 (43)	250,564.0 (27)	254,293.8 (28)	352,659.0 (35)	614,076.2 (39)	162,954.2 (23)	258,254.6 (24)	108,219.1 (17)	167,395.5 (21)	199,002.0 (31)	206,160.3 (25)	107,299.8 (23)	364,670.4 (38)
Pyrrhophyta (dinoflagellates)	62,828.4 (5)	48,462.4 (5)	55,645.4 (5)	19,038.9 (3)	86,912.8 (9)	62,045.7 (7)	54,701.9 (5)	52,033.4 (3)	57,370.3 (8)	46,439.7 (4)	45,370.8 (7)	67,598.6 (8)	68,068.6 (11)	50,339.3 (6)	42,026.8 (9)	27,029.7 (3)
Chlorophyta (green algae)	129,464.7 (11)	81,694.3 (9)	105,579.5 (10)	34,328.3 (5)	10,292.3 (1)	13,008.3 (1)	25,349.6 (3)	41,359.8 (3)	26,683.8 (4)	43,327.7 (4)	29,352.1 (5)	16,010.2 (2)	56,035.9 (9)	37,738.4 (5)	22,014.0 (5)	44,028.2 (5)
Cyanophyta (blue-green algae)		36.4 (<1)	18.2 (<1)	166.7 (<1)	25.0 (<1)	3.1 (<1)	41.7 (<1)		8.3 (<1)	20.0 (<1)		11.1 (<1)		21.4 (<1)	25.0 (<1)	68.8 (<1)
Euglenophyta (euglenoids)		2,769.2 (<1)	1,384.6 (<1)		1,143.6 (<1)				1,334.2 (<1)							
Cryptophyta (cryptophytes)	167,542.5 (15)	135,695.6 (14)	151,619.1 (14)	123,752.9 (18)	150,953.8 (16)	125,080.0 (14)	122,745.2 (12)	173,444.4 (11)	122,745.2 (17)	204,931.1 (19)	109,403.4 (18)	183,228.4 (23)	41,359.8 (6)	120,076.9 (15)	77,049.3 (16)	140,089.6 (15)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)	13,327.2 (1)	1,384.6 (<1)	7,355.9 (1)		2,287.2 (<1)	1,000.6 (<1)		8,005.2 (1)	5,336.8 (1)	6,404.0 (1)		3,557.8 (<1)			2,001.3 (<1)	2,001.3 (<1)
Haptophyceae (haptophytes including coccolithophores)	13,327.2 (1)		6,663.6 (1)								2,668.4 (<1)					
Prasinophyceae (prasinophytes)	66,636.2 (6)	59,539.9 (6)	63,088.1 (6)	11,423.4 (2)	38,882.1 (4)	29,018.6 (3)	29,352.1 (3)	81,385.4 (5)	25,349.6 (4)	30,419.5 (3)	21,347.0 (3)	28,462.7 (4)	21,347.0 (3)	35,451.3 (4)	20,012.8 (4)	37,023.6 (4)
unidentified phytoflagellates	523,570.2 (46)	330,930.9 (35)	427,250.6 (41)	196,100.8 (28)	376,240.9 (41)	393,251.6 (44)	397,587.9 (40)	585,708.1 (37)	306,863.1 (43)	483,509.5 (45)	294,855.5 (47)	327,320.5 (41)	241,487.9 (38)	353,369.0 (43)	198,126.7 (42)	335,214.5 (35)
Others	1,903.9 (<1)	2,769.3 (<1)	2,336.6 (<1)	13,327.2 (2)	6,861.5 (1)	22,014.1 (2)	13,341.9 (1)	12,007.7 (1)	4,002.6 (1)	9,606.1 (1)	10,673.5 (2)	12,452.4 (2)	14,676.1 (2)	13,723.1 (2)	4,002.5 (1)	2,001.3 (<1)
Total phytoplankton	1,148,105.0	951,410.5	1,049,757.9	702,894.2	924,163.2	899,715.8	995,779.3	1,568,020.2	712,648.1	1,082,912.2	621,889.8	806,037.2	641,977.3	816,879.7	472,558.2	952,127.4

[a] Values are expressed as cells per liter and represent the mean of three replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface; B = Bottom; Avg. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
14 JUNE 1977

TAXON	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
	S	B	AVG.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	160,637.7 (17)	453,401.6 (28)	307,019.7 (24)	133,666.1 (39)	75,120.7 (17)	168,838.4 (17)	392,419.8 (47)	255,952.8 (36)	484,992.7 (49)	112,896.7 (21)	117,100.8 (23)	82,139.5 (21)	356,915.2 (53)	62,585.8 (13)	1,383,176.3 (65)	229,517.4 (34)
Pyrrhophyta (dinoflagellates)	78,749.8 (8)	49,567.8 (3)	64,158.8 (5)	6,884.0 (2)	38,437.7 (9)	41,368.1 (4)	36,823.5 (4)	46,449.6 (7)	57,420.3 (6)	48,047.4 (9)	28,911.7 (6)	20,468.7 (5)	31,057.1 (5)	25,622.7 (5)	149,568.9 (7)	44,621.6 (7)
Chlorophyta (green algae)	81,299.4 (8)	102,810.1 (6)	92,054.8 (7)	11,423.4 (3)	53,334.8 (12)	64,041.0 (7)	70,445.1 (8)	56,035.9 (8)	61,389.3 (6)	33,354.7 (6)	75,781.8 (15)	31,131.0 (9)	38,024.3 (6)	27,751.1 (6)	77,916.5 (4)	33,164.1 (5)
Cyanophyta (blue-green algae)	133.3 (<1)	1,566.7 (<1)	850.0 (<1)	4,425.0 (1)	33.3 (<1)		850.0 (<1)	560.0 (<1)	250.0 (<1)	33.3 (<1)	73.3 (<1)	11.1 (<1)	1,006.3 (<1)	26.7 (<1)	40.0 (<1)	57.1 (<1)
Euglenophyta (euglenoids)		3,807.8 (<1)	1,903.9 (<1)				1,601.0 (<1)	1,601.0 (<1)	2,088.4 (<1)		2,134.7 (<1)		2,001.3 (<1)		1,067.3 (<1)	1,143.6 (<1)
Cryptophyta (cryptophytes)	78,694.2 (8)	102,810.1 (6)	90,752.2 (7)	13,708.1 (4)	27,751.1 (6)	149,429.0 (15)	40,025.6 (5)	70,445.1 (10)	44,028.2 (4)	53,367.5 (10)	17,077.6 (3)	28,462.7 (7)	27,017.3 (4)	44,828.7 (10)	28,818.4 (1)	59,466.6 (9)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)	5,077.1 (1)		2,538.6 (<1)		6,404.0 (1)	1,334.2 (<1)	3,202.0 (<1)	6,404.1 (1)	2,668.4 (<1)	2,668.4 (<1)		1,778.9 (<1)	1,000.6 (<1)	1,067.3 (<1)	1,067.3 (<1)	5,718.0 (1)
Haptophyceae (haptophytes including coccolithophores																
Prasinophyceae (prasinophytes)	48,232.0 (5)	68,540.0 (4)	58,386.0 (5)		25,616.3 (6)	138,755.4 (14)	12,808.2 (2)	32,020.4 (5)	9,339.3 (1)	10,673.5 (2)	1,067.3 (<1)	15,120.9 (4)	4,002.5 (1)	26,683.7 (6)	6,404.1 (<1)	35,451.3 (5)
Unidentified phytoflagellates	517,858.5 (53)	833,904.6 (52)	675,881.6 (52)	169,065.7 (50)	214,537.3 (48)	408,261.3 (42)	273,775.1 (33)	238,552.6 (34)	321,539.2 (33)	289,518.6 (53)	257,231.3 (51)	211,691.2 (54)	211,135.2 (31)	277,510.9 (59)	470,701.2 (22)	261,881.9 (39)
Others					2,134.7 (<1)		1,601.0 (<1)		1,334.2 (<1)		1,067.3 (<1)	889.5 (<1)	2,001.3 (<1)	2,134.7 (<1)	2,134.7 (<1)	2,287.2 (<1)
Total phytoplankton	970,682.0	1,616,408.7	1,293,545.6	339,202.3	444,469.9	972,027.4	833,551.3	708,021.5	985,630.0	550,560.1	500,445.8	391,684.5	674,161.1	468,211.6	2,120,894.7	673,308.8

[a] Values are expressed as cells per liter and represent the mean of three replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface; B = Bottom; Avg. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
12 JULY 1977

	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
TAXON	S	B	AVG.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	154,160.9 (22)	514,452.8 (36)	334,306.9 (31)	452,485.1 (54)	90,213.9 (23)	127,934.3 (20)	177,665.9 (33)	139,427.8 (27)	59,237.5 (27)	179,739.3 (33)	122,483.8 (33)	338,222.4 (50)	176,490.7 (40)	338,487.2 (45)	40,851.2 (13)	258,730.7 (34)
Pyrrhophyta (dinoflagellates)	32,647.6 (5)	34,286.7 (2)	33,467.1 (3)	53,342.3 (6)	38,118.2 (10)	37,708.9 (6)	20,346.2 (4)	25,642.9 (5)	18,712.0 (8)	3,684.8 (2)	32,037.3 (9)	4,282.6 (1)	28,496.0 (6)	26,755.9 (4)	18,019.9 (6)	22,681.2 (3)
Chlorophyta (green algae)	20,694.6 (3)	15,231.2 (1)	17,962.9 (2)	3,974.5 (<1)	9,005.7 (2)	8,805.7 (1)	9,606.1 (2)	9,606.0 (2)	5,870.4 (3)	17,344.4 (3)	7,115.7 (2)	24,549.0 (4)	3,557.8 (1)	17,789.1 (2)	9,339.3 (3)	13,458.6 (2)
Cyanophyta (blue-green algae)	709.5 (<1)	6,157.8 (<1)	3,433.7 (<1)	25,266.7 (3)	100.0 (<1)	100.0 (<1)	820.0 (<1)	806.6 (<1)	243.3 (<1)	62.5 (<1)	177.8 (<1)	400.0 (<1)	11.1 (<1)	355.5 (<1)	25.0 (<1)	33.3 (<1)
Euglenophyta (euglenoids)	1,087.9 (<1)		544.0 (<1)		1,000.6 (<1)			1,067.3 (<1)						889.5 (<1)		
Cryptophyta (cryptophytes)	56,572.8 (8)	87,579.0 (6)	72,075.9 (7)	3,807.8 (<1)	36,023.1 (9)	94,460.4 (14)	39,491.9 (7)	62,973.6 (12)	13,341.9 (6)	50,032.0 (9)	25,794.3 (7)	37,357.2 (6)	26,683.7 (6)	60,483.2 (8)	36,023.1 (11)	129,416.2 (17)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae)					2,001.3 (<1)	800.5 (<1)			1,067.3 (<1)					889.5 (<1)	667.1 (<1)	2,668.4 (<1)
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	21,758.7 (3)	60,924.4 (4)	41,341.6 (4)	11,423.4 (1)	7,004.4 (2)	145,693.2 (22)	36,289.9 (7)	43,761.3 (8)	3,735.7 (2)	93,393.0 (17)	8,894.6 (2)	25,616.4 (4)	14,231.3 (3)	64,930.4 (9)	7,338.1 (2)	109,403.3 (14)
Unidentified phytoflagellates	422,120.0 (59)	696,824.3 (49)	559,472.2 (53)	289,391.5 (34)	202,129.3 (52)	236,951.7 (36)	251,894.5 (47)	240,153.6 (46)	119,543.2 (54)	200,128.1 (36)	177,002.2 (47)	241,221.0 (36)	196,570.2 (44)	241,043.2 (32)	204,130.7 (65)	217,472.6 (29)
Others					2,001.3 (1)	2,401.5 (<1)				1,334.2 (<1)	889.5 (<1)	1,067.3 (<1)				8,005.1 (1)
TOTAL PHYTOPLANKTON	709,751.8	1,415,456.2	1,062,604.3	840,691.3	387,597.8	654,906.2	536,114.5	523,439.1	221,751.3	550,718.3	374,395.2	673,315.5	446,040.8	751,623.5	316,394.4	761,869.4

[a] Values are expressed as cells per liter and represent the mean of three replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface; B = Bottom; Avg. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
23 AUGUST 1977

	STATION AND DEPTH[c]															
	11		12		0		1		2		3		4		5	
TAXON	S	B	AVG.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	169,055.4 (18)	437,375.4 (20)	303,215.4 (23)	196,426.4 (52)	73,255.0 (24)	182,539.2 (33)	167,284.4 (27)	155,429.6 (23)	126,105.6 (34)	107,912.2 (20)	227,039.9 (23)	147,954.0 (18)	142,848.1 (26)	171,973.2 (26)	81,469.6 (20)	126,025.4 (21)
Phrrhophyta (dinoflagellates)	28,558.4 (3)	17,135.0 (1)	22,846.7 (2)	7,615.6 (2)	6,404.1 (2)	8,545.4 (2)	13,350.3 (2)	10,018.9 (2)	14,248.2 (4)	11,207.2 (2)	30,017.7 (3)	20,582.1 (2)	9,606.1 (2)	18,678.7 (3)	20,955.2 (5)	21,323.6 (4)
Chlorophyta (green algae)	20,942.8 (2)	85,675.1 (5)	53,309.0 (4)	15,339.4 (4)	11,207.1 (4)	27,751.0 (5)	20,012.8 (3)	36,023.1 (5)	22,236.5 (6)	32,020.5 (6)	31,414.2 (3)	41,124.1 (5)	36,823.6 (7)	24,015.4 (4)	31,414.2 (8)	70,063.2 (12)
Cyanophyta (blue-green algae)	233.3 (<1)	875.0 (<1)	554.2 (<1)	6,041.1 (2)	30.0 (<1)		3,325.9 (1)	87.5 (<1)	5.6 (<1)	40.0 (<1)	37.5 (<1)		160.0 (<1)	50.0 (<1)		
Euglenophyta (euglenoids)											1,427.9 (4)					
Cryptophyta (cryptophytes)	78,059.5 (8)	79,963.4 (5)	79,011.5 (6)	15,231.1 (4)	18,411.8 (6)	75,781.8 (14)	89,390.5 (14)	84,053.8 (13)	21,347.0 (6)	104,066.6 (20)	34,270.0 (3)	100,525.5 (12)	38,424.6 (7)	98,729.9 (15)	5,711.7 (1)	54,832.1 (9)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae)					3,202.0 (1)	1,067.3 (<1)	1,334.2 (<1)									
Haptophyceae (haptophytes including coccolithophores)																
Prasingphyceae (prasinophytes)	30,462.2 (3)	28,558.3 (2)	29,510.3 (2)	1,903.9 (1)	3,202.0 (1)	26,683.7 (5)	38,691.4 (6)	8,005.1 (1)	1,779.0 (<1)	4,803.0 (1)		11,423.3 (1)	1,601.0 (<1)	8,005.2 (1)	1,903.8 (<1)	15,231.1 (3)
Unidentified phytoflagellates	630,188.1 (66)	1,005,254.7 (61)	817,721.4 (63)	137,080.2 (36)	191,322.5 (62)	210,267.8 (38)	284,181.9 (46)	368,235.7 (56)	185,007.3 (50)	264,169.1 (50)	676,833.6 (68)	504,912.0 (61)	323,407.0 (58)	325,541.7 (50)	262,737.0 (65)	319,853.8 (53)
Others						14,942.9 (3)	1,334.2 (<1)		889.5 (<1)	6,404.1 (1)				2,668.4 (<1)		1,523.1 (<1)
Total phytoplankton	957,499.7	1,654,836.9	1,306,168.3	379,637.7	307,034.5	547,579.1	618,905.6	661,853.7	371,618.7	530,622.7	1,001,040.8	826,521.0	552,870.4	649,662.5	404,191.5	608,852.3

[a] Values are expressed as cells per liter and represent the mean of three replicates, except 48 which is the mean of two replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface; B = Bottom; Avg. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
13 SEPTEMBER 1977

TAXON	STATION AND DEPTH[c] 11 S	11 B	AVG.	12 S	0 S	0 B	1 S	1 B	2 S	2 B	3 S	3 B	4 S	4 B	5 S	5 B
Bacillariophyta (diatoms)	666,070.8 (54)	630,879.3 (47)	648,475.1 (50)	579,258.6 (70)	413,914.6 (52)	541,784.4 (60)	791,669.9 (55)	1,223,587.1 (57)	754,809.8 (52)	240,532.0 (36)	441,242.9 (50)	208,469.8 (31)	649,076.5 (55)	424,614.9 (51)	655,015.2 (61)	399,314.3 (43)
Pyrrhophyta (dinoflagellates)	26,654.4 (2)	45,693.3 (3)	36,197.9 (4)	38,094.5 (5)	32,086.9 (4)	23,125.8 (3)	57,116.7 (4)	79,963.4 (4)	69,394.3 (5)	26,700.5 (4)	45,730.9 (5)	31,414.1 (5)	66,709.4 (6)	26,717.2 (3)	50,699.1 (5)	37,374.0 (4)
Chlorophyta (green algae)	19,205.6 (2)	45,693.4 (3)	32,449.5 (2)	15,231.1 (2)	21,413.6 (3)	19,568.0 (2)	34,270.0 (2)	39,981.7 (2)	16,010.3 (1)	18,678.6 (3)	11,423.3 (1)	28,558.3 (4)	5,336.7 (<1)	37,357.2 (4)	21,347.0 (2)	45,362.4 (5)
Cyanophyta (blue-green algae)	150.0 (<1)	140.0 (<1)	145.0 (<1)	583.3 (<1)	44.5 (<1)		333.3 (<1)						100.0 (<1)			
Eygleonophyta (euglenoids)					1,778.9 (<1)		3,807.8 (<1)						5,336.8 (<1)			
Cryptophyta (cryptophytes)	26,654.4 (2)	36,554.7 (3)	31,604.6 (2)	11,423.3 (1)	42,694.0 (5)	32,020.5 (4)	38,077.8 (3)	34,270.0 (2)	56,035.9 (4)	64,041.0 (10)	19,990.8 (2)	34,270.0 (5)	45,362.4 (4)	29,352.1 (4)	24,015.3 (2)	48,030.7 (5)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)					1,778.9 (<1)				2,668.4 (<1)		5,711.7 (1)	8,567.5 (1)	2,668.4 (<1)		2,668.4 (<1)	
Haptophyceae (haptophytes including coccolithophotes)									2,668.4 (<1)							
Prasinophyceae (prasinophytes)	45,693.4 (4)	31,985.3 (2)	38,839.4 (3)	11,423.3 (1)	14,231.3 (2)	33,799.4 (4)	76,155.6 (5)	97,098.4 (5)	42,694.0 (3)	26,683.7 (4)	14,279.1 (2)	17,135.0 (3)	34,688.9 (3)	5,336.8 (1)	10,673.4 (1)	29,352.1 (3)
Unidentified phytoflagellates	449,318.4 (36)	539,182.1 (40)	494,250.3 (38)	163,734.6 (20)	266,837.4 (34)	256,163.9 (28)	441,702.8 (31)	651,130.9 (30)	506,991.1 (35)	282,847.7 (43)	342,700.5 (39)	345,556.3 (51)	365,567.3 (31)	312,199.8 (37)	304,194.6 (28)	368,235.6 (40)
Others		9,138.7 (1)	4,569.4 (<1)	11,423.3 (1)				11,423.3 (1)								2,668.4 (<1)
Total phytoplankton	1,233,747.0	1,339,266.8	1,286,507.2	831,172.0	794,780.1	906,462.0	1,443,133.9	2,137,454.8	1,451,272.2	659,483.5	881,079.2	673,971.0	1,174,846.4	835,578.0	1,068,613.0	930,337.5

[a] Values are expressed as cells per liter and represent the mean of three replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface; B = Bottom; Avg. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
11 OCTOBER 1977

TAXON	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
	S	B	AVG.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	455,628.4 (32)	571,653.1 (38)	513,640.8 (35)	1,116,529.7 (64)	431,388.6 (41)	2,158,692.1 (68)	527,495.6 (29)	672,065.2 (39)	336,875.0 (31)	240,113.4 (25)	277,047.5 (34)	350,151.9 (30)	345,452.0 (34)	401,953.8 (39)	288,335.4 (36)	415,374.5 (33)
Pyrrhophyta (dinoflagellates)	72,381.0 (5)	49,551.1 (3)	60,996.1 (4)	85,883.7 (5)	11,806.7 (1)	45,693.5 (1)	64,091.1 (4)	56,086.0 (3)	34,855.5 (3)	24,015.4 (2)	21,330.3 (3)	13,392.0 (1)	26,783.7 (3)	12,082.7 (1)	31,444.6 (4)	16,026.9 (1)
Chlorophyta (green algae)	65,399.0 (5)	58,200.0 (4)	61,799.5 (4)	67,469.5 (4)	39,011.1 (4)	23,613.4 (1)	45,928.2 (3)	73,921.1 (4)	59,170.9 (5)	81,401.2 (8)	34,235.2 (4)	97,828.2 (9)	49,230.7 (5)	44,028.2 (4)	46,366.0 (6)	90,573.1 (7)
Cyanophyta (blue-green algae)	783.0 (<1)	2,200.0 (<1)	1,491.7 (<1)	19,125.0 (1)	83.3 (<1)	800.0 (<1)	275.0 (<1)	1,100.0 (<1)	383.3 (<1)	250.0 (<1)	100.0 (<1)	116.7 (<1)	733.3 (<1)	75.0 (<1)	233.4 (<1)	333.3 (<1)
Euglenophyta (euglenoids)						7,615.6 (<1)						5,336.7 (<1)				
Cryptophyta (cryptophytes)	140,888.0 (10)	72,347.9 (5)	106,618.0 (7)	57,116.7 (3)	41,885.6 (4)	137,080.2 (4)	128,082.0 (7)	132,084.5 (8)	104,066.6 (9)	117,408.5 (12)	71,586.3 (9)	112,071.7 (10)	56,035.9 (5)	84,053.8 (8)	53,619.3 (7)	66,709.4 (5)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)							4,002.6 (4)		2,668.4 (4)	5,336.7 (1)						
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	26,654.5 (2)	45,693.3 (3)	36,173.9 (2)		15,231.0 (1)	91,386.8 (3)	32,020.6 (2)	20,012.8 (1)	13,341.9 (1)	18,678.6 (2)	3,046.2 (<1)	10,673.5 (1)	5,336.7 (1)	12,007.7 (1)	4,468.3 (1)	13,341.8 (1)
Unidentified phytoflagellates	677,785.5 (47)	693,016.5 (46)	685,401.0 (47)	399,817.2 (23)	517,858.5 (49)	708,247.6 (22)	1,012,648.1 (56)	780,499.6 (45)	547,016.7 (50)	474,970.7 (49)	411,240.6 (50)	557,711.3 (48)	536,343.2 (53)	476,304.9 (46)	384,271.6 (48)	653,751.8 (52)
Others				9,519.5 (1)		7,615.6 (<1)		4,002.6 (<1)				2,668.4 (<1)		4,002.6 (<1)		
Total Phytoplankton	1,439,519.7	1,492,661.9	1,466,091.0	1,755,461.3	1,057,264.8	3,180,744.8	1,814,543.2	1,739,771.8	1,098,378.3	962,174.5	818,586.1	1,149,950.4	1,019,915.5	1,034,508.7	808,738.6	1,256,110.8

[a] Values are expressed as cells per liter and represent the mean of three replicates, except 4B which is the mean of two replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface; B = Bottom; Avg. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
2 NOVEMBER 1977

TAXON	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
	S	B	AVG.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	3,986,717.2 (87)	4,630,604.1 (91)	4,308,660.7 (89)	3,896,771.7 (88)	4,860,562.2 (80)	5,237,546.7 (79)	5,446,173.8 (84)	8,498,725.3 (37)	4,076,012.4 (68)	4,374,950.1 (67)	3,814,933.3 (65)	3,414,843.9 (64)	2,158,942.2 (79)	3,296,156.4 (71)	4,009,469.5 (77)	3,789,074.3 (74)
Pyrrhophyta (dinoflagellates)	19,080.7 (<1)	28,558.5 (1)	23,819.6 (<1)		20,096.0 (<1)	6,754.3 (<1)	19,288.9 (<1)	45,693.4 (<1)	40,358.9 (1)		67,042.6 (1)	26,683.7 (1)	58,804.0 (2)	8,894.6 (<1)	166.7 (<1)	27,100.5 (1)
Chlorophyta (green algae)					13,341.9 (<1)	80,092.9 (1)			120,076.8 (2)	40,025.6 (1)	106,735.0 (2)	40,025.6 (1)	66.7 (<1)	35,578.3 (1)	80,051.2 (2)	53,367.5 (1)
Cyanophyta (blue-green algae)	833.3 (<1)	708.3 (<1)	770.8 (<1)	1,500.0 (<1)	750.0 (<1)	291.6 (< 1)	1,166.7 (<1)	500.0 (<1)	750.0 (<1)	1,250.0 (<1)	2,083.3 (<1)	1,250.0 (<1)	1,000.0 (<1)	333.3 (<1)	833.3 (<1)	1,416.7 (<1)
Euglenophyta (euglenoids)										13,341.9 (<1)						
Crytophyta (cryptophytes)	76,155.6 (2)	47,597.3 (1)	61,876.5 (1)	38,077.8 (1)	226,811.8 (4)	126,747.8 (2)	57,116.7 (1)	68,540.1 (1)	226,811.8 (4)	213,469.9 (3)	186,786.2 (3)	213,469.9 (4)	64,041.0 (2)	160,102.5 (3)	186,786.2 (4)	80,051.2 (2)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)	9,519.5 (1)		4,759.8 (<1)		6,670.9 (<1)	13,341.8 (<1)			13,341.9 (<1)	40,025.6 (1)	53,367.5 (1)	13,341.9 (<1)		26,683.7 (1)		13,341.9 (<1)
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	9,519.5 (<1)	9,519.5 (<1)	9,519.5 (<1)	19,038.9 (<1)	73,380.3 (1)	13,341.9 (<1)			40,025.6 (1)	13,341.9 (<1)	40,025.6 (1)	13,341.9 (<1)	48,030.7 (2)	35,578.3 (1)		26,683.7 (1)
Unidentified phytoflagellates	342,700.5 (7)	209,428.1 (4)	276,064.3 (6)	342,700.5 (8)	800,512.3 (13)	1,020,653.2 (15)	723,478.8 (11)	913,867.9 (9)	1,387,554.7 (23)	1,507,631.6 (23)	1,360,870.9 (23)	1,374,212.8 (26)	288,184.4 (11)	862,774.4 (19)	880,563.6 (17)	733,803.0 (14)
Others	161,830.8 (4)	180,869.7 (4)	171,350.3 (4)	133,272.4 (3)	46,696.5 (1)	153,431.5 (2)	228,467.0 (4)	205,620.3 (2)	120,076.8 (2)	293,521.1 (5)	226,811.8 (4)	226,811.8 (4)	112,071.7 (4)	222,364.5 (4)	66,709.4 (1)	426,939.9 (8)
Total Phytoplankton	4,606,357.1	5,107,285.5	4,856,821.5	4,431,361.3	6,048,821.9	6,652,201.7	6,475,691.9	9,722,947.0	6,025,008.9	6,497,557.7	5,858,656.2	5,323,981.5	2,731,140.7	4,648,466.0	5,224,579.9	5,151,778.7

[a] Values are expressed as cells per liter and represent the mean of three replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface; B = Bottom; Avg. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
1 DECEMBER 1977

	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
TAXON	S	B	AVG.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	626,218.0 (62)	2,974,744.9 (69)	1,800,481.5 (68)	477,131.1 (78)	591,846.0 (66)	630,871.6 (70)	73,486.9 (54)	1,011,754.0 (69)	268,553.9 (59)	44,997.7 (53)	101,492.0 (53)	163,142.9 (48)	106,363.6 (33)	104,551.0 (33)	235,285.3 (48)	175,721.0 (40)
Pyrrhophyta (dinoflagellates)	13,335.6 (1)	76,155.6 (2)	44,745.6 (2)	14,279.1 (2)	8,573.9 (1)	15,239.5 (2)	3,470.4 (3)	66,001.7 (4)	14,701.3 (3)	1,247.5 (1)	4,596.0 (2)	14,304.4 (4)	5,584.3 (2)	7,756.8 (2)	11,467.1 (2)	16,326.1 (4)
Chlorophyta (green algae)	26,654.4 (3)	50,770.4 (1)	38,712.5 (1)	11,423.3 (2)	28,589.6 (3)	22,921.7 (3)	3,482.2 (3)	30,506.7 (2)	6,577.6 (1)	3,389.9 (4)	7,615.5 (4)	56.3 (<1)	3,760.1 (1)	3,001.9 (1)	8,611.3 (2)	4,902.8 (1)
Cyanophyta (blue-green algae)	108.3 (<1)	4,555.5 (<1)	2,331.9 (<1)	625.0 (<1)	50.0 (<1)	308.3 (<1)	8.3 (<1)	66.7 (<1)	64.3 (<1)	18.9 (<1)	233.3 (<1)	56.3 (<1)	596.2 (<1)	51.8 (<1)	393.8 (<1)	164.3 (<1)
Euglenophyta (euglenoids)	1,903.9 (<1)		952.0 (<1)													
Cryptophyta (cryptophytes)	72,347.9 (7)	406,163.5 (9)	239,255.7 (9)	19,990.8 (3)	65,684.2 (7)	78,059.5 (9)	6,937.8 (5)	114,233.5 (8)	32,633.1 (7)	6,937.8 (8)	9,138.7 (5)	31,414.2 (9)	38,794.0 (12)	43,287.0 (13)	31,414.2 (6)	32,638.2 (7)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates	1,903.9 (<1)		952.0 (<1)			1,903.9 (<1)	266.8 (<1)	7,615.6 (1)	3,263.8 (1)	355.8 (<1)				593.0 (<1)	2,855.9 (1)	
Haptophyceae (haptophytes including coccolithophores)									9,791.4 (2)		21,323.5 (11)	28,558.4 (8)	16,010.3 (5)	40,322.1 (13)	52,833.0 (11)	70,172.0 (16)
Prasinophyceae (prasinophytes)	17,135.0 (2)		8,567.5 (<1)		11,423.4 (1)	5,711.7 (1)	4,002.5 (3)	40,616.5 (3)	6,527.6 (1)	177.9 (<1)	1,523.1 (1)	2,855.9 (1)	6,157.8 (2)	3,557.8 (1)	9,995.4 (2)	8,159.5 (2)
Unidentified phytoflagellates	237,986.5 (24)	685,400.9 (16)	461,693.7 (17)	71,395.9 (12)	185,629.4 (21)	140,888.0 (16)	44,828.6 (33)	198,004.7 (13)	114,233.5 (25)	27,395.3 (32)	44,170.3 (23)	92,814.7 (28)	143,476.3 (45)	116,815.4 (36)	138,508.2 (30)	133,816.4 (30)
Others	5,711.7 (1)	126,926.1 (3)	66,318.9 (2)	14,279.2 (2)	4,283.8 (<1)	9,519.4 (1)	533.7 (<1)	7,615.6 (1)		1,067.3 (1)	1,523.1 (1)	2,855.8 (1)	615.8 (<1)	1,185.9 (<1)	2,855.9 (1)	1,631.9 (<1)
TOTAL PHYTOPLANKTON	1,003,305.3	4,324,716.9	2,664,011.3	609,124.4	896,080.3	905,423.6	137,017.2	1,476,415.0	456,351.5	85,588.1	191,615.5	336,058.9	321,358.4	321,122.7	494,220.1	443,532.2

[a] Values are expressed as cells per liter and represent the mean of three replicates.
[b] Percentage values are given in parentheses.
[c] S = Surface; B = Bottom; Avg. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
24 JANUARY 1978

	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
TAXON	S	B	AVE.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	1,259,304.6 (44)	2,987,889.8 (69)	2,123,597.2 (57)	1,478,259.3 (50)	1,297,162.7 (57)	2,156,806.2 (69)	1,479,947.6 (61)	1,225,617.9 (59)	1,001,479.2 (53)	1,055,953.1 (58)	1,261,502.6 (64)	1,085,508.9 (64)	885,451.6 (46)	794,963.3 (53)	869,308.3 (50)	425,880.3 (44)
Pyrrhophyta (dinoflagellates)	56,546.1 (2)	15,052.3 (<1)	35,799.2 (1)	90,313.8 (3)	40,163.4 (2)	13,387.8 (<1)	26,692.3 (1)	24,073.0 (1)	20,144.5 (1)	32,105.8 (2)	48,171.0 (2)	48,121.1 (3)	27,662.4 (3)	15,052.3 (1)	18,865.4 (1)	15,118.9 (2)
Chlorophyta (green algae)		60,209.2 (1)	30,104.6 (1)		68,065.3 (3)	113,484.0 (4)	101,564.1 (4)	60,182.7 (3)	60,132.7 (3)	24,123.0 (1)	44,142.3 (2)	28,176.9 (2)	2,508.7 (<1)	3,763.1 (<1)	3,763.1 (<1)	30,126.7 (3)
Cyanophyta (blue-green algae)	67,885.4 (2)	60,475.9 (1)	64,180.7 (2)	266.7 (<1)		583.3 (<1)			75.0 (<1)	100.0 (<1)		25.0 (<1)	5,017.4 (<1)	33.4 (<1)		
Euglenophyta (euglenoids)					8,007.6 (<1)		5,338.5 (<1)							3,763.1 (<1)	3,763.1 (<1)	
Cryptophyta (cryptophytes)	225,784.6 (8)	270,941.5 (6)	248,363.1 (7)	301,046.1 (10)	176,169.1 (8)	93,423.0 (3)	117,446.1 (5)	156,149.9 (7)	132,126.9 (7)	116,111.4 (6)	96,092.3 (5)	68,065.3 (4)	82,787.7 (8)	150,523.1 (10)	176,864.6 (10)	155,540.5 (16)
Xanthophyta (xanthophytes)													2,508.7 (<1)			
Chrysophyceae (yellow-brown algae and silicoflagellates)		30,104.6 (1)	15,052.3 (<1)	45,156.9 (2)	4,003.8 (<1)		5,338.5 (<1)		8,007.8 (<1)	8,007.6 (<1)	4,003.8 (<1)	4,003.8 (<1)	7,526.2 (1)	15,052.3 (1)	11,289.2 (1)	25,087.1 (3)
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	33,867.7 (1)	30,104.6 (1)	31,986.2 (1)	165,575.3 (6)	44,042.2 (2)		53,384.6 (2)	48,046.2 (2)	48,046.1 (3)	20,019.2 (1)	24,023.1 (1)	16,015.4 (1)	32,613.3 (3)	18,815.4 (1)	30,104.5 (2)	15,052.3 (2)
Unidentified phytoflagellates	1,196,658.4 (42)	888,086.1 (20)	1,042,372.3 (31)	857,981.5 (29)	596,572.7 (26)	687,326.5 (22)	539,184.3 (22)	556,534.3 (27)	576,553.5 (31)	512,492.0 (28)	452,434.4 (23)	396,380.5 (23)	406,412.3 (39)	485,436.9 (32)	598,329.2 (35)	291,011.2 (30)
Others					36,034.6 (2)	40,038.4 (1)	106,769.2 (4)	16,015.4 (1)	28,026.9 (1)	52,050.0 (3)	40,038.4 (2)	44,042.3 (3)		22,578.5 (1)	15,052.3 (1)	5,017.4 (1)
Total phytoplankton	2,840,046.8	4,342,864.0	3,591,455.6	2,938,599.6	2,270,221.4	3,105,049.2	2,435,665.3	2,086,619.4	1,874,592.6	1,820,962.1	1,970,407.9	1,690,339.2	1,052,488.3	1,509,981.4	1,727,339.7	962,840.4

[a]Values are expressed as cells per liter and represent the mean of three replicates, except 2S which is the mean of two replicates.

[b]Percentage values are given in parentheses.

[c]S = Surface; B = Bottom; AVE. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
8 FEBRUARY 1978

	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
TAXON	S	B	AVE.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	1,270,793.8 (47)	2,319,042.6 (59)	1,794,918.2 (53)	1,055,787.2 (51)	1,375,612.0 (61)	1,712,133.9 (63)	2,031,737.2 (67)	1,941,769.7 (64)	1,271,085.3 (61)	3,138,581.0 (69)	384,313.4 (54)	1,062,911.9 (72)	408,786.9 (50)	1,000,163.1 (72)	462,845.4 (42)	456,043.8 (53)
Pyrrhophyta (dinoflagellates)	45,223.6 (2)	18,815.4 (<1)	32,019.5 (1)	83.4 (<1)	37,536.0 (2)	20,102.6 (1)	16,182.1 (1)	31,224.3 (1)	36,776.8 (2)	20,019.3 (<1)	32,410.4 (5)	9,491.0 (1)	21,536.5 (3)	5,039.6 (<1)	30,121.4 (3)	5,669.6 (1)
Chlorophyta (green algae)	15,052.3 (1)		7,526.2 (<1)	18,815.4 (1)	122,784.6 (5)	133,461.5 (5)	112,107.7 (4)	84,525.6 (3)	100,096.1 (5)	126,788.4 (3)					3,763.1 (<1)	
Cyanophyta (blue-green algae)	66.7 (<1)	250.0 (<1)	158.4 (<1)	166.7 (<1)	333.4 (<1)	166.6 (<1)	366.7 (<1)	388.9 (<1)	125.0 (<1)				5,875.8 (1)	1,111.1 (<1)	766.7 (<1)	
Euglenophyta (euglenoids)									3,336.5 (<1)			9,407.7 (1)				
Cryptophyta (cryptophytes)	285,993.9 (10)	319,861.5 (8)	302,927.7 (9)	159,930.8 (8)	154,815.3 (7)	113,442.3 (4)	160,153.7 (5)	75,628.1 (2)	73,403.8 (4)	93,423.0 (2)	64,509.9 (9)	65,853.9 (4)	80,637.4 (10)	60,209.2 (4)	97,840.0 (9)	73,380.0 (9)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)	15,052.3 (1)		7,526.2 (<1)				10,676.9 (<1)	4,448.7 (<1)	13,346.1 (1)						22,578.5 (2)	
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	60,209.2 (2)	18,815.4 (<1)	39,512.3 (1)	47,038.5 (2)	26,692.3 (1)	6,673.1 (<1)	5,338.5 (<1)		6,673.1 (<1)	6,673.1 (<1)		9,407.7 (1)	16,127.5 (2)	10,034.9 (1)	18,815.4 (2)	11,289.2 (1)
Unidentified phytoflagellates	948,295.3 (35)	1,204,184.6 (30)	1,076,240.0 (33)	714,984.6 (35)	512,492.0 (23)	700,672.6 (26)	667,307.3 (22)	791,871.3 (26)	513,826.6 (25)	1,061,018.5 (23)	236,536.3 (33)	310,453.8 (21)	268,791.2 (33)	296,028.7 (21)	440,280.0 (40)	287,875.4 (34)
Others	90,313.8 (3)	75,261.6 (2)	82,787.7 (2)	56,446.2 (3)	42,707.6 (2)	46,711.5 (2)	26,692.3 (1)	102,320.5 (3)	60,057.6 (3)	126,788.4 (3)		9,407.7 (1)	16,127.5 (2)	25,087.2 (2)	26,341.6 (2)	22,578.4 (3)
Total phytoplankton	2,731,000.9	3,956,231.1	3,343,616.2	2,053,252.8	2,272,973.2	2,733,364.1	3,030,562.4	3,032,177.1	2,078,726.9	4,573,291.7	717,770.0	1,476,933.7	817,882.8	1,397,673.8	1,103,352.1	856,836.4

[a]Values are expressed as cells per liter and represent the mean of three replicates.

[b]Percentage values are given in parentheses.

[c]S = Surface; B = Bottom; AVE. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
15 MARCH 1978

	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
TAXON	S	B	AVE.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	651,569.6 (54)	1,044,254.1 (54)	847,911.9 (54)	585,637.3 (76)	854,953.1 (54)	863,226.7 (50)	520,984.1 (54)	1,045,171.0 (71)	616,607.4 (51)	439,478.1 (50)	419,463.0 (55)	472,553.3 (52)	486,188.4 (60)	462,944.2 (60)	782,345.6 (72)	535,276.0 (70)
Pyrrhophyta (dinoflagellates)	35,235.6 (3)	28,223.1 (1)	31,729.4 (2)	22,944.4 (3)	27,626.9 (2)	39,138.8 (2)	23,806.0 (2)	33,923.2 (2)	11,444.7 (1)	20,972.6 (2)	20,019.3 (3)	20,019.2 (2)	6,673.1 (1)	16,682.6 (2)	28,228.2 (3)	14,057.4 (2)
Chlorophyta (green algae)				1,393.7 (<1)					46,902.3 (4)	39,085.2 (4)	28,598.9 (4)	40,991.7 (4)	44,804.9 (6)	25,858.1 (3)		1,081.3 (<1)
Cyanophyta (blue-green algae)	2,017.0 (<1)		1,008.5 (<1)										953.3 (<1)			
Euglenophyta (euglenoids)	8,400.0 (1)		4,200.0 (<1)	3,010.5 (<1)			1,763.9 (<1)		1,144.0 (<1)	2,859.9 (<1)	953.3 (<1)		953.3 (<1)	1,668.3 (<1)	1,128.9 (<1)	1,081.3 (<1)
Cryptophyta (cryptophytes)	132,418.0 (11)	338,676.9 (18)	235,547.5 (15)	47,170.8 (6)	105,513.4 (7)	283,993.6 (16)	128,911.2 (13)	105,217.9 (7)	89,228.5 (7)	91,516.4 (10)	49,571.4 (6)	101,049.4 (11)	40,038.4 (5)	76,740.4 (10)	84,669.2 (8)	54,067.2 (7)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)	1,685.0 (<1)		842.5 (<1)		2,138.1 (<1)	2,565.7 (<1)			2,287.9 (<1)	3,813.2 (<1)		2,859.9 (<1)	1,906.6 (<1)	834.1 (<1)		
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	28,570.1 (2)	28,223.1 (1)	28,396.6 (2)	8,808.4 (1)	28,611.7 (2)	61,771.0 (4)	22,128.2 (2)	17,295.3 (1)	30,886.8 (3)	27,645.6 (3)	24,785.7 (3)	27,645.6 (3)	11,439.6 (1)	25,858.1 (3)	23,707.4 (2)	14,057.4 (2)
Unidentified phytoflagellates	343,781.3 (28)	338,676.9 (18)	341,229.1 (23)	93,247.7 (12)	576,126.7 (36)	483,752.3 (28)	269,041.8 (28)	263,267.1 (18)	398,096.5 (33)	252,623.5 (29)	223,071.3 (29)	250,716.9 (27)	217,351.5 (27)	165,158.6 (21)	167,080.6 (15)	150,306.8 (20)
Others	5,030.1 (<1)	141,115.4 (7)	73,072.8 (5)	4,198.6 (1)		2,106.2 (<1)	1,567.9 (<1)	3,003.0 (<1)	3,431.9 (<1)	1,906.6 (<1)			953.3 (<1)			
Total phytoplankton	1,208,706.7	1,919,169.5	1,563,938.3	766,411.4	1,594,969.9	1,736,554.3	968,203.1	1,467,877.5	1,200,030.0	879,901.1	766,462.9	915,836.0	811,262.4	775,744.4	1,087,159.9	769,927.4

[a]Values are expressed as cells per liter and represent the mean of three replicates, except 11B which is composed of a single replicate.

[b]Percentage values are given in parentheses.

[c]S = Surface; B= Bottom; AVE. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
25 APRIL 1978

	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
TAXON	S	B	AVE.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	16,002,028.4 (88)	6,648,102.6 (85)	11,325,065.5 (87)	5,125,310.7 (83)	1,132,263.1 (73)	2,209,528.8 (85)	1,172,830.1 (75)	6,333,900.4 (89)	800,778.9 (80)	1,097,567.3 (85)	636,814.7 (82)	1,651,125.8 (87)	953,159.5 (85)	1,772,206.0 (83)	942,843.4 (70)	2,142,057.0 (83)
Pyrrhophyta (dinoflagellates)	346,999.8 (2)	78,397.5 (1)	212,698.7 (2)	82,804.6 (1)	97,260.1 (6)	50,418.7 (2)	76,672.4 (5)	94,535.3 (1)	84,354.2 (8)	62,917.5 (5)	22,879.0 (3)	41,945.1 (2)	40,055.2 (4)	41,954.3 (2)	57,104.1 (4)	68,637.4 (3)
Chlorophyta (green algae)	106,769.1 (1)	15,679.5 (<1)	61,224.3 (<1)	112,892.3 (2)	40,372.1 (3)	20,760.7 (1)	29,361.5 (2)	166,826.8 (2)	21,353.8 (2)	13,981.7 (1)	17,540.7 (2)	11,439.6 (1)	13,346.2 (1)	37,750.5 (2)	57,091.8 (4)	25,739.0 (1)
Cyanophyta (blue-green algae)		31,359.0 (<1)	15,679.5 (<1)					1,390.2 (<1)								
Euglenophyta (euglenoids)	40,038.4 (<1)		20,019.2 (<1)	7,526.2 (<1)	1,835.1 (<1)	2,965.8 (<1)			1,067.7 (<1)			1,906.6 (<1)				
Cryptophyta (cryptophytes)	320,307.5 (2)	47,038.5 (1)	183,673.0 (1)	82,787.7 (1)	82,579.3 (5)	62,282.0 (2)	42,411.1 (3)	88,974.3 (1)	12,812.3 (1)	15,379.8 (1)	9,914.3 (1)	24,785.7 (1)	8,897.4 (1)	52,431.3 (2)	47,304.7 (4)	60,057.7 (2)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)																
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	93,423.0 (1)		46,711.5 (<1)	75,261.6 (1)	16,515.9 (1)	2,965.8 (<1)	3,262.4 (<1)	5,560.9 (<1)	1,067.7 (<1)			3,813.2 (<1)			1,631.2 (<1)	
Unidentified phytoflagellates	1,361,306.9 (7)	956,448.7 (12)	1,158,877.8 (10)	692,406.3 (11)	181,674.4 (12)	213,538.3 (8)	233,261.0 (15)	422,628.0 (6)	75,806.1 (8)	99,269.9 (8)	91,516.4 (12)	160,153.8 (8)	107,881.3 (10)	218,114.1 (10)	231,629.8 (17)	237,370.8 (9)
Others					1,835.1 (<1)	44,487.1 (2)	3,262.4 (<1)		3,203.1 (<1)	4,194.5 (<1)	762.6 (<1)	9,533.0 (1)	2,224.3 (<1)	6,291.8 (<1)	4,893.6 (<1)	34,318.6 (1)
Total phytoplankton	18,270,873.1	7,777,025.8	13,023,949.5	6,178,989.4	1,554,335.1	2,606,947.2	1,561,060.9	7.113,815.9	1,000,443.8	1,293,310.7	779,427.7	1,904,702.8	1,125,563.9	2,128,748.0	1,342,498.6	2,568,180.5

[a]Values are expressed as cells per liter and represent the mean of three replicates.

[b]Percentage values are given in parentheses.

[c]S = Surface; B = Bottom; AVE. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
17 MAY 1978

TAXON	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
	S	B	AVE.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	22,955,370.1 (95)	5,832,265.8 (85)	14,393818.0 (90)	9,620,346.8 (84)	2,070,559.3 (82)	3,306,285.3 (80)	2,462,364.4 (81)	3,231,101.8 (75)	2,250,160.1 (77)	3,147,037.6 (84)	1,901,826.0 (82)	2,800,021.1 (85)	3,002,882.9 (88)	3,930,292.7 (92)	3,106,982.4 (87)	3,475,336.0 (86)
Pyrrhophyta (dinoflagellates)	120,115.2 (<1)	86,750.0 (1)	103,432.6 (1)	100,096.2 (1)	29,742.8 (1)	67,620.5 (2)	124,119.4 (4)	136,130.5 (3)	61,400.5 (2)	21,353.8 (1)	15,570.5 (1)	61,392.2 (2)	32,030.7 (1)	35,233.9 (1)	64,061.6 (2)	38,436.9 (1)
Chlorophyta (green algae)	66,730.7 (<1)	126,788.4 (2)	96,759.6 (1)	33,365.4 (<1)	22,879.1 (1)	39,148.7 (1)	32,030.8 (1)	32,030.7 (1)	53,384.6 (2)	10,677.0 (<1)	31,141.0 (1)	13,346.1 (<1)	29,361.5 (1)	28,827.7 (1)	51,249.2 (1)	44,843.0 (1)
Cyanophyta (blue-green algae)		11,344.3 (<1)	5,672.2 (<1)	11,121.8 (<1)								2,669.2 (<1)		3,203.1 (<1)		3,203.1 (<1)
Euglenophyta (euglenoids)							4,003.9 (<1)									
Cryptophyta (cryptophytes)	133,461.4 (1)	180,173.0 (3)	156,817.2 (2)	244,679.3 (2)	112,107.6 (4)	74,738.4 (2)	116,111.5 (4)	192,184.5 (4)	136,130.7 (5)	69,400.0 (2)	82,301.2 (4)	117,446.1 (4)	74,738.4 (2)	38,436.9 (1)	83,279.9 (2)	64,061.5 (2)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)	13,346.1 (<1)		6,673.1 (<1)		2,287.9 (<1)		4,003.9 (<1)		5,338.5 (<1)	2,669.2 (<1)	8,897.4 (<1)	5,338.4 (<1)	2,669.2 (<1)	6,406.1 (<1)		
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	66,730.7 (<1)	6,673.1 (<1)	36,701.9 (<1)	244,679.3 (2)	16,015.4 (1)	103,210.2 (2)	64,061.6 (2)	88,084.5 (2)	61,392.2 (2)	64,061.5 (2)	13,346.2 (1)	34,699.9 (1)	34,699.9 (1)	22,421.5 (1)	12,812.3 (<1)	12,812.3 (<1)
Unidentified phytoflagellates	880,845.6 (4)	613,922.7 (9)	747,384.2 (7)	1,145,544.2 (10)	281,413.0 (11)	540,963.8 (13)	244,234.5 (8)	604,580.4 (14)	344,330.6 (12)	421,738.2 (11)	278,044.7 (12)	253,576.7 (8)	218,876.9 (6)	217,809.0 (5)	237,027.5 (7)	384,369.0 (10)
Others	13,346.1 (<1)		6,673.1 (<1)		2,287.9 (<1)											3,203.1 (<1)
Total phytoplankton	24,249,945.9	6,857,917.3	15,553,931.9	11,399,833.0	2,537,293.0	4,131,966.9	3,050,930.0	4,284,112.4	2,912,137.2	3,736,937.3	2,331,127.0	3,288,489.7	3,395,259.5	4,282,630.9	3,555,412.9	4,026,264.9

[a]Values are expressed as cells per liter and represent the mean of three replicates.

[b]Percentage values are given in parentheses.

[c]S = Surface; B = Bottom; AVE. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
21 JUNE 1978

	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
TAXON	S	B	AVE.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	749,479.8 (65)	865,507.6 (56)	807,493.7 (61)	633,450.7 (82)	844,959.6 (64)	718,676.5 (65)	816,790.3 (78)	878,175.7 (79)	656,650.1 (83)	2,691,472.9 (92)	1,487,359.3 (92)	1,498,771.9 (91)	764,867.5 (82)	1,205,453.7 (72)	907,976.1 (79)	2,127,392.9 (94)
Pyrrhophyta (dinoflagellates)	37,630.8 (3)	37,637.1 (2)	37,634.0 (3)	12,543.5 (2)	61,985.5 (5)	51,732.2 (5)	24,022.9 (2)	18,684.5 (2)	25,802.5 (3)	22,243.7 (1)	23,726.4 (1)	20,019.1 (1)	27,159.3 (3)	169,650.4 (10)	38,709.4 (3)	25,087.3 (1)
Chlorophyta (green algae)	68,989.8 (6)	77,613.5 (5)	73,301.7 (5)	47,038.4 (6)	24,467.9 (2)	30,759.7 (3)	22,688.5 (2)	24,023.1 (2)	9,787.2 (1)	4,448.7 (<1)	4,448.7 (<1)	8,007.7 (<1)	14,680.7 (2)	45,673.5 (3)	14,514.7 (1)	7,526.2 (<1)
Cyanophyta (blue-green algae)	6,271.8 (1)	2,351.9 (<1)	4,311.9 (<1)	3,449.4 (<1)			1,735.0 (<1)	2,669.2 (<1)					293.6 (<1)			
Euglenophyta (euglenoids)					3,262.4 (<1)											
Cryptophyta (cryptophytes)	43,902.6 (4)	79,965.3 (5)	61,934.0 (5)	10,975.6 (1)	39,148.7 (3)	39,148.7 (4)	10,676.9 (1)	25,357.7 (2)	8,007.7 (1)	26,692.3 (1)	11,863.2 (1)	12,011.5 (1)	5,138.3 (1)	29,361.5 (2)	9,676.5 (1)	2,508.7 (4)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)							1,334.6 (<1)					1,334.6 (<1)		1,631.2 (<1)		
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	18,815.4 (2)	30,575.0 (2)	24,695.2 (2)	1,567.9 (<1)	1,631.2 (<1)	18,176.2 (2)	2,669.2 (<1)	4,003.8 (<1)	889.7 (<1)	6,673.1 (<1)		2,669.2 (<1)	2,202.1 (<1)	3,262.4 (<1)		
Unidentified phytoflagellates	235,192.3 (20)	442,161.5 (29)	338,676.9 (25)	62,717.9 (8)	350,707.1 (26)	251,670.2 (23)	160,153.7 (15)	154,815.3 (14)	86,305.1 (11)	157,929.4 (5)	90,457.2 (6)	96,092.2 (6)	120,382.2 (13)	216,949.0 (13)	174,176.6 (15)	90,313.8 (4)
Others		2,351.9 (<1)	1,176.0 (<1)	1,567.9 (<1)	1,631.2 (<1)	1,398.2 (<1)	4,003.8 (<1)	4,003.8 (<1)		31,141.0 (1)		1,334.6 (<1)		4,893.6 (<1)		2,508.7 (<1)
Total phytoplankton	1,160,282.5	1,538,163.8	1,349,223.4	773,311.3	1,327,793.6	1,111,561.7	1,044,074.9	1,111,733.1	787,442.3	2,940,601.1	1,617,854.8	1,640,240.8	934,723.7	1,676,875.3	1,145,053.3	2,255,337.6

[a]Values are expressed as cells per liter and represent the mean of three replicates.

[b]Percentage values are given in parentheses.

[c]S = Surface; B = Bottom; AVE. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
12 JULY 1978

TAXON	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
	S	B	AVE.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	71,677.6 (16)	112,892.6 (17)	92,285.1 (16)	107,247.7 (38)	71,197.5 (13)	146,602.9 (15)	59,223.5 (18)	57,974.4 (21)	30,446.0 (12)	112,997.3 (28)	63,420.7 (18)	169,877.2 (49)	86,008.3 (27)	164,108.0 (40)	42,373.9 (16)	34,036.0 (15)
Pyrrhophyta (dinoflagellates)	77,053.7 (17)	95,331.5 (14)	86,192.6 (15)	48,920.0 (17)	170,550.0 (32)	81,062.7 (8)	60,891.9 (19)	41,706.8 (15)	65,896.6 (26)	44,931.9 (11)	103,352.7 (29)	31,458.6 (9)	86,505.5 (27)	47,452.9 (12)	51,382.7 (19)	47,380.7 (21)
Chlorophyta (green algae)	3,583.8 (1)	17,561.0 (3)	10,572.4 (2)	1,881.5 (1)	16,557.6 (3)	36,219.6 (4)	37,953.0 (12)	28,777.6 (10)	25,024.1 (10)	20,464.1 (5)	27,599.8 (8)	11,534.9 (3)	11,863.2 (4)	18,783.4 (5)	36,368.2 (13)	23,022.2 (10)
Cyanophyta (blue-green algae)		40.0 (<1)	20.0 (<1)	1,317.1 (<1)	9,106.7 (2)	1,897.2 (<1)	834.2 (<1)			889.8 (<1)		314.6 (<1)	2,965.8 (1)	2,224.3 (1)		667.3 (<1)
Euglenophyta (euglenoids)				940.8 (<1)				1,251.2 (<1)	1,251.2 (<1)		1,174.4 (<1)		494.3 (<1)			
Cryptophyta (cryptophytes)	56,446.1 (12)	146,760.0 (21)	101,603.1 (17)	24,460.0 (9)	82,787.7 (15)	308,729.1 (32)	27,943.5 (8)	48,379.8 (17)	17,099.7 (7)	45,821.8 (11)	28,187.0 (8)	18,351.0 (5)	15,817.7 (5)	37,566.9 (9)	39,704.8 (15)	24,023.0 (11)
Xanthophyta (xanthophytes)		1,254.4 (<1)	627.2 (<1)													
Chrysophyceae (yellow-brown algae and silicoflagellates)						1,724.7 (<1)	6,256.0 (2)	2,085.4 (1)		1,334.6 (<1)	1,761.7 (<1)		988.6 (<1)	494.3 (<1)	5,004.9 (2)	1,334.6 (1)
Haptophyceae (haptophytes including coccolithophores)												524.3 (<1)				
Prasinophyceae (prasinophytes)	69,885.8 (15)	106,620.6 (16)	88,253.2 (15)	14,111.6 (5)	44,705.4 (8)	115,557.8 (12)	17,099.8 (5)	8,758.4 (3)	2,919.5 (1)	27,582.0 (7)	4,110.7 (1)	5,767.4 (2)	3,954.4 (1)	17,794.8 (4)	11,010.5 (4)	7,674.0 (3)
Unidentified phytoflagellates	180,986.0 (39)	203,206.1 (30)	192,096.1 (35)	85,610.0 (30)	140,739.1 (26)	274,234.1 (28)	117,612.9 (36)	90,503.6 (32)	108,020.4 (43)	147,252.5 (37)	132,126.9 (37)	109,581.4 (31)	111,217.8 (35)	119,126.7 (29)	85,415.4 (31)	86,082.6 (38)
Others						1,724.7 (<1)	1,251.2 (<1)	2,085.3 (1)		444.9 (<1)		1,572.9 (<1)	2,471.5 (1)	988.6 (<1)	1,334.6 (<1)	333.7 (<1)
Total phytoplankton	459,633.0	683,666.2	571,649.7	284,488.7	535,644.0	967,752.8	329,066.0	281,522.5	250,657.5	401,718.9	361,733.9	348,982.3	322,287.1	408,539.9	272,595.0	224,554.1

[a]Values are expressed as cells per liter and represent the mean of three replicates.

[b]Percentage values are given in parentheses.

[c]S = Surface; B = Bottom; AVE. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
8 AUGUST 1978

TAXON	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
	S	B	AVE.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	216,752.6 (49)	392,379.4 (51)	304,566.0 (50)	313,275.9 (58)	154,815.5 (40)	175,028.5 (40)	242,889.4 (61)	451,568.8 (53)	12,679.1 (13)	188,432.3 (65)	40,139.5 (32)	456,869.0 (89)	21,353.9 (21)	729,380.2 (75)	30,731.3 (19)	310,964.9 (62)
Pyrrhophyta (dinoflagellates)	7,526.0 (2)	25,479.2 (3)	16,502.6 (3)	17,874.6 (3)	26,358.8 (7)	16,778.1 (4)	7,697.1 (2)	13,170.7 (2)	7,341.2 (7)	9,218.1 (3)	13,547.9 (11)	11,360.5 (2)	8,177.9 (8)	14,684.0 (2)	5,664.1 (4)	3,336.5 (1)
Chlorophyta (green algae)	16,557.5 (4)	45,235.4 (6)	30,896.5 (5)	21,637.7 (4)	19,352.0 (5)	25,548.4 (6)	19,670.7 (5)	33,867.7 (4)	6,940.0 (7)	8,557.9 (3)	4,515.7 (4)	5,089.4 (1)	7,674.0 (7)	20,686.5 (2)	18,409.9 (11)	14,013.4 (3)
Cyanophyta (blue-green algae)	3,236.2 (1)	18,384.2 (2)	10,810.2 (2)	7,432.0 (1)	333.7 (<1)	953.3 (<1)	855.2 (<1)	7,526.1 (1)	133.5 (<1)	700.7 (<1)			700.7 (1)			667.3 (<1)
Euglenophyta (euglenoids)															222.4 (<1)	667.3 (<1)
Cryptophyta (cryptophytes)	21,073.2 (5)	41,550.6 (5)	31,311.9 (5)	17,874.6 (3)	14,013.5 (4)	32,030.7 (7)	10,263.0 (3)	24,460.0 (3)	2,535.8 (3)	5,437.9 (2)	5,017.4 (4)	1,566.0 (<1)	3,670.2 (4)	10,009.6 (1)	4,107.2 (3)	12,011.5 (2)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)		3,135.9 (<1)	1,568.0 (<1)		2,002.0 (1)	381.3 (<1)		1,881.5 (<1)	266.9 (<1)	775.6 (<1)				667.3 (<1)	222.4 (<1)	667.3 (<1)
Haptophyceae (haptophytes including coccolithophores)											250.9 (<1)					
Prasinophyceae (prasinophytes)	9,783.9 (2)	6,271.8 (1)	8,027.9 (1)	14,111.5 (3)	7,006.8 (2)	4,957.1 (1)	1,710.4 (<1)	5,644.6 (1)	133.5 (<1)				333.7 (<1)	2,669.2 (<1)	889.7 (1)	
Unidentified phytoflagellates	164,822.7 (37)	238,328.3 (31)	201,575.5 (33)	141,115.4 (26)	158,151.9 (41)	175,025.2 (40)	109,471.3 (28)	308,572.3 (36)	69,266.5 (70)	74,866.6 (26)	60,961.8 (49)	38,365.7 (7)	61,559.1 (59)	184,844.1 (19)	101,298.2 (63)	152,813.4 (31)
Others	752.6 (<1)	4,311.9 (1)	2,532.3 (<1)	4,703.8 (1)	1,001.0 (<1)	2,669.2 (1)	3,421.0 (1)	1,881.5 (<1)		333.7 (<1)	250.9 (<1)	783.0 (<1)		3,336.5 (<1)		4,671.1 (1)
Total phytoplankton	440,504.7	775,076.7	607,790.9	538,025.5	383,035.2	433,371.8	395,978.1	848,573.2	99,296.5	288,322.8	124,684.1	514,033.6	103,469.5	966,277.4	161,545.2	499,812.7

[a]Values are expressed as cells per liter and represent the mean of three replicates.

[b]Percentage values are given in parentheses.

[c]S = Surface; B = Bottom; AVE. = The average of intake S and B values.

Table 2.2A-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
12 SEPTEMBER 1978

	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
TAXON	S	B	AVE.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	1,212,019.6 (77)	1,113,287.3 (69)	1,171,653.4 (73)	389,478.6 (85)	681,640.0 (68)	706,894.2 (68)	711,857.9 (72)	776,994.7 (67)	847,517.9 (80)	775,647.5 (74)	700,227.4 (73)	645,335.8 (77)	681,797.4 (78)	953,455.2 (76)	883,072.9 (84)	654,424.8 (83)
Pyrrhophyta (dinoflagellates)	43,952.8 (3)	56,446.2 (3)	50,199.5 (3)	15,527.9 (3)	48,785.3 (5)	31,725.6 (3)	45,605.7 (4)	41,182.6 (4)	22,879.1 (2)	4,078.0 (<1)	32,034.0 (3)	34,703.2 (4)	30,508.6 (3)	43,775.4 (3)	15,637.7 (1)	21,685.0 (3)
Chlorophyta (green algae)	33,115.1 (2)	56,446.1 (3)	44,780.6 (3)	7,055.8 (2)	13,551.5 (1)	18,837.1 (2)	14,871.4 (1)	21,048.8 (2)	10,486.3 (1)	15,496.4 (1)	15,125.6 (2)	8,007.7 (1)	17,540.7 (2)	8,541.5 (1)	11,958.2 (1)	4,927.8 (1)
Cyanophyta (blue-green algae)		3,057.5 (<1)	1,528.8 (<1)	876.7 (<1)		594.9 (<1)	1,090.6 (<1)			570.9 (<1)		600.6 (<1)				1,971.2 (<1)
Euglenophyta (euglenoids)					903.4 (<1)	1,982.9 (<1)	1,982.8 (<1)	915.2 (<1)								
Cryptophyta (cryptophytes)	46,662.1 (3)	87,021.1 (5)	66,841.6 (4)	8,466.9 (2)	50,140.4 (5)	49,571.4 (5)	43,622.8 (4)	73,213.2 (6)	27,645.6 (3)	49,751.4 (5)	34,700.0 (4)	28,694.2 (3)	5,338.4 (1)	25,624.6 (2)	16,557.5 (2)	15,769.1 (2)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)	3,311.5 (<1)	2,351.9 (<1)	2,831.7 (<1)		2,710.3 (<1)	991.4 (<1)	1,982.9 (<1)		953.3 (<1)	815.6 (<1)	889.7 (<1)		762.6 (<1)	3,203.1 (<1)		985.6 (<1)
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	20,170.1 (1)	9,407.7 (1)	14,788.9 (1)		13,099.7 (1)	17,845.6 (2)	6,940.0 (1)	13,727.5 (1)	1,906.6 (<1)	815.6 (<1)	5,338.5 (1)	6,673.1 (1)	3,813.2 (<1)	11,744.6 (1)	2,759.6 (<1)	
Unidentified phytoflagellates	218,258.4 (14)	282,230.7 (17)	250,244.6 (16)	36,690.0 (8)	194,689.4 (19)	203,242.7 (20)	158,628.4 (16)	234,282.0 (20)	138,227.9 (13)	204,715.1 (19)	167,271.7 (17)	114,109.5 (14)	134,986.8 (15)	204,996.8 (16)	117,742.5 (11)	86,730.0 (11)
Others		9,407.7 (1)	4,703.8 (<1)	1,411.2 (<1)	1,806.8 (<1)	1,982.9 (<1)	5,948.6 (1)	3,660.7 (<1)	4,766.5 (<1)	2,446.8 (<1)	889.7 (<1)	1,334.6 (<1)	762.6 (<1)	2,135.4 (<1)		1,971.1 (<1)
Total phytoplankton	1,577,489.6	1,637,656.2	1,607,572.9	459,507.1	1,007,326.8	1,033,668.7	992,531.1	1,165,024.7	1,054,383.2	1,054,337.3	956,476.6	839,458.7	875,510.3	1,253,476.6	1,047,728.4	788,464.6

[a]Values are expressed as cells per liter and represent the mean of three replicates.

[b]Percentage values are given in parentheses.

[c]S = Surface; B = Bottom; AVE. = The average of intake S and B values.

Table 2.2-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
3 OCTOBER 1978

	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
TAXON	S	B	AVE.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	946,047.1 (61)	1,716,924.3 (60)	1,331,485.7 (60)	371,046.1 (74)	245,785.3 (25)	250,062.7 (30)	488,889.8 (53)	577,401.9 (52)	294,885.3 (47)	222,710.0 (45)	95,085.3 (23)	104,230.2 (29)	161,967.7 (28)	293,650.2 (41)	226,428.5 (33)	358,752.4 (54)
Pyrrhophyta (dinoflagellates)	33,867.5 (2)	62,717.0 (2)	48,292.7 (2)	6,397.2 (1)	35,886.4 (4)	37,369.1 (4)	35,843.8 (4)	30,844.5 (3)	41,106.3 (7)	37,191.4 (7)	28,474.1 (7)	36,842.0 (10)	30,844.5 (5)	32,920.4 (5)	31,319.0 (5)	18,570.7 (3)
Chlorophyta (green algae)	42,899.1 (3)	125,435.8 (4)	84,167.4 (4)	35,184.8 (7)	70,685.1 (7)	52,494.8 (6)	73,975.8 (8)	67,472.2 (6)	35,233.9 (6)	44,042.2 (9)	43,963.7 (11)	31,701.2 (9)	49,571.4 (8)	56,320.6 (8)	52,850.7 (8)	58,367.2 (9)
Cyanophyta (blue-green algae)	14,676.0 (1)	69,773.7 (2)	42,224.8 (2)	16,952.7 (3)	12,832.0 (1)	355.9 (<1)	610.1 (<1)	96.4 (<1)	838.9 (<1)		41.9 (<1)	728.3 (<1)	1,927.8 (<1)		23,619.7 (3)	
Euglenophyta (euglenoids)					1,087.5 (<1)	1,779.5 (<1)										
Cryptophyta (cryptophytes)	85,798.1 (6)	180,314.1 (6)	133,056.1 (6)	3,198.6 (1)	57,635.6 (6)	47,156.4 (6)	39,657.1 (4)	45,302.8 (4)	31,878.2 (5)	28,872.2 (6)	20,935.1 (5)	18,421.0 (5)	23,684.1 (4)	22,243.6 (3)	45,673.5 (7)	20,642.0 (3)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)	2,257.8 (<1)	7,839.7 (<1)	5,048.8 (<1)	1,599.3 (<1)	1,087.5 (<1)	15,125.6 (2)	4,575.8 (1)	1,927.8 (<1)	2,516.8 (<1)	3,914.9 (1)	3,349.6 (1)	2,570.4 (1)	5,508.0 (1)	6,228.2 (1)	4,567.3 (1)	5,694.4 (1)
Haptophyceae (haptophytes including coccolithophores)																
Prasinophyceae (prasinophytes)	27,094.2 (2)	62,718.0 (2)	44,906.1 (2)		7,612.3 (1)	5,338.4 (1)	9,914.3 (1)	5,783.4 (1)	15,519.7 (2)	6,361.7 (1)	8,792.7 (2)	3,855.6 (1)	7,711.1 (1)	5,338.4 (1)	14,354.5 (2)	711.8 (1)
Unidentified phytoflagellates	395,123.0 (25)	619,339.7 (22)	507,231.4 (23)	63,972.3 (13)	543,731.9 (55)	420,848.5 (50)	258,534.0 (28)	385,555.4 (34)	198,400.0 (32)	149,743.8 (30)	216,050.5 (52)	160,648.0 (44)	304,037.8 (52)	287,387.0 (40)	281,870.6 (41)	192,184.5 (29)
Others	11,289.2 (1)	23,519.2 (1)	17,404.2 (1)	3,198.6 (1)	4,349.9 (<1)	3,559.0 (<1)	4,575.8 (1)		1,258.4 (<1)	4,893.6 (1)	1,674.8 (<1)	4,284.0 (1)	1,652.4 (<1)	8,897.4 (1)	3,914.9 (1)	3,559.0 (1)
Total phytoplankton	1,559,052.0	2,868,582.4	2,213,817.2	501,549.6	980,693.5	834,089.9	916,576.5	1,114,384.4	621,637.5	497,729.8	418,367.7	363,280.7	586,904.8	712,985.8	684,598.7	659,133.8

[a]Values are expressed as cells per liter and represent the mean of three replicates.

[b]Percentage values are given in parentheses.

[c]S = Surface; B = Bottom; AVE. = The average of intake S and B values.

Table 2.2-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
7 NOVEMBER 1978

	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
TAXON	S	B	AVE.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	3,512,205.0 (37)	6,886,430.4 (67)	5,199,317.7 (52)	2,874,990.8 (53)	1,614,883.6 (66)	2,795,064.8 (72)	4,069,091.8 (68)	5,501,577.9 (77)	1,539,255.7 (66)	2,486,831.6 (61)	944,618.7 (63)	1,082,714.3 (58)	965,677.1 (53)	931,386.7 (54)	2,236,220.6 (70)	2,170,972.8 (64)
Pyrrhophyta (dinoflagellates)	160,557.9 (2)	100,348.8 (1)	130,453.4 (1)	188,153.9 (3)	102,320.5 (4)	26,692.3 (1)	17,828.2 (<1)	51,901.7 (1)	57,833.3 (2)	71,179.4 (2)	37,072.6 (2)	36,701.9 (2)	54,833.4 (3)	24,216.3 (1)	121,598.2 (4)	35,606.4 (1)
Chlorophyta (green algae)	210,732.3 (2)	326,133.4 (3)	268,432.8 (3)	82,787.7 (1)	40,038.5 (2)	102,956.0 (3)	243,196.4 (4)	103,803.4 (1)	48,935.9 (2)	93,423.0 (2)	19,277.8 (1)	63,394.3 (3)	48,740.8 (3)	52,414.3 (3)	6,821.3 (<1)	136,427.2 (4)
Cyanophyta (blue-green algae)	53,184.8 (1)	185,645.1 (2)	119,415.0 (1)	172,348.9 (3)	16,682.7 (1)	3,813.2 (<1)	21,947.0 (<1)	7,414.5 (<1)	8,897.4 (<1)	17,794.8 (<1)		3,336.5 (<1)	24,370.4 (1)	32,254.9 (2)		29,658.1 (1)
Euglenophyta (euglenoids)	50,174.3 (1)	37,630.8 (<1)	43,902.6 (<1)	60,209.2 (1)		3,813.2 (<1)	5,931.6 (<1)		2,224.4 (<1)							2,965.8 (<1)
Cryptophyta (cryptophytes)	1,174,079.9 (12)	790,246.1 (8)	982,163.0 (10)	556,935.3 (10)	93,423.0 (4)	91,516.4 (2)	249,128.1 (4)	215,021.2 (3)	117,891.0 (5)	253,576.8 (6)	50,418.8 (3)	61,725.9 (3)	176,685.4 (10)	116,924.1 (7)	142,358.9 (4)	121598.2 (4)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)	50,174.3 (1)	50,174.4 (<1)	50,174.4 (1)	30,104.6 (1)	6,673.1 (<1)	7,626.4 (<1)	17,794.9 (<1)	59,316.2 (1)		4,448.7 (<1)	7,414.5 (<1)	15,014.4 (1)	6,092.6 (<1)		2,965.8 (<1)	14,829.0 (<1)
Haptophyceae (haptophytes including coccolithophores)								14,829.1 (<1)								
Prasinophyceae (prasinophytes)	1,284,463.5 (13)	363,764.1 (4)	824,113.8 (8)	428,990.8 (8)	26,692.3 (1)	15,252.8 (<1)	59,316.2 (1)	37,072.7 (1)	48,935.9 (2)	40,038.4 (1)	7,414.5 (<1)	13,346.1 (1)	91,389.0 (5)	60,478.0 (4)	5,931.6 (<1)	41,521.4 (1)
Unidentified phytoflagellates	3,080,705.4 (32)	1,542,861.4 (15)	2,311,783.4 (23)	1,008,504.6 (19)	540,518.9 (22)	762,636.9 (20)	1,215,982.1 (21)	904,572.1 (13)	464,890.7 (20)	1,000,960.9 (25)	421,145.0 (28)	538,850.6 (29)	438,667.2 (24)	471,728.5 (27)	637,649.2 (20)	791,871.3 (23)
Others	10,034.9 (<1)	37,630.8 (<1)	23,832.8 (<1)	7,526.2 (<1)	13,346.1 (1)	91,516.4 (2)	41,521.3 (1)	207,606.7 (3)	46,711.5 (2)	84,525.6 (2)	10,380.3 (1)	43,375.0 (2)	18,277.8 (1)	36,286.8 (2)	38,555.5 (1)	47,453.0 (1)
Total phytoplankton	9,586,312.3	10,320,865.3	9,953,588.9	5,410,552.0	2,454,578.7	3,900,888.4	5,941,737.6	7,103,115.5	2,355,575.8	4,052,779.2	1,497,742.2	1,858,459.0	1,824,733.7	1,725,689.6	3,192,101.1	3,392,903.2

[a]Values are expressed as cells per liter and represent the mean of three replicates.

[b]Percentage values are given in parentheses.

[c]S = Surface; B = Bottom; AVE. = The average of intake S and B values.

Table 2.2-1
cont'd

PHYTOPLANKTON DENSITY[a] AND PERCENTAGE COMPOSITION[b]
ST. LUCIE PLANT
6 DECEMBER 1978

	STATION AND DEPTH[c]															
	11			12	0		1		2		3		4		5	
TAXON	S	B[d]	AVE.	S	S	B	S	B	S	B	S	B	S	B	S	B
Bacillariophyta (diatoms)	465,680.5 (50)			642,954.9 (59)	285,994.1 (25)	1,417,425.8 (71)	642,602.9 (53)	966,870.6 (77)	213,983.2 (28)	144,138.3 (22)	43,182.3 (14)	177,550.5 (34)	150,430.0 (19)	290,056.6 (60)	143,782.7 (21)	330,806.6 (35)
Pyrrhophyta (dinoflagellates)	38,302.6 (4)			25,804.0 (2)	27,596.0 (2)	25,087.2 (1)	19,772.1 (2)	11,863.2 (1)	77,111.0 (10)	31,458.8 (5)	27,760.2 (9)	30,073.3 (6)	86,368.7 (11)	8,541.5 (2)	101,082.7 (15)	17,616.9 (2)
Chlorophyta (green algae)	72,573.6 (8)			103,215.9 (9)	66,481.1 (6)	137,979.5 (7)	25,703.7 (2)	22,243.5 (2)	28,916.7 (4)	37,750.6 (6)	9,638.9 (3)	25,446.7 (5)	40,610.4 (5)	30,963.1 (6)	18,506.7 (3)	33,276.5 (4)
Cyanophyta (blue-green algae)	22,376.8 (2)			39,566.1 (4)	32,613.3 (3)	50,174.4 (2)	3,954.4 (<1)	5,931.6 (<1)	4,819.4 (1)	6,692.2 (1)	1,927.8 (1)	1,735.0 (<1)	5,719.8 (1)	2,491.3 (1)	7,901.0 (1)	6,851.0 (1)
Euglenophyta (euglenoids)					1,254.4 (<1)				2,891.7 (<1)	572.0 (<1)	2,698.9 (1)	578.3 (<1)	14,299.5 (2)		22,065.6 (3)	
Cryptophyta (cryptophytes)	58,462.1 (6)			64,509.9 (6)	253,380.5 (22)	62,717.9 (3)	90,951.5 (7)	28,175.2 (2)	72,291.6 (9)	84,652.7 (13)	64,773.3 (22)	80,388.3 (15)	89,228.5 (12)	38,081.0 (8)	49,113.8 (7)	121,360.9 (13)
Xanthophyta (xanthophytes)																
Chrysophyceae (yellow-brown algae and silicoflagellates)				2,150.3 (<1)	1,254.4 (<1)		1,977.2 (<1)	1,482.9 (<1)	18,313.9 (2)	572.0 (<1)	3,084.5 (1)		13,155.4 (2)	355.9 (<1)	20,642.1 (3)	1,957.4 (<1)
Haptophyceae (haptophytes including coccolithophores)							59,316.2 (5)		963.9 (<1)	572.0 (<1)			1,143.9 (<1)	711.8 (<1)		
Prasinophyceae (prasinophytes)	4,031.8 (<1)			8,601.3 (1)	21,324.1 (2)		5,931.6 (<1)		26,025.0 (3)	5,719.8 (1)	20,048.9 (7)	10,410.0 (2)	102,956.0 (13)	1,067.7 (<1)	40,572.3 (6)	3,914.9 (<1)
Unidentified phytoflagellates	268,119.2 (28)			189,229.0 (17)	436,516.9 (39)	301,046.2 (15)	363,806.0 (30)	209,089.6 (17)	323,866.4 (42)	347,762.4 (52)	125,691.1 (42)	193,741.6 (37)	269,973.5 (35)	106,057.4 (22)	264,787.6 (39)	415,955.0 (44)
Others	10,079.7 (1)			17,202.7 (2)	2,508.7 (<1)		3,954.4 (<1)	7,414.5 (1)	4,819.5 (1)	2,859.9 (<1)	771.1 (<1)	4,048.3 (1)	572.0 (<1)	3,203.1 (1)	2,847.2 (<1)	4,893.6 (1)
Total phytoplankton	939,626.3			1,093,234.1	1,126,923.5	1,994,431.0	1,217,970.0	1,253,071.1	774,002.3	662,750.7	239,577.0	523,972.0	774,457.7	481,529.4	671,301.7	936,632.8

[a]Values are expressed as cells per liter and represent the mean of three replicates.

[b]Percentage values are given in parentheses.

[c]S = Surface; B = Bottom; Ave. = The average of intake S and B values.

[d]Station 11 Bottom could not be analyzed due to heavy detritus content in the samples.

Table 2.2A-2

ACTIVE CHLOROPHYLL-α AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1976

Date	Station	Pigment and Depth[b]					
		Chlorophyll-α (mg/m^3)			Phaeopigment (mg/m^3)		
		S	B	A	S	B	A
MAR 26	0	0.89	1.87	1.38	0.03	1.06	0.55
	1	2.00	1.14	1.57	0.01	0.14	0.08
	2	3.13	2.21	2.67	0.05	0.55	0.30
	3	3.10	2.29	2.70	0.12	0.53	0.33
	4	3.45[c]	2.46	2.96	0.14[c]	0.47	0.31
	5	2.37	6.81	4.59	0.14	3.41	1.78
	11	2.67	3.27	2.97	0.04	0.33	0.19
	12	1.43	2.49	1.96	0.05	0.59	0.32
APR 21	0	1.82	1.84	1.83	ND[d]	0.10	0.05
	1	1.72	2.28	2.00	ND	0.21	0.11
	2	1.48	2.42	1.95	ND	0.41	0.21
	3	0.95	1.59	1.27	ND	0.03	0.02
	4	1.29	2.59	1.94	ND	0.15	0.08
	5	0.84	2.28	1.56	ND	0.11	0.05
	11	1.07	2.17	1.62	0.03	ND	0.02
	12	1.44	1.41[c]	1.43	0.02	ND[c]	0.01

[a] Phaeopigment ≡ phaeophytin-α plus phaeophorbide-α.

[b] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[c] Value represents single determination.

[d] ND = Not Detected.

Table 2.2A-2
cont'd
ACTIVE CHLOROPHYLL-α AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1976

Date	Station	Pigment and Depth[b] Chlorophyll-α (mg/m^3) S	B	A	Phaeopigment (mg/m^3) S	B	A
MAY 12	0	0.95	0.68	0.81	0.04	0.03	0.04
	1	0.83	0.60	0.72	0.03	0.02	0.03
	2	0.50	0.41	0.46	0.03	0.02	0.03
	3	0.52	0.49	0.51	0.03	ND[c]	0.02
	4	0.63	0.60	0.62	ND	0.05	0.03
	5	0.58	0.62	0.60	ND	0.02	0.01
	11	1.07	2.22	1.64	ND	0.02	0.01
	12	1.12	0.87	0.99	0.01	0.05	0.03
JUN 8	0	4.02	5.17	4.60	0.03	0.69	0.36
	1	3.79	3.58	3.69	0.71	0.27	0.49
	2	1.48	1.20	1.34	0.03	0.20	0.12
	3	0.79	0.94	0.87	0.02	0.16	0.09
	4	2.60	1.81	2.20	ND	0.12	0.06
	5	1.62	1.52	1.57	0.05	0.20	0.13
	11	2.65	4.29	3.47	0.19	0.22	0.20
	12	2.55	3.79	3.17	0.18	1.41	0.80

[a] Phaeopigment ≡ phaeophytin-α plus phaeophorbide-α.

[b] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[c] ND = Not Detected.

Table 2.2A-2
cont'd
ACTIVE CHLOROPHYLL-α AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1976

Date	Station	Pigment and Depth[b] Chlorophyll-α (mg/m^3) S	B	A	Phaeopigment (mg/m^3) S	B	A
JUL 14	0	2.00	1.47	1.74	ND[c]	0.05	0.03
	1	0.83	0.72	0.78	ND	0.02	0.01
	2	2.42	2.19	2.30	ND	ND	ND
	3	1.71	1.57	1.64	ND	ND	ND
	4	1.62	1.67	1.65	ND	ND	ND
	5	1.12	2.43	1.78	ND	ND	ND
	11	1.74	1.02	1.38	ND	<0.005	<0.005
	12	0.81	1.49[d]	0.81	ND	ND[d]	ND
AUG 11	0	1.36	1.13	1.24	0.02	0.20	0.11
	1	2.36	2.26	2.31	0.05	0.08	0.06
	2	0.85	1.11	0.98	<0.005	0.02	0.01
	3	0.53	0.69	0.61	<0.005	<0.005	<0.005
	4	0.67	1.01	0.84	<0.005	0.08	0.04
	5	1.13	0.95	1.04	ND	0.23	0.12
	11	13.00	4.12	8.56	ND	0.26	0.13
	12	5.66	3.48	4.57	ND	ND	ND

[a] Phaeopigment ≡ phaeophytin-α plus phaeophorbide-α.

[b] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[c] ND = Not Detected.

[d] Value represents single determination.

Table 2.2A-2
cont'd
ACTIVE CHLOROPHYLL-α AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1976

Date	Station	Pigment and Depth[b] Chlorophyll-α (mg/m^3) S	B	A	Phaeopigment (mg/m^3) S	B	A
SEP 14	0	2.72	3.92	3.32	0.10	0.93	0.52
	1	7.09	5.63	6.36	ND[c]	1.17	0.59
	2	3.16	2.86	3.01	ND	0.23	0.12
	3	2.31	2.92	2.61	ND	0.32	0.16
	4	2.95	2.44	2.69	0.04	0.55	0.30
	5	3.46	3.12	3.29	ND	0.25	0.13
	11	28.55	1.27	14.91	ND	0.24	0.12
	12	4.45	2.63	3.54	0.24	0.06	0.15
OCT 15	0	8.81	8.30	8.55	ND	0.73	0.37
	1	8.97	8.27	8.62	1.21	0.45	0.83
	2	7.30	3.95	5.62	ND	0.17	0.09
	3	3.63	6.30	4.97	0.19	1.72	0.96
	4	6.20	5.29	5.74	ND	0.72	0.36
	5	7.37	5.99	6.68	ND	1.30	0.65
	11	13.53	11.50	12.51	ND	ND	ND
	12	13.22	9.63	11.42	ND	ND	ND

[a] Phaeopigment ≡ phaeophytin-α plus phaeophorbide-α.

[b] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[c] ND = Not Detected.

Table 2.2A-2
cont'd
ACTIVE CHLOROPHYLL-α AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1976

Date	Station	Pigment and Depth[b]					
		Chlorophyll-α (mg/m^3)			Phaeopigment (mg/m^3)		
		S	B	A	S	B	A
NOV 10	0	2.97	7.91	5.44	0.15	2.44	1.30
	1	3.88	3.93	3.91	0.39	0.53	0.46
	2	2.94	2.89	2.91	0.24	0.51	0.38
	3	1.63	2.31	1.97	0.22	0.40	0.31
	4	3.30	3.09	3.19	0.01	0.54	0.28
	5	2.27	2.92	2.60	0.03	0.63	0.33
	11	5.11	4.71	4.91	0.06	0.48	0.27
	12	6.21	5.69	5.95	0.13	0.21	0.17
DEC 13	0	1.26	1.15	1.20	0.17	0.24	0.21
	1	1.16	1.25	1.21	0.13	0.12	0.12
	2	0.77[c]	1.82	1.30	0.11[c]	0.51	0.32
	3	0.61	0.53	0.57	0.07	0.16	0.12
	4	0.70	0.60	0.65	0.14	0.14	0.14
	5	0.80	0.92	0.86	0.09	0.14	0.11
	11	1.83	2.92	2.37	0.17	0.69	0.43
	12	2.35	1.95	2.15	0.19	0.35	0.27

[a] Phaeopigment ≡ phaeophytin-α plus phaeophorbide-α.

[b] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[c] Value represents single determination.

Table 2.2A-2
cont'd

ACTIVE CHLOROPHYLL-*a* AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1977

		Pigment and Depth[b]					
		Chlorophyll-*a* (mg/m^3)			Phaeopigment (mg/m^3)		
Date	Station	S	B	A	S	B	A
JAN 25	0	1.44	1.30	1.37	0.19	0.19	0.19
	1	1.57	1.12	1.35	0.07	0.14	0.11
	2	0.88	0.87	0.87	0.05	0.05	0.05
	3	1.04	0.68	0.86	0.06	0.09	0.08
	4	0.89	0.98	0.93	0.10	0.20	0.15
	5	0.82	0.77	0.79	0.07	0.01	0.04
	11	1.62	2.97	2.30	0.28	0.89	0.59
	12	3.39	2.43	2.91	0.20	1.54	0.87
FEB 15	0	1.59	3.12	2.36	0.07	0.59	0.33
	1	2.34	1.88	2.11	0.05	0.16	0.10
	2	1.24	1.03	1.13	0.04	0.12	0.08
	3	0.88	0.93	0.90	0.07	0.02	0.04
	4	0.99	1.01	1.00	0.03	0.05	0.04
	5	1.64	1.67	1.65	0.05	0.25	0.15
	11	2.56	3.15	2.85	0.19	0.25	0.22
	12	3.22	2.09	2.66	0.60	0.54	0.57

[a] Phaeopigment ≡ phaeophytin-*a* plus phaeophorbide-*a*.

[b] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

Table 2.2A-2
cont'd
ACTIVE CHLOROPHYLL-a AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1977

		Pigment and Depth[b]					
		Chlorophyll-*a* (mg/m^3)			Phaeopigment (mg/m^3)		
Date	Station	S	B	A	S	B	A
MAR 11	0	0.71	0.79	0.75	0.07	0.10	0.09
	1	0.81	0.75[c]	0.79	0.06	0.06[c]	0.06
	2	0.61	1.11	0.86	0.04	0.02	0.03
	3	0.69	0.71	0.70	0.01	0.03	0.02
	4	0.66	1.99	1.32	0.01	0.07	0.04
	5	1.70	1.03	1.37	ND[d]	<0.005	<0.005
	11	0.83	0.84	0.83	0.17	0.05	0.11
	12	0.57	-[e]	0.57	0.11	-	0.11
APR 19	0	0.65	0.66	0.66	0.02	0.02	0.02
	1	0.83	0.81	0.82	ND	<0.005	<0.005
	2	0.50	0.44	0.47	0.01	0.01	0.01
	3	0.24	0.26	0.25	0.02	0.02	0.02
	4	0.41	0.44	0.42	ND	ND	ND
	5	0.51	0.37	0.44	ND	0.03	0.01
	11	0.79	0.91	0.85	ND	ND	ND
	12	1.06	-	1.06	0.04	-	0.04

[a] Phaeopigment ≡ phaeophytin-a plus phaeophorbide-a.

[b] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[c] Value represents single determination.

[d] ND = Not detected.

[e] Single depth sample in discharge considered representative of water column due to turbulent mixing in immediate discharge.

Table 2.2A-2
cont'd

ACTIVE CHLOROPHYLL-*a* AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1977

Date	Station	Pigment and Depth[b] Chlorophyll-*a* (mg/m³) S	B	A	Phaeopigment (mg/m³) S	B	A
MAY 10	0	0.65	0.82	0.74	0.09	0.05	0.07
	1	1.21	0.98	1.09	<0.005	0.03	0.01
	2	0.63	0.67	0.65	ND[c]	0.07	0.04
	3	0.52	0.54	0.53	<0.005	0.04	0.02
	4	0.55	0.73	0.64	0.07	0.01	0.04
	5	0.56	0.65	0.60	0.07	0.04	0.05
	11	0.64	0.78	0.71	ND	0.08	0.04
	12	0.65	-[d]	0.65	0.06	-	0.06
JUNE 14	0	0.26	0.54	0.40	0.04	0.01	0.03
	1	0.36	0.28	0.32	0.10	0.10	0.10
	2	0.50	0.26	0.38	0.04	0.10	0.07
	3	0.19	0.27	0.23	0.07	0.04	0.06
	4	0.52	0.29	0.40	0.03	0.09	0.06
	5	0.96	0.35	0.66	0.02	0.04	0.03
	11	0.98[e]	0.67[e]	0.82	ND[e]	0.02[e]	0.01
	12	0.23	-	0.23	0.07	-	0.07

[a] Phaeopigment ≡ phaeophytin-*a* plus phaeophorbide-*a*.

[b] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determination.

[c] ND = Not detected.

[d] Single depth sample in discharge considered representative of water column due to turbulent mixing in immediate discharge.

[e] Value represents single determination.

Table 2.2A-2
cont'd
ACTIVE CHLOROPHYLL-*a* AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1977

Date	Station	Pigment and Depth[b] Chlorophyll-*a* (mg/m³) S	B	A	Phaeopigment (mg/m³) S	B	A
JULY 12	0	0.26	0.47	0.36	0.04	0.05	0.04
	1	0.41	0.45	0.43	0.05	0.02	0.04
	2	0.30	0.51	0.40	<0.005	0.02	0.01
	3	0.40	0.31	0.36	0.03	0.01	0.02
	4	0.21	0.58	0.40	0.03	0.03	0.03
	5	0.18	0.53	0.36	0.05	0.15	0.10
	11	0.46	1.31[c]	0.88	0.06	ND[d]	0.03
	12	0.18	-[e]	0.18	0.08	-	0.08
AUG 23	0	0.67	0.75	0.71	0.02	0.13	0.07
	1	0.93	0.76	0.85	0.09	0.08	0.09
	2	0.67	1.18	0.93	0.07	0.14	0.11
	3	1.25	1.43	1.34	0.02	0.03	0.02
	4	1.07	1.20[c]	1.14	<0.005	0.07[c]	0.04
	5	0.71	1.09	0.90	0.06	0.18	0.12
	11	1.02	1.14	1.08	0.08	0.14	0.11
	12	1.62	-	1.62	0.20	-	0.20

[a] Phaeopigment ≡ phaeophytin-*a* plus phaeophorbide-*a*.

[b] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determination.

[c] Value represents single determination.

[d] ND = Not detected.

[e] Single depth sample in discharge considered representative of water column due to turbulent mixing in immediate discharge.

Table 2.2A-2
cont'd

ACTIVE CHLOROPHYLL-*a* AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1977

		Pigment and Depth[b]					
		Chlorophyll-*a* (mg/m^3)			Phaeopigment (mg/m^3)		
Date	Station	S	B	A	S	B	A
JULY 12	0	0.26	0.47	0.36	0.04	0.05	0.04
	1	0.41	0.45	0.43	0.05	0.02	0.04
	2	0.30	0.51	0.40	<0.005	0.02	0.01
	3	0.40	0.31	0.36	0.03	0.01	0.02
	4	0.21	0.58	0.40	0.03	0.03	0.03
	5	0.18	0.53	0.36	0.05	0.15	0.10
	11	0.46	1.31[c]	0.88	0.06	ND[d]	0.03
	12	0.18	-[e]	0.18	0.08	-	0.08
AUG 23	0	0.67	0.75	0.71	0.02	0.13	0.07
	1	0.93	0.76	0.85	0.09	0.08	0.09
	2	0.67	1.18	0.93	0.07	0.14	0.11
	3	1.25	1.43	1.34	0.02	0.03	0.02
	4	1.07	1.20[c]	1.14	<0.005	0.07[c]	0.04
	5	0.71	1.09	0.90	0.06	0.18	0.12
	11	1.02	1.14	1.08	0.08	0.14	0.11
	12	1.62	-	1.62	0.20	-	0.20

[a] Phaeopigment ≡ phaeophytin-*a* plus phaeophorbide-*a*.

[b] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determination.

[c] Value represents single determination.

[d] ND = Not detected.

[e] Single depth sample in discharge considered representative of water column due to turbulent mixing in immediate discharge.

Table 2.2A-2
cont'd
ACTIVE CHLOROPHYLL-*a* AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1977

		Pigment and Depth[b]					
		Chlorophyll-*a* (mg/m^3)			Phaeopigment (mg/m^3)		
Date	Station	S	B	A	S	B	A
SEPT 13	0	1.34	1.52	1.43	<0.005	0.02	0.01
	1	2.16	2.07	2.11	0.01	0.12	0.06
	2	1.72	1.22	1.47	ND[c]	0.07	0.03
	3	1.43	0.91	1.17	0.03	0.02	0.02
	4	1.80	1.28	1.54	ND	ND	ND
	5	1.65	1.38	1.51	ND	0.07	0.03
	11	1.92	2.20	2.06	ND	ND	ND
	12	0.40	-[d]	0.40	0.16	-	0.16
OCT 11	0	1.26	2.94	2.10	0.05	0.37	0.21
	1	1.69	1.55	1.62	0.05	0.11	0.08
	2	1.45	1.05	1.25	ND	0.12	0.06
	3	1.10	1.15	1.12	0.06	0.06	0.06
	4	1.03	1.29	1.16	0.17	0.09	0.13
	5	1.25	1.34	1.29	0.09	0.12	0.10
	11	1.60	1.65	1.62	0.03	0.04	0.03
	12	1.07	-	1.07	0.35	-	0.35

[a] Phaeopigment ≡ phaeophytin-*a* plus phaeophorbide-*a*.

[b] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[c] ND = Not detected.

[d] Single depth sample in discharge considered representative of water column due to turbulent mixing in immediate discharge.

Table 2.2A-2
cont'd
ACTIVE CHLOROPHYLL-*a* AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1977

Date	Station	Pigment and Depth[b] Chlorophyll-*a* (mg/m³) S	B	A	Phaeopigment (mg/m³) S	B	A
NOV 2	0	6.47	11.29	8.88	ND[c]	1.13	0.56
	1	6.86	9.02	7.94	0.45	ND	0.23
	2	6.34	7.17	6.76	ND	0.57	0.28
	3	4.82	4.89	4.85	0.10	0.05	0.08
	4	4.49	6.78	5.63	ND	0.39	0.20
	5	4.26	6.82	5.54	0.15	0.24	0.20
	11	5.74	6.79	6.26	0.36	0.09	0.22
	12	4.89	-[d]	4.89	0.40	-	0.40
DEC 1	0	1.30	1.41	1.35	0.09	0.06	0.08
	1	1.18	1.89	1.53	0.24	0.22	0.23
	2	0.82	0.73	0.78	0.08	0.24	0.16
	3	0.65	0.65	0.65	0.05	0.11	0.08
	4	0.43	0.58	0.50	0.14	0.09	0.11
	5	0.95	0.79	0.87	0.10	0.10	0.10
	11	1.56	7.50	4.53	0.15	0.04	0.09
	12	0.56	-	0.56	0.14	-	0.14

[a] Phaeopigment ≡ phaeophytin-*a* plus phaeophorbide-*a*.

[b] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[c] ND = Not detected.

[d] Single depth sample in discharge considered representative of water column due to turbulent mixing in immediate discharge.

Table 2.2A-2
cont'd

DIFFERENCES BETWEEN MONTHLY MEAN CHLOROPHYLL-a (TUKEY'S TEST)
OFFSHORE SURFACE STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Month (Mean)	Feb (1.45)	Mar (0.86)	Apr (0.52)	May (0.69)	Jun (0.47)	Jul (0.29)	Aug (0.88)	Sep (1.68)	Oct (1.30)	Nov (5.54)	Dec (0.89
Jan (1.11)	0.34	0.25	0.59	0.42	0.64	0.82*	0.23	0.57	0.19	4.43*	0.22
Feb (1.45)		0.59	0.93*	0.76	0.98*	1.16*	0.57	0.23	0.15	4.09*	0.56
Mar (0.86)			0.34	0.17	0.39	0.57	0.02	0.82*	0.44	4.68*	0.03
Apr (0.52)				0.17	0.05	0.23	0.36	1.16*	0.78	5.02*	0.37
May (0.69)					0.22	0.40	0.19	0.99*	0.61	4.85*	0.20
Jun (0.47)						0.18	0.41	1.21*	0.83*	5.07*	0.42
Jul (0.29)							0.59	1.39*	1.01*	5.25*	0.60
Aug (0.88)								0.80*	0.42	4.66*	0.01
Sep (1.68)									0.38	3.86*	0.79*
Oct (1.30)										4.24*	0.41
Nov (5.54)											4.65*

* Significant at α = .05, HSD = 0.79.

Table 2.2A-2
cont'd

ACTIVE CHLOROPHYLL-a AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1978

		Pigment and Depth[b]					
		Chlorophyll-a (mg/m^3)			Phaeopigment (mg/m^3)		
Date	Station	S	B	A	S	B	A
24 JAN	0	2.18	3.64	2.91	0.07	0.01	0.04
	1	1.99	2.24	2.12	0.01	0.11	0.06
	2	1.52	1.73	1.62	ND[c]	ND	ND
	3	1.23[d]	1.12	1.18	ND[d]	0.04	0.02
	4	1.19	1.53	1.36	0.09	0.02	0.05
	5	1.62	1.88	1.75	<0.005	ND	<0.005
	11	2.25	3.31[d]	2.78	0.26	0.66[d]	0.46
	12	1.93	-	1.93	0.26	-	0.26
8 FEB	0	2.61	2.97	2.79	0.01	0.18	0.09
	1	4.32	3.85	4.09	0.08	0.04	0.06
	2	2.35	3.07	2.71	0.21	0.14	0.17
	3	0.91	0.89	0.90	0.01	0.03	0.02
	4	1.42	1.14	1.28	0.10	0.01	0.06
	5	2.16	2.20	2.18	ND	0.02	0.01
	11	3.92	3.91	3.92	0.12	0.41	0.27
	12	2.80	-	2.80	0.27	-	0.27

[a]Phaeopigment = Phaeophytin-a plus phaeophorbide-a.

[b]S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[c]ND = Not Detected.

[d]Single Determination.

Table 2.2A-2
cont'd

ACTIVE CHLOROPHYLL-*a* AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1978

		Pigment and Depth[b]					
		Chlorophyll-*a* (mg/m^3)			Phaeopigment (mg/m^3)		
Date	Station	S	B	A	S	B	A
15 MAR	0	2.14	2.45	2.30	ND[c]	ND	ND
	1	2.17	2.29	2.23	ND	ND	ND
	2	1.63	1.62	1.62	ND	ND	ND
	3	1.68	1.50[d]	1.59	ND	ND[d]	ND
	4	1.66	1.79	1.72	ND	ND	ND
	5	1.85	1.52	1.68	ND	ND	ND
	11	1.81	3.84	2.82	ND	0.76	0.38
	12	0.75	-	0.75	0.18	-	0.18
25 APR	0	1.99	3.30	2.64	ND	0.12	0.06
	1	1.77	8.35	5.06	0.09	0.77	0.43
	2	0.93	1.15	1.04	0.02	ND	0.01
	3	0.60	0.97	0.78	ND	0.06	0.03
	4	0.64	1.72	1.18	0.02	0.15	0.09
	5	1.34	1.99	1.67	0.01	0.18	0.10
	11	18.44	10.39	14.41	0.25	0.58	0.41
	12	5.65	-	5.65	ND	-	ND

[a]Phaeopigment = Phaeophytin-*a* plus phaeophorbide-*a*.

[b]S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[c]ND = Not Detected.

[d]Single Determination.

Table 2.2A-2
cont'd

ACTIVE CHLOROPHYLL-*a* AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1978

Date	Station	Pigment and Depth[b] Chlorophyll-*a* (mg/m^3) S	B	A	Phaeopigment (mg/m^3) S	B	A
17 MAY	0	2.45	3.30	2.87	ND[c]	0.39	0.19
	1	2.63	4.51	3.57	0.12	0.34	0.23
	2	2.89	5.48	4.18	0.02	ND	0.01
	3	2.08	6.18	4.13	0.20	0.14	0.17
	4	2.78	5.12	3.95	0.04	ND	0.02
	5	2.95	3.91	3.43	ND	0.32	0.16
	11	12.90	6.33	9.62	0.24	0.23	0.24
	12	6.22	-	6.22	0.22	-	0.22
21 JUNE	0	0.62	0.99	0.81	0.04	0.05	0.04
	1	0.59	0.84	0.72	0.08	0.06	0.07
	2	0.66	1.53	1.09	0.03	0.01	0.02
	3	1.05	0.97	1.01	ND	<0.005	<0.005
	4	0.52	1.09	0.80	0.01	0.04	0.02
	5	0.83	1.02	0.93	<0.005	0.02	0.01
	11	1.31	1.38	1.34	0.05	0.05	0.05
	12	0.69	-	0.69	0.23	-	0.23

[a]Phaeopigment = Phaeophytin-*a* plus phaeophorbide-*a*.

[b]S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[c]ND = Not Detected.

Table 2.2A-2
cont'd
ACTIVE CHLOROPHYLL-a AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1978

		Pigment and Depth[b]					
		Chlorophyll-a (mg/m^3)			Phaeopigment (mg/m^3)		
Date	Station	S	B	A	S	B	A
12 JULY	0	0.13	0.43	0.28	0.07	0.04	0.06
	1	0.57	0.84	0.71	0.05	0.07	0.06
	2	0.22	0.30	0.26	0.03	0.11	0.07
	3	0.21	0.27	0.24	0.05	0.06	0.06
	4	0.27	0.35	0.31	0.11	0.13	0.12
	5	0.38	0.36	0.37	0.08	0.14	0.11
	11	0.54	1.67	1.11	0.11	0.37	0.24
	12	0.38	-	0.38	0.11	-	0.11
8 AUG	0	0.46	0.49	0.47	ND[c]	0.03	0.01
	1	0.87	0.50	0.69	0.02	0.01	0.01
	2	0.17	0.71	0.44	ND	ND	ND
	3	0.17	0.19	0.18	ND	ND	ND
	4	0.22	1.13	0.68	ND	ND	ND
	5	0.28	0.30	0.29	ND	0.01	<0.005
	11	0.46	1.87	1.16	ND	0.05	0.03
	12	0.83	-	0.83	ND	-	ND

[a]Phaeopigment = Phaeophytin-a plus phaeophorbide-a.

[b]S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[c]ND = Not Detected.

Table 2.2A-2
cont'd
ACTIVE CHLOROPHYLL-a AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1978

		Pigment and Depth[b]					
		Chlorophyll-a (mg/m^3)			Phaeopigment (mg/m^3)		
Date	Station	S	B	A	S	B	A
12 SEPT	0	1.56	1.62	1.59	ND[c]	ND	ND
	1	1.37	1.35	1.36	ND	0.11	0.06
	2	1.03	1.03	1.03	ND	ND	ND
	3	1.00	0.95	0.98	ND	ND	ND
	4	1.23	1.43	1.33	ND	ND	ND
	5	1.02	1.03	1.02	ND	ND	ND
	11	2.08	2.32	2.20	0.06	ND	0.03
	12	0.52[d]	-	0.52[d]	0.08[d]	-	0.08[d]
3 OCT	0	1.68	1.24	1.46	ND	0.03	0.01
	1	1.90	2.66	2.28	0.17	ND	0.08
	2	2.08	1.95	2.01	0.09	ND	0.05
	3	1.77	1.38	1.57	ND	0.13	0.07
	4	1.68	1.95	1.82	ND	0.08	0.04
	5	1.56	1.98	1.77	ND	0.07	0.03
	11	2.98	3.65	3.31	ND	0.13	0.07
	12	0.44	-	0.44	0.02	-	0.02

[a]Phaeopigment = Phaeophytin-a plus phaeophorbide-a.

[b]S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[c]ND = Not Detected.

[d]Single Determination.

Table 2.2A-2
cont'd
ACTIVE CHLOROPHYLL-a AND PHAEOPIGMENTS[a]
ST. LUCIE PLANT
1978

Date	Station	Pigment and Depth[b] Chlorophyll-a (mg/m³) S	B	A	Phaeopigment (mg/m³) S	B	A
7 NOV	0	4.97	4.33	4.65	ND[c]	0.58	0.29
	1	8.27	11.26	9.77	0.20	1.19	0.69
	2	5.46[d]	3.99	4.72	ND[d]	0.18	0.09
	3	3.08	3.60	3.34	0.42	0.18	0.30
	4	3.48	3.28	3.38	ND	0.07	0.03
	5	5.13	4.95	5.04	ND	0.24	0.12
	11	12.03	7.86	9.94	ND	0.51	0.25
	12	8.34	-	8.34	ND	-	ND
6 DEC	0	1.42	1.30	1.36	0.06	0.36	0.21
	1	3.00	3.83	3.41	0.16	0.16	0.16
	2	1.61	1.19	1.40	0.07	0.08	0.07
	3	0.54	0.80	0.67	0.08	0.29	0.18
	4	1.99	1.43	1.71	ND	0.06	0.03
	5	1.33	1.58	1.45	0.06	0.14	0.10
	11	1.46	7.51	4.49	0.38	2.38	1.38
	12	1.52	-	1.52	0.20	-	0.20

[a]Phaeopigment = Phaeophytin-a plus phaeophorbide-a.

[b]S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[c]ND = Not Detected.

[d]Single Determination.

Table 2.2A-3

RESULTS OF TRICHROMATIC CHLOROPHYLL AND TOTAL CAROTENOID DETERMINATIONS
ST. LUCIE PLANT
1976

		Pigment and Depth[a]											
		Chlorophyll-a (mg/m^3)			Chlorophyll-b (mg/m^3)			Chlorophyll-c (mg/m^3)			Carotenoids ($\frac{m\text{-}SPU}{m^3}$)		
Date	Station	S	B	A	S	B	A	S	B	A	S	B	A
MAR 26	0	0.91	2.44	1.68	0.04	1.16	0.60	0.02	4.48	2.25	1.06	9.62	5.34
	1	2.05	1.24	1.65	0.01	0.13	0.07	0.93	0.59	0.76	2.03	1.41	1.72
	2	3.58	2.58	3.08	0.02	0.07	0.05	1.95	1.07	1.51	3.00	2.75	2.88
	3	3.23	2.64	2.94	ND[b]	0.26	0.13	1.08	1.75	1.42	3.32	3.63	3.48
	4	3.62[c]	2.79	3.21	ND[c]	0.08	0.04	1.61[c]	1.07	1.34	3.43[c]	1.97	2.70
	5	2.48	9.00	5.74	ND	0.08	0.04	0.52	3.69	2.11	2.38	10.96	6.67
	11	2.68	3.55	3.12	ND	ND	ND	1.05	1.06	1.06	2.43	2.73	2.58
	12	1.46	2.91	2.19	ND	ND	ND	0.12	0.48	0.30	1.19	2.66	1.93
APR 21	0	1.75	1.93	1.84	ND	0.13	0.07	0.67	1.06	0.87	1.78	2.61	2.20
	1	1.66	2.45	2.06	ND	0.08	0.04	0.60	1.09	0.85	1.66	2.86	2.26
	2	1.44	2.70	2.07	ND	0.15	0.08	0.54	1.04	0.80	1.47	2.89	2.18
	3	0.92	1.64	1.28	ND	0.06	0.03	0.36	0.70	0.53	0.94	2.07	1.51
	4	1.21	2.72	2.00	ND	0.06	0.03	0.53	1.24	0.89	1.26	3.19	2.23
	5	0.77	2.24	1.51	<0.005	0.01	0.01	0.35	0.92	0.64	0.96	2.65	1.81
	11	1.08	2.16	1.62	ND	ND	ND	0.34	0.79	0.57	1.21	2.11	1.66
	12	1.48	1.43[c]	1.46	<0.005	<0.005[c]	<0.005	0.55	0.50[c]	0.53	1.61	1.78[c]	1.70

[a] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.
[b] ND = Not Detected.
[c] Value represents single determination.

Table 2.2A-3
cont'd
RESULTS OF TRICHROMATIC CHLOROPHYLL AND TOTAL CAROTENOID DETERMINATIONS
ST. LUCIE PLANT
1976

		Pigment and Depth[a]											
		Chlorophyll-a ($^{mg}/_{m^3}$)			Chlorophyll-b ($^{mg}/_{m^3}$)			Chlorophyll-c ($^{mg}/_{m^3}$)			Carotenoids ($\frac{m\text{-}SPU}{m^3}$)		
Date	Station	S	B	A	S	B	A	S	B	A	S	B	A
MAY 12	0	0.99	0.70	0.85	0.06	0.09	0.08	0.49	0.39	0.44	1.38	0.99	1.19
	1	0.86	0.62	0.74	0.04	0.06	0.05	0.37	0.31	0.34	1.24	0.97	1.11
	2	0.53	0.42	0.48	0.03	0.07	0.05	0.31	0.33	0.32	0.80	0.76	0.78
	3	0.55	0.53	0.54	0.02	0.05	0.04	0.24	0.24	0.24	0.87	0.85	0.86
	4	0.61	0.64	0.63	0.01	0.06	0.04	0.35	0.33	0.34	0.87	1.05	0.96
	5	0.58	0.64	0.61	0.01	0.05	0.03	0.25	0.27	0.26	0.98	1.02	1.00
	11	1.07	2.27	1.67	0.02	0.01	0.02	0.50	0.93	0.72	1.42	2.56	1.99
	12	1.14	0.92	1.03	0.06	0.04	0.05	0.45	0.37	0.41	1.71	1.27	1.49
JUN 8	0	4.04	5.67	4.86	ND[b]	0.34	0.17	1.70	2.41	2.06	3.75	5.96	4.86
	1	4.32	3.82	4.07	ND	ND	ND	1.52	1.75	1.64	4.58	3.88	4.23
	2	1.50	1.34	1.42	ND	ND	ND	0.61	0.63	0.62	1.70	1.61	1.66
	3	0.83	1.06	0.95	ND	0.01	0.01	0.32	0.52	0.42	1.05	1.47	1.26
	4	2.63	1.92	2.28	ND	0.01	0.01	1.07	0.90	0.99	2.63	2.23	2.43
	5	1.63	1.67	1.65	ND	0.02	0.01	0.59	0.75	0.67	1.91	2.15	2.03
	11	2.81	4.52	3.67	0.06	0.10	0.08	1.31	2.04	1.68	3.46	5.60	4.53
	12	2.72	4.61	3.67	<0.005	0.93	0.47	1.20	4.67	2.94	2.77	11.09	6.93

[a] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.
[b] ND = Not Detected.

Table 2.2A-3
cont'd
RESULTS OF TRICHROMATIC CHLOROPHYLL AND TOTAL CAROTENOID DETERMINATIONS
ST. LUCIE PLANT
1976

		Pigment and Depth[a]											
		Chlorophyll-a (mg/m3)			Chlorophyll-b (mg/m3)			Chlorophyll-c (mg/m3)			Carotenoids (m-SPU/m3)		
Date	Station	S	B	A	S	B	A	S	B	A	S	B	A
JUL 14	0	2.01	1.52	1.77	0.09	0.13	0.11	1.05	0.81	0.93	2.50	1.64	2.07
	1	0.82	0.74	0.78	0.10	0.16	0.13	0.50	0.46	0.48	1.29	1.04	1.17
	2	2.39	2.19	2.29	0.06	0.16	0.11	1.31	1.12	1.22	2.84	2.33	2.59
	3	1.57	1.55	1.56	0.04	0.14	0.09	0.93	0.87	0.90	1.94	1.76	1.85
	4	1.63	1.60	1.62	0.07	0.15	0.11	0.90	0.88	0.89	1.98	1.79	1.89
	5	0.97	2.35	1.66	0.10	0.19	0.15	0.65	1.44	1.05	1.49	3.11	2.30
	11	1.65	1.00	1.33	0.11	0.36	0.24	0.84	1.11	0.98	2.25	2.37	2.31
	12	0.78	1.41[b]	1.10	0.06	0.25[b]	0.16	0.49	1.17[b]	0.83	1.64	2.35[b]	2.00
AUG 11	0	1.38	1.25	1.31	0.17	0.20	0.19	0.95	0.90	0.93	2.02	1.80	1.91
	1	2.35	2.32	2.33	0.18	0.29	0.24	1.40	1.34	1.37	3.07	2.83	2.95
	2	0.85	1.13	0.99	0.16	0.19	0.18	0.61	0.80	0.71	1.40	1.66	1.53
	3	0.51	0.68	0.60	0.11	0.15	0.13	0.45	0.52	0.49	0.87	1.17	1.02
	4	0.66	1.07	0.87	0.16	0.24	0.20	0.58	0.74	0.66	1.18	1.66	1.42
	5	1.11	1.09	1.10	0.22	0.21	0.22	0.95	0.88	0.92	1.88	1.74	1.81
	11	12.68	4.33	8.51	ND[c]	0.35	0.18	6.28	2.28	4.28	12.28	5.62	8.95
	12	5.47	3.50	4.49	0.05	0.28	0.17	2.68	2.09	2.39	5.70	4.38	5.04

[a] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.
[b] Value represents single determination.
[c] ND = Not Detected.

Table 2.2A-3
cont'd
RESULTS OF TRICHROMATIC CHLOROPHYLL AND TOTAL CAROTENOID DETERMINATIONS
ST. LUCIE PLANT
1976

		Pigment and Depth[a]											
		Chlorophyll-a (mg/m^3)			Chlorophyll-b (mg/m^3)			Chlorophyll-c (mg/m^3)			Carotenoids ($\frac{m\text{-}SPU}{m^3}$)		
Date	Station	S	B	A	S	B	A	S	B	A	S	B	A
SEP 14	0	2.84	4.54	3.69	0.10	0.29	0.20	1.50	2.27	1.89	2.80	4.50	3.65
	1	7.16	6.42	6.79	0.19	0.35	0.27	3.15	2.99	3.07	7.12	6.54	6.83
	2	3.08	3.00	3.04	0.14	0.13	0.14	1.66	1.40	1.53	3.25	2.96	3.11
	3	2.32	3.16	2.74	0.15	0.21	0.18	1.29	1.69	1.49	2.50	2.92	2.71
	4	2.98	2.81	2.90	0.12	0.16	0.14	1.43	1.32	1.38	3.06	2.67	2.87
	5	3.28	3.31	3.30	0.20	0.20	0.20	1.46	1.74	1.60	3.82	3.32	3.57
	11	27.01	1.43	14.22	ND[b]	0.16	0.08	12.05	0.88	6.47	24.99	1.52	13.26
	12	4.47	2.67	3.57	0.48	0.37	0.43	1.84	1.02	1.43	4.74	2.91	3.83
OCT 18	0	8.63	8.88	8.76	ND	0.32	0.16	4.14	3.65	3.90	7.95	8.20	8.08
	1	9.86	8.70	9.28	0.07	0.25	0.16	4.49	3.87	4.18	10.10	8.02	9.06
	2	6.93	4.12	5.53	0.07	0.21	0.14	3.36	2.05	2.71	6.34	3.72	5.03
	3	3.78	7.43	5.61	0.44	0.52	0.48	3.00	3.47	3.24	4.22	8.12	6.17
	4	6.17	5.81	5.99	0.20	0.18	0.19	3.40	2.74	3.07	5.69	5.62	5.66
	5	7.11	6.87	6.99	0.08	0.36	0.22	3.40	3.30	3.35	6.46	6.87	6.67
	11	13.12	11.68	12.40	ND	ND	ND	6.47	5.49	5.98	11.82	10.87	11.35
	12	12.76	9.56	11.16	ND	ND	ND	5.84	4.57	5.21	10.79	8.46	9.63

[a] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.
[b] ND = Not Detected.

Table 2.2A-3
cont'd
RESULTS OF TRICHROMATIC CHLOROPHYLL AND TOTAL CAROTENOID DETERMINATIONS
ST. LUCIE PLANT
1976

		Pigment and Depth[a]											
		Chlorophyll-a ($^{mg}/_{m^3}$)			Chlorophyll-b ($^{mg}/_{m^3}$)			Chlorophyll-c ($^{mg}/_{m^3}$)			Carotenoids ($\frac{m\text{-}SPU}{m^3}$)		
Date	Station	S	B	A	S	B	A	S	B	A	S	B	A
NOV 10	0	3.10	9.50	6.30	0.11	0.53	0.32	1.51	3.95	2.73	3.03	9.85	6.44
	1	4.18	4.32	4.25	0.10	0.13	0.12	2.22	2.06	2.14	4.19	4.05	4.12
	2	3.13	3.24	3.19	0.10	0.14	0.12	1.65	1.69	1.67	3.07	3.28	3.18
	3	1.78	2.59	2.19	0.14	0.07	0.11	1.02	1.36	1.19	1.96	2.66	2.31
	4	3.36	3.46	3.41	0.10	0.25	0.18	1.62	1.92	1.77	3.11	3.51	3.11
	5	2.32	3.35	2.84	0.11	0.13	0.12	1.04	1.75	1.40	2.08	3.33	2.71
	11	5.18	5.08	5.13	0.13	0.12	0.13	2.19	2.51	2.35	4.82	4.85	4.84
	12	6.37	5.93	6.15	0.07	0.02	0.05	2.65	2.62	2.64	5.76	5.63	5.70
DEC 13	0	1.38	1.31	1.35	0.07	0.11	0.09	0.66	0.72	0.69	1.41	1.24	1.33
	1	1.26	1.35	1.30	0.05	0.07	0.06	0.58	0.68	0.63	1.23	1.30	1.26
	2	0.98	2.16	1.57	0.06	0.12	0.09	0.54	1.04	0.79	1.06	2.18	1.62
	3	0.66	0.63	0.64	0.06	0.06	0.06	0.40	0.38	0.39	0.72	0.68	0.70
	4	0.79	0.69	0.74	0.08	0.08	0.08	0.46	0.42	0.44	0.84	0.72	0.78
	5	0.86	1.02	0.94	0.07	0.08	0.07	0.50	0.49	0.49	0.86	1.06	0.96
	11	1.97	3.39	2.68	0.08	0.10	0.09	0.86	1.44	1.15	1.82	3.82	2.82
	12	2.51	2.20	2.35	0.10	0.11	0.11	1.12	0.96	1.04	2.37	2.21	2.29

[a] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

Table 2.2A-3
cont'd

RESULTS OF TRICHROMATIC CHLOROPHYLL AND TOTAL CAROTENOID DETERMINATIONS
ST. LUCIE PLANT
1977

		Pigment and Depth[a]											
		Chlorophyll-a (mg/m^3)			Chlorophyll-b (mg/m^3)			Chlorophyll-c (mg/m^3)			Carotenoids ($\frac{m\text{-}SPU}{m^3}$)		
Date	Station	S	B	A	S	B	A	S	B	A	S	B	A
JAN 25	0	1.58	1.43	1.51	0.07	0.16	0.11	0.67	0.77	0.72	1.65	1.36	1.51
	1	1.64	1.22	1.43	0.11	0.13	0.12	0.85	0.60	0.72	1.68	1.17	1.42
	2	0.92	0.90	0.91	0.13	0.12	0.12	0.60	0.53	0.57	0.94	0.81	0.88
	3	1.09	0.75	0.92	0.12	0.12	0.12	0.57	0.39	0.48	1.10	0.75	0.92
	4	0.96	1.10	1.03	0.13	0.20	0.17	0.64	1.05	0.85	0.97	1.07	1.02
	5	0.87	0.78	0.82	0.09	0.12	0.10	0.45	0.44	0.44	0.95	0.77	0.86
	11	1.81	3.56	2.69	0.13	0.09	0.11	0.97	1.30	1.13	2.16	4.19	3.18
	12	3.57	2.93	3.25	0.14	0.16	0.15	1.66	1.22	1.44	3.63	3.22	3.43
FEB 15	0	1.65	3.51	2.58	0.12	0.33	0.22	0.83	2.20	1.51	1.71	4.13	2.92
	1	2.41	1.99	2.20	0.14	0.20	0.17	1.41	1.06	1.23	2.46	2.13	2.29
	2	1.27	1.12	1.20	0.08	0.07	0.08	0.63	0.56	0.59	1.44	1.12	1.28
	3	0.92	0.94	0.93	0.10	0.13	0.11	0.62	0.59	0.60	1.10	1.03	1.07
	4	1.00	1.02	1.01	0.08	0.13	0.11	0.56	0.71	0.63	1.03	1.07	1.05
	5	1.70	1.84	1.77	0.11	0.17	0.14	0.80	0.82	0.81	1.81	1.78	1.79
	11	2.72	3.34	3.03	0.10	0.26	0.18	1.13	1.66	1.40	2.66	3.60	3.13
	12	3.62	2.45	3.03	0.39	0.18	0.28	1.61	0.97	1.29	3.86	2.52	3.19

[a] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

Table 2.2A-3
cont'd

RESULTS OF TRICHROMATIC CHLOROPHYLL AND TOTAL CAROTENOID DETERMINATIONS
ST. LUCIE PLANT
1977

		Pigment and Depth[a]											
		Chlorophyll-a (mg/m^3)			Chlorophyll-b (mg/m^3)			Chlorophyll-c (mg/m^3)			Carotenoids ($\frac{m\text{-}SPU}{m^3}$)		
Date	Station	S	B	A	S	B	A	S	B	A	S	B	A
MAR 11	0	0.76	0.86	0.81	0.06	0.05	0.06	0.50	0.53	0.52	0.80	0.81	0.80
	1	0.86	0.81[b]	0.84	0.03	<0.005[b]	0.02	0.48	0.41[b]	0.45	0.79	0.69[b]	0.74
	2	0.64	1.14	0.89	0.07	0.05	0.06	0.37	0.70	0.53	0.63	1.17	0.90
	3	0.69	0.74	0.71	0.12	0.07	0.09	0.47	0.33	0.40	0.78	0.72	0.75
	4	0.66	2.05	1.35	0.03	ND[c]	0.01	0.36	1.02	0.69	0.59	1.80	1.19
	5	1.60	1.05	1.32	0.04	0.08	0.06	0.80	0.59	0.70	1.41	0.93	1.17
	11	0.94	0.88	0.91	0.07	0.06	0.06	0.45	0.45	0.45	0.93	0.79	0.86
	12	0.65	-[d]	0.65	0.06	-	0.06	0.26	-	0.26	0.57	-	0.57
APR 19	0	0.64	0.69	0.66	0.02	ND	0.01	0.32	0.28	0.30	0.75	0.77	0.76
	1	0.81	0.82	0.81	ND	ND	ND	0.32	0.28	0.30	0.86	0.78	0.82
	2	0.51	0.44	0.48	ND	ND	ND	0.25	0.14	0.19	0.48	0.44	0.46
	3	0.26	0.28	0.27	ND	ND	ND	0.05	0.10	0.07	0.31	0.24	0.28
	4	0.39	0.42	0.41	ND	ND	ND	0.17	0.18	0.17	0.38	0.45	0.42
	5	0.50	0.37	0.43	ND	ND	ND	0.18	0.18	0.18	0.45	0.33	0.39
	11	0.78	0.92	0.85	ND	ND	ND	0.34	0.40	0.37	0.89	1.02	0.95
	12	1.10	-[d]	1.10	ND	-	ND	0.45	-	0.45	1.09	-	1.09

[a] S = Surface; B = Bottom; A = Average.
[b] Value represents single determination.
[c] Not detected.
[d] Single depth sample in discharge considered representative of water column due to turbulent mixing in immediate discharge.

Table 2.2A-3
cont'd
RESULTS OF TRICHROMATIC CHLOROPHYLL AND TOTAL CAROTENOID DETERMINATIONS
ST. LUCIE PLANT
1977

		Pigment and Depth[a]											
		Chlorophyll-a (mg/m³)			Chlorophyll-b (mg/m³)			Chlorophyll-c (mg/m³)			Carotenoids (m-SPU/m³)		
Date	Station	S	B	A	S	B	A	S	B	A	S	B	A
MAY 10	0	0.71	0.84	0.78	0.05	0.05	0.05	0.24	0.34	0.29	0.69	0.78	0.74
	1	1.22	1.01	1.11	0.05	0.06	0.06	0.45	0.32	0.38	1.09	0.80	0.95
	2	0.64	0.72	0.68	0.05	0.07	0.06	0.23	0.26	0.25	0.70	0.69	0.70
	3	0.53	0.58	0.55	0.05	0.06	0.05	0.23	0.22	0.23	0.57	0.55	0.56
	4	0.60	0.74	0.67	0.07	0.04	0.06	0.30	0.23	0.26	0.53	0.66	0.59
	5	0.59	0.68	0.64	0.08	0.06	0.07	0.31	0.27	0.29	0.60	0.59	0.59
	11	0.61	0.84	0.72	0.11	0.07	0.09	0.46	0.33	0.40	0.82	0.88	0.85
	12	0.69	-[b]	0.69	0.07	-	0.07	0.36	-	0.36	0.69	-	0.69
JUNE 14	0	0.29	0.56	0.43	0.05	0.05	0.05	0.12	0.23	0.18	0.44	0.80	0.62
	1	0.42	0.35	0.38	0.04	0.05	0.04	0.19	0.17	0.18	0.49	0.33	0.41
	2	0.52	0.32	0.42	0.03	0.05	0.04	0.27	0.20	0.23	0.58	0.31	0.45
	3	0.23	0.30	0.26	0.04	0.04	0.04	0.20	0.17	0.18	0.25	0.39	0.32
	4	0.55	0.35	0.45	0.04	0.06	0.05	0.33	0.20	0.27	0.67	0.42	0.55
	5	0.97	0.38	0.68	0.05	0.06	0.05	0.68	0.15	0.42	1.13	0.30	0.72
	11	0.98[c]	0.69[c]	0.83	0.12[c]	0.09[c]	0.11	0.38[c]	0.27[c]	0.33	1.21[c]	0.81[c]	1.01
	12	0.27	-	0.27	0.05	-	0.05	0.11	-	0.11	0.19	-	0.19

[a] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[b] Single depth sample in discharge considered representative of water column due to turbulent mixing in immediate discharge.

[c] Value represents single determination.

Table 2.2A-3
cont'd

RESULTS OF TRICHROMATIC CHLOROPHYLL AND TOTAL CAROTENOID DETERMINATIONS
ST. LUCIE PLANT
1977

		Pigment and Depth[a]											
		Chlorophyll-a (mg/m^3)			Chlorophyll-b (mg/m^3)			Chlorophyll-c (mg/m^3)			Carotenoids ($\frac{m\text{-}SPU}{m^3}$)		
Date	Station	S	B	A	S	B	A	S	B	A	S	B	A
JULY 12	0	0.29	0.49	0.39	0.03	0.10	0.07	0.10	0.24	0.17	0.27	0.58	0.43
	1	0.44	0.46	0.45	0.03	0.03	0.03	0.18	0.20	0.19	0.47	0.50	0.48
	2	0.30	0.52	0.41	0.02	0.05	0.04	0.15	0.26	0.21	0.29	0.59	0.44
	3	0.39	0.33	0.36	0.04	0.03	0.03	0.16	0.19	0.17	0.42	0.30	0.36
	4	0.23	0.61	0.42	0.03	0.05	0.04	0.14	0.24	0.19	0.19	0.68	0.43
	5	0.21	0.63	0.42	0.02	0.07	0.05	0.11	0.22	0.16	0.22	0.70	0.46
	11	0.49	1.31[b]	0.90	0.06	0.18[b]	0.12	0.17	0.42[b]	0.30	0.44	1.24[b]	0.84
	12	0.23	-[c]	0.23	0.04	-	0.04	0.10	-	0.10	0.09	-	0.09
AUG 23	0	0.68	0.83	0.75	0.14	0.16	0.15	0.60	0.60	0.60	0.71	0.96	0.84
	1	0.99	0.81	0.90	0.17	0.16	0.17	0.58	0.64	0.61	1.09	0.83	0.96
	2	0.71	1.27	0.99	0.13	0.25	0.19	0.35	0.92	0.64	0.78	1.31	1.05
	3	1.28	1.44	1.36	0.19	0.22	0.20	0.58	0.76	0.67	1.36	1.51	1.43
	4	1.08	1.25[b]	1.17	0.17	0.19[b]	0.18	0.55	0.92[b]	0.74	1.10	1.34[b]	1.22
	5	0.75	1.20	0.97	0.14	0.23	0.18	0.47	0.65	0.56	0.80	1.23	1.01
	11	1.08	1.23	1.16	0.18	0.17	0.18	0.52	0.59	0.55	1.08	1.19	1.14
	12	1.75	-[c]	1.75	0.20	-	0.20	0.76	-	0.76	1.49	-	1.49

[a] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[b] Value represents single determination.

[c] Single depth sample in discharge considered representative of water column due to turbulent mixing in immediate discharge.

Table 2.2-3
cont'd

RESULTS OF TRICHROMATIC CHLOROPHYLL AND TOTAL CAROTENOID DETERMINATIONS
ST. LUCIE PLANT
1977

		Pigment and Depth[a]											
		Chlorophyll-a (mg/m3)			Chlorophyll-b (mg/m3)			Chlorophyll-c (mg/m3)			Carotenoids (m-SPU/m3)		
Date	Station	S	B	A	S	B	A	S	B	A	S	B	A
NOV 2	0	6.44	12.19	9.32	0.08	0.15	0.11	2.90	4.83	3.86	5.73	11.63	8.68
	1	7.26	9.00	8.13	0.14	0.16	0.15	3.43	3.78	3.60	6.85	8.50	7.68
	2	6.29	7.63	6.96	0.36	0.39	0.37	2.89	3.77	3.33	5.85	7.59	6.72
	3	4.94	5.00	4.97	0.21	0.21	0.21	2.46	2.38	2.42	4.67	4.48	4.58
	4	4.27	7.13	5.70	0.11	0.21	0.16	2.04	3.47	2.76	3.74	6.81	5.27
	5	4.43	7.09	5.76	0.09	0.23	0.16	2.01	3.35	2.68	4.05	6.47	5.26
	11	6.06	6.95	6.51	0.18	0.10	0.14	3.01	3.24	3.13	5.41	6.67	6.04
	12	5.21	-[b]	5.21	0.17	-	0.17	2.43	-	2.43	4.85	-	4.85
DEC 1	0	1.37	1.46	1.42	0.12	0.12	0.12	0.62	0.81	0.71	1.32	1.31	1.32
	1	1.34	2.05	1.69	0.12	0.12	0.12	0.79	0.93	0.86	1.08	1.93	1.51
	2	0.67	0.89	0.88	0.13	0.09	0.11	0.52	0.49	0.51	0.84	0.84	0.84
	3	0.68	0.72	0.70	0.06	0.09	0.08	0.33	0.34	0.34	0.69	0.59	0.64
	4	0.51	0.63	0.57	0.07	0.12	0.10	0.24	0.37	0.31	0.49	0.53	0.51
	5	1.01	0.86	0.94	0.14	0.12	0.13	0.63	0.43	0.53	0.94	0.64	0.79
	11	1.68	7.69	4.68	0.10	ND[c]	0.05	0.86	3.39	2.12	1.64	7.91	4.77
	12	0.65	-[b]	0.65	0.07	-	0.07	0.45	-	0.45	0.36	-	0.36

[a] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[b] Single depth sample in discharge considered representative of water column due to turbulent mixing in immediate discharge.

[c] ND = Not Detected.

Table 2.2-3
cont'd

RESULTS OF TRICHROMATIC CHLOROPHYLL AND TOTAL CAROTENOID DETERMINATIONS
ST. LUCIE PLANT
1977

		Pigment and Depth[a]											
		Chlorophyll-a (mg/m^3)			Chlorophyll-b (mg/m^3)			Chlorophyll-c (mg/m^3)			Carotenoids ($\frac{m\text{-}SPU}{m^3}$)		
Date	Station	S	B	A	S	B	A	S	B	A	S	B	A
SEPT 13	0	1.35	1.56	1.45	0.07	0.07	0.07	0.78	0.82	0.80	1.27	1.54	1.41
	1	2.16	2.16	2.16	0.10	0.11	0.11	1.06	1.07	1.06	1.99	2.07	2.03
	2	1.71	1.28	1.50	0.08	0.10	0.09	0.95	0.71	0.83	1.57	1.20	1.38
	3	1.46	0.92	1.19	0.05	0.09	0.07	0.78	0.47	0.63	1.35	0.86	1.11
	4	1.74	1.30	1.52	0.09	0.07	0.08	0.92	0.69	0.80	1.60	1.21	1.41
	5	1.59	1.43	1.51	0.06	0.13	0.10	0.81	0.83	0.82	1.52	1.32	1.42
	11	1.93	2.21	2.07	0.08	0.08	0.08	1.00	1.07	1.03	1.79	2.03	1.91
	12	0.50	-[b]	0.50	0.08	-	0.08	0.27	-	0.27	0.40	-	0.40
OCT 11	0	1.30	3.22	2.26	0.12	0.15	0.14	0.67	1.51	1.09	1.40	3.46	2.43
	1	1.74	1.64	1.69	0.16	0.13	0.15	0.87	0.74	0.80	1.96	1.93	1.95
	2	1.45	1.14	1.29	0.14	0.11	0.12	0.71	0.57	0.64	1.61	1.23	1.42
	3	1.15	1.20	1.17	0.09	0.14	0.12	0.61	0.76	0.69	1.23	1.27	1.25
	4	1.15	1.35	1.25	0.12	0.12	0.12	0.73	0.69	0.71	1.31	1.51	1.41
	5	1.31	1.43	1.37	0.13	0.12	0.13	0.76	0.73	0.75	1.41	1.54	1.48
	11	1.63	1.67	1.65	0.12	0.15	0.14	0.79	0.79	0.79	1.77	1.83	1.80
	12	1.27	-[b]	1.27	0.28	-	0.28	0.72	-	0.72	1.25	-	1.25

[a] S = Surface; B = Bottom; A = Average. S and B values represent mean of duplicate determinations.

[b] Single depth sample in discharge considered representative of water column due to turbulent mixing in immediate discharge.

Table 2.2A-4

GROSS PRIMARY PRODUCTIVITY (P)[a], EXTINCTION COEFFICIENT PER METER (k) AND SURFACE RADIATION (g-cal/cm^2/day)
ST. LUCIE PLANT
MARCH-DECEMBER 1976

Date	Station and parameter												Surface radiation
	0		1		2		3		4		5		
	P	k	P	k	P	k	P	k	P	k	P	k	
26 MAR	0.17	0.61	0.23	0.53	0.21	0.99	0.14	1.50	b	b	0.65	0.55	448.43
21 APR	0.32	0.53	0.28	0.65	0.41	0.44	0.26	0.46	0.31	0.57	0.33	0.43	611.40
12 MAY	0.25	0.28	0.28	0.22	0.22	0.18	0.20	0.22	0.23	0.23	0.24	0.22	511.16
8 JUN	1.39	0.29	0.50	0.65	0.39	0.31	0.20	0.39	0.62	0.31	0.50	0.27	532.67
14 JUL	0.58	0.28	0.28	0.25	1.00	0.21	0.93	0.16	1.27	0.12	0.69	0.24	612.44
11 AUG	0.55	0.20	0.53	0.39	c	c	0.38	0.14	0.47	0.16	0.42	0.22	588.52
14 SEP	0.49	0.43	0.30	1.33	0.52	0.37	0.46	0.36	0.83	0.20	1.28	0.16	317.42
15 OCT	b	b	b	b	0.75	0.53	b	b	0.57	0.70	c	c	377.87

[a] P = g organic carbon produced/m^2/day.
[b] 0.0 transmittance reading on bottom.
[c] Data not available.

Table 2.2A-4
cont'd

GROSS PRIMARY PRODUCTIVITY (P)[a], EXTINCTION COEFFICIENT PER METER (k) AND SURFACE RADIATION (g-cal/cm^2/day)
ST. LUCIE PLANT
NOVEMBER-DECEMBER 1976

Date	Station and parameter												Surface radiation
	0		1		2		3		4		5		
	P	k	P	k	P	k	P	k	P	k	P	k	
10 Nov	0.54	0.68	0.26	1.01	0.30	0.66	0.38	0.35	0.32	0.68	0.32	0.55	350.33
13 Dec[b]													150.89

[a] P = g organic carbon produced/m^2/day.
[b] Data not available due to equipment failure.

Table 2.2A-4
cont'd

GROSS PRIMARY PRODUCTIVITY (P)[a], EXTINCTION COEFFICIENT PER METER (k) AND SURFACE RADIATION (g-cal/cm^2/day)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Date	Station and parameter												Surface radiation
	0		1		2		3		4		5		
	P	k	P	k	P	k	P	k	P	k	P	k	
25 Jan	0.45	0.20	0.28	0.32	0.44	0.13	0.26	0.22	0.41	0.15	b	b	319.64
15 Feb	0.31	0.36	0.28	0.36	0.30	0.18	b	b	b	b	0.36	0.22	177.04
11 Mar	0.24	0.23	0.31	0.19	0.41	0.15	0.18	0.28	0.46	0.21	0.50	0.20	380.60
19 Apr	0.22	0.26	0.10	0.67	0.24	0.17	0.09	0.25	0.16	0.22	b	b	510.40
10 May	0.23	0.17	0.21	0.27	0.20	0.17	0.17	0.17	0.23	0.15	0.23	0.14	229.10
14 Jun	0.61	0.06	0.13	0.22	0.25	0.14	0.12	0.17	0.27	0.14	0.35	0.17	603.90
12 Jul	0.21	0.17	0.28	0.15	0.37	0.10	0.29	0.12	0.29	0.13	0.30	0.11	640.08
23 Aug	0.36	0.16	0.26	0.27	b	b	0.59	0.19	0.67	0.14	0.66	0.11	489.95
13 Sep	0.51	0.24	0.38	0.49	0.70	0.18	0.53	0.19	0.62	0.21	0.65	0.20	536.26
11 Oct	0.36	0.35	0.30	0.32	0.38	0.19	0.29	0.22	0.32	0.21	0.35	0.22	265.89
2 Nov	c	c	c	c	c	c	0.37	0.78	c	c	c	c	262.21
1 Dec	0.23	0.28	0.10	0.70	0.16	0.24	0.08	0.41	0.10	0.23	0.27	0.15	206.01

[a] P = g organic carbon produced/m^2/day.
[b] Data not available.
[c] 0.0 transmittance reading on bottom.

Table 2.2A-4
cont'd

GROSS PRIMARY PRODUCTIVITY (P)[a], EXTINCTION COEFFICIENT PER METER (k) AND SURFACE RADIATION (g-cal/cm^2/day)
ST. LUCIE PLANT
JANUARY-NOVEMBER 1978

	Station and parameter												
	0		1		2		3		4		5		
Date	P	k	P	k	P	k	P	k	P	k	P	k	Surface radiation
24 Jan	0.23	0.67	0.25	0.46	0.27	0.33	0.18	0.35	0.20	0.37	0.23	0.42	241
8 Feb	0.21	0.64	0.18	1.06	0.17	0.77	0.13	0.34	0.22	0.28	0.24	0.43	198
15 Mar	0.50	0.34	0.69	0.24	0.67	0.18	0.63	0.19	0.73	0.17	0.66	0.19	393
25 Apr	0.52	0.47	0.63	0.74	0.43	0.23	0.28	0.26	0.45	0.24	0.48	0.32	635
17 May	0.77	0.35	2.24	0.15	1.35	0.29	1.22	0.31	1.25	0.29	1.82	0.17	614
21 Jun	0.14	0.26	0.12	0.29	0.20	0.25	0.22	0.21	0.19	0.19	0.22	0.20	197
12 Jul	0.11	0.18	0.23	0.24	0.04	0.52	0.10	0.18	0.15	0.16	0.11	0.27	441
8 Aug	0.10	0.44	0.31	0.21	0.31	0.13	0.11	0.15	0.24	0.27	0.13	0.20	634
12 Sep	0.51	0.24	0.33	0.31	0.40	0.20	0.32	0.23	0.56	0.18	0.25	0.31	433
3 Oct	0.34	0.33	0.42	0.41	0.46	0.34	0.44	0.28	1.25	0.11	0.40	0.34	443
7 Nov	0.13	0.74	0.24	0.85	0.25	0.40	0.11	0.65	0.22	0.33	0.17	0.62	67

[a]P = g organic carbon produced/m^2/day.

Table 2.2A-5

STATISTICAL COMPARISON OF TOTAL PHYTOPLANKTON DENSITY
OFFSHORE SURFACE STATIONS
ST. LUCIE PLANT
MARCH 1976 - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS X YEARS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	17	16.11207446	0.94776909
ERROR	180	116.21214913	0.64562305
CORRECTED TOTAL	197	132.32422359	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	6.79321018	2.10	0.0662
YEAR	2	7.83694310	6.07	0.0028
STATION*YEAR	10	1.48192118	0.23	0.9931

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=180 MS=0.645623

GROUPING		MEAN	N	STATION
	A	14.128483	33	1
B	A	13.986747	33	0
B	A	13.799537	33	5
B	A	13.796239	33	2
B		13.688712	33	4
B		13.565044	33	3

DUNCAN'S MULTIPLE RANGE TEST: YEARS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=180 MS=0.645623

GROUPING	MEAN	N	YEAR
A	14.102640	60	76
B	13.809895	66	78
B	13.614246	72	77

Table 2.2A-5
cont'd

STATISTICAL COMPARISON OF TOTAL PHYTOPLANKTON DENSITY
OFFSHORE BOTTOM STATIONS
ST. LUCIE PLANT
MARCH 1976 - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS X YEARS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	17	24.73414737	1.45494985
ERROR	100	121.49462283	0.67497013
CORRECTED TOTAL	197	146.22877020	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	9.22177449	2.73	0.0209
YEAR	2	13.74741774	10.18	0.0001
STATION*YEAR	10	1.76495515	0.26	0.9884

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=180 MS=0.67497

GROUPING			MEAN	N	STATION
	A		14.418116	33	1
B	A		14.314711	33	0
B	A	C	14.051212	33	5
B	A	C	13.993397	33	2
B		C	13.909393	33	4
		C	13.810463	33	3

DUNCAN'S MULTIPLE RANGE TEST: YEARS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=180 MS=0.67497

GROUPING	MEAN	N	YEAR
A	14.433692	60	76
B	14.088230	66	78
C	13.785638	72	77

Table 2.2A-5
cont'd

ANALYSIS OF VARIANCE FOR PHYTOPLANKTON DENSITY
ST. LUCIE PLANT
MARCH-OCTOBER 1976

INTAKE-DISCHARGE STATIONS

Depth	Source	Degrees of freedom	Sum of squares	Mean square	F
Surface	Stations	1	$.8615321 \times 10^{11}$	$.8615321 \times 10^{11}$	0.091
	Months	7	$.3495500 \times 10^{14}$	$.4993571 \times 10^{13}$	5.267**
	Error	7	$.6636227 \times 10^{13}$	$.9480324 \times 10^{12}$	
	Total	15	$.4167738 \times 10^{14}$		
Bottom	Stations	1	$.1050566 \times 10^{13}$	$.1050566 \times 10^{13}$	0.449
	Months	7	$.5364225 \times 10^{14}$	$.7663179 \times 10^{13}$	3.279
	Error	7	$.1636155 \times 10^{14}$	$.2337365 \times 10^{13}$	
	Total	15	$.7105437 \times 10^{14}$		

OFFSHORE STATIONS

Depth	Source	Degrees of freedom	Sum of squares	Mean square	F
Surface	Stations	5	$.8162714 \times 10^{13}$	$.1632543 \times 10^{13}$	1.697
	Months	7	$.4964351 \times 10^{14}$	$.6806216 \times 10^{13}$	7.374**
	Error	35	$.3366269 \times 10^{14}$	$.9617910 \times 10^{12}$	
	Total	47	$.9146891 \times 10^{14}$		
Bottom	Stations	5	$.8534055 \times 10^{13}$	$.1706811 \times 10^{13}$	0.995
	Months	7	$.1487050 \times 10^{15}$	$.2124357 \times 10^{14}$	12.386**
	Error	35	$.6002755 \times 10^{14}$	$.1715073 \times 10^{13}$	
	Total	47	$.2172666 \times 10^{15}$		

** Significant at $\alpha = .01$.

Table 2.2A-5
cont'd

DIFFERENCES BETWEEN MONTHLY MEAN PHYTOPLANKTON DENSITY (TUKEY'S TEST)
OFFSHORE STATIONS
ST. LUCIE PLANT
MARCH-OCTOBER 1976

Surface stations

Month (Mean)	APR (1304354.5)	MAY (650657.1)	JUN (1411525.7)	JUL (1287848.1)	AUG (1140876.6)	SEP (1805394.6)	OCT (4133968.7)
MAR (2446645.5)	1,142,291.0	1,795,988.4	1,035,119.8	1,158,797.4	1,305,768.9	641,250.9	1,687,323.2
APR (1304354.5)		653,697.4	107,171.2	16,506.4	163,477.9	501,040.1	2,829,614.2**
MAY (650657.1)			760,868.6	637,191.0	490,219.5	1,154,737.5	3,483,311.6**
JUN (1411525.7)				123,677.6	270,649.1	393,868.9	2,722,443.0**
JUL (1287848.1)					146,971.5	517,546.5	2,846,120.6**
AUG (1140876.6)						664,518.0	2,993,092.1**
SEP (1805394.6)							2,328,574.1**

** Significant at $\alpha = .01$, HSD = 2.15×10^6.

Bottom stations

Month (Mean)	APR (2745138.9)	MAY (656154.2)	JUN (1979909.7)	JUL (1255918.9)	AUG (1262219.1)	SEP (2913331.4)	OCT (6609979.3)
MAR (3509908.9)	764,770.0	2,853,754.7*	1,529,999.2	2,253,990.0	2,247,689.8	596,577.5	2,560,070.4*
APR (2745138.9)		2,088,984.7	765,229.2	1,489,220.0	1,482,919.8	168,192.5	3,324,840.4**
MAY (656154.2)			1,323,755.5	599,764.7	606,064.9	2,257,177.2	5,413,825.1**
JUN (1979909.7)				723,990.8	717,690.6	933,421.7	4,090,069.6**
JUL (1255918.9)					6,300.2	1,657,412.5	4,814,060.4**
AUG (1262219.1)						1,651,112.3	4,807,760.2**
SEP (2913331.1)							3,156,648.2**

* Significant at $\alpha = .05$, HSD = 2.438×10^6.
** Significant at $\alpha = .01$, HSD = 2.925×10^6.

Table 2.2A-5
cont'd

ANALYSIS OF VARIANCE FOR PHYTOPLANKTON DENSITY
OFFSHORE STATIONS (0-5)
ST. LUCIE PLANT
JANUARY - DECEMBER 1977

SURFACE				
Source	Degrees of freedom	Sum of squares	Mean squares	F
Months	11	1210657×10^8	110059×10^8	4.43*
Stations	5	22931×10^8	4586×10^8	1.84
Error	55	136474×10^8	2481×10^8	
Total	71	1370062×10^8		

BOTTOM				
Source	Degrees of freedom	Sum of squares	Mean squares	F
Months	11	1662227×10^8	151111×10^8	36.55*
Stations	5	83671×10^8	16734×10^8	4.04*
Error	55	227374×10^8	4134×10^8	
Total	71	1973273×10^8		

*Significant at $\alpha = .05$.

Table 2.2A-5
cont'd

DIFFERENCES BETWEEN MONTHLY MEAN PHYTOPLANKTON DENSITY (TUKEY'S TEST)
OFFSHORE BOTTOM STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

MONTH (MEAN)	FEB (861004.0)	MAR (1518897.0)	APR (795190.8)	MAY (1020938.6)	JUN (627297.6)	JUL (652641.5)	AUG (637512.5)	SEP (1023876.6)	OCT (1553871.0)	NOV (6332754.0)	DEC (594685.3)
JAN (1309140.0)	448,136.0	209,757.0	513,949.2	288,201.4	681,842.4	656,498.5	671,627.0	285,274.6	244,731.0	5,023,614.0*	714,454.7
FEB (861004.0)		657,893.0	65,813.2	159,934.6	233,706.4	208,362.5	223,491.5	162,872.6	692,867.0	5,471,750.0*	266,318.7
MAR (1518897.0)			723,706.2	497,958.4	891,599.4	866,255.5	881,384.5	495,031.6	34,974.0	4,813,857.0*	924,211.7
APR (795190.8)				225,749.4	167,893.2	142,549.3	157,678.3	228,685.3	758,680.2	5,537,563.2*	200,505.5
MAY (1020938.6)					393,641.0	368,297.1	383,426.1	2,938.0	532,932.4	5,311,815.4*	426,253.3
JUN (627297.6)						25,343.9	10,214.9	396,579.0	926,573.4	5,705,456.4*	32,612.3
JUL (652641.5)							15,129.0	371,235.1	901,229.5	5,680,112.5*	57,956.2
AUG (637512.5)								356,364.1	916,358.5	5,695,241.5*	42,827.2
SEP (1023876.6)									529,994.4	5,308,877.4*	429,191.3
OCT (1553871.0)										4,778,883.0*	959,185.7
NOV (6332754.0)											5,738,068.7*

*Significant at α = .05, HSD = 1,267,817.0.

Table 2.2A-5
cont'd

DIFFERENCES BETWEEN STATION MEAN PHYTOPLANKTON DENSITY (TUKEY'S TEST)
OFFSHORE BOTTOM STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

STATION (MEAN)	1 (2003965.0)	2 (1170373.0)	3 (1021667.3)	4 (1273168.0)	5 (1271244.0)
0 (1723482.0)	280,483.0	553,109.0	701,814.7	450,314.0	452,238.0
1 (2003965.0)		833,592.0*	982,297.7*	730,797.0	732,721.0
2 (1170373.0)			148,705.7	102,795.0	100,871.0
3 (1021667.3)				251,500.7	249,576.7
4 (1273168.0)					1,924.0

*Significant at $\alpha = .05$, HSD = 775,838.0

Table 2.2A-5
cont'd

ANALYSIS OF VARIANCE FOR PHYTOPLANKTON DENSITY
OFFSHORE STATIONS (0-5)
ST. LUCIE PLANT
MARCH 1976 - DECEMBER 1977[a]

SURFACE

Source	Degrees of freedom	Sum of squares	Mean squares	F
Years (Y)	1	86601×10^8	86601×10^8	15.44*
Months (M)	9	1109651×10^8	123294×10^8	21.98*
Stations (S)	5	89825×10^8	17965×10^8	3.20*
Y x M	9	649606×10^8	72178×10^8	12.87*
Y x S	5	30775×10^8	6155×10^8	1.10
M x S	45	286282×10^8	6361×10^8	1.13
Error	45	252335×10^8	5607×10^8	
Total	119	2505077×10^8		

BOTTOM

Source	Degrees of freedom	Sum of squares	Mean squares	F
Years (Y)	1	351786×10^8	351786×10^8	41.21*
Months (M)	9	2210211×10^8	245579×10^8	28.77*
Stations (S)	5	222205×10^8	44441×10^8	5.21*
Y x M	9	1088551×10^8	120950×10^8	14.17*
Y x S	5	15981×10^8	3196×10^8	37.45*
M x S	45	636495×10^8	14144×10^8	1.65
Error	45	384072×10^8	8534×10^8	
Total	119	4909300×10^8		

*Significant at $\alpha = .05$.

[a]January and February 1977 not included in analysis.

Table 2.2A-5
cont'd

DIFFERENCES BETWEEN STATION MEAN PHYTOPLANKTON DENSITY (TUKEY'S TEST)
OFFSHORE STATIONS (0-5)
ST. LUCIE PLANT
MARCH 1976 - DECEMBER 1977[a]

STATION (MEAN)	SURFACE STATIONS 1 (2001935.0)	2 (1466372.0)	3 (1173001.0)	4 (1234948.0)	5 (1367132.0)
0 (1580100.0)	421,835.0	113,728.0	407,099.0	345,152.0	212,968.0
1 (2001935.0)		535,563.0	828,934.0*	766,987.0*	634,803.0
2 (1466372.0)			293,371.0	231,424.0	99,240.0
3 (1173001.0)				61,947.0	194,131.0
4 (1234948.0)					132,184.0

*Significant at $\alpha = .05$, HSD = 705,435.4.
[a]January and February 1977 not included in analysis.

Table 2.2A-5
cont'd

DIFFERENCES BETWEEN STATION MEAN PHYTOPLANKTON DENSITY (TUKEY'S TEST)
OFFSHORE STATIONS (0-5)
ST. LUCIE PLANT
MARCH 1976 - DECEMBER 1977

STATION (MEAN)	BOTTOM STATIONS 1 (2684762.0)	2 (1701149.0)	3 (1530588.0)	4 (1660808.0)	5 (2061866.0)
0 (2464076.0)	220,686.0	762,927.0	933,488.0*	803,268.0	402,210.0
1 (2684762.0)		983,613.0*	1,154,174.0*	1,023,954.0*	622,896.0
2 (1701149.0)			170,561.0	40,341.0	360,717.0
3 (1530588.0)				130,220.0	531,278.0
4 (1660808.0)					401,058.0

*Significant at $\alpha = .05$, HSD = 870,313.4.

Table 2.2A-5
cont'd

STATISTICAL COMPARISON OF TOTAL PHYTOPLANKTON DENSITY
OFFSHORE SURFACE STATIONS
ST. LUCIE PLANT
JANUARY - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	5	8.73812128	1.74762426
ERROR	190	140.40447480	0.73897092
CORRECTED TOTAL	195	149.14259608	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	8.73812128	2.36	0.0410

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=190 MS=0.738971

GROUPING		MEAN	N	STATION
	A	14.086762	33	0
	A	14.076491	32	1
B	A	13.737836	33	5
B	A	13.705278	32	2
B		13.583549	33	3
B		13.578078	33	4

Table 2.2-5
cont'd

STATISTICAL COMPARISON OF TOTAL PHYTOPLANKTON DENSITY
OFFSHORE BOTTOM STATIONS
ST. LUCIE PLANT
JANUARY - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	5	9.33311519	1.86662304
ERROR	192	136.39314437	0.71038096
CORRECTED TOTAL	197	145.72625957	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	9.33311519	2.63	0.0251

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=192 MS=0.710381

GROUPING		MEAN	N	STATION
	A	14.403375	33	1
B	A	14.311612	33	0
B	A	14.124135	33	2
B		13.903265	33	5
B		13.872071	33	3
B		13.860471	33	4

Table 2.2A-6

STATISTICAL COMPARISON OF CHLOROPHYLL-*a*
OFFSHORE SURFACE STATIONS
ST. LUCIE PLANT
MARCH 1976 - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS X YEARS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	17	67.87050125	3.99238243
ERROR	174	480.41754667	2.76102038
CORRECTED TOTAL	191	548.28804792	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	23.77200417	1.72	0.1308
YEAR	2	39.58352347	7.17	0.0010
STATION*YEAR	10	4.51497361	0.16	0.9983

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=174 MS=2.76102

GROUPING		MEAN	N	STATION
	A	2.464375	32	1
B	A	2.001875	32	0
B	A	1.825312	32	2
B	A	1.734062	32	5
B	A	1.602500	32	4
B		1.330000	32	3

DUNCAN'S MULTIPLE RANGE TEST: YEARS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=174 MS=2.76102

GROUPING		MEAN	N	YEAR
	A	2.403500	60	76
B	A	1.873167	60	78
B		1.306389	72	77

Table 2.2A-6
cont'd

STATISTICAL COMPARISON OF CHLOROPHYLL-*a*
OFFSHORE BOTTOM STATIONS
ST. LUCIE PLANT
MARCH 1976 - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS X YEARS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	17	90.30180125	5.31187066
ERROR	174	710.33838000	4.08240448
CORRECTED TOTAL	191	800.64018125	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	36.32585625	1.78	0.1183
YEAR	2	40.41024681	4.95	0.0081
STATION*YEAR	10	13.56569819	0.33	0.9714

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=174 MS=4.0824

GROUPING		MEAN	N	STATION
	A	2.783437	32	1
B	A	2.605625	32	0
B	A	2.035312	32	5
B	A	1.861250	32	2
B	A	1.840312	32	4
B		1.565937	32	3

DUNCAN'S MULTIPLE RANGE TEST: YEARS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=174 MS=4.0824

GROUPING		MEAN	N	YEAR
	A	2.548500	60	76
	A	2.385833	60	78
	B	1.528889	72	77

Table 2.2A-6
cont'd

DIFFERENCES BETWEEN MONTHLY MEAN CHLOROPHYLL-*a* (TUKEY'S TEST)
OFFSHORE STATIONS
ST. LUCIE PLANT
MARCH-DECEMBER 1976

Surface stations

Month (Mean)	APR (1.35)	MAY (0.67)	JUN (2.38)	JUL (1.62)	AUG (1.15)	SEP (3.62)	OCT (7.05)	NOV (2.83)	DEC (0.88)
MAR (2.49)	1.14	1.82	0.11	0.87	1.34	1.13	4.56**	0.34	1.61
APR (1.35)		0.68	1.03	0.27	0.20	2.27**	5.70**	1.48	0.47
MAY (0.67)			1.71	0.95	0.48	2.95**	6.38**	2.16**	0.21
JUN (2.38)				0.76	1.23	1.24	4.67**	0.45	1.50
JUL (1.62)					0.47	2.00*	5.43**	1.21	0.74
AUG (1.15)						2.47**	5.90**	1.68	0.27
SEP (3.62)							3.43**	0.79	2.74**
OCT (7.05)								4.22**	6.17**
NOV (2.83)									1.95*

* Significant at α = .05, HSD = 1.83.
** Significant at α = .01, HSD = 2.15.

Bottom stations

Month (Mean)	APR (2.17)	MAY (0.57)	JUN (2.37)	JUL (1.68)	AUG (1.19)	SEP (3.48)	OCT (6.35)	NOV (3.84)	DEC (1.05)
MAR (2.80)	0.63	2.23	0.43	1.12	1.61	0.68	3.55**	1.04	1.75
APR (2.17)		1.60	0.20	0.49	0.98	1.31	4.18**	1.67	1.12
MAY (0.57)			1.80	1.11	0.62	2.91**	5.78**	3.27**	0.48
JUN (2.37)				0.69	1.18	1.11	3.98**	1.47	1.32
JUL (1.68)					0.49	1.80	4.67**	2.16	0.63
AUG (1.19)						2.29	5.16**	2.65*	0.14
SEP (3.48)							2.87**	0.36	2.43*
OCT (6.35)								2.51*	5.30**
NOV (3.84)									2.79**

* Significant at α = .05, HSD = 2.34.
** Significant at α = .01, HSD = 2.76.

Table 2.2A-6
cont'd

DIFFERENCES BETWEEN MEAN SURFACE STATION CHLOROPHYLL-α (TUKEY'S TEST)
OFFSHORE STATIONS
ST. LUCIE PLANT
1976

Station (Mean)	1 (3.26)	2 (2.40)	3 (1.58)	4 (2.34)	5 (2.16)
0 (2.68)	0.58	0.28	1.10	0.34	0.52
1 (3.26)		0.86	1.68**	0.92	1.10
2 (2.40)			0.82	0.06	0.24
3 (1.58)				0.76	0.58
4 (2.34)					0.18

**Significant at α = .01, HSD = 1.52.

Table 2.2A-6
cont'd

DIFFERENCES BETWEEN MONTHLY MEAN CHLOROPHYLL-a (TUKEY'S TEST)
OFFSHORE SURFACE STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Month (Mean)	Feb (1.45)	Mar (0.86)	Apr (0.52)	May (0.69)	Jun (0.47)	Jul (0.29)	Aug (0.88)	Sep (1.68)	Oct (1.30)	Nov (5.54)	Dec (0.89
Jan (1.11)	0.34	0.25	0.59	0.42	0.64	0.82*	0.23	0.57	0.19	4.43*	0.22
Feb (1.45)		0.59	0.93*	0.76	0.98*	1.16*	0.57	0.23	0.15	4.09*	0.56
Mar (0.86)			0.34	0.17	0.39	0.57	0.02	0.82*	0.44	4.68*	0.03
Apr (0.52)				0.17	0.05	0.23	0.36	1.16*	0.78	5.02*	0.37
May (0.69)					0.22	0.40	0.19	0.99*	0.61	4.85*	0.20
Jun (0.47)						0.18	0.41	1.21*	0.83*	5.07*	0.42
Jul (0.29)							0.59	1.39*	1.01*	5.25*	0.60
Aug (0.88)								0.80*	0.42	4.66*	0.01
Sep (1.68)									0.38	3.86*	0.79*
Oct (1.30)										4.24*	0.41
Nov (5.54)											4.65*

* Significant at α = .05, HSD = 0.79.

Table 2.2A-6
cont'd

DIFFERENCES BETWEEN MONTHLY MEAN CHLOROPHYLL-*a* (TUKEY'S TEST)
OFFSHORE BOTTOM STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Month (Mean)	Feb (1.61)	Mar (1.06)	Apr (0.50)	May (0.73)	Jun (0.33)	Jul (0.48)	Aug (1.07)	Sep (1.40)	Oct (1.55)	Nov (7.56)	Dec (1.01)
Jan (0.95)	0.66	0.11	0.45	0.22	0.62	0.47	0.12	0.45	0.60	6.71*	0.06
Feb (1.61)		0.55	1.11	0.88	1.28	1.13	0.54	0.21	0.06	6.05*	0.60
Mar (1.06)			0.56	0.33	0.73	0.58	0.01	0.34	0.49	6.60*	0.05
Apr (0.50)				0.23	0.17	0.02	0.57	0.90	1.05	7.16*	0.51
May (0.73)					0.40	0.25	0.34	0.67	0.82	6.93*	0.28
Jun (0.33)						0.15	0.74	1.07	1.22	7.33*	0.68
Jul (0.48)							0.59	0.92	1.07	7.18*	0.53
Aug (1.07)								0.33	0.48	6.59*	0.06
Sep (1.40)									0.15	6.26*	0.39
Oct (1.55)										6.11*	0.54
Nov (7.66)											6.65*

* Significant at α = .05, HSD = 1.36.

Table 2.2A-6
cont'd

DIFFERENCES BETWEEN STATION MEAN CHLOROPHYLL-a (TUKEY'S TEST)
OFFSHORE STATIONS (0-5)
ST. LUCIE PLANT
JANUARY - DECEMBER 1977

SURFACE					
Station (Mean)	1 (1.70)	2 (1.31)	3 (1.10)	4 (1.09)	5 (1.27)
0 (1.38)	0.32	0.07	0.28	0.29	0.11
1 (1.70)		0.39	0.60*	0.61*	0.43
2 (1.31)			0.21	0.22	0.04
3 (1.10)				0.01	0.17
4 (1.09)					0.18

*Significant at α = .05; HSD = 0.48.

BOTTOM					
Station (Mean)	1 (1.80)	2 (1.35)	3 (1.06)	4 (1.43)	5 (1.40)
0 (2.13)	0.33	0.78	1.07*	0.70	0.73
1 (1.80)		0.45	0.74	0.37	0.40
2 (1.35)			0.29	0.08	0.05
3 (1.06)				0.37	0.34
4 (1.43)					0.03

*Significant at α = .05; HSD = 0.83.

Table 2.2A-6
cont'd

ANALYSIS OF VARIANCE FOR CHLOROPHYLL-a
AT OFFSHORE STATIONS
ST. LUCIE PLANT
MARCH 1976-DECEMBER 1977

January-December 1977					
Depth	Source	Degrees of freedom	Sum of squares	Mean squares	F
Surface	Months	11	128.4400	11.67636	72.78*
	Stations	5	2.9928	0.59856	3.73*
	Error	55	8.8227	0.16041	
	Total	71	140.2555		
Bottom	Months	11	257.4672	23.40610	49.25*
	Stations	5	8.5768	1.71536	3.61*
	Error	55	26.1387	0.47525	
	Total	71	292.1827		

March 1976-December 1977[a]					
Depth	Source	Degrees of freedom	Sum of squares	Mean squares	F
Surface	Years (Y)	1	35.7188	35.71880	71.07*
	Months (M)	9	195.9557	21.77286	43.32*
	Stations (S)	5	13.4511	2.69022	5.35*
	Y x M	9	123.1643	13.68492	27.23*
	Y x S	5	4.0380	0.80760	1.60
	M x S	45	25.8410	0.57424	1.14
	Error	45	22.6169	0.50260	
	Total	119	420.7858		
Bottom	Years (Y)	1	28.2169	28.21686	49.44*
	Months (M)	9	279.5283	31.05870	54.42*
	Stations (S)	5	19.6516	3.93031	6.89*
	Y x M	9	131.9219	14.65798	25.68*
	Y x S	5	2.0989	0.41978	0.74
	M x S	45	65.3171	1.45149	2.54*
	Error	45	25.6812	0.57069	
	Total	119	552.4159		

* Significant at $\alpha = .05$.
[a] January and February 1977 not included in analysis.

Table 2.2A-6
cont'd

DIFFERENCES BETWEEN STATION MEAN CHLOROPHYLL-*a* (TUKEY'S TEST)
OFFSHORE STATIONS (0-5)
ST. LUCIE PLANT
MARCH 1976 - DECEMBER 1977[a]

SURFACE					
Station (Mean)	1 (2.45)	2 (1.88)	3 (1.35)	4 (1.73)	5 (1.71)
0 (2.02)	0.43	0.14	0.67*	0.29	0.31
1 (2.45)		0.57	1.10*	0.72*	0.74*
2 (1.88)			0.53	0.15	0.17
3 (1.35)				0.38	0.36
4 (1.73)					0.02

*Significant at α = .05; HSD = 0.67.

BOTTOM					
Station (Mean)	1 (2.41)	2 (1.77)	3 (1.54)	4 (1.84)	5 (2.10)
0 (2.73)	0.32	0.96*	1.19*	0.89*	0.63
1 (2.41)		0.64	0.87*	0.57	0.31
2 (1.77)			0.23	0.07	0.33
3 (1.54)				0.30	0.56
4 (1.84)					0.26

*Significant at α = .05; HSD = 0.71.

[a]January and February 1977 not included in analysis.

Table 2.2A-6
cont'd

DIFFERENCES BETWEEN MONTHLY MEAN CHLOROPHYLL-*a* (TUKEY'S TEST)
CANAL STATIONS (11,12)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Month (Mean)	Feb (3.08)	Mar (0.70)	Apr (0.96)	May (0.68)	Jun (0.53)	Jul (0.53)	Aug (1.35)	Sep (1.23)	Oct (1.35)	Nov (5.58)	Dec (2.55)
Jan (2.84)	0.24	2.14	1.88	2.16	2.31	2.31	1.49	1.61	1.49	2.74	0.29
Feb (3.04)		2.34	2.08	2.36	2.51	2.51	1.69	1.81	1.69	2.54	0.49
Mar (0.70)			0.26	0.02	0.17	0.17	0.65	0.53	0.65	4.88*	1.85
Apr (0.96)				0.28	0.43	0.43	0.39	0.27	0.39	4.62*	1.59
May (0.68)					0.15	0.15	0.67	0.55	0.67	4.90*	1.87
Jun (0.53)						0.00	0.82	0.70	0.82	5.05*	2.02
Jul (0.53)							0.82	0.70	0.82	5.05*	2.02
Aug (1.35)								0.12	0.00	4.23*	1.20
Sep (1.23)									0.12	4.35*	1.32
Oct (1.35)										4.23*	1.20
Nov (5.58)											3.03

*Significant at α = .05, HSD = 3.78.

Table 2.2A-6
cont'd

STATISTICAL COMPARISON OF CHLOROPHYLL-a
OFFSHORE SURFACE STATIONS
ST. LUCIE PLANT
JANUARY - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	5	9.67612833	1.93522567
ERROR	54	111.65437000	2.06767352
CORRECTED TOTAL	59	121.33049833	

SOURCE	DF	TYPE 1 SS	F VALUE	PR > F
STATION	5	9.67612833	0.94	0.4663

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=54 MS=2.06767

GROUPING	MEAN	N	STATION
A	2.588000	10	1
A	2.066000	10	0
A	1.874000	10	5
A	1.872000	10	2
A	1.482000	10	4
A	1.357000	10	3

Table 2.2A-6
cont'd

STATISTICAL COMPARISON OF CHLOROPHYLL-a
OFFSHORE BOTTOM STATIONS
ST. LUCIE PLANT
JANUARY - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	5	25.88618833	5.17723767
ERROR	54	204.18667000	3.78123463
CORRECTED TOTAL	59	230.07285833	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	25.88618833	1.37	0.2497

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=54 MS=3.78123

GROUPING		MEAN	N	STATION
	A	3.785000	10	1
B	A	2.433000	10	0
B	A	2.226000	10	2
B	A	2.078000	10	5
B	A	2.018000	10	4
B		1.775000	10	3

Table 2.2A-7

DIFFERENCES IN STATION MEAN CAROTENOID (TUKEY'S TEST)
OFFSHORE STATIONS (0-5)
ST. LUCIE PLANT
MARCH 1976 - DECEMBER 1977[a]

SURFACE					
Station (Mean)	1 (2.66)	2 (1.91)	3 (1.50)	4 (1.73)	5 (1.77)
0 (2.05)	0.61	0.14	0.55	0.32	0.28
1 (2.66)		0.75	1.16*	0.93*	0.89*
2 (1.91)			0.41	0.18	0.14
3 (1.50)				0.23	0.27
4 (1.73)					0.04

*Significant at α = .05; HSD = 0.65.

BOTTOM					
Station (Mean)	1 (2.56)	2 (1.98)	3 (1.81)	4 (1.99)	5 (2.51)
0 (3.45)	0.89	1.47*	1.64*	1.46*	0.94
1 (2.56)		0.58	0.75	0.57	0.05
2 (1.98)			0.17	0.01	0.53
3 (1.81)				0.18	0.70
4 (1.99)					0.52

*Significant at α = .05; HSD = 1.07.

[a]January and February 1977 not included in analysis.

Table 2.2A-7
cont'd

DIFFERENCES IN MONTHLY MEAN CAROTENOID (TUKEY'S TEST)
OFFSHORE BOTTOM STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Month (Mean)	Feb (1.88)	Mar (1.02)	Apr (0.50)	May (0.68)	Jun (0.43)	Jul (0.43)	Aug (1.20)	Sep (1.37)	Oct (1.82)	Nov (7.58)	Dec (0.97)
Jan (0.99)	0.89	0.03	0.49	0.31	0.56	0.56	0.21	0.38	0.83	6.59*	0.02
Feb (1.88)		0.86	1.38	1.20	1.45	1.45	0.68	0.51	0.06	5.70*	0.91
Mar (1.02)			0.52	0.34	0.59	0.59	0.18	0.35	0.80	6.56*	0.05
Apr (0.50)				0.18	0.07	0.07	0.70	0.87	1.32	7.08*	0.47
May (0.68)					0.25	0.25	0.52	0.69	1.14	6.90*	0.29
Jun (0.43)						0.00	0.77	0.94	1.39	7.15	0.54
Jul (0.43)							0.77	0.94	1.39	7.15*	0.54
Aug (1.20)								0.17	0.62	6.38*	0.23
Sep (1.37)									0.45	6.21*	0.40
Oct (1.82)										5.76*	0.85
Nov (7.58)											6.61*

* Significant at α = .05, HSD = 1.50.

Table 2.2A-7
cont'd

DIFFERENCES IN MONTHLY MEAN CAROTENOID (TUKEY'S TEST)
OFFSHORE SURFACE STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Month (Mean)	Feb (1.59)	Mar (0.83)	Apr (0.54)	May (0.70)	Jun (0.59)	Jul (0.31)	Aug (0.97)	Sep (1.55)	Oct (1.49)	Nov (5.15)	Dec (0.89)
Jan (1.22)	0.37	0.39	0.68	0.52	0.63	0.91*	0.25	0.33	0.27	3.93*	0.33
Feb (1.59)		0.76	1.05*	0.89*	1.00*	1.28*	0.62	0.04	0.10	3.56*	0.70
Mar (0.83)			0.29	0.13	0.24	0.52	0.14	0.72	0.66	4.32*	0.06
Apr (0.54)				0.16	0.05	0.23	0.43	1.01*	0.95*	4.61*	0.35
May (0.70)					0.11	0.39	0.27	0.85*	0.79*	4.45*	0.19
Jun (0.59)						0.28	0.38	0.96*	0.90*	4.56*	0.30
Jul (0.31)							0.66	1.24*	1.18*	4.84*	0.58
Aug (0.97)								0.58	0.52	4.18*	0.08
Sep (1.55)									0.06	3.60*	0.66
Oct (1.49)										3.66*	0.60
Nov (5.15)											4.26*

* Significant at α = .05, HSD = 0.78.

Table 2.2A-7
cont'd

DIFFERENCES IN MONTHLY MEAN CAROTENOID (TUKEY'S TEST)
OFFSHORE BOTTOM STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Month (Mean)	Feb (1.88)	Mar (1.02)	Apr (0.50)	May (0.68)	Jun (0.43)	Jul (0.43)	Aug (1.20)	Sep (1.37)	Oct (1.82)	Nov (7.58)	Dec (0.97)
Jan (0.99)	0.89	0.03	0.49	0.31	0.56	0.56	0.21	0.38	0.83	6.59*	0.02
Feb (1.88)		0.86	1.38	1.20	1.45	1.45	0.68	0.51	0.06	5.70*	0.91
Mar (1.02)			0.52	0.34	0.59	0.59	0.18	0.35	0.80	6.56*	0.05
Apr (0.50)				0.18	0.07	0.07	0.70	0.87	1.32	7.08*	0.47
May (0.68)					0.25	0.25	0.52	0.69	1.14	6.90*	0.29
Jun (0.43)						0.00	0.77	0.94	1.39	7.15	0.54
Jul (0.43)							0.77	0.94	1.39	7.15*	0.54
Aug (1.20)								0.17	0.62	6.38*	0.23
Sep (1.37)									0.45	6.21*	0.40
Oct (1.82)										5.76*	0.85
Nov (7.58)											6.61*

* Significant at α = .05, HSD = 1.50.

Table 2.2A-7
cont'd

DIFFERENCES IN STATION MEAN CAROTENOID (TUKEY'S TEST)
OFFSHORE STATIONS (0-5)
ST. LUCIE PLANT
JANUARY - DECEMBER 1977

SURFACE					
Station (Mean)	1 (1.73)	2 (1.31)	3 (1.15)	4 (1.05)	5 (1.27)
0 (1.40)	0.33	0.09	0.25	0.35	0.13
1 (1.73)		0.42	0.58*	0.68*	0.46
2 (1.31)			0.16	0.26	0.04
3 (1.15)				0.10	0.12
4 (1.05)					0.22

*Significant at $\alpha = .05$; HSD = 0.48.

BOTTOM					
Station (Mean)	1 (1.81)	2 (1.44)	3 (1.06)	4 (1.46)	5 (1.38)
0 (2.34)	0.53	0.90	1.28*	0.88	0.96*
1 (1.81)		0.37	0.75	0.35	0.43
2 (1.44)			0.38	0.02	0.06
3 (1.06)				0.40	0.32
4 (1.46)					0.05

*Significant at $\alpha = .05$; HSD = 0.92.

Table 2.2A-8
cont'd

DIFFERENCES IN STATION MEAN CAROTENOID (TUKEY'S TEST)
OFFSHORE STATIONS (0-5)
ST. LUCIE PLANT
MARCH 1976 - DECEMBER 1977[a]

SURFACE					
Station (Mean)	1 (2.66)	2 (1.91)	3 (1.50)	4 (1.73)	5 (1.77)
0 (2.05)	0.61	0.14	0.55	0.32	0.28
1 (2.66)		0.75	1.16*	0.93*	0.89*
2 (1.91)			0.41	0.18	0.14
3 (1.50)				0.23	0.27
4 (1.73)					0.04

*Significant at α = .05; HSD = 0.65.

BOTTOM					
Station (Mean)	1 (2.56)	2 (1.98)	3 (1.81)	4 (1.99)	5 (2.51)
0 (3.45)	0.89	1.47*	1.64*	1.46*	0.94
1 (2.56)		0.58	0.75	0.57	0.05
2 (1.98)			0.17	0.01	0.53
3 (1.81)				0.18	0.70
4 (1.99)					0.52

*Significant at α = .05; HSD = 1.07.

[a]January and February 1977 not included in analysis.

Table 2.2A-8

DIFFERENCES IN STATION MEAN CHLOROPHYLL-*b*
(TUKEY'S TEST)
OFFSHORE BOTTOM STATIONS (0-5)
ST. LUCIE PLANT
MARCH 1976-DECEMBER 1977[a]

Station (Mean)	1 (0.12)	2 (0.12)	3 (0.12)	4 (0.11)	5 (0.12)
0 (0.21)	0.09	0.09	0.09	0.10*	0.09
1 (0.12)		0.00	0.00	0.01	0.00
2 (0.12)			0.00	0.01	0.00
3 (0.12)				0.01	0.00
4 (0.11)					0.01

* Significant at α = .05, HSD = 0.10.
[a] January and February 1977 not included in analysis.

Table 2.2A-8
cont'd

DIFFERENCES IN MONTHLY MEAN CHLOROPHYLL-*b* (TUKEY'S TEST)
OFFSHORE SURFACE STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Month (Mean)	Feb (0.11)	Mar (0.06)	Apr (0.01)	May (0.06)	Jun (0.04)	Jul (0.03)	Aug (0.16)	Sep (0.08)	Oct (0.13)	Nov (0.17)	Dec (0.11)
Jan (0.11)	0.00	0.05	0.10*	0.05	0.07*	0.08*	0.05	0.03	0.02	0.06	0.00
Feb (0.11)		0.05	0.10*	0.05	0.07*	0.08*	0.05	0.03	0.02	0.06	0.00
Mar (0.06)			0.05	0.00	0.02	0.03	0.10*	0.02	0.07*	0.11*	0.05
Apr (0.01)				0.05	0.03	0.02	0.15*	0.07*	0.12*	0.16*	0.10*
May (0.06)					0.02	0.03	0.10*	0.02	0.07*	0.11*	0.05
Jun (0.04)						0.01	0.12*	0.04	0.09*	0.13*	0.07*
Jul (0.03)							0.13*	0.05	0.10*	0.14*	0.08*
Aug (0.16)								0.08*	0.03	0.01	0.05
Sep (0.08)									0.05	0.09*	0.03
Oct (0.13)										0.04	0.02
Nov (0.17)											0.06

* Significant at α = .05, HSD = 0.07.

Table 2.2A-8
cont'd

DIFFERENCES IN MONTHLY MEAN CHLOROPHYLL-*b* (TUKEY'S TEST)
OFFSHORE BOTTOM STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Month (Mean)	Feb (0.17)	Mar (0.04)	Apr (0.01)	May (0.06)	Jun (0.05)	Jul (0.06)	Aug (0.20)	Sep (0.10)	Oct (0.13)	Nov (0.23)	Dec (0.11)
Jan (0.14)	0.03	0.10*	0.13*	0.08*	0.09*	0.08*	0.06	0.04	0.01	0.09*	0.03
Feb (0.17)		0.13*	0.16*	0.11*	0.12*	0.11*	0.03	0.07	0.04	0.06	0.06
Mar (0.04)			0.03	0.02	0.01	0.02	0.16*	0.06	0.09*	0.19*	0.07
Apr (0.01)				0.05	0.04	0.05	0.19*	0.09*	0.12*	0.22*	0.10*
May (0.06)					0.01	0.00	0.14*	0.04	0.07	0.17*	0.05
Jun (0.05)						0.01	0.15*	0.05	0.08*	0.18*	0.06
Jul (0.06)							0.14*	0.04	0.07	0.17*	0.05
Aug (0.20)								0.10*	0.07	0.03	0.09*
Sep (0.10)									0.03	0.13*	0.01
Oct (0.13)										0.10*	0.02
Nov (0.23)											0.12*

* Significant at α = .05, HSD = 0.08.

Table 2.2A-9

DIFFERENCES IN STATION MEAN CHLOROPHYLL-*c* (TUKEY'S TEST)
OFFSHORE STATIONS (o-5)
ST. LUCIE PLANT
JANUARY - DECEMBER 1977

SURFACE					
Station (Mean)	1 (0.88)	2 (0.66)	3 (0.59)	4 (0.58)	5 (0.67)
0 (0.70)	0.18	0.04	0.11	0.12	0.03
1 (0.88)		0.22	0.29*	0.30*	0.21
2 (0.66)			0.07	0.08	0.01
3 (0.59)				0.01	0.08
4 (0.58)					0.09

*Significant at $\alpha = .05$; HSD = 0.24.

BOTTOM					
Station (Mean)	1 (0.85)	2 (0.76)	3 (0.56)	4 (0.82)	5 (0.72)
0 (1.10)	0.25	0.34	0.54*	0.28	0.38
1 (0.85)		0.09	0.29	0.03	0.13
2 (0.76)			0.20	0.06	0.04
3 (0.56)				0.26	0.16
4 (0.82)					0.10

*Significant at $\alpha = .05$; HSD = 0.42.

Table 2.2A-9
cont'd

DIFFERENCES IN STATION MEAN CHLOROPHYLL-*c* (TUKEY'S TEST)
OFFSHORE STATIONS (0-5)
ST. LUCIE PLANT
MARCH 1976 - DECEMBER 1977[a]

SURFACE					
Station (Mean)	1 (1.21)	2 (0.96)	3 (0.75)	4 (0.89)	5 (0.82)
0 (1.00)	0.21	0.04	0.25	0.11	0.18
1 (1.21)		0.25	0.46*	0.32*	0.39*
2 (0.96)			0.21	0.07	0.14
3 (0.75)				0.14	0.07
4 (0.89)					0.07

*Significant at α = .05; HSD = 0.30

BOTTOM					
Station (Mean)	1 (1.18)	2 (0.96)	3 (0.86)	4 (0.98)	5 (1.13)
0 (1.54)	0.36	0.58*	0.68*	0.56*	0.41
1 (1.18)		0.22	0.32	0.20	0.05
2 (0.96)			0.10	0.02	0.17
3 (0.86)				0.12	0.27
4 (0.98)					0.15

*Significant at α = .05; HSD = 0.42

[a]January and February not included in analysis.

Table 2.2A-9
cont'd

DIFFERENCES IN MONTHLY MEAN CHLOROPHYLL-*c* (TUKEY'S TEST)
OFFSHORE BOTTOM STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Month (Mean)	Feb (0.99)	Mar (0.60)	Apr (0.19)	May (0.27)	Jun (0.19)	Jul (0.23)	Aug (0.75)	Sep (0.77)	Oct (0.83)	Nov (3.60)	Dec (0.56)
Jan (0.63)	0.36	0.03	0.44	0.36	0.44	0.40	0.12	0.14	0.20	2.97*	0.07
Feb (0.99)		0.39	0.80*	0.72*	0.80*	0.76*	0.24	0.22	0.16	2.61*	0.43
Mar (0.60)			0.41	0.33	0.41	0.37	0.15	0.17	0.23	3.00*	0.04
Apr (0.19)				0.08	0.00	0.04	0.56	0.58	0.64*	3.41*	0.37
May (0.27)					0.08	0.04	0.48	0.50	0.56	3.33*	0.29
Jun (0.19)						0.04	0.56	0.58	0.64*	3.41*	0.37
Jul (0.23)							0.52	0.54	0.60*	3.37*	0.33
Aug (0.75)								0.02	0.08	2.85*	0.19
Sep (0.77)									0.06	2.83*	0.21
Oct (0.83)										2.77*	0.27
Nov (3.60)											3.04*

* Significant at α = .05, HSD = 0.59.

Table 2.2A-9
cont'd

DIFFERENCES IN MONTHLY MEAN CHLOROPHYLL-*c* (TUKEY'S TEST)
OFFSHORE SURFACE STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Month (Mean)	Feb (0.81)	Mar (0.50)	Apr (0.22)	May (0.29)	Jun (0.30)	Jul (0.14)	Aug (0.52)	Sep (0.88)	Oct (0.73)	Nov (2.62)	Dec (0.52)
Jan (0.63)	0.18	0.13	0.41*	0.34	0.33	0.49*	0.11	0.25	0.10	1.99*	0.11
Feb (0.81)		0.31	0.59*	0.52*	0.51*	0.67*	0.29	0.07	0.08	1.81*	0.29
Mar (0.50)			0.28	0.21	0.20	0.36	0.02	0.38	0.23	2.12*	0.02
Apr (0.22)				0.07	0.08	0.08	0.30	0.66*	0.51*	2.40*	0.30
May (0.29)					0.01	0.15	0.23	0.59*	0.44*	2.33*	0.23
Jun (0.30)						0.16	0.22	0.58*	0.43*	2.32*	0.22
Jul (0.14)							0.38	0.74*	0.59*	2.48*	0.38
Aug (0.52)								0.36	0.21	2.10*	0.00
Sep (0.88)									0.15	1.74*	0.36
Oct (0.73)										1.89*	0.21
Nov (2.62)											2.10*

* Significant at α = .05, HSD = 0.39.

Table 2.2A-10

STATISTICAL COMPARISON OF PHAEOPIGMENT
OFFSHORE SURFACE STATIONS
ST. LUCIE PLANT
MARCH 1976 - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS X YEARS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	17	0.50151500	0.02950088
ERROR	174	2.27581000	0.01307937
CORRECTED TOTAL	191	2.77732500	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	0.27553125	4.21	0.0013
YEAR	2	0.05949722	2.27	0.1059
STATION*YEAR	10	0.16648653	1.27	0.2491

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=174 MS=.0130794

GROUPING	MEAN	N	STATION
A	0.139687	32	1
B	0.056250	32	3
B	0.041875	32	0
B	0.036562	32	4
B	0.036250	32	2
B	0.030625	32	5

DUNCAN'S MULTIPLE RANGE TEST: YEARS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=174 MS=.0130794

GROUPING		MEAN	N	YEAR
	A	0.080333	60	76
B	A	0.054722	72	77
B		0.036000	60	78

Table 2.2A-10
cont'd

DIFFERENCES IN MONTHLY MEAN PHAEOPIGMENT (TUKEY'S TEST)
OFFSHORE SURFACE STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Month (Mean)	Feb (0.05)	Mar (0.03)	Apr (0.01)	May (0.04)	Jun (0.05)	Jul (0.03)	Aug (0.04)	Sep (0.01)	Oct (0.07)	Nov (0.12)	Dec (0.12)
Jan (0.09)	0.04	0.06	0.08	0.05	0.04	0.06	0.05	0.08	0.02	0.03	0.03
Feb (0.05)		0.02	0.04	0.01	0.00	0.02	0.01	0.04	0.02	0.07	0.07
Mar (0.03)			0.02	0.01	0.01	0.00	0.01	0.02	0.04	0.09	0.09
Apr (0.01)				0.03	0.04	0.02	0.03	0.00	0.06	0.11	0.11
May (0.04)					0.01	0.01	0.00	0.03	0.03	0.08	0.08
Jun (0.05)						0.02	0.01	0.04	0.02	0.07	0.07
Jul (0.03)							0.01	0.02	0.04	0.09	0.09
Aug (0.04)								0.03	0.03	0.08	0.08
Sep (0.01)									0.06	0.11	0.11
Oct (0.07)										0.05	0.05
Nov (0.12)											0.00

* Significant at α = .05, HSD = 0.12.

Table 2.2A-10
cont'd

DIFFERENCES BETWEEN MONTHLY MEAN PHAEOPIGMENT (TUKEY'S TEST)
OFFSHORE BOTTOM STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Month (Mean)	Feb (0.20)	Mar (0.05)	Apr (0.02)	May (0.04)	Jun (0.06)	Jul (0.05)	Aug (0.11)	Sep (0.05)	Oct (0.15)	Nov (0.40)	Dec (0.14)
Jan (0.11)	0.09	0.06	0.09	0.07	0.05	0.06	0.00	0.06	0.04	0.29*	0.03
Feb (0.20)		0.15	0.18	0.16	0.14	0.15	0.09	0.15	0.05	0.20	0.06
Mar (0.05)			0.03	0.01	0.01	0.00	0.06	0.00	0.10	0.35*	0.09
Apr (0.02)				0.02	0.04	0.03	0.09	0.03	0.13	0.38*	0.12
May (0.04)					0.02	0.01	0.07	0.01	0.11	0.36*	0.10
Jun (0.06)						0.01	0.05	0.01	0.09	0.34*	0.08
Jul (0.05)							0.06	0.00	0.10	0.35*	0.09
Aug (0.11)								0.06	0.04	0.29*	0.03
Sep (0.05)									0.10	0.35*	0.09
Oct (0.15)										0.25	0.01
Nov (0.40)											0.26

* Significant at α = .05, HSD = 0.27.

Table 2.2A-10
cont'd

DIFFERENCES IN STATION MEAN
PHAEOPIGMENT (TUKEY'S TEST)
OFFSHORE BOTTOM STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Station (Mean)	1 (0.09)	2 (0.13)	3 (0.04)	4 (0.09)	5 (0.10)
0 (0.23)	0.14	0.10	0.19*	0.14	0.13
1 (0.09)		0.04	0.05	0.00	0.01
2 (0.13)			0.09	0.04	0.03
3 (0.04)				0.05	0.06
4 (0.09)					0.01

* Significant at α = .05, HSD = 0.16.

Table 2.2A-10
cont'd

STATISTICAL COMPARISON OF PHAEOPIGMENT
OFFSHORE BOTTOM STATIONS
ST. LUCIE PLANT
MARCH 1976 - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS X YEARS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	17	5.94994958	0.34999703
ERROR	174	23.19793167	0.13332145
CORRECTED TOTAL	191	29.14788125	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	1.04821875	1.57	0.1691
YEAR	2	3.73020208	13.99	0.0001
STATION*YEAR	10	1.17152875	0.88	0.5543

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=174 MS=0.133321

GROUPING	MEAN	N	STATION
A	0.330625	32	0
A	0.261875	32	5
A	0.208750	32	1
A	0.140000	32	2
A	0.138125	32	3
A	0.133750	32	4

DUNCAN'S MULTIPLE RANGE TEST: YEARS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=174 MS=0.133321

GROUPING	MEAN	N	YEAR
A	0.408833	60	76
B	0.112917	72	77
B	0.102667	60	78

Table 2.2A-10
cont'd

DIFFERENCES IN STATION MEAN
PHAEOPIGMENT (TUKEY'S TEST)
OFFSHORE SURFACE STATIONS (0-5)
ST. LUCIE PLANT
MARCH 1976-DECEMBER 1977[a]

Station (Mean)	1 (0.18)	2 (0.04)	3 (0.05)	4 (0.04)	5 (0.04)
0 (0.05)	0.13*	0.01	0.00	0.01	0.01
1 (0.18)		0.14*	0.13*	0.14*	0.14*
2 (0.04)			0.01	0.00	0.00
3 (0.05)				0.01	0.01
4 (0.04)					0.00

* Significant at α = .05, HSD = 0.12.
[a] January and February 1977 not included in analysis.

Table 2.2A-10
cont'd

DIFFERENCES IN STATION MEAN
PHAEOPIGMENT (TUKEY'S TEST)
OFFSHORE BOTTOM STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Station (Mean)	1 (0.09)	2 (0.13)	3 (0.04)	4 (0.09)	5 (0.10)
0 (0.23)	0.14	0.10	0.19*	0.14	0.13
1 (0.09)		0.04	0.05	0.00	0.01
2 (0.13)			0.09	0.04	0.03
3 (0.04)				0.05	0.06
4 (0.09)					0.01

* Significant at α = .05, HSD = 0.16.

Table 2.2A-10
cont'd

ANALYSIS OF VARIANCE FOR PHAEOPIGMENT
AT OFFSHORE STATIONS
ST. LUCIE PLANT
MARCH 1976-DECEMBER 1977

January-December 1977					
Depth	Source	Degrees of freedom	Sum of squares	Mean squares	F
Surface	Months	11	0.08794	0.00799	2.26*
	Stations	5	0.03214	0.00643	1.81
	Error	55	0.19474	0.00354	
	Total	71	0.31482		
Bottom	Months	11	0.71894	0.06536	3.49*
	Stations	5	0.23028	0.04606	2.46*
	Error	55	1.02792	0.01869	
	Total	71	1.97715		

March 1976-December 1977[a]					
Depth	Source	Degrees of freedom	Sum of squares	Mean squares	F
Surface	Years (Y)	1	0.02640	0.02640	1.53
	Months (M)	9	0.33580	0.03731	2.17*
	Stations (S)	5	0.30684	0.06137	3.57*
	Y x M	9	0.10387	0.01154	0.67
	Y x S	5	0.09376	0.01875	1.09
	M x S	45	0.72721	0.01616	0.94
	Error	45	0.77348	0.01719	
	Total	119	2.36735		
Bottom	Years (Y)	1	2.78312	2.78312	24.12*
	Months (M)	9	5.24665	0.58296	5.05*
	Stations (S)	5	1.12802	0.22560	1.96
	Y x M	9	3.21995	0.35777	3.10*
	Y x S	5	0.61625	0.12325	1.07
	M x S	45	7.26692	0.16149	1.40
	Error	45	5.19240	0.11539	
	Total	119	25.45328		

* Significant at $\alpha = .05$.
[a] January and February 1977 not included in analysis.

Table 2.2A-10
cont'd

STATISTICAL COMPARISON OF PHAEOPIGMENT
OFFSHORE SURFACE STATIONS
ST. LUCIE PLANT
JANUARY - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	5	0.04312000	0.00862400
ERROR	54	0.28112000	0.00520593
CORRECTED TOTAL	59	0.32424000	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	0.04312000	1.66	0.1600

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=54 MS=.0052059

GROUPING		MEAN	N	STATION
	A	0.077000	10	1
B	A	0.063000	10	3
B	A	0.037000	10	2
B	A	0.026000	10	4
B	A	0.012000	10	0
B		0.001000	10	5

Table 2.2A-10
cont'd

STATISTICAL COMPARISON OF PHAEOPIGMENT
OFFSHORE SURFACE STATIONS
ST. LUCIE PLANT
JANUARY - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	5	0.04312000	0.00862400
ERROR	54	0.28112000	0.00520593
CORRECTED TOTAL	59	0.32424000	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	0.04312000	1.66	0.1600

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=54 MS=.0052059

GROUPING		MEAN	N	STATION
	A	0.077000	10	1
B	A	0.063000	10	3
B	A	0.037000	10	2
B	A	0.026000	10	4
B	A	0.012000	10	0
B		0.001000	10	5

Table 2.2A-10
cont'd

STATISTICAL COMPARISON OF PHAEOPIGMENT
OFFSHORE BOTTOM STATIONS
ST. LUCIE PLANT
JANUARY - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	5	0.38465333	0.07693067
ERROR	54	2.03792000	0.03773926
CORRECTED TOTAL	59	2.42257333	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	0.38465333	2.04	0.0870

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=54 MS=.0377393

GROUPING		MEAN	N	STATION
	A	0.263000	10	1
B	A	0.139000	10	0
B	A	0.086000	10	5
B		0.058000	10	3
B		0.037000	10	4
B		0.033000	10	2

Table 2.2A-11

ANALYSIS OF VARIANCE FOR GROSS PRIMARY PRODUCTIVITY AT OFFSHORE STATIONS (0 through 5) ST. LUCIE PLANT

JANUARY-NOVEMBER 1978

Source	Degrees of freedom	Sum of squares	Mean squares	F
Stations	5	0.33223	0.06645	1.78
Months	10	8.71134	0.87113	23.32*
Error	50	1.86746	0.03735	
Total	65	10.91103		

*Significant at α=.05.

MARCH 1976-NOVEMBER 1978[a]

Source	Degrees of freedom	Sum of squares	Mean squares	F
Stations	5	13.89835	2.77967	0.89
Error	164	510.30809	3.11163	
Total	169	524.20644		

[a]The following dates are not included in the analysis because data were not available at one or more stations: March, August and October 1976, and January, February, April, August and December 1977.

Table 2.2A-12

PEARSON CORRELATION COEFFICIENTS (r) FOR PHYTOPLANKTON DENSITY AND PIGMENTS VS. PHYSICAL AND CHEMICAL PARAMETERS, OFFSHORE SURFACE STATIONS (0-5)
ST. LUCIE PLANT
MARCH 1976 - DECEMBER 1977

Parameter	Phytoplankton Density	Chlorophyll-*a*	Phaeopigment	Chlorophyll-*b*	Chlorophyll-*c*	Carotenoids
Temperature	-.0653	.0315	-.0735	.0060	.0312	.0427
Temperature^2	-.0714	.0294	-.0716	.0131	.0286	.0394
(n=132)[a]						
Salinity	-.1397	-.1935*	.0290	.1187	-.1524*	-.2225*
Salinity^2	-.1403	-.1954*	.0283	.1153	-.1547*	-.2246*
(n=132)						
Dissolved Oxygen	.1073	.1277	-.0243	.0115	.1466*	.0857
Dissolved Oxygen^2	.1007	.1271	-.0248	.0064	.1464*	.0841
(n=132)						
Nitrate	.0113	.1265	-.0989	.0772	.1450	.1406
Nitrate^2	.0137	.1334	-.1073	.0854	.1532	.1516
(n=56)						
Nitrite	-.0400	-.0873	-.0599	.3017*	-.0288	-.0347
Nitrite^2	-.0525	-.0864	-.0798	.2781*	-.0296	-.0282
(n=132)						
Ammonia	-.1075	-.1403	-.1331	.0715	-.1287	-.0958
Ammonia^2	-.0605	-.0905	-.1164	.0785	-.0696	-.0483
(n=132)						
Phosphate	-.1201	-.1240	-.0335	.0582	-.1136	-.1142
Phosphate^2	-.0982	-.0961	-.0252	.0701	-.0844	-.0864
(n=102)						
Silica	.0312	.0752	.0677	.4186*	.1061	.1122
Silica^2	-.0596	-.0120	.0350	.3754*	.0186	.0208
(n=66)						

*Significant at $\alpha = .05$.

[a]Number of observations.

Table 2.2A-12
cont'd

PEARSON CORRELATION COEFFICIENTS (r) FOR PHYTOPLANKTON DENSITY AND PIGMENTS VS. PHYSICAL AND CHEMICAL PARAMETERS, OFFSHORE BOTTOM STATIONS (0-5)
ST. LUCIE PLANT
MARCH 1976 - DECEMBER 1977

Parameter	Phytoplankton Density	Chlorophyll-*a*	Phaeopigment	Chlorophyll-*b*	Chlorophyll-*c*	Carotenoids
Temperature	.0050	.0287	-.0443	-.0526	-.0099	.0118
Temperature^2	.0038	.0255	-.0429	-.0500	-.0118	.0074
(n=132)[a]						
Salinity	-.2883*	-.2203*	-.3178*	-.2477*	-.2844*	-.3293*
Salinity^2	-.2882*	-.2214*	-.3158*	-.2491	-.2852*	-.3294*
(n=132)						
Dissolved Oxygen	.0653	.0476	-.0947	.0026	.0388	.0050
Dissolved Oxygen^2	.0598	.0408	-.0998	-.0071	.0307	-.0041
(n=132)						
Nitrate	.1527	.2148	.2208	.2371*	.2285*	.2013
Nitrate^2	-.0149	.0276	.0666	.0975	.0334	.0143
(n=54)						
Nitrite	-.0181	-.0199	-.0140	.1240	.0152	-.0027
Nitrite^2	-.0464	-.0590	-.0353	.1192	-.0183	-.0276
(n=132)						
Ammonia	.0130	.0589	-.0042	.0883	.0667	.0813
Ammonia^2	.0397	.0441	.0229	.0256	.0330	.0312
(n=132)						
Phosphate	.3817*	.3149*	.3871*	.4023*	.3533*	.3436*
Phosphate^2	.4208*	.3611*	.4266*	.4180*	.3940*	.3908*
(n=102)						
Silica	.0508	.1683	.2040	.6080*	.2271*	.1966
Silica^2	-.0131	.0921	.1486	.5833*	.1547	.1191
(n=66)						

*Significant at α = .05.

[a]Number of observations.

Table 2.2A-13

MULTIPLE REGRESSION FOR OFFSHORE STATIONS (0-5)
ST. LUCIE PLANT
MARCH 1976-DECEMBER 1977

Dependent variables	Independent variables[a]	R	R^2
Density	Temperature	0.294	0.086
	Nitrite	0.357	0.128
	Nitrite^2	0.494	0.244
	Ammonia^2	0.517	0.267
Active chlorophyll-*a*	Temperature	0.324	0.105
	Nitrite	0.412	0.170
	Nitrite^2	0.565	0.320
	Silica	0.588	0.346
	Silica^2	0.653	0.426
	Temperature^2	0.669	0.447
	Nitrate	0.678	0.460
	Nitrate^2	0.687	0.472
Phaeopigment	Ammonia	0.434	0.188
Chlorophyll-*b*	Silica	0.521	0.272
	Temperature	0.672	0.452
	Silica^2	0.706	0.499
	Ammonia	0.732	0.536
	Ammonia^2	0.755	0.571
	Salinity	0.780	0.609
Chlorophyll-*c*	Temperature	0.320	0.102
	Nitrite	0.424	0.180
	Nitrite^2	0.575	0.330
	Silica	0.612	0.375
	Silica^2	0.675	0.455
	Temperature^2	0.691	0.478
Carotenoid	Temperature	0.307	0.094
	Nitrite	0.402	0.162
	Nitrite^2	0.549	0.301
	Silica	0.578	0.335
	Silica^2	0.641	0.411
	Temperature^2	0.655	0.430

[a] When the F-value to enter the regression was not significant (α=.05) for any independent variable, the stepwise procedure was stopped.

Table 2.2A-13
cont'd
CHLOROPHYLL-a STEPWISE ANALYSIS[a]
OFFSHORE STATIONS (0 through 5)
ST. LUCIE PLANT
JANUARY - NOVEMBER 1978

SURFACE

R SQUARE = 0.57164036

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	6	67.85104274	11.30850712	10.23	0.0001
ERROR	46	50.84428933	1.10531064		
TOTAL	52	118.69533206			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	17.68375974				
TEMP	-0.24252818	0.05058191	25.41079660	22.99	0.0001
DO	-1.49641584	0.26095945	36.34454991	32.88	0.0001
NITRATE	-7.46766298	4.52894871	3.09510025	2.72	0.1060
NITRITE	171.58527542	76.89123953	5.50415503	4.98	0.0336
AMMONIA	-4.76989634	2.45777968	4.15339509	3.77	0.0534
SI	2.13423646	0.76130716	8.68659547	7.86	0.0074

BOTTOM

R SQUARE = 0.28696319

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	4	64.67297556	16.16824389	4.93	0.0020
ERROR	49	160.69730777	3.27953689		
TOTAL	53	225.37028333			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	64.20509564				
TEMP	-0.07652832	0.06135004	5.10301950	1.56	0.2182
SALINITY	-1.65923126	0.53816640	31.17474341	9.51	0.0034
NITRITE	491.63969126	164.34118827	29.35024853	8.95	0.0043
PO	-312.44999168	168.03431372	11.33907434	3.46	0.0639

[a]The first step to include non-significant type II sums of squares was selected as the best model.

Table 2.2A-13
cont'd

PHYTOPLANKTON STEPWISE ANALYSIS[a]
OFFSHORE STATIONS (0 THROUGH 5)
ST. LUCIE PLANT
JANUARY - NOVEMBER 1978

SURFACE

R SQUARE = 0.50010699

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	6	19.30114903	3.21685817	7.67	0.0001
ERROR	46	19.29269059	0.41941067		
TOTAL	52	38.59403963			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	1.28027634				
TEMP	-0.16012314	0.03032399	11.69432233	27.88	0.0001
SALINITY	0.62109113	0.20925495	3.69474654	8.81	0.0047
DO	-0.91340665	0.17226699	11.79073257	28.11	0.0001
NITRATE	-6.34521997	2.79956502	2.15452589	5.14	0.0282
NITRITE	123.91576766	46.68463579	2.95491276	7.05	0.0139
AMMONIA	1.78841605	1.51312906	0.58590153	1.40	0.2433

BOTTOM

R SQUARE = 0.46585523

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	6	14.77688080	2.46281347	6.83	0.0001
ERROR	47	16.94391840	0.36048975		
TOTAL	53	31.71959920			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	22.17078888				
TEMP	-0.13660566	0.03067088	7.14745242	19.83	0.0001
DO	-0.66079200	0.15462963	6.53318263	18.26	0.0001
NITRATE	-7.87398296	2.99048555	2.49918524	6.93	0.0114
NITRITE	199.15237537	56.31018809	4.53910073	12.51	0.0039
AMMONIA	1.84458686	1.59352155	0.48303129	1.34	0.2529
PO	-169.50699866	56.06431788	3.29530074	9.14	0.0040

[a]The first step to include non-significant type II sums of squares was selected as the best model.

Table 2.2A-14

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
26 MARCH 1976

Taxon	Station and depth[c]													
	11	12	0		1		2		3		4		5	
	Ø	Ø	Sd	B	S	B	Se	B	S	B	S	B	S	B
Protozoa		0.4 (<1)		2.3 (<1)	40.0 (2)	1.7 (1)	32.7 (2)	1.2 (<1)	1.2 (<1)	2.6 (<1)		19.5 (1)		18.0 (<1)
Coelenterata		1.1 (<1)		2.3 (<1)		3.5 (3)	8.2 (1)		18.0 (1)	5.2 (<1)		6.5 (<1)		9.0 (<1)
Mollusca	1.4 (<1)			13.8 (3)	51.5 (2)	3.5 (3)	89.8 (6)	12.0 (4)	34.8 (2)	22.3 (1)		292.0 (12)	432.8 (12)	1480.0 (23)
Polychaeta	1.4 (<1)								1.2 (<1)	2.6 (<1)		3.2 (<1)	9.0 (<1)	9.0 (<1)
Crustacea														
nauplii	10.8 (1)		3.4 (11)				8.2 (1)		4.8 (<1)	2.6 (<1)		32.5 (1)		
cladocera									2.4 (<1)		5.2 (<1)	6.5 (<1)		
ostracoda	0.9 (<1)		2.6 (8)	2.3 (<1)	165.2 (7)	6.9 (5)	40.8 (3)	21.5 (8)	31.2 (2)	137.5 (8)		133.0 (6)	343.4 (10)	758.0 (12)
copepoda	111.4 (7)	14.9 (3)	18.0 (58)	419.0 (75)	1392.8 (62)	100.5 (73)	841.0 (56)	210.3 (75)	964.8 (61)	1181.9 (72)	1394.1 (95)	1505.6 (63)	2289.3 (65)	3645.8 (56)
cirripedia (barnacle) nauplii	1313.3 (86)	447.6 (93)	0.9 (3)	9.2 (2)	17.1 (1)		40.8 (3)	2.4 (1)		5.3 (<1)		22.7 (1)	1.8 (<1)	9.0 (<1)
decapoda	34.7 (2)	8.1 (2)	2.6 (8)	46.0 (8)	285.4 (13)	3.4 (3)	122.5 (8)	22.8 (8)	358.0 (23)	147.8 (9)	58.8 (4)	175.2 (7)	291.5 (8)	243.7 (4)
others	5.2 (<1)	3.5 (1)		6.9 (1)	97.0 (4)	5.2 (4)	8.2 (1)	2.4 (1)	6.0 (<1)	11.8 (1)	3.5 (<1)	6.4 (<1)	37.7 (1)	162.4 (3)
Chaetognatha			0.9 (3)	4.6 (1)	22.8 (1)	1.7 (1)		2.4 (1)	18.0 (1)	10.4 (1)	5.1 (<1)	35.5 (2)	69.8 (2)	99.3 (2)
Chordata														
urochordata	51.2 (3)							1.2 (<1)	30.0 (2)	28.8 (2)	3.5 (<1)	35.7 (2)		
fish	1.4 (<1)			23.0 (4)	28.5 (1)	5.2 (4)	16.3 (1)		10.8 (1)	1.3 (<1)			1.8 (<1)	

Table 2.2A-14
cont'd
DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
26 MARCH 1976

Taxon	Station and depth[c]													
	11	12	0		1		2		3		4		5	
	Ø	Ø	Sd.	B	S	B	S[e]	B	S	B	S	B	S	B
Eggs	1.6 (<1)	4.9 (1)	2.6 (8)	29.9 (5)	137.0 (6)	6.9 (5)	302.1 (20)	6.0 (2)	103.3 (7)	73.3 (4)		126.6 (5)	51.9 (2)	54.1 (1)
Miscellaneous	1.4 (<1)													
TOTAL	1534.7	480.5	31.0	559.3	2237.6	138.5	1510.6	282.2	1584.5	1633.4	1470.2	2400.9	3529.0	6488.3

[a] Values expressed are undamaged zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table H-151.
[c] Ø = oblique; S = surface; B = bottom.
[d] Sample not preserved immediately.
[e] Scyphozoan medusa removed from sample before analysis.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
4 APRIL 1976

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	Bd	S	B	S	Bd	S	B	S	B	S	Bd
Protozoa		2.5 (<1)					1.5 (<1)	0.9 (<1)	6.7 (<1)	33.9 (1)	1.6 (<1)	16.1 (<1)		
Coelenterata			6.7 (2)	5.5 (<1)	8.1 (1)	1.2 (<1)	11.5 (4)		8.9 (<1)		2.4 (<1)	2.7 (<1)	26.6 (9)	2.6 (<1)
Mollusca	1.9 (<1)	1.2 (<1)	36.5 (9)	201.0 (6)	82.9 (13)	402.8 (16)	12.9 (4)	82.5 (26)	32.5 (3)	3096.1 (57)	8.8 (3)	260.8 (8)	17.1 (6)	106.5 (10)
Polychaeta	1.2 (<1)		3.7 (<1)		6.0 (<1)		2.3 (<1)		6.7 (<1)	24.2 (<1)		21.5 (<1)	1.7 (<1)	
Crustacea														
nauplii		0.6 (<1)	6.0 (1)	35.8 (1)	4.1 (<1)	2.5 (<1)	3.8 (1)	9.2 (3)	10.1 (<1)	4.8 (<1)	3.2 (1)	75.3 (2)	5.1 (<1)	7.8 (1)
cladocera							0.8 (<1)							
ostracoda						2.5 (<1)								
copepoda	52.7 (20)	34.0 (5)	223.0 (55)	2632.9 (81)	358.1 (58)	1844.5 (73)	155.4 (48)	126.1 (40)	378.9 (33)	1787.8 (33)	112.1 (35)	1096.9 (33)	151.7 (49)	633.5 (62)
cirripedia (barnacle) nauplii	0.6 (<1)	648.1 (92)	7.4 (2)	8.3 (<1)	14.2 (2)	22.4 (<1)	3.8 (1)		4.5 (<1)	4.8 (<1)	1.6 (<1)	26.9 (<1)	24.8 (8)	15.6 (2)
decapoda	16.1 (6)	6.9 (<1)	34.1 (9)	159.8 (5)	82.9 (13)	129.3 (5)	7.7 (2)	23.2 (7)	107.7 (9)	208.3 (4)	9.6 (3)	1196.3 (36)	23.2 (8)	160.9 (16)
others	165.7 (62)	1.3 (<1)	8.2 (2)	11.1 (<1)		6.2 (<1)				4.8 (<1)	2.4 (<1)	5.4 (<1)		2.6 (<1)
Chaetognatha			1.4 (<1)				5.4 (2)		4.4 (<1)			2.7 (<1)	0.9 (<1)	
Chordata														
urochordata	3.8 (1)		2.2 (<1)	41.3 (1)	10.1 (2)	54.6 (2)	29.6 (9)	49.1 (16)	352.0 (31)	193.8 (4)	108.1 (34)	427.4 (13)	8.6 (3)	64.9 (6)
fish	11.8 (4)		5.9 (1)	5.5 (<1)	2.0 (<1)	1.2 (<1)	66.0 (21)		206.3 (18)	4.8 (<1)	12.0 (<1)	8.1 (<1)	17.2 (6)	2.6 (<1)

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
4 APRIL 1976

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	Bd	S	B	S	Bd	S	B	S	B	S	Bd
Eggs	11.8 (4)	6.3 (<1)	68.4 (16)	132.2 (4)	46.5 (8)	51.0 (2)	21.2 (7)	21.4 (7)	31.4 (3)	116.3 (2)	59.6 (19)	147.8 (4)	30.0 (9)	28.6 (3)
Miscellaneous	+[e]				2.0 (<1)		+[e]		+[e]		+[e]	+[e]	+[e]	
TOTAL	265.6	700.9	403.5	3233.4	616.9	2518.2	321.9	312.4	1150.1	5479.6	321.4	3287.9	306.9	1025.6

[a] Values expressed are undamaged zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table H-152.
[c] Ø = oblique; S = surface; B = bottom.
[d] Scyphozoan medusa removed from sample before analysis.
[e] Echinoderm larvae noted as present; however, due to fragility of specimens, a quantitative analysis is not available.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
12 MAY 1976

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S[d]	B	S	B	S	B	S	B	S	B
Protozoa		4.9 (1)							0.9 (<1)					
Coelenterata	1.1 (<1)		2.5 (5)	74.4 (9)	25.7 (11)	20.7 (8)	1.8 (<1)	8.1 (4)	3.6 (1)	91.4 (7)		6.0 (2)	2.6 (3)	6.1 (3)
Mollusca	3.8 (2)	7.3 (2)	1.7 (3)			1.9 (<1)	2.8 (<1)	1.2 (<1)	2.7 (<1)		10.0 (1)	3.0 (1)	3.7 (4)	6.1 (3)
Polychaeta				11.4 (1)	5.1 (2)		3.7 (<1)		12.7 (2)	6.5 (<1)	10.0 (1)		0.5 (<1)	
Crustacea nauplii	0.7 (<1)			24.7 (3)					8.2 (1)	6.5 (<1)	5.0 (<1)		1.1 (1)	
cladocera												1.5 (1)		
ostracoda					2.6 (1)					222.1 (17)		4.5 (2)		
copepoda	52.6 (26)	143.6 (33)	13.6 (25)	283.4 (36)	66.8 (29)	80.7 (31)	663.7 (85)	98.9 (49)	416.1 (64)	692.7 (52)	599.1 (65)	115.3 (48)	60.7 (61)	128.8 (54)
cirripedia (barnacle) nauplii		12.2 (3)	0.8 (1)		2.6 (1)			2.3 (1)		6.5 (<1)	7.5 (<1)			
decapoda	112.2 (55)	90.0 (21)	2.4 (4)	243.4 (31)	100.2 (43)	124.1 (47)	18.8 (2)	38.5 (19)	44.5 (7)	130.6 (10)	22.5 (2)	52.5 (22)	5.7 (6)	49.1 (21)
others	3.4 (2)	138.7 (32)		15.2 (2)		5.7 (2)		1.2 (<1)	2.7 (<1)	26.1 (2)	7.5 (<1)	7.5 (3)		
Chaetognatha	0.8 (<1)			3.8 (<1)	5.1 (2)	9.4 (4)	18.7 (2)	2.3 (1)	35.4 (5)	19.6 (1)	37.4 (4)		3.1 (3)	6.1 (3)
Chordata urochordata	0.4 (<1)			9.5 (1)		3.8 (1)	30.1 (4)	43.1 (22)	80.0 (12)	98.0 (7)	147.3 (16)	24.0 (10)	2.6 (3)	12.2 (5)
fish							2.8 (<1)	1.2 (<1)			2.5 (<1)		1.6 (2)	

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
12 MAY 1976

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S[d]	B	S	B	S	B	S	B	S	B
Eggs	29.7 (15)	34.1 (17)	33.9 (62)	121.7 (15)	23.1 (10)	11.3 (4)	38.5 (5)	3.5 (2)	46.3 (7)	39.2 (3)	79.9 (9)	6.0 (2)	17.3 (17)	30.7 (13)
Miscellaneous						+[e]			1.8 (<1)	+[e]				
TOTAL	204.7	430.8	54.9	787.3	231.2	257.6	780.9	200.3	654.9	1339.2	928.7	241.3	98.9	239.1

[a] Values expressed are undamaged zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing see Table H-153.
[c] Ø = oblique; S = surface; B = bottom.
[d] Scyphozoan medusa removed from sample before analysis.
[e] Echinoderm larvae noted as present; however, due to fragility of specimens, a quantitative analysis is not available.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
8 JUNE 1976

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
Protozoa	1.5 (<1)	9.7 (2)	9.5 (4)		28.1 (7)	10.6 (1)	5.5 (2)	4.3 (<1)	3.7 (1)	3.6 (<1)	15.1 (3)	2.4 (<1)	6.3 (4)	10.8 (<1)
Coelenterata	1.1 (<1)							4.2 (<1)			2.0 (<1)			1.8 (<1)
Mollusca	12.4 (3)	10.5 (2)	11.8 (5)	19.3 (1)	5.1 (1)	28.9 (2)	16.4 (5)	220.7 (6)	7.4 (1)	60.5 (2)	5.0 (1)	88.7 (7)		337.4 (15)
Polychaeta	3.0 (1)	2.2 (<1)	4.8 (2)	6.9 (<1)	1.3 (<1)	3.0 (<1)	5.5 (2)	2.1 (<1)	7.3 (1)				6.3 (4)	5.4 (<1)
Crustacea nauplii		0.7 (<1)	2.4 (1)	1.4 (<1)	3.9 (1)	7.6 (1)	4.4 (1)	19.1 (<1)	7.4 (1)	14.3 (<1)	6.0 (1)		4.2 (2)	5.4 (<1)
cladocera	0.5 (<1)	0.7 (<1)				1.5 (<1)	1.1 (<1)				2.0 (<1)		1.1 (1)	1.8 (<1)
ostracoda										3.6 (<1)				
copepoda	159.3 (41)	310.2 (50)	102.0 (42)	1045.3 (59)	260.5 (61)	949.9 (71)	148.7 (42)	2150.6 (55)	479.2 (69)	2096.7 (63)	361.3 (75)	752.5 (56)	112.6 (66)	1367.4 (59)
cirripedia (barnacle) nauplii	181.1 (47)	243.0 (39)	92.5 (37)	609.3 (34)	80.4 (19)	176.6 (13)	141.0 (40)	946.8 (24)	7.4 (1)	398.7 (12)	34.2 (7)	143.8 (11)	12.6 (7)	285.3 (12)
decapoda	8.1 (3)	12.7 (2)	7.1 (3)	53.7 (4)	15.3 (4)	115.6 (9)	5.5 (2)	507.2 (13)	1.9 (<1)	576.8 (17)	7.0 (1)	273.3 (20)	6.4 (4)	236.9 (10)
others	1.1 (<1)	14.1 (2)		2.8 (<1)	3.9 (1)	4.6 (<1)	4.4 (1)	4.2 (<1)	5.6 (1)	24.9 (1)		9.6 (1)		34.1 (1)
Chaetognatha	0.4 (<1)		2.4 (1)	2.8 (<1)		6.1 (<1)		17.0 (<1)	7.6 (1)	7.1 (<1)	1.0 (<1)	7.2 (1)	2.2 (1)	
Chordata urochordata	0.7 (<1)		2.4 (1)	4.1 (<1)	6.4 (1)	3.1 (<1)	1.1 (<1)	8.5 (<1)	148.0 (21)	74.7 (2)	13.1 (3)	19.2 (1)	4.2 (2)	23.3 (1)
fish	0.4 (<1)	1.4 (<1)		1.4 (<1)	10.2 (2)	7.6 (1)	1.1 (<1)	6.4 (<1)	9.3 (1)	14.3 (<1)	18.1 (4)	7.2 (1)	5.3 (3)	

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
8 JUNE 1976

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
Eggs	18.5 (5)	19.4 (3)	11.8 (5)	28.9 (2)	15.4 (4)	13.7 (1)	16.4 (5)	23.4 (1)	9.3 (1)	67.6 (2)	18.1 (4)	33.6 (3)	10.5 (6)	10.8 (<1)
Miscellaneous		+[d]			+[d]	1.5 (<1) / +[d]	+[d]	+[d]	+[d]		+[d]		+[d]	
TOTAL	388.1	624.6	246.7	1775.9	430.5	1330.3	351.1	3914.5	694.1	3342.8	482.9	1337.5	171.7	2320.4

[a] Values expressed are undamaged zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table H-154.
[c] Ø= oblique; S = surface; B = bottom.
[d] Echinoderm larvae noted as present; however, due to fragility of specimens, a quantitative analysis is not available.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
14 JULY 1976

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
Protozoa							3.0 (1)						4.2 (1)	
Coelenterata	0.7 (<1)				7.0 (<1)								1.4 (<1)	
Mollusca	0.7 (<1)		6.0 (<1)			16.9 (<1)	6.0 (2)	13.2 (<1)	3.2 (1)	40.9 (1)	1.7 (1)	5.4 (<1)	7.0 (1)	25.3 (3)
Polychaeta			17.9 (1)		35.1 (<1)	5.6 (<1)	3.0 (1)		4.7 (2)	15.7 (1)		16.2 (<1)	1.4 (<1)	
Crustacea nauplii	2.5 (2)		95.6 (3)	6.9 (<1)	42.1 (1)	5.6 (<1)		19.8 (<1)		15.7 (1)			1.4 (<1)	
cladocera														
ostracoda	17.7 (11)		6.0 (<1)	960.9 (40)	28.1 (<1)	2351.6 (35)	1.5 (<1)	112.0 (1)		62.9 (2)	1.7 (1)	108.5 (2)		316.8 (43)
copepoda	59.8 (38)	33.6 (25)	1918.4 (62)	705.1 (30)	6841.8 (85)	3017.0 (45)	154.3 (45)	7630.3 (93)	91.8 (32)	2236.3 (76)	134.2 (43)	4768.3 (90)	541.3 (65)	278.7 (40)
cirripedia (barnacle) nauplii	37.0 (24)	84.4 (62)	35.9 (1)	13.8 (1)	28.1 (<1)	22.6 (<1)		13.2 (<1)		18.9 (1)	1.7 (1)		2.8 (<1)	
decapoda	23.3 (15)	13.8 (10)	131.5 (4)	131.2 (6)	189.7 (2)	383.3 (6)		145.0 (2)	3.1 (1)	147.7 (5)	5.1 (2)	151.9 (3)	39.2 (5)	63.3 (9)
others	1.2 (1)	1.2 (1)	17.9 (1)	89.8 (4)	21.0 (<1)	434.2 (6)		19.8 (<1)	1.6 (1)	31.4 (1)	3.4 (1)	38.0 (1)		
Chaetognatha	2.5 (2)	0.6 (<1)	460.3 (15)	200.4 (8)	625.2 (8)	287.6 (4)	10.6 (3)	72.5 (1)	11.1 (4)	88.1 (3)	8.5 (3)	43.3 (1)	75.5 (9)	
Chordata urochordata	3.2 (2)	0.6 (<1)	35.9 (1)	55.3 (2)	21.1 (<1)	169.2 (3)	15.1 (4)	92.3 (1)	11.1 (4)	28.3 (1)	6.8 (2)		1.4 (<1)	50.7 (7)
fish	7.6 (5)	0.6 (<1)	17.9 (1)			5.6 (<1)	1.5 (<1)						4.2 (1)	

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
14 JULY 1976

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
Eggs	0.5 (<1)	1.7 (1)	340.6 (11)	221.2 (9)	168.6 (2)	67.7 (1)	149.8 (43)	92.3 (1)	164.5 (57)	254.8 (9)	149.5 (48)	162.8 (3)	152.5 (18)	
Miscellaneous														
TOTAL	156.7	136.5	3083.9	2384.6	8007.8	6766.9	344.8	8210.4	291.1	2940.7	312.6	5294.4	832.3	734.8

[a] Values expressed are undamaged zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table H-155.
[c] Ø = oblique; S = surface; B = bottom.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
11 AUGUST 1976

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
Protozoa		5.5 (1)	5.6 (<1)		10.8 (<1)	4.7 (1)	11.6 (<1)	7.9 (<1)	11.7 (<1)		4.3 (<1)			
Coelenterata					10.8 (<1)		11.6 (<1)		11.7 (<1)		4.4 (<1)	9.2 (<1)		0.6 (<1)
Mollusca	27.2 (1)	5.5 (1)	13.1 (1)	8.7 (3)	195.0 (4)	18.8 (5)	104.4 (3)	365.4 (5)	70.0 (2)	205.0 (3)	28.3 (1)	142.5 (1)	116.5 (4)	15.0 (1)
Polychaeta	4.5 (<1)	6.8 (1)			1028.8 (20)		11.6 (<1)		11.7 (<1)	14.6 (<1)		4.6 (<1)		0.6 (<1)
Crustacea nauplii	27.2 (1)		3.7 (<1)	8.7 (3)	10.8 (<1)	9.4 (2)		7.9 (<1)				4.6 (<1)	2.1 (<1)	
cladocera	4.5 (<1)		655.3 (26)	66.9 (23)	1516.1 (29)	117.4 (29)	1246.8 (33)	230.3 (3)	268.3 (7)	2578.2 (32)	130.9 (3)	4187.1 (36)	1226.3 (40)	137.0 (12)
ostracoda							11.6 (<1)	15.9 (<1)		483.4 (6)		114.9 (1)	2.1 (<1)	2.3 (<1)
copepoda	417.0 (21)	128.9 (14)	1739.9 (69)	148.4 (52)	1895.2 (37)	103.3 (25)	2087.7 (55)	4662.0 (58)	3161.7 (80)	3925.8 (48)	3451.4 (91)	6126.6 (53)	1471.9 (47)	526.9 (46)
cirripedia (barnacle) nauplii	1346.0 (68)	744.4 (79)	18.7 (1)		140.8 (3)	47.0 (11)	11.6 (<1)	587.7 (7)	35.0 (1)	58.6 (1)	4.3 (<1)	372.3 (3)	21.2 (1)	163.6 (14)
decapoda	27.2 (1)	16.5 (2)	9.4 (<1)	49.4 (17)	205.8 (4)	84.6 (21)	121.8 (3)	2041.2 (25)	23.3 (1)	161.0 (2)	6.6 (<1)	344.7 (3)	163.1 (5)	277.1 (24)
others	4.5 (<1)				32.5 (1)		5.8 (<1)	15.8 (<1)	11.7 (<1)	29.2 (<1)		59.7 (1)	2.1 (<1)	4.7 (<1)
Chaetognatha	4.5 (<1)	15.1 (2)	50.5 (2)		97.4 (2)		81.2 (2)	103.2 (1)	35.0 (1)	146.4 (2)	43.7 (1)	78.1 (1)	61.4 (2)	16.8 (1)
Chordata urochordata	9.0 (<1)	6.9 (1)	18.7 (1)		10.8 (<1)	9.4 (2)	5.8 (<1)	47.7 (1)	233.3 (6)	410.2 (5)	74.2 (2)	87.3 (1)	21.2 (1)	6.4 (1)
fish	99.7 (5)	8.2 (1)	11.2 (<1)	2.9 (1)		4.7 (1)	29.0 (1)		46.7 (1)	58.5 (1)	21.8 (1)	9.2 (<1)	6.4 (<1)	1.7 (<1)

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
11 AUGUST 1976

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
Eggs			9.3 (<1)			9.4 (2)	40.6 (1)	7.9 (<1)	11.7 (<1)	29.3 (<1)	15.3 (<1)		6.4 (<1)	2.9 (<1)
Miscellaneous	+[d]	+[d]			+[d]	+[d]	+[d]		11.7 (<1)	+[d]	+[d]			2.3 (<1)
TOTAL	1971.3	937.8	2535.4	285.0	5154.8	408.7	3781.1	8092.9	3943.5	8100.2	3785.2	11540.8	3100.7	1157.9

[a] Values expressed are undamaged zooplankters per cubic meter and represent the mean of three subsamples.

[b] For detailed taxonomic listing, see Table H-156.

[c] Ø = oblique; S = surface; B = bottom.

[d] Echinoderm larvae noted as present; however, due to fragility of specimens, a quantitative analysis is not available.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
14 SEPTEMBER 1976

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
Protozoa					2.3 (<1)		15.7 (<1)		3.0 (<1)					
Coelenterata			1.4 (<1)	17.9 (<1)	16.1 (<1)	8.5 (<1)			3.0 (<1)	24.8 (<1)	9.1 (<1)	74.8 (<1)		20.2 (<1)
Mollusca	12.5 (<1)	8.4 (<1)	7.1 (<1)	26.9 (<1)	60.0 (3)	12.7 (<1)	109.9 (1)		32.6 (<1)	105.6 (1)	42.6 (1)	37.4 (<1)	15.3 (<1)	192.2 (1)
Polychaeta	8.4 (<1)				2.3 (<1)		15.3 (<1)		5.9 (<1)	12.4 (<1)			3.8 (<1)	5.1 (<1)
Crustacea														
nauplii	16.6 (<1)		4.3 (<1)	17.9 (<1)	16.2 (<1)	21.2 (1)						12.5 (<1)	3.8 (<1)	
cladocera	58.2 (<1)	8.3 (<1)	351.7 (19)	698.6 (12)	55.5 (3)	93.1 (6)	6014.8 (34)		1875.1 (41)	4281.2 (43)	91.2 (2)	1800.9 (19)	4100.6 (63)	2624.7 (22)
ostracoda				9.0 (<1)	9.2 (<1)		15.7 (<1)			37.3 (<1)	3.0 (<1)			
copepoda	19479.0 (96)	4985.0 (95)	910.6 (48)	3806.7 (67)	1228.6 (57)	914.3 (59)	7349.7 (42)		1580.9 (34)	4728.5 (48)	2156.0 (65)	6468.4 (67)	1797.8 (28)	8202.6 (69)
cirripedia (barnacle) nauplii	481.9 (2)	171.0 (3)	8.5 (<1)	26.9 (<1)	18.5 (<1)	21.2 (1)	455.4 (3)		53.5 (1)	31.1 (<1)	15.2 (<1)	12.5 (<1)	38.2 (<1)	15.2 (<1)
decapoda	33.3 (<1)	33.4 (<1)	507.9 (27)	555.4 (9)	672.1 (31)	410.6 (26)	3266.5 (19)		968.7 (21)	385.2 (4)	857.4 (26)	891.2 (9)	474.4 (7)	672.4 (5)
others	4.2 (<1)		2.9 (<1)	44.9 (<1)	16.1 (<1)	4.2 (<1)	31.4 (<1)		11.9 (<1)	37.2 (<1)		6.2 (<1)	3.8 (<1)	10.1 (<1)
Chaetognatha		8.4 (<1)	28.4 (2)	134.3 (2)	41.6 (2)	29.6 (2)	47.1 (<1)		14.8 (<1)	43.5 (<1)	60.8 (1)	105.9 (1)	7.6 (<1)	40.5 (<1)
Chordata														
urochordata	58.2 (<1)	16.7 (<1)	22.7 (1)	304.5 (5)	4.6 (<1)	8.5 (<1)	15.7 (<1)		3.0 (<1)	124.3 (1)	27.4 (<1)	193.2 (2)	3.8 (<1)	65.7 (<1)
fish	45.7 (<1)	29.2 (<1)					15.7 (<1)		14.9 (<1)	6.2 (<1)		6.2 (<1)		

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
14 SEPTEMBER 1976

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
Eggs	8.3 (<1)		32.6 (2)	53.8 (<1)	9.3 (<1)	12.7 (1)	94.2 (<1)		11.9 (<1)	37.3 (<1)	27.4 (<1)	43.6 (<1)	11.5 (<1)	5.1 (<1)
Miscellaneous			+[d]		2.3 (<1)		+[d]		+[d]	+[d]			+[d]	
TOTAL	20206.3	5260.4	1878.1	5696.8	2154.7	1536.6	17447.1		4579.2	9854.6	3290.1	9652.8	6460.6	11853.8

[a] Values expressed are undamaged zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table H-157.
[c] Ø = oblique; S = surface; B = bottom.
[d] Echinoderm larvae noted as present; however, due to fragility of specimens, a quantitative analysis is not available.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
15 OCTOBER 1976

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
Protozoa		1.8 (<1)					1.5 (<1)					2.7 (<1)		3.3 (<1)
Coelenterata		1.8 (<1)		0.9 (1)	4.0 (<1)	1.2 (<1)	10.5 (<1)			1.5 (<1)				
Mollusca	82.0 (1)	100.8 (5)	66.7 (7)	4.5 (5)	359.5 (7)	45.5 (3)	12.0 (<1)	104.8 (7)	58.7 (5)	12.2 (1)	32.2 (2)	27.4 (2)	63.0 (5)	101.0 (2)
Polychaeta	22.0 (<1)	14.4 (1)	68.2 (8)		118.6 (3)		11.0 (<1)		17.4 (1)	1.5 (1)	7.6 (1)		4.6 (<1)	
Crustacea nauplii			3.0 (<1)	2.7 (3)	19.8 (<1)				17.4 (1)		5.7 (<1)		7.0 (1)	
cladocera	62.0 (1)	36.0 (2)	7.6 (1)		162.0 (4)	9.7 (1)	318.1 (11)		21.4 (2)	3.1 (<1)	15.2 (1)		123.7 (9)	3.3 (<1)
ostracoda		1.8 (<1)									1.9 (1)		2.3 (<1)	
copepoda	624.4 (11)	529.5 (24)	416.8 (47)	86.0 (88)	3018.9 (73)	1679.8 (94)	1641.3 (55)	1327.4 (84)	738.1 (61)	699.4 (62)	710.9 (52)	1146.5 (89)	641.6 (46)	4371.0 (90)
cirripedia (barnacle) nauplii	4729.2 (85)	1415.6 (66)	80.3 (9)		252.9 (6)	6.1 (<1)	394.6 (13)	15.0 (1)	123.0 (10)	32.3 (3)	301.4 (22)	8.2 (1)	333.6 (24)	29.3 (1)
decapoda	40.0 (<1)	25.2 (1)	221.2 (25)		102.8 (2)	13.3 (1)	501.1 (17)	49.9 (3)	28.0 (2)	316.4 (28)	98.6 (7)	46.5 (4)	179.7 (13)	325.8 (7)
others	14.0 (<1)	14.4 (1)		0.9 (1)	15.9 (<1)	1.8 (<1)		25.0 (2)	2.6 (<1)		1.9 (<1)		2.3 (<1)	3.3 (<1)
Chaetognatha	10.0 (<1)	12.6 (1)	6.0 (1)	0.9 (1)	55.3 (1)	15.2 (1)	30.0 (1)	24.9 (2)	4.0 (<1)	23.1 (2)	7.6 (1)	41.0 (3)	4.7 (<1)	32.7 (1)
Chordata urochordata	2.0 (<1)	5.4 (<1)	21.2 (2)	1.8 (2)	27.7 (1)	13.4 (1)	42.0 (1)	29.9 (2)	169.8 (14)	43.0 (4)	170.6 (13)	13.7 (1)	14.0 (1)	13.0 (<1)
fish														

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
15 OCTOBER 1976

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
Eggs						1.2 (<1)			18.7 (2)	1.5 (<1)	1.9 (<1)		11.7 (1)	
Miscellaneous					11.9 (<1)	0.6 (<1)	+[d]		8.0 (1) / +[d]	+[d]	7.6 (<1) / +[d]		9.3 (1) / +[d]	
TOTAL	5585.6	2159.3	891.0	97.7	4149.3	1787.8	2962.1	1576.9	1207.1	1134.0	1363.1	1286.0	1397.5	4882.7

[a] Values expressed are undamaged zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table H-158.
[c] Ø = oblique; S = surface; B = bottom.
[d] Echinoderm larvae noted as present; however, due to fragility of specimens, a quantitative analysis is not available.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
10 NOVEMBER 1976

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
Protozoa														
Coelenterata										1.5 (<1)				
Mollusca	4.3 (1)	173.6 (4)	170.7 (13)	253.8 (18)	196.4 (7)	24.4 (2)	7.5 (1)	14.2 (2)	12.1 (6)	61.9 (8)	34.7 (5)	195.0 (9)	5.5 (2)	997.3 (8)
Polychaeta	15.0 (2)		13.6 (1)	12.9 (1)	137.0 (5)	11.1 (1)	17.5 (2)	17.1 (2)	6.1 (3)	1.5 (<1)	26.7 (4)	16.0 (1)	1.9 (1)	124.7 (1)
Crustacea nauplii		9.1 (<1)	10.2 (1)		36.5 (1)	1.1 (<1)	2.5 (<1)	9.3 (1)			10.7 (2)	6.4 (<1)		45.3 (<1)
cladocera					9.1 (<1)		12.5 (1)		4.8 (2)	3.0 (<1)	5.3 (1)		25.1 (11)	
ostracoda				1.3 (<1)		1.1 (<1)								
copepoda	278.2 (41)	484.1 (12)	1024.2 (77)	661.9 (48)	917.7 (33)	556.6 (48)	769.5 (75)	459.0 (50)	104.6 (51)	473.1 (64)	496.4 (76)	863.0 (39)	154.5 (67)	5904.7 (47)
cirripedia (barnacle) nauplii	378.7 (55)	3292.8 (83)	102.4 (8)	376.1 (27)	1451.9 (52)	532.2 (46)	183.0 (18)	363.5 (40)	62.0 (30)	140.6 (19)	32.0 (5)	1070.7 (48)	18.6 (8)	5349.3 (42)
decapoda	1.8 (<1)		3.4 (<1)	9.1 (1)	4.6 (<1)	5.5 (<1)	7.5 (1)	11.4 (1)		21.1 (3)		9.6 (<1)	2.8 (1)	79.3 (1)
others	0.8 (<1)	13.7 (<1)		2.6 (<1)				0.7 (<1)				3.2 (<1)		22.7 (<1)
Chaetognatha	2.9 (<1)	4.6 (<1)	3.4 (<1)	20.7 (2)	9.1 (<1)	4.4 (<1)	5.0 (<1)	3.6 (<1)		10.5 (1)		16.0 (1)		11.3 (<1)
Chordata urochordata	0.4 (<1)	9.1 (<1)	10.2 (1)	29.6 (2)	32.0 (1)	22.2 (2)	10.0 (1)	16.4 (2)	6.1 (3)	7.6 (1)	34.7 (5)	35.2 (2)	4.6 (2)	
fish	0.7 (<1)				4.6 (<1)	2.2 (<1)					2.7 (<1)			

Table 2.2A-14
cont'd
DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
10 NOVEMBER 1976

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
Eggs				5.2 (<1)		2.2 (<1)	5.0 (<1)	12.1 (1)	7.3 (4)	18.2 (2)	10.7 (2)	22.4 (1)	15.8 (7)	56.7 (<1)
Miscellaneous	3.9 (1)/+[d]		+[d]	+[d]	4.6 (<1)/+[d]	1.1 (<1)/+[d]		2.8 (<1)/+[d]	1.2 (1)/+[d]	1.5 (<1)/+[d]		3.2 (<1)/+[d]	1.9 (1)/+[d]	+[d]
TOTAL	686.7	3987.0	1338.1	1373.2	2803.5	1164.1	1020.0	910.1	204.2	740.5	653.9	2240.7	230.7	12591.3

[a] Values expressed are undamaged zooplankters per cubic meter and represent the mean of three subsamples.

[b] For detailed taxonomic listing, see Table H-159.

[c] Ø = oblique; S = surface; B = bottom.

[d] Echinoderm larvae noted as present; however, due to fragility of specimens, a quantitative analysis is not available.

Table 2.2A-14
cont'd

TOTAL AND MEAN ZOOPLANKTERS PER CUBIC METER[a]
ST. LUCIE PLANT
MARCH-NOVEMBER 1976

	Station and depth[b]																				
	11	12	0			1			2			3			4			5		
Date	Ø	Ø	S	B	x̄	S	B	x̄	S	B	x̄	S	B	x̄	S	B	x̄	S	B	x̄
26 MAR	1534.7	480.5	31.0	559.3	295.2	2237.6	138.5	1188.1	1510.6	282.2	896.4	1584.5	1633.4	1609.0	1470.2	2400.9	1935.6	3529.0	6488.3	5008.7
21 APR	265.6	700.9	403.5	3233.4	1818.5	616.9	2518.2	1567.6	321.9	312.4	317.2	1150.1	5479.6	3314.9	321.4	3287.9	1804.7	306.9	1025.6	666.3
12 MAY	204.7	430.8	54.9	787.3	421.1	231.2	257.6	244.4	780.9	200.3	490.6	654.9	1339.2	997.1	928.7	241.3	584.3	98.9	239.1	169.0
8 JUN	388.1	624.6	246.7	1775.9	1011.3	430.5	1330.3	880.4	351.1	3914.5	2132.8	694.1	3342.8	2018.5	482.9	1337.5	910.2	171.7	2320.4	1246.1
14 JUL	156.7	136.5	3083.9	2384.6	2734.3	8007.8	6766.9	7387.4	344.8	8210.4	4277.6	291.1	2940.7	1615.9	312.6	5294.6	2803.5	832.3	734.8	783.6
11 AUG	1971.3	937.8	2535.4	285.0	1410.2	5154.8	408.7	2781.8	3781.1	8092.9	5937.0	3943.5	8100.2	6021.9	3785.2	11540.8	7663.0	3100.7	1157.9	2129.3
14 SEP	20206.3	5260.4	1878.1	5696.8	3787.5	2154.7	1536.6	1845.7	17447.1	NA[c]	NA[c]	4579.2	9854.6	7216.9	3290.1	9652.8	6471.5	6460.6	11853.8	9157.2
15 OCT	5585.6	2159.3	891.0	97.7	494.4	4149.3	1787.8	2968.6	2962.1	1576.9	2269.5	1207.1	1134.0	1170.6	1363.1	1286.0	1324.6	1397.5	4882.7	3140.1
10 NOV	686.7	3987.0	1338.1	1373.2	1355.7	2803.5	1164.1	1983.8	1020.0	910.1	965.1	204.2	740.5	472.4	653.9	2240.7	1447.3	230.7	12591.3	6411.0
MEAN	3444.4	1635.3	1162.5	1799.2	1480.9	2865.1	1767.6	2316.4	3168.8	2937.5	2160.7	1589.9	3840.6	2715.2	1400.9	4142.5	2711.7	1792.0	4588.2	3190.1

[a] S, B and Ø values represent the mean of three subsamples.
[b] Ø = oblique; S = surface; B = bottom
[c] Data not available.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
DECEMBER 1977

Taxon	Station and depth[c]													
	11		12		0		1		2		3		4		5	
	O	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED[d]																
Protozoa	0.8 (<1)								1.5 (<1)				4.7 (<1)			
Coelenterata			7.1 (1)		19.4 (1)						8.9 (1)		21.0 (2)	1.6 (1)	1.6 (<1)	2.3 (<1)
Mollusca	4.0 (1)	5.8 (2)	31.0 (2)	6.0 (5)	33.2 (2)		8.9 (1)	19.6 (4)	13.3 (1)	0.4 (1)	21.0 (2)	4.8 (2)	20.4 (2)	2.2 (<1)
Polychaeta	0.8 (<1)	4.7 (1)	2.4 (<1)		2.1 (1)		3.0 (<1)	2.0 (<1)	4.4 (<1)	0.4 (1)		1.6 (1)	12.6 (1)	2.2 (<1)
Crustacea																
nauplii			4.7 (<1)		2.1 (<1)		1.5 (1)	3.9 (1)	1.5 (<1)	0.8 (2)		3.2 (1)	7.8 (1)	2.3 (1)
cladocera																
ostracoda				3.0 (2)	10.4 (1)		5.9 (1)	9.8 (2)		0.8 (2)		40.2 (14)		7.8 (2)
copepoda	140.8 (38)	93.3 (28)	738.3 (48)	7.0 (60)	1195.3 (64)	9.3 (39)	371.6 (49)	711.0 (33)	1016.4 (71)	14.6 (42)	677.9 (53)	167.4 (57)	83.2 (7)	130.8 (29)
cirripedia (barnacle) nauplii	171.2 (46)	179.6 (40)	19.1 (1)		1.5 (1)		2.9 (<1)	3.9 (1)		0.4 (1)	7.3 (<1)	1.6 (1)	37.7 (3)	7.8 (2)
decapoda	7.2 (2)	5.8 (2)	4447.8 (29)	16.5 (13)	260.5 (17)	2.3 (10)	168.8 (22)	160.3 (29)	23.6 (2)	2.4 (7)	62.9 (5)	8.0 (3)	718.9 (62)	109.6 (24)
others		31.6 (10)			4.7 (1)	0.7 (3)			1.5 (<1)				1.6 (<1)	1.1 (<1)
Chaetognatha			11.9 (1)	6.0 (5)	12.5 (1)	1.1 (5)	10.4 (1)	5.9 (1)	11.7 (1)	0.8 (2)	37.3 (3)	3.2 (1)	6.3 (1)	7.9 (2)
Echinodermata	0.8 (<1)		4.7 (1)		6.2 (1)	0.4 (2)	1.5 (1)	2.0 (<1)	1.5 (<1)	0.4 (1)	4.7 (<1)	1.6 (1)	4.7 (<1)	3.4 (1)
Chordata																
urochordata		2.3 (1)	58.1 (2)	7.5 (6)	49.8 (1)	2.2 (9)	16.3 (2)	15.7 (3)	103.1 (7)	3.1 (9)	260.9 (21)	24.1 (8)	64.3 (6)	57.0 (15)
fish			2.4 (1)						1.5 (<1)		4.6 (<1)			
Eggs	37.6 (10)	46.7 (14)	169.1 (11)	9.0 (7)	270.0 (12)	0.7 (3)	109.6 (14)	39.0 (7)	162.0 (11)	3.5 (10)	81.5 (6)	3.2 (1)	171.1 (15)	6.7 (1)
Miscellaneous					6.1 (<1)			4.0 (1)	13.3 (1)	0.4 (1)	2.3 (<1)		1.6 (<1)	1.1 (<1)
SUBTOTAL UNDAMAGED	363.2	319.8	1476.6	126.0	1797.5	16.7	701.9	477.1	1362.7	28.0	1181.1	260.5	1131.8	342.1
SUBTOTAL DAMAGED[e]	8.8 (2)	8.7 (3)	64.3 (4)	4.5 (3)	68.5 (4)	7.1 (30)	56.3 (7)	82.2 (15)	64.8 (5)	7.0 (20)	86.2 (7)	33.8 (11)	26.7 (2)	107.3 (24)
SUBTOTAL UNDAMAGED + DAMAGED	372.0	328.0	1540.9	130.5	1866.0	23.8	758.2	559.3	1427.5	35.0	1267.3	294.3	1158.5	449.4

[a] Values expressed are zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table N-29.
[c] O = oblique; S = surface; B = bottom.
[d] Percentage is based on total undamaged.
[e] Percentage is based on total undamaged + damaged.

Table 2.2A-14
cont'd

RESULTS OF ZOOPLANKTON BIOMASS ANALYSIS[a]
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

	Station and depth[b]										
	11	12	0			1			2		
	Ø	Ø	S	B	X	S	B	X	S	B	X
25 JAN	1.28	4.05	6.00	1.58	3.79	15.83	1.50	8.67	14.24	3.49	8.87
15 FEB	4.17	13.29	10.97	6.13	8.55	32.08	16.26	24.17	1.87	22.54	12.21
11 MAR	2.62	9.22	21.07	19.45	20.26	7.66	7.66	7.66	26.92	374.26	200.59
19-20 APR[c]	2.02	6.07	16.17	16.03	16.10	15.79	13.87	14.83	15.34	27.06	21.20
10 MAY	1.72	5.46	3.51	27.27	15.39	42.81	17.69	30.25	4.33	35.38	19.86
14 JUN	1.59	4.20	7.67	16.99	12.33	16.85	58.70	37.78	2.12	37.94	20.03
12 JUL	4.28	7.93	48.04	41.12	44.58	50.84	89.99	70.42	60.80	46.95	53.88
23 AUG	2.13	5.18	16.51	23.95	20.23	28.26	20.42	24.34	14.89	NA[d]	NA[d]
13 SEP	4.03	3.72	17.91	22.72	20.31	19.36	26.78	23.07	27.45	26.53	26.99
11-19 OCT[e]	6.62	12.88	3.60	0.85	2.23	10.84	38.22	24.50	7.92	2.44	5.18
2 NOV	2.22	4.21	5.24	5.12	5.18	36.12	40.41	38.27	3.38	11.39	7.39
1 DEC	0.84	1.22	5.63	11.49	8.56	11.34	14.43	12.89	31.66	16.07	23.87
MEAN	2.79	6.45	13.53	16.06	14.79	23.98	28.83	26.40	17.58	54.91	36.37

	Station and depth[b]									
	3			4			5			
	S	B	X	S	B	X	S	B	X
25 JAN	4.15	9.86	7.01	13.40	2.55	7.98	5.95	3.83	4.89
15 FEB	23.78	38.49	31.14	15.25	1.72	8.49	12.93	41.25	27.09
11 MAR	48.35	19.73	34.04	19.22	11.82	15.52	86.33	18.76	52.55
19-20 APR[c]	19.12	22.95	21.04	13.09	14.48	13.79	16.18	13.44	14.81
10 MAY	3.42	17.37	10.40	7.00	38.29	22.65	4.44	24.40	14.42
14 JUN	12.86	27.44	20.15	2.96	24.69	13.83	25.33	70.79	48.06
12 JUL	30.80	105.70	68.25	NA[d]	46.39	NA[d]	223.47	16.58	120.03
23 AUG	29.81	NA[d]	NA[d]	8.79	NA[d]	NA[d]	29.24	19.42	24.33
13 SEP	19.20	24.49	21.85	15.24	28.22	21.73	24.26	51.63	37.95
11-19 OCT[e]	2.41	1.47	1.94	2.91	4.08	3.50	3.70	6.19	5.00
2 NOV	8.37	11.86	10.12	11.21	10.09	10.65	3.86	14.13	9.00
1 DEC	10.37	10.98	10.68	17.20	21.38	19.29	7.36	85.87	46.62
MEAN	17.72	26.39	21.51	11.48	18.52	13.74	36.92	30.52	33.73

[a]Ash-free dry weight expressed in mg/m^3.
[b]Ø = Oblique; S = Surface; B = Bottom.
[c]Stations 11 and 12 collected 20 APR; all other stations collected 19 APR.
[d]Data not available.
[e]Stations 11 and 12 collected 11 OCT; all other stations collected 19 OCT.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
JANUARY 1977

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED[d]														
Protozoa						2.0 (1)								
Coelenterata														
Mollusca	15.4 (15)	28.1 (14)	129.2 (13)	52.9 (8)	59.0 (6)	84.3 (8)	125.9 (9)	155.1 (6)	39.0 (6)	86.3 (3)	30.9 (2)	112.9 (6)	75.2 (3)	358.4 (15)
Polychaeta	3.8 (4)	13.1 (7)	7.0 (1)	5.5 (1)	7.0 (1)	8.0 (1)	5.8 (1)	2.6 (1)	9.9 (1)	15.6 (1)	9.3 (1)	5.7 (<1)		10.1 (1)
Crustacea nauplii	0.4 (<1)		150.7 (15)	16.4 (3)	8.1 (1)	20.1 (2)	9.7 (1)	2.6 (<1)	16.5 (1)		15.4 (1)	7.6 (1)	15.8 (1)	7.6 (<1)
cladocera													4.0 (<1)	
ostracoda		1.3 (1)		5.5 (1)	7.0 (<1)		15.5 (1)	31.6 (1)	3.3 (1)	15.7 (1)	3.1 (<1)	26.8 (2)	7.9 (<1)	12.6 (1)
copepoda	59.4 (56)	91.8 (47)	651.9 (66)	505.4 (78)	811.0 (81)	865.5 (77)	1022.5 (75)	1935.7 (77)	1083.7 (75)	2613.9 (75)	1310.0 (82)	1290.7 (74)	1757.3 (77)	1751.7 (73)
cirripedia (barnacle) nauplii	6.0 (6)	16.9 (9)	9.9 (1)	7.3 (1)	26.4 (3)	20.1 (2)	11.6 (1)	13.2 (1)	23.1 (2)	70.6 (2)	12.4 (1)	5.7 (<1)	11.9 (1)	7.6 (1)
decapoda	0.4 (1)	2.8 (1)	9.8 (1)	5.5 (1)	8.1 (1)	14.0 (1)	65.7 (5)	115.7 (5)	56.0 (4)	227.5 (7)	18.5 (1)	172.1 (10)	87.3 (4)	143.7 (6)
others	3.4 (3)	19.6 (10)			16.3 (2)	10.0 (1)	1.9 (1)	10.5 (1)		15.6 (1)				2.5 (1)
Chaetognatha			7.0 (1)		7.0 (1)	8.0 (1)	1.9 (<1)	13.2 (1)	16.5 (1)	31.4 (1)	24.8 (2)	3.8 (<1)	47.5 (2)	7.5 (1)
Echinodermata				1.8 (1)	8.1 (1)	4.0 (1)		7.6 (1)			24.7 (2)	3.8 (<1)	4.0 (<1)	
Chordata urochordata				5.5 (1)	20.3 (2)	50.2 (4)	42.6 (3)	94.7 (4)	75.8 (5)	196.2 (6)	49.4 (3)	28.7 (2)	122.7 (5)	70.7 (3)
fish					7.0 (1)	2.0 (1)	5.8 (1)				9.3 (1)	7.6 (<1)	4.0 (1)	
Eggs	15.8 (15)	23.4 (12)	39.7 (4)	45.6 (7)	40.7 (4)	34.1 (3)	46.5 (3)	123.6 (5)	72.5 (5)	196.2 (6)	86.5 (5)	88.1 (5)	138.5 (6)	22.7 (1)
Miscellaneous	0.9 (1)						1.9 (<1)		3.3 (1)				11.9 (1)	
SUBTOTAL UNDAMAGED	105.5	197.5	992.7	651.4	1006.0	1122.3	1357.3	2501.1	1459.6	3469.0	1594.3	1753.0	2233.0	2395.1
SUBTOTAL DAMAGED[e]	2.2 (2)	9.3 (5)	50.9 (5)	29.2 (4)	38.5 (4)	38.1 (3)	36.7 (3)	73.7 (3)	62.6 (4)	94.1 (3)	43.3 (3)	61.2 (3)	110.9 (5)	103.5 (4)
TOTAL UNDAMAGED + DAMAGED	107.7	206.8	1043.6	680.6	1044.5	1160.4	1394.0	2574.8	1512.2	3563.1	1637.6	1814.2	2398.9	2503.6

[a] Values expressed are zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table N-1B.
[c] Ø = oblique; S = surface; B = bottom.
[d] Percentage is based on total undamaged.
[e] Percentage is based on total undamaged + damaged.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
FEBRUARY 1977

Taxon	Station and depth[c] 11 Ø	12 Ø	0 S	0 B	1 S	1 B	2 S	2 B	3 S	3 B	4 S	4 B	5 S	5 B
UNDAMAGED[d]														
Protozoa														
Coelenterata				0.3 (1)			2.4 (1)	3.2 (1)	6.7 (1)	11.3 (1)	2.3 (1)	31.6 (<1)	12.1 (<1)	8.6 (1)
Mollusca	38.5 (7)	47.4 (10)	5.1 (1)	1.6 (1)	3.7 (1)	14.2 (2)	12.1 (1)	9.4 (1)	26.8 (1)	19.8 (1)	23.3 (1)	15.8 (<1)	38.2 (1)	32.3 (1)
Polychaeta	1.0 (1)						2.4 (1)		1.7 (1)		2.3 (1)			
Crustacea														
nauplii	1.0 (1)		17.8 (1)	0.5 (1)	3.3 (1)	2.2 (1)	7.3 (1)	1.6 (1)	1.7 (1)				2.0 (<1)	
cladocera														
ostracoda	1.0 (1)			1.1 (1)	6.5 (1)	6.5 (1)		32.8 (2)	1.7 (1)	923.0 (14)		412.1 (5)		23.7 (1)
copepoda	367.0 (65)	177.4 (39)	1501.2 (87)	266.9 (84)	4115.5 (91)	1676.9 (86)	2266.7 (88)	1495.5 (83)	2818.8 (90)	5207.5 (78)	2605.2 (83)	8020.2 (90)	4261.3 (94)	4748.5 (92)
cirripedia (barnacle) nauplii	9.1 (2)	23.7 (5)			22.9 (1)									2.2 (1)
decapoda	5.0 (1)		5.1 (1)	24.5 (8)	9.9 (1)	4.3 (1)	2.2 (1)	54.8 (3)	21.9 (1)	319.0 (5)	11.6 (<1)	202.9 (2)	4.0 (<1)	71.1 (1)
others	31.4 (6)	42.8 (18)		1.4 (1)	26.2 (1)	52.1 (3)		14.1 (1)		17.0 (1)		12.7 (<1)	10.0 (<1)	28.0 (1)
Chaetognatha	9.1 (2)		15.2 (1)	2.2 (1)	9.8 (1)	6.6 (1)	31.5 (1)	28.2 (2)	92.0 (3)	82.0 (1)	37.1 (1)	101.3 (1)	66.3 (2)	51.6 (1)
Echinodermata														
Chordata														
urochordata			5.1 (1)	0.8 (1)	32.8 (1)	26.0 (1)	12.1 (1)	9.4 (1)	28.5 (1)	8.5 (1)	20.9 (1)	9.5 (1)		21.5 (1)
fish	1.0 (1)		2.5 (1)	0.3 (1)	55.8 (1)	2.2 (<1)	2.4 (<1)	3.1 (<1)		110.1 (2)				
Eggs	103.4 (18)	127.8 (28)	175.2 (10)	19.4 (6)	154.2 (3)	132.4 (7)	235.1 (9)	129.6 (8)	118.8 (4)		253.3 (9)	158.5 (2)	148.7 (3)	154.8 (3)
Miscellaneous			2.5 (<1)								2.3 (<1)			
SUBTOTAL UNDAMAGED	567.5	459.1	1729.7	319.0	4469.6	1893.9	2579.2	1691.7	3118.6	6698.2	2958.3	8964.6	4542.6	5142.3
SUBTOTAL DAMAGED[e]	16.2 (3)	23.7 (5)	38.0 (2)	7.6 (2)	52.5 (1)	71.6 (4)	50.9 (2)	46.9 (3)	77.0 (2)	146.7 (2)	67.4 (2)	149.1 (2)	56.3 (1)	187.2 (4)
TOTAL UNDAMAGED + DAMAGED	583.7	482.8	1767.7	326.6	4522.1	1965.5	2630.1	1738.6	3195.6	6844.9	3025.7	9113.7	4598.9	5329.5

[a] Values expressed are zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table N-19.
[c] Ø = oblique; S = surface; B = bottom.
[d] Percentage is based on total undamaged.
[e] Percentage is based on total undamaged + damaged.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
MARCH 1977

Taxon	Station and depth[c]													
	11	12	0		1		2		3		4		5	
	O	O	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED[d]														
Protozoa	2.4 (<1)													
Coelenterata	0.8 (<1)	20.9 (6)	5.0 (<1)	14.5 (<1)	5.1 (<1)		2.4 (<1)	54.7 (<1)	5.1 (<1)	17.7 (1)		12.4 (<1)	18.4 (<1)	18.9 (1)
Mollusca	38.0 (6)	13.9 (4)	15.1 (1)	63.9 (1)	50.5 (1)	93.6 (1)	24.2 (1)	191.5 (1)	119.8 (3)	88.4 (2)	22.2 (1)	68.2 (2)	25.8 (<1)	66.2 (2)
Polychaeta	86.6 (13)	20.9 (6)	10.1 (<1)	110.3 (2)	85.9 (1)	140.4 (2)	4.8 (<1)		5.0 (<1)	11.7 (<1)	3.7 (<1)		3.7 (<1)	15.8 (<1)
Crustacea														
nauplii	3.2 (1)	20.9 (6)	2.5 (<1)			54.6 (1)	2.4 (<1)		12.7 (<1)	2.9 (<1)	3.7 (<1)			6.3 (<1)
cladocera											3.7 (<1)			
ostracoda		7.0 (2)	7.6 (<1)	145.2 (3)	40.2 (1)	144.2 (2)		164.1 (1)		11.8 (<1)			11.0 (<1)	517.2 (13)
copepoda	305.7 (45)	118.3 (33)	3078.5 (93)	3745.3 (80)	7091.0 (84)	7450.2 (82)	3535.7 (93)	23468.8 (81)	4308.9 (90)	3436.4 (88)	4145.0 (92)	3851.8 (88)	5599.6 (91)	2765.7 (70)
cirripedia (barnacle) nauplii	75.2 (11)	41.7 (12)	35.3 (1)	226.4 (5)	393.9 (5)	479.5 (5)	31.5 (1)	875.3 (3)		8.8 (<1)		24.8 (1)	36.8 (1)	315.3 (8)
decapoda	1.6 (<1)	14.0 (4)		31.9 (1)	106.4 (1)	140.4 (2)	2.4 (<1)	574.6 (2)	5.0 (<1)	29.4 (1)		9.3 (<1)	36.8 (1)	53.8 (1)
others	17.8 (3)	48.8 (14)	7.6 (<1)	113.2 (2)	303.1 (4)	272.9 (3)	7.3 (<1)	574.4 (2)	5.1 (<1)	44.1 (1)		49.6 (1)	47.9 (1)	6.3 (<1)
Chaetognatha			10.2 (<1)	11.6 (<1)	50.7 (1)	23.4 (<1)	12.1 (<1)	13.7 (1)	50.8 (1)	29.4 (1)	25.9 (1)	12.4 (<1)	55.2 (1)	6.4 (<1)
Echinodermata	4.9 (1)					3.9 (<1)								9.5 (<1)
Chordata														
urochordata	86.5 (13)	20.9 (6)	25.3 (1)	148.1 (3)	85.9 (1)	78.0 (1)	9.7 (1)	1367.7 (5)	147.9 (3)	59.0 (2)	44.3 (1)	142.7 (3)	11.0 (<1)	53.6 (1)
fish	0.8 (<1)	27.8 (8)	15.1 (1)	2.9 (<1)	75.8 (1)	23.4 (<1)	14.5 (<1)	46.5 (2)	10.2 (<1)	5.8 (<1)	59.1 (1)	65.1 (2)	132.4 (2)	
Eggs	57.4 (8)		108.5 (3)	92.9 (2)	156.6 (2)	159.8 (2)	15.5 (4)	1039.4 (4)	119.8 (3)	138.6 (4)	195.6 (4)	130.2 (3)	176.6 (3)	107.2 (3)
Miscellaneous		7.0 (2)	2.5 (<1)						5.1 (<1)	2.9 (<1)		6.2 (<1)	14.7 (<1)	
SUBTOTAL UNDAMAGED	680.9	362.1	3323.3	4706.2	8445.3	9064.3	3802.0	28912.5	4795.4	3886.9	4503.2	4372.7	6169.9	3942.2
SUBTOTAL DAMAGED[e]	23.5 (3)	13.9 (4)	80.8 (2)	101.6 (2)	520.3 (6)	187.1 (2)	82.4 (2)	1340.5 (4)	140.2 (3)	129.5 (3)	92.3 (2)	130.2 (3)	209.7 (3)	94.7 (2)
TOTAL UNDAMAGED + DAMAGED	704.4	376.0	3404.1	4807.8	8965.6	9251.4	3884.4	30253.0	4935.6	4016.4	4595.5	4502.9	6379.6	4036.9

[a] Values expressed are zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table N-20.
[c] O = oblique; S = surface; B = bottom.
[d] Percentage is based on total undamaged.
[e] Percentage is based on total undamaged + damaged.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
APRIL 1977[c]

Taxon	Station and depth[d]													
	11	12	0		1		2		3		4		5	
	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED[e]														
Protozoa	0.8 (<1)	11.6 (3)			7.5 (<1)						2.0 (<1)			
Coelenterata	0.8 (<1)		4.1 (<1)		22.5 (1)	3.4 (<1)	2.7 (<1)	9.1 (1)	4.9 (<1)	7.9 (<1)	6.1 (<1)		3.7 (<1)	12.1 (1)
Mollusca	28.4 (12)	23.2 (7)	37.0 (2)	37.7 (2)	120.2 (3)	37.2 (3)	54.3 (1)	52.3 (3)	98.0 (3)	283.8 (5)	38.8 (3)	71.4 (4)	92.2 (3)	39.5 (3)
Polychaeta	1.7 (1)		12.3 (1)	2.2 (<1)	45.1 (1)		16.3 (<1)	2.3 (<1)	14.7 (<1)		16.3 (1)		11.1 (<1)	3.0 (<1)
Crustacea														
nauplii														
cladocera	0.8 (<1)			2.2 (<1)								4.9 (<1)		9.1 (1)
ostracoda								2.3 (<1)	4.9 (<1)					
copepoda	103.6 (44)	89.6 (25)	1433.5 (74)	1757.2 (77)	1796.2 (46)	749.7 (54)	3505.1 (84)	1248.8 (73)	2821.5 (77)	4786.0 (78)	1100.6 (73)	1405.0 (74)	2232.2 (75)	851.6 (65)
cirripedia (barnacle) nauplii	6.7 (3)	96.7 (27)	4.1 (<1)	8.9 (<1)	15.0 (<1)	6.8 (1)		2.3 (<1)		7.9 (<1)	6.1 (<1)	9.9 (1)	29.5 (1)	18.2 (1)
decapoda	16.5 (7)	18.4 (5)	36.9 (2)	89.0 (4)	195.2 (5)	185.8 (13)	97.6 (2)	111.3 (6)	83.3 (2)	276.2 (5)	77.3 (5)	170.0 (9)	250.7 (9)	145.9 (11)
others	5.8 (2)	15.0 (4)	4.1 (<1)	6.6 (<1)	37.5 (1)	6.8 (1)		6.9 (<1)	14.7 (<1)		2.0 (<1)		14.8 (1)	6.0 (1)
Chaetognatha			20.5 (1)	11.2 (1)			70.5 (2)	20.4 (1)	117.6 (3)	157.7 (3)	8.1 (1)	17.2 (1)	33.2 (1)	12.1 (1)
Echinodermata	3.3 (1)						21.7 (1)							
Chordata														
urochordata	44.2 (19)	36.5 (10)	131.6 (8)	250.7 (11)	1337.8 (34)	300.5 (22)	181.7 (4)	93.2 (5)	362.5 (10)	370.7 (6)	116.2 (8)	120.6 (6)	92.2 (3)	118.6 (9)
fish	0.8 (<1)	1.7 (1)	57.6 (3)	11.1 (1)	67.6 (2)	10.1 (1)	2.7 (<1)	45.5 (3)		47.4 (1)	8.2 (1)		18.5 (1)	15.1 (1)
Eggs	24.2 (10)	59.7 (17)	135.8 (8)	95.4 (4)	285.6 (7)	91.2 (7)	241.4 (6)	127.4 (7)	137.2 (4)	212.9 (4)	136.6 (9)	93.5 (5)	184.2 (6)	85.2 (7)
Miscellaneous									4.9 (<1)					
SUBTOTAL UNDAMAGED	237.6	351.9	1727.5	2272.2	3930.2	1391.5	4194.0	1721.8	3664.2	6150.5	1518.3	1909.7	2962.3	1316.4
SUBTOTAL DAMAGED[f]	5.9 (2)	18.3 (5)	201.6 (11)	62.1 (3)	543.6 (12)	141.9 (9)	92.1 (2)	75.1 (4)	200.9 (5)	425.8 (7)	163.0 (10)	78.8 (4)	180.7 (6)	151.9 (10)
TOTAL UNDAMAGED + DAMAGED	243.5	370.2	1929.1	2334.3	4478.8	1533.4	4286.1	1796.9	3865.1	6576.3	1681.3	1988.5	3143.0	1468.3

[a] Values expressed are zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table M-21.
[c] Stations 11 and 12 collected 20 April, all other stations collected 19 April.
[d] Ø = oblique; S = surface; B = bottom.
[e] Percentage is based on total undamaged.
[f] Percentage is based on total undamaged + damaged.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
MAY 1977

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED[d]														
Protozoa					1.8 (<1)									
Coelenterata														
Mollusca	29.4 (10)	10.5 (3)	7.6 (1)	45.0 (1)	29.4 (2)	19.6 (1)	7.7 (1)	12.2 (<1)	22.5 (4)	15.9 (2)	15.9 (1)	30.6 (1)	333.5 (9)	107.6 (4)
Polychaeta					1.8 (1)		3.8 (<1)		5.0 (1)	3.2 (<1)	3.2 (<1)	10.2 (<1)		
Crustacea														
nauplii		4.2 (1)	7.6 (1)	4.5 (<1)	9.2 (1)	7.4 (<1)	15.3 (1)		15.0 (2)	9.5 (1)		5.1 (<1)	40.4 (1)	4.9 (<1)
cladocera														
ostracoda	2.7 (1)	4.2 (1)		27.0 (1)	14.7 (1)	4.9 (<1)	11.5 (1)	1845.5 (58)	12.5 (2)	267.0 (35)	73.2 (3)	1411.7 (27)	10.1 (<1)	44.0 (2)
copepoda	143.9 (46)	208.4 (60)	1012.9 (84)	2852.2 (85)	1011.6 (79)	1689.3 (85)	750.4 (45)	700.7 (22)	269.3 (42)	298.8 (39)	1191.0 (56)	2507.3 (48)	2274.1 (64)	1368.8 (55)
cirripedia (barnacle) nauplii	24.0 (8)	23.1 (7)	5.1 (<1)	4.5 (<1)	7.4 (1)							20.4 (<1)	10.1 (<1)	
decapoda	10.6 (3)	8.4 (2)	17.7 (2)	229.8 (7)	71.7 (6)	79.0 (4)	145.3 (9)	138.5 (4)	49.9 (8)	38.3 (5)	143.4 (7)	346.7 (7)	363.8 (10)	547.8 (22)
others	2.6 (1)	16.8 (5)	2.5 (<1)	18.0 (1)	27.6 (2)	44.3 (2)	3.8 (<1)	12.3 (1)		15.9 (2)		30.6 (1)	10.1 (<1)	9.8 (<1)
Chaetognatha	5.3 (2)	4.2 (1)	35.5 (3)	99.1 (3)	5.5 (1)	29.5 (2)	287.2 (17)	346.1 (11)	69.8 (11)	57.1 (8)	375.8 (18)	667.7 (13)	50.5 (1)	190.7 (8)
Echinodermata														
Chordata														
urochordata	5.3 (2)	2.1 (<1)	2.5 (<1)	4.5 (1)	9.2 (1)		76.5 (5)	24.4 (1)	25.0 (4)		22.3 (1)	15.3 (<1)	60.6 (2)	44.0 (2)
fish						2.5 (<1)	3.8 (<1)		7.5 (1)	3.2 (<1)				9.8 (<1)
Eggs	86.6 (28)	67.3 (19)	119.3 (10)	76.6 (2)	95.8 (8)	122.7 (6)	382.8 (23)	81.5 (3)	159.6 (25)	57.2 (8)	321.6 (15)	137.6 (3)	404.3 (11)	146.7 (6)
Miscellaneous														
SUBTOTAL UNDAMAGED	310.4	349.2	1210.7	3361.2	1285.7	1999.2	1688.1	3161.2	636.1	766.1	2146.4	5183.2	3557.5	2474.1
SUBTOTAL DAMAGED[e]	5.3 (2)	27.3 (7)	83.8 (7)	49.5 (2)	114.2 (8)	71.2 (3)	91.9 (5)	85.5 (3)	54.8 (8)	19.1 (2)	159.3 (7)	428.2 (8)	212.2 (6)	171.1 (7)
TOTAL UNDAMAGED + DAMAGED	315.7	376.5	1294.5	3410.7	1399.9	2070.4	1780.0	3246.7	690.9	785.2	2305.7	5611.4	3769.7	2645.2

[a] Values expressed are zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table N-22.
[c] Ø = oblique; S = surface; B = bottom.
[d] Percentage is based on total undamaged.
[e] Percentage is based on total undamaged + damaged.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
JUNE 1977

Taxon	Station and depth[c]													
	11	12	0		1		2		3		4		5	
	ø	ø	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED[d]														
Protozoa	7.1 (1)	7.0 (2)	15.3 (2)	10.5 (<1)	3.3 (<1)	19.8 (1)	14.2 (4)		23.0 (8)	10.7 (1)	11.7 (3)		110.1 (15)	
Coelenterata			6.6 (1)	7.9 (<1)							4.7 (1)	25.4 (2)		
Mollusca	249.6 (26)	16.4 (6)	155.0 (25)	103.0 (4)	93.3 (7)	207.7 (1)	35.6 (9)	11.3 (1)	26.9 (9)	21.4 (2)	29.0 (8)		234.0 (31)	61.0 (1)
Polychaeta							3.6 (1)	5.6 (<1)		10.7 (1)		5.1 (<1)		
Crustacea														
nauplii				2.6 (1)	11.3 (1)		7.1 (2)							
cladocera														
ostracoda						9.9 (1)	3.6 (1)	11.2 (1)		117.6 (8)		5.1 (<1)	32.1 (4)	152.5 (2)
copepoda	461.3 (48)	161.9 (56)	423.6 (67)	2455.3 (92)	1163.4 (80)	14894.1 (92)	170.5 (47)	870.7 (67)	84.5 (79)	1015.8 (71)	263.5 (72)	1293.5 (74)	211.1 (28)	6456.9 (82)
cirripedia (barnacle) nauplii	138.4 (14)	65.7 (23)					17.8 (4)				9.3 (3)		55.0 (7)	10.2 (1)
decapoda	67.4 (7)	25.7 (9)	3.8 (1)	60.7 (2)	96.6 (7)	712.1 (4)	53.5 (13)	224.9 (17)	22.8 (25)	122.8 (9)	18.7 (5)	258.8 (15)	41.4 (6)	406.7 (5)
others	7.0 (1)	7.0 (2)		2.6 (<1)	3.3 (<1)	49.5 (1)	3.6 (1)	11.3 (1)	7.7 (3)	16.0 (1)				10.2 (<1)
Chaetognatha	9.4 (1)		6.6 (1)	23.7 (1)	13.3 (1)	49.5 (1)	60.5 (15)	140.4 (11)	26.8 (9)	85.5 (6)	11.7 (3)	121.7 (7)	4.6 (1)	162.7 (2)
Echinodermata							3.6 (1)							
Chordata														
urochordata	2.4 (<1)	2.3 (1)	2.2 (1)	13.2 (<1)	33.3 (2)	217.6 (1)	7.1 (2)	5.6 (<1)	46.1 (16)	26.7 (2)	2.3 (1)	25.3 (2)	55.1 (7)	559.3 (7)
fish	3.5 (<1)			5.3 (1)	3.3 (<1)			11.3 (1)						
Eggs	21.3 (2)	2.3 (1)	15.3 (2)		23.3 (2)	19.3 (<1)	21.3 (5)	11.3 (1)	7.7 (3)		11.7 (3)	5.1 (<1)	13.8 (2)	30.5 (<1)
Miscellaneous											2.3 (1)			
SUBTOTAL UNDAMAGED	967.4	288.3	633.4	2684.8	1446.4	16110.0	402.0	1303.6	295.5	1427.2	363.9	1740.0	757.2	7850.0
SUBTOTAL DAMAGED[e]	24.8 (3)	63.2 (18)	21.9 (3)	118.7 (4)	110.0 (7)	169.2 (1)	277.0 (41)	382.0 (23)	49.9 (14)	37.4 (3)	58.3 (14)	96.4 (5)	91.8 (11)	325.4 (4)
TOTAL UNDAMAGED + DAMAGED	992.2	351.5	655.3	2803.5	1556.4	16349.[illegible]	679.0	1685.6	345.4	1464.6	422.2	1836.4	849.0	8175.4

[a] Values expressed are zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listings, see Table N-23.
[c] ø = oblique; S = surface; B = bottom.
[d] Percentage is based on total undamaged.
[e] Percentage is based on total undamaged + damaged.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
JULY 1977

Taxon	Station and depth[c]													
	11	12	0		1		2		3		4		5	
	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED[d]														
Protozoa	27.7 (3)	10.5 (1)	19.4 (<1)		24.0 (1)				20.6 (1)		53.2 (4)	30.0 (<1)		19.4 (1)
Coelenterata				30.2 (<1)				10.0 (<1)			5.9 (1)	15.0 (<1)		20.1 (2)
Mollusca	20.8 (2)	10.5 (1)	71.0 (1)	50.3 (<1)	56.0 (2)	48.7 (1)	14.8 (2)	119.4 (1)	20.6 (1)	71.5 (1)	53.2 (4)	60.0 (1)	25.6 (<1)	72.8 (4)
Polychaeta				20.1 (<1)	8.0 (<1)			29.9 (<1)			5.9 (<1)			14.6 (1)
Crustacea nauplii										23.8 (<1)				4.9 (<1)
cladocera				20.1 (1)				10.0 (<1)	61.7 (2)	23.9 (1)	5.9 (<1)	15.0 (<1)		24.3 (1)
ostracoda						32.5 (1)	3.7 (1)			71.5 (1)				4.9 (<1)
copepoda	431.3 (46)	723.0 (69)	5240.6 (92)	13209.1 (87)	2865.7 (82)	8508.8 (89)	452.9 (61)	7741.1 (84)	2653.7 (68)	5101.2 (78)	945.4 (67)	8226.3 (86)	14060.6 (94)	1460.4 (74)
cirripedia (barnacle) nauplii	188.6 (20)	170.3 (16)		30.2 (<1)	8.0 (<1)	32.5 (1)		19.9 (1)	61.7 (2)					24.3 (1)
decapoda	54.2 (6)	89.0 (8)	45.3 (1)	1217.4 (8)	160.0 (5)	584.5 (6)	14.8 (2)	924.9 (10)	61.7 (2)	762.6 (12)	47.2 (3)	479.6 (5)	153.6 (1)	19.5 (1)
others	1.4 (1)	10.5 (1)	6.5 (<1)		8.0 (1)	48.6 (1)				11.9 (<1)			25.6 (<1)	
Chaetognatha	8.4 (1)		38.8 (1)	70.5 (1)				19.9 (<1)		35.8 (1)	70.8 (5)	45.0 (1)	51.2 (<1)	14.6 (1)
Echinodermata														
Chordata urochordata	20.8 (2)		103.3 (2)	110.6 (1)	192.1 (6)	129.9 (1)	196.7 (26)	119.4 (1)	534.8 (14)	357.6 (6)	118.2 (8)	674.3 (7)	605.8 (4)	67.9 (3)
fish			12.9 (<1)	10.1 (<1)		16.2 (<1)		10.0 (<1)	20.6 (1)		11.8 (1)			
Eggs	194.2 (21)	28.8 (3)	142.0 (3)	482.9 (3)	176.1 (5)	178.6 (2)	63.1 (9)	228.9 (3)	473.1 (12)	59.6 (1)	94.5 (7)	60.0 (1)	93.9 (1)	213.5 (11)
Miscellaneous	1.4 (<1)		6.5 (<1)	10.1 (<1)										
SUBTOTAL UNDAMAGED	948.8	1042.6	5686.3	15261.6	3497.9	9580.3	746.0	9233.4	3908.5	6519.4	1412.0	9605.2	15016.3	1970.2
SUBTOTAL DAMAGED[e]	25.0 (3)	102.1 (9)	226.0 (4)	322.1 (2)	248.2 (7)	535.6 (5)	133.6 (15)	467.8 (5)	205.7 (5)	405.3 (6)	301.3 (18)	434.6 (4)	622.8 (4)	480.4 (20)
TOTAL UNDAMAGED + DAMAGED	973.8	1144.7	5912.3	15583.7	3746.1	10115.9	879.6	9701.2	4114.2	6924.7	1713.3	10039.8	15639.1	2450.6

[a] Values expressed are zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table N-24.
[c] Ø = oblique; S = surface; B = bottom.
[d] Percentage is based on total undamaged.
[e] Percentage is based on total undamaged + damaged.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
AUGUST 1977

Taxon	Station and depth[c] 11	12	0		1		2		3		4		5	
	O	O	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED[d]														
Protozoa		3.2 (1)				7.6 (<1)	34.2 (2)	6.9 (<1)	30.7 (1)		6.3 (1)		22.2 (1)	
Coelenterata			26.9 (1)	88.1 (3)	48.3 (1)	76.1 (1)	4.9 (<1)	48.5 (2)	19.1 (1)	118.2 (2)	6.3 (1)	25.9 (<1)	3.7 (<1)	66.8 (2)
Mollusca	29.2 (3)	31.8 (5)		33.0 (1)	123.2 (3)	129.4 (2)	78.2 (4)	13.9 (1)	26.8 (1)	52.6 (1)	31.6 (3)	38.8 (1)	103.5 (3)	55.7 (2)
Polychaeta	12.0 (1)	6.3 (1)		11.0 (<1)	37.5 (1)	22.8 (<1)	14.7 (1)	6.9 (<1)	15.3 (1)	39.4 (1)	6.3 (1)	38.8 (1)		11.1 (<1)
Crustacea														
nauplii	3.4 (<1)				112.5 (3)	30.5 (<1)				13.1 (<1)			7.4 (<1)	
cladocera	17.2 (2)		5.4 (<1)	11.0 (<1)	246.5 (6)	685.2 (9)	97.8 (5)	624.3 (25)	126.5 (5)	591.7 (11)	12.7 (1)	504.9 (7)	395.5 (12)	478.9 (13)
ostracoda														44.5 (1)
copepoda	306.2 (32)	162.3 (27)	1344.2 (82)	2334.5 (69)	2625.3 (66)	4606.4 (57)	1383.2 (72)	1317.9 (53)	1804.9 (76)	3405.7 (64)	947.9 (85)	4272.3 (62)	2383.8 (71)	2271.7 (62)
cirripedia (barnacle) nauplii	394.0 (41)	286.4 (47)			150.0 (4)	60.9 (1)	4.9 (<1)		7.7 (<1)		3.2 (<1)	12.9 (<1)	3.7 (<1)	
decapoda	146.1 (15)	60.4 (10)	26.8 (1)	253.2 (8)	336.0 (10)	1423.5 (18)	97.9 (5)	110.9 (5)	222.3 (9)	407.3 (8)	72.9 (7)	1242.3 (18)	70.3 (2)	177.9 (5)
others	8.6 (1)	22.2 (4)			10.7 (<1)	83.7 (1)		6.9 (<1)	7.6 (<1)		3.2 (<1)	38.8 (1)	3.7 (<1)	11.1 (<1)
Chaetognatha	10.3 (1)		10.7 (1)	22.0 (1)	26.8 (1)	76.1 (1)	63.5 (3)	13.8 (1)	80.5 (3)	184.0 (3)	9.5 (1)	38.7 (1)	81.4 (3)	100.1 (3)
Echinodermata														
Chordata														
urochordata	24.1 (3)	22.3 (4)	317.2 (14)	605.7 (18)	182.2 (5)	639.5 (8)	83.1 (4)	228.9 (9)		394.4 (7)	3.2 (<1)	517.8 (8)	51.7 (2)	367.5 (10)
fish			10.8 (1)	22.0 (1)	26.8 (1)	182.7 (2)	24.5 (1)	69.3 (3)	11.5 (1)	78.9 (2)	12.6 (1)	129.4 (2)	59.1 (2)	44.5 (1)
Eggs	13.7 (1)	12.7 (2)	16.1 (1)	11.0 (<1)	26.8 (1)	38.0 (1)	39.1 (2)	27.7 (1)	11.5 (1)	39.4 (1)		12.9 (<1)	40.7 (1)	33.4 (1)
Miscellaneous					5.4 (<1)	7.6 (<1)	4.9 (<1)			13.1 (<1)				
SUBTOTAL UNDAMAGED	964.8	607.6	2258.1	3391.5	4008.0	8070.0	1930.9	2475.9	2364.4	5337.8	1115.7	6873.5	3226.7	3663.2
SUBTOTAL DAMAGED[e]	41.2 (4)	95.5 (14)	155.9 (7)	473.5 (12)	96.5 (2)	548.1 (6)	112.6 (6)	194.2 (7)	103.6 (4)	446.9 (8)	85.5 (7)	530.7 (7)	125.7 (4)	233.8 (6)
TOTAL UNDAMAGED + DAMAGED	1006.0	703.1	2414.0	3865.0	4104.5	8618.1	2043.5	2670.1	2468.0	5784.7	1201.2	7404.2	3352.4	3897.0

[a] Values expressed are zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table N-25.
[c] O = oblique; S = surface; B = bottom.
[d] Percentage is based on total undamaged.
[e] Percentage is based on total undamaged + damaged.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
SEPTEMBER 1977

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	ø	ø	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED[d]														
Protozoa		4.9 (<1)	5.1 (<1)		13.3 (<1)		4.1 (<1)		5.2 (<1)	6.2 (<1)			4.8 (<1)	
Coelenterata			10.2 (1)			4.8 (<1)		10.1 (<1)			4.8 (<1)			
Mollusca	271.1 (28)	32.4 (3)	107.5 (5)	116.8 (5)	270.7 (8)	166.3 (4)	24.4 (1)	50.5 (1)	15.6 (1)		4.8 (<1)	58.7 (1)	38.6 (1)	40.3 (1)
Polychaeta			10.2 (1)	16.6 (1)	22.2 (1)							8.4 (<1)	4.8 (<1)	6.7 (<1)
Crustacea														
nauplii	2.7 (<1)		10.3 (1)								9.5 (1)		4.8 (<1)	
cladocera	1.3 (<1)	3.2 (<1)	30.7 (1)		13.3 (<1)	9.6 (<1)	12.2 (<1)	30.3 (1)		24.9 (1)		25.1 (1)	57.9 (2)	6.7 (<1)
ostracoda														
copepoda	324.7 (34)	594.0 (48)	1685.2 (78)	1742.7 (73)	2817.7 (78)	2921.8 (78)	2789.7 (89)	3050.4 (82)	2252.1 (95)	1681.2 (79)	1064.7 (81)	4432.3 (83)	2727.1 (82)	4033.5 (81)
cirripedia (barnacle) nauplii	259.0 (27)	543.6 (44)	20.5 (1)	8.3 (<1)	124.2 (3)	61.8 (2)		30.3 (1)				50.3 (1)		
decapoda	50.8 (5)	26.0 (2)	215.0 (10)	471.0 (20)	203.8 (6)	399.4 (11)	105.8 (3)	242.4 (7)	26.0 (1)	161.8 (8)	76.4 (6)	343.5 (6)	130.4 (4)	261.6 (5)
others	17.4 (2)	11.4 (1)		16.7 (1)	17.7 (1)	33.3 (1)	8.2 (<1)				4.8 (<1)		4.8 (<1)	6.7 (<1)
Chaetognatha	2.6 (<1)		20.5 (1)	4.2 (<1)	8.9 (<1)	38.0 (1)	40.7 (1)	20.2 (1)	41.6 (2)	31.2 (2)	14.3 (1)	33.5 (1)	48.3 (1)	40.2 (1)
Echinodermata				4.2 (<1)	13.3 (<1)		12.2 (<1)			18.7 (1)		16.7 (<1)	9.7 (<1)	26.8 (1)
Chordata														
urochordata	18.7 (2)	1.6 (<1)	51.2 (2)	12.5 (1)	88.8 (3)	66.5 (2)	56.9 (2)	212.1 (6)	15.6 (1)	149.3 (7)	109.8 (8)	360.3 (7)	197.9 (6)	422.8 (9)
fish		1.6 (<1)			13.3 (<1)	28.5 (1)	61.0 (2)	50.5 (1)	5.2 (<1)	18.6 (1)	14.3 (1)	8.4 (<1)	111.0 (3)	127.5 (3)
Eggs	12.1 (1)	9.7 (1)	5.1 (<1)	12.5 (1)	13.3 (<1)	14.3 (<1)	24.4 (1)	30.3 (1)	10.4 (<1)	18.7 (1)	4.8 (<1)	33.5 (1)	4.8 (<1)	13.4 (<1)
Miscellaneous										6.2 (<1)	4.8 (<1)			
SUBTOTAL UNDAMAGED	963.1	1228.3	2171.5	2405.5	3620.5	3744.3	3139.6	3727.1	2371.7	2116.8	1313.0	5370.7	3344.9	4986.2
SUBTOTAL DAMAGED[e]	28.1 (3)	144.5 (11)	107.5 (5)	70.9 (3)	97.5 (3)	118.9 (3)	109.9 (3)	161.6 (4)	62.3 (3)	186.6 (8)	109.9 (8)	310.1 (6)	72.4 (2)	187.9 (4)
TOTAL UNDAMAGED + DAMAGED	991.2	1372.8	2279.0	2476.4	3718.0	3863.2	3249.5	3888.7	2434.0	2303.4	1422.9	5680.8	3417.3	5174.1

[a] Values expressed are zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table N-26.
[c] ø = oblique; S = surface; B = bottom.
[d] Percentage is based on total undamaged.
[e] Percentage is based on total undamaged + damaged.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
OCTOBER 1977[c]

	Station and depth[d]													
	11	12	0			1		2	3		4		5	
Taxon	ø	ø	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED[e]														
Protozoa														
Coelenterata	1.8 (<1)		23.5 (3)	56.5 (4)	22.7 (1)	10.7 (<1)	119.6 (4)		13.1 (1)	13.5 (1)	8.9 (1)	26.0 (1)	10.4 (2)	29.2 (1)
Mollusca	148.3 (5)	67.2 (3)	38.1 (4)	62.2 (4)	62.3 (3)	43.0 (1)	33.2 (1)	2.9 (<1)	2.6 (1)	5.4 (1)	23.6 (2)	7.4 (<1)	4.1 (1)	26.0 (1)
Polychaeta	285.8 (9)	72.6 (3)	11.7 (1)	33.9 (2)	155.7 (7)	35.8 (1)	86.3 (3)	2.9 (<1)	7.9 (1)	2.7 (1)	8.9 (1)	11.1 (1)	12.3 (2)	29.2 (1)
Crustacea														
nauplii	10.7 (<1)		35.2 (4)	8.5 (1)	25.5 (1)	21.5 (<1)	39.8 (1)	8.7 (1)	10.5 (1)	8.1 (1)	14.8 (1)	7.4 (<1)	20.5 (3)	29.2 (1)
cladocera	157.2 (5)	40.3 (2)	17.6 (2)	257.0 (17)	390.9 (16)	999.7 (31)	942.8 (31)	411.8 (45)	137.2 (9)	225.6 (19)	309.8 (29)	983.5 (44)	76.1 (12)	684.5 (31)
ostracoda														
copepoda	923.3 (28)	1010.4 (42)	539.0 (62)	350.4 (23)	1200.9 (51)	1458.4 (46)	1118.7 (37)	217.5 (24)	150.4 (10)	190.8 (16)	336.3 (32)	657.1 (29)	376.2 (58)	229.9 (33)
cirripedia (barnacle) nauplii	1643.1 (49)	1085.7 (45)	17.6 (2)	48.0 (3)	53.8 (2)	35.8 (1)	39.8 (1)	17.4 (2)	7.9 (1)	45.6 (4)	3.0 (<1)	111.4 (5)	32.9 (5)	55.2 (3)
decapoda	118.0 (4)	83.4 (4)	114.2 (13)	19.8 (1)	99.2 (4)	247.1 (8)	46.4 (2)	17.4 (2)	10.6 (1)	13.5 (1)	20.7 (2)	77.9 (3)	28.9 (4)	142.7 (6)
others	10.7 (<1)	10.8 (1)												6.5 (<1)
Chaetognatha			11.7 (1)	19.8 (1)	22.7 (1)	17.8 (1)	16.6 (1)		18.5 (1)	10.8 (1)	14.8 (1)	14.8 (1)	4.1 (1)	19.4 (1)
Echinodermata	7.2 (<1)	5.4 (<1)	38.1 (4)	630.1 (42)	277.6 (12)	258.0 (8)	597.5 (20)	229.1 (25)	1115.8 (75)	655.4 (55)	303.9 (29)	308.1 (14)	57.6 (9)	421.7 (19)
Chordata														
urochordata	5.4 (<1)	2.7 (<1)	17.6 (2)	2.8 (<1)	39.7 (2)	39.4 (1)	13.3 (<1)	2.9 (<1)	5.3 (<1)	13.4 (1)	5.9 (1)	7.4 (<1)	8.2 (1)	19.5 (1)
fish														
Eggs	19.7 (1)	26.9 (1)	2.9 (<1)	2.8 (<1)	11.3 (1)		3.3 (<1)		5.3 (<1)	8.1 (1)	8.9 (1)	7.4 (<1)	8.2 (1)	3.2 (<1)
Miscellaneous		2.7 (<1)	2.9 (<1)	8.5 (1)	14.1 (1)	21.5 (1)	6.7 (<1)		5.3 (<1)	8.1 (1)	3.0 (<1)	18.5 (1)	6.2 (1)	38.9 (2)
SUBTOTAL UNDAMAGED	3331.2	2408.1	870.1	1500.3	2376.4	3188.7	3064.0	910.6	1490.4	1201.0	1062.5	2238.0	645.7	2235.1
SUBTOTAL DAMAGED[f]	82.2 (2)	53.8 (2)	11.7 (1)	87.8 (6)	88.0 (4)	401.2 (11)	235.6 (7)	133.4 (13)	44.8 (3)	59.2 (5)	221.3 (17)	408.2 (15)	6.2 (1)	249.7 (10)
TOTAL UNDAMAGED + DAMAGED	3413.4	2461.9	881.8	1588.1	2464.4	3589.9	3299.6	1044.0	1535.2	1260.2	1283.8	2646.2	651.9	2484.8

[a] Values expressed are zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table N-27.
[c] Stations 11 and 12 collected 11 October, all other stations collected 19 October.
[d] ø = oblique; S = surface; B = bottom.
[e] Percentage is based on total undamaged.
[f] Percentage is based on total undamaged + damaged.

Table 2.2A-14
cont'd

DENSITY[a] AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA[b] COLLECTED
ST. LUCIE PLANT
NOVEMBER 1977

	Station and depth[c]													
	11	12	0		1		2		3		4		5	
Taxon	ø	ø	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED[d]														
Protozoa					126.5 (2)	121.2 (3)	5.0 (1)				5.1 (<1)			
Coelenterata	6.5 (<1)			2.5 (<1)	19.4 (<1)	5.1 (<1)	10.0 (1)	6.6 (1)	4.0 (<1)		72.0 (1)	32.5 (1)	4.4 (<1)	59.4 (1)
Mollusca	91.8 (5)	86.8 (5)	13.8 (1)	31.3 (5)	272.5 (4)	247.5 (6)	19.9 (1)	218.6 (9)	92.0 (3)	357.9 (11)	10.3 (<1)	263.7 (6)	109.5 (5)	81.6 (1)
Polychaeta	500.7 (27)	234.1 (14)	27.1 (1)	13.8 (2)	2579.6 (35)	833.3 (20)	29.8 (1)	192.1 (8)	100.0 (4)	319.5 (9)	1239.4 (25)	486.9 (11)	43.8 (2)	378.6 (7)
Crustacea nauplii		4.3 (<1)	2.8 (1)	1.3 (1)	29.2 (1)	166.7 (4)		6.6 (<1)	68.0 (3)	12.8 (<1)	20.6 (<1)	16.2 (<1)		
cladocera	3.7 (<1)		5.5 (<1)	7.5 (1)	214.1 (3)	237.4 (6)	168.6 (7)	13.2 (1)	247.8 (9)	57.5 (2)	601.7 (12)	89.3 (2)	258.4 (11)	59.4 (1)
ostracoda					9.7 (1)					6.4 (<1)				
copepoda	402.4 (21)	472.8 (28)	753.4 (51)	317.1 (53)	2647.8 (36)	2121.1 (51)	639.6 (28)	854.6 (34)	1267.0 (47)	1252.5 (37)	2381.0 (48)	1492.9 (33)	910.9 (38)	2999.4 (54)
cirripedia (barnacle) nauplii	786.3 (42)	754.6 (45)	16.6 (1)	36.4 (6)	477.0 (7)		19.8 (1)	410.8 (16)	24.0 (1)	396.2 (12)	190.3 (4)	1030.4 (23)	48.2 (2)	653.3 (12)
decapoda	6.4 (1)	12.9 (1)	33.1 (2)	27.7 (5)	68.1 (1)	101.3 (1)	24.3 (1)	185.5 (7)	40.0 (1)	115.2 (3)	143.6 (3)	166.4 (4)	13.2 (1)	289.5 (5)
others	9.3 (<1)	17.3 (1)		3.8 (1)		45.5 (1)		39.7 (2)		32.0 (1)		28.4 (1)		14.9 (<1)
Chaetognatha	0.9 (<1)		19.3 (1)	2.5 (<1)	58.4 (1)	30.4 (1)	248.0 (11)	13.7 (1)	32.0 (1)	18.4 (1)	51.4 (1)	28.5 (1)	122.5 (5)	29.8 (1)
Echinodermata	75.0 (1)	21.7 (1)	19.3 (1)	110.3 (19)	321.7 (4)	40.4 (1)	19.8 (1)	477.0 (19)	655.5 (24)	607.1 (18)	92.6 (2)	478.7 (11)	105.1 (4)	556.8 (10)
Chordata urochordata	1.9 (<1)	17.3 (1)	527.7 (36)	8.8 (1)	340.7 (5)	55.6 (1)	927.2 (40)	33.1 (1)	119.9 (4)	57.5 (2)	56.6 (1)	186.6 (4)	626.3 (26)	237.6 (4)
fish				1.3 (<1)			5.0 (<1)							7.4 (<1)
Eggs	0.9 (<1)			2.5 (<1)			5.0 (<1)	6.6 (<1)	16.0 (1)	6.4 (<1)	5.1 (<1)	16.2 (<1)		7.4 (<1)
Miscellaneous	26.9 (1)	8.7 (1)		2.5 (<1)	19.4 (<1)	5.1 (<1)				19.2 (1)	10.3 (<1)	60.9 (1)	8.8 (<1)	22.2 (<1)
SUBTOTAL UNDAMAGED	1862.7	1630.5	1413.1	569.3	7183.6	4010.6	2122.5	2457.6	2666.2	3278.6	4880.0	4377.6	2251.1	5397.3
SUBTOTAL DAMAGED[e]	10.2 (1)	43.4 (3)	63.5 (4)	26.4 (4)	136.3 (2)	141.7 (3)	198.3 (9)	39.7 (2)	32.0 (1)	127.9 (4)	92.5 (2)	93.4 (2)	153.2 (6)	178.2 (3)
TOTAL UNDAMAGED + DAMAGED	1872.9	1673.9	1476.6	595.7	7319.9	4152.3	2320.8	2497.3	2698.2	3406.5	4972.5	4471.0	2404.3	5575.5

[a] Values expressed are zooplankters per cubic meter and represent the mean of three subsamples.
[b] For detailed taxonomic listing, see Table N-28.
[c] ø = oblique; S = surface; B = bottom.
[d] Percentage is based on total undamaged.
[e] Percentage is based on total undamaged + damaged.

Table 2.2A-14
cont'd

DENSITY (no./m³) AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA
ST. LUCIE PLANT
23 JANUARY 1978

	Station and depth[a]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED														
Protozoa	1.4 (<1)	0.5 (<1)			2.4 (<1)				2.9 (<1)				3.2 (<1)	
Coelenterata	0.7 (<1)	0.5 (<1)	33.4 (2)	14.4 (<1)	2.4 (<1)		25.4 (1)	3.3 (<1)	11.7 (1)		22.5 (2)		6.4 (<1)	1.8 (<1)
Mollusca	88.4 (20)	36.6 (15)	50.0 (4)	241.7 (5)	64.2 (2)	33.1 (2)	62.2 (4)	193.1 (4)	29.2 (3)	3.9 (4)	57.5 (5)	244.5 (9)	152.1 (5)	212.5 (8)
Polychaeta	17.1 (4)	6.9 (3)	9.3 (1)	25.3 (1)	33.4 (1)	10.6 (1)	5.1 (<1)				2.5 (<1)		9.7 (<1)	3.5 (<1)
Crustacea nauplii	1.4 (<1)		38.9 (3)	28.9 (1)	30.9 (1)	5.3 (<1)	6.3 (<1)		11.7 (1)		5.0 (<1)	2.5 (<1)	9.7 (<1)	1.8 (<1)
cladocera										0.6 (1)				
ostracoda		1.0 (<1)		7.2 (<1)		1.3 (<1)		16.7 (<1)			5.0 (<1)	7.6 (<1)		10.6 (<1)
copepoda	150.7 (34)	86.4 (36)	834.4 (59)	2190.6 (44)	1845.6 (70)	765.6 (51)	1009.9 (57)	1264.8 (28)	636.0 (62)	56.5 (52)	825.0 (70)	1431.6 (55)	1942.6 (64)	966.9 (37)
cirripedia (barnacle) nauplii	117.9 (26)	33.7 (14)	44.4 (3)	1865.8 (38)	487.6 (18)	611.7 (40)	384.4 (22)	2766.0 (62)	180.9 (18)	43.6 (40)	22.5 (2)	662.9 (26)	550.4 (18)	1159.9 (44)
decapoda	5.6 (1)	4.0 (2)	1.9 (<1)	39.6 (1)	26.2 (1)	6.6 (<1)	9.0 (1)	66.6 (1)	11.6 (1)	2.3 (2)	20.0 (2)	75.5 (3)	25.7 (1)	40.9 (2)
others	26.8 (6)	11.7 (5)		25.3 (1)	14.3 (1)	4.0 (<1)	5.1 (<1)	20.0 (<1)				12.6 (<1)		5.3 (<1)
Chaetognatha		1.5 (1)	3.7 (<1)	7.2 (<1)	2.4 (<1)	5.3 (<1)	8.9 (1)	3.3 (<1)	8.8 (1)		17.5 (1)	17.6 (1)	12.9 (<1)	1.8 (<1)
Echinodermata	2.8 (1)	7.8 (3)	42.6 (3)	21.7 (<1)	19.0 (1)	1.3 (<1)	13.9 (1)	6.7 (<1)	8.8 (1)		7.5 (1)		12.9 (<1)	
Chordata urochordata		1.5 (1)	186.9 (13)	223.7 (4)	64.2 (2)	14.6 (1)	73.6 (4)	30.0 (1)	49.6 (5)	1.7 (2)	95.0 (8)	47.9 (2)	113.3 (4)	54.9 (2)
fish	8.9 (2)	7.3 (3)	109.2 (8)	137.2 (3)	4.7 (<1)	8.0 (1)	92.6 (5)	63.2 (1)			35.0 (3)	27.7 (1)	174.9 (6)	120.5 (5)
Eggs	23.3 (5)	15.6 (7)	46.3 (3)	144.4 (3)	35.7 (1)	35.8 (2)	76.1 (4)	56.6 (1)	67.1 (7)	1.1 (1)	62.5 (5)	52.9 (2)	35.6 (1)	42.5 (2)
Miscellaneous	1.4 (<1)	22.0 (9)	1.9 (<1)		11.9 (<1)	10.6 (1)	1.3 (<1)	3.3 (<1)	5.8 (1)		5.0 (<1)	5.0 (<1)	6.5 (<1)	5.3 (<1)
SUBTOTAL UNDAMAGED	446.4	237.0	1402.9	4973.0	2644.9	1513.8	1773.8	4493.6	1024.1	109.7	1182.5	2588.3	3055.9	2628.2
SUBTOTAL DAMAGED	7.6 (2)	6.4 (3)	46.4 (3)	187.6 (4)	102.2 (4)	29.3 (2)	30.5 (2)	76.6 (2)	32.2 (3)	12.0 (10)	50.0 (4)	83.1 (3)	110.0 (3)	33.7 (1)
TOTAL UNDAMAGED + DAMAGED	454.0	243.4	1449.3	5160.6	2747.1	1543.1	1804.3	4570.2	1056.3	121.7	1232.5	2671.4	3165.9	2661.9

[a]Ø = Oblique; S = Surface; B = Bottom.

Table 2.2A-14
cont'd

DENSITY (no./m³) AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA
ST. LUCIE PLANT
13 FEBRUARY 1978

	Station and depth[a]													
	11	12	0		1		2		3		4		5	
Taxon	β	β	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED														
Protozoa		65.1 (12)	1.6 (<1)		3.2 (<1)						1.0 (<1)			1.5 (<1)
Coelenterata	4.2 (1)	6.4 (1)			6.4 (<1)		2.1 (<1)	4.6 (<1)	2.8 (<1)	5.2 (1)	4.7 (1)	4.8 (1)	2.8 (<1)	3.0 (<1)
Mollusca	18.3 (3)	25.8 (5)	32.1 (2)	123.0 (11)	123.1 (6)	31.3 (5)	22.3 (3)	173.7 (17)	41.4 (6)	73.1 (7)	17.2 (3)	46.7 (13)	23.5 (4)	133.4 (9)
Polychaeta	21.7 (4)	5.1 (1)	11.2 (1)	10.7 (1)	31.6 (2)	2.1 (<1)	16.0 (2)	2.8 (<1)	3.5 (<1)	6.0 (1)	3.7 (1)	1.7 (<1)	0.6 (<1)	10.6 (1)
Crustacea nauplii	61.0 (10)	38.7 (7)	156.0 (12)	92.7 (8)	312.5 (16)	13.5 (2)	17.0 (2)	5.6 (1)	1.4 (<1)	0.9 (<1)	23.9 (5)	0.4 (<1)	3.9 (1)	6.1 (<1)
cladocera														
ostracoda		0.6 (<1)						0.9 (<1)	7.6 (1)	67.2 (7)		0.9 (<1)	5.6 (1)	3.0 (<1)
copepoda	190.4 (33)	147.0 (28)	884.4 (69)	732.6 (65)	1221.8 (64)	462.2 (77)	614.8 (75)	649.9 (63)	482.2 (70)	668.4 (66)	311.3 (63)	216.3 (61)	468.3 (75)	1061.4 (69)
cirripedia (barnacle) nauplii	213.0 (36)	161.2 (30)	4.8 (<1)	3.5 (<1)	56.8 (3)	5.2 (1)	13.8 (2)	14.1 (1)	2.8 (<1)	11.9 (1)	3.1 (1)	4.9 (1)	2.8 (<1)	10.6 (1)
decapoda	5.8 (1)	3.2 (1)	6.4 (<1)	12.5 (1)	6.4 (<1)	3.0 (1)	1.1 (<1)	18.5 (2)	1.4 (<1)	30.0 (3)		4.7 (1)	2.4 (<1)	16.6 (1)
others	16.7 (3)	33.5 (6)	51.5 (4)	46.2 (4)	31.6 (2)	36.5 (6)		20.7 (2)	2.8 (<1)	24.7 (2)	9.8 (2)	10.3 (3)	2.2 (<1)	13.6 (1)
Chaetognatha		3.2 (1)	8.0 (1)	17.8 (2)		3.1 (1)	2.1 (<1)	8.4 (1)	4.2 (1)	11.2 (1)	3.6 (1)	4.0 (1)	0.6 (<1)	10.6 (1)
Echinodermata	2.5 (<1)	1.2 (<1)	1.6 (<1)	5.4 (<1)	15.8 (1)	3.1 (1)	37.2 (5)	16.9 (2)	14.5 (2)	7.7 (1)	11.4 (2)	5.3 (1)	20.3 (3)	31.8 (2)
Chordata urochordata							3.2 (<1)	4.7 (<1)	3.4 (1)	3.5 (<1)	1.6 (<1)	2.2 (1)	1.1 (<1)	7.5 (<1)
fish			1.6 (<1)		3.2 (<1)	2.1 (<1)		1.9 (<1)			0.5 (<1)	0.9 (<1)	0.6 (<1)	1.5 (<1)
Eggs	47.6 (8)	36.8 (7)	91.7 (7)	76.7 (7)	94.7 (5)	32.3 (5)	86.0 (10)	103.3 (10)	70.4 (10)	100.3 (10)	73.7 (15)	44.0 (12)	58.5 (9)	180.5 (12)
Miscellaneous	3.3 (1)	3.1 (1)	35.4 (3)	10.7 (1)	9.5 (<1)	4.2 (1)	6.5 (1)	4.7 (1)	49.0 (7)	8.6 (1)	27.0 (5)	9.4 (3)	31.5 (5)	45.5 (3)
SUBTOTAL UNDAMAGED	584.5	530.9	1286.3	1131.8	1916.6	598.6	822.1	1030.7	687.4	1018.7	492.5	356.5	624.7	1537.2
SUBTOTAL DAMAGED	1.7 (<1)	4.4 (1)	77.2 (6)	44.6 (4)	56.9 (3)	20.8 (3)	18.1 (2)	19.5 (2)	42.1 (6)	53.0 (5)	19.2 (4)	22.2 (6)	26.4 (4)	46.9 (3)
TOTAL UNDAMAGED + DAMAGED	586.2	535.3	1363.5	1176.4	1973.5	619.4	840.2	1050.2	729.5	1071.7	511.7	378.7	651.1	1584.1

[a]β = Oblique; S = Surface; B = Bottom.

Table 2.2A-14
cont'd

DENSITY (no./m³) AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA
ST. LUCIE PLANT
15 MARCH 1978

	Station and depth[a]													
	11	12	0			1		2		3		4		5
Taxon	β	β	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED														
Protozoa		7.3 (2)												
Coelenterata	15.4 (2)	4.8 (1)	0.6 (<1)	3.5 (<1)	3.1 (<1)	6.3 (1)		4.9 (<1)		6.7 (<1)				4.3 (1)
Mollusca	43.4 (5)	40.4 (11)	1.9 (1)	7.0 (1)	55.8 (3)	30.9 (3)	1.6 (1)	9.8 (<1)	6.3 (1)	6.7 (<1)	2.9 (2)	12.5 (1)	1.1 (<1)	1.4 (<1)
Polychaeta	3.1 (<1)	2.4 (1)		1.2 (<1)			0.5 (<1)				0.5 (<1)		1.1 (<1)	1.4 (<1)
Crustacea nauplii	5.2 (1)	2.4 (1)		3.5 (<1)		2.1 (<1)	1.6 (1)	4.9 (<1)	9.4 (1)	6.7 (<1)	0.8 (<1)	6.3 (<1)	4.5 (1)	4.3 (1)
cladocera														
ostracoda	140.7 (17)	12.1 (3)	6.8 (3)	23.3 (4)	21.7 (1)	18.6 (2)		380.4 (17)	11.0 (1)	248.9 (13)	0.5 (<1)	579.0 (30)	3.4 (1)	108.2 (19)
copepoda	299.0 (36)	138.4 (37)	103.3 (44)	496.2 (82)	1813.2 (82)	842.0 (80)	91.7 (39)	1594.8 (71)	623.2 (78)	1436.0 (76)	85.2 (51)	1183.1 (60)	391.7 (77)	334.7 (60)
cirripedia (barnacle) nauplii	133.5 (16)	72.0 (19)	1.2 (1)		15.5 (1)	8.2 (1)	1.6 (1)		6.3 (1)	6.7 (<1)		6.3 (<1)	4.5 (1)	
decapoda	38.9 (5)	12.9 (3)	6.1 (3)	12.8 (2)	130.2 (6)	57.9 (5)		87.9 (4)	23.6 (3)	77.6 (4)	1.7 (1)	90.8 (5)	5.6 (1)	46.9 (8)
others	25.8 (3)	22.6 (6)		2.4 (<1)	18.6 (1)	10.4 (1)						6.2 (<1)		2.8 (1)
Chaetognatha	8.2 (1)	1.6 (<1)	2.5 (1)	1.2 (<1)	24.8 (1)	18.6 (2)	5.4 (2)	9.8 (<1)	3.2 (<1)	3.4 (<1)	9.8 (6)	25.0 (1)	7.9 (2)	4.2 (1)
Echinodermata	1.0 (<1)		0.6 (<1)			2.1 (<1)								1.4 (<1)
Chordata urochordata			5.6 (2)	5.8 (1)	18.6 (1)	4.1 (<1)	22.3 (9)	43.9 (2)	44.1 (6)	33.6 (2)	9.9 (6)	18.8 (1)	9.0 (2)	12.8 (2)
fish	49.7 (6)	16.2 (4)			3.1 (<1)		1.1 (<1)				2.7 (2)	3.1 (<1)	1.1 (<1)	
Eggs	54.9 (7)	39.7 (11)	108.2 (46)	46.6 (8)	99.2 (4)	57.7 (5)	111.4 (47)	107.3 (5)	69.2 (9)	70.6 (4)	53.6 (32)	25.1 (1)	77.7 (15)	34.2 (6)
Miscellaneous	1.0 (<1)				3.1 (<1)								1.1 (<1)	
SUBTOTAL UNDAMAGED	819.8	372.8	236.8	603.5	2206.9	1058.9	237.2	2243.7	796.3	1896.9	167.6	1956.2	508.7	556.6
SUBTOTAL DAMAGED	10.3 (1)	9.7 (3)	21.0 (8)	27.0 (4)	58.9 (3)	99.1 (9)	11.4 (5)	175.7 (7)	42.5 (5)	154.9 (8)	7.5 (4)	156.4 (7)	32.6 (6)	61.0 (10)
TOTAL UNDAMAGED + DAMAGED	830.1	382.5	257.8	630.5	2265.8	1158.0	248.6	2419.4	838.8	2051.8	175.1	2112.6	541.3	617.6

[a]β = Oblique; S = Surface; B = Bottom.

Table 2.2A-14
cont'd

DENSITY (no./m³) AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA
ST. LUCIE PLANT
25 APRIL 1978

	Station and depth[a]													
	11	12	0			1	2		3		4		5	
Taxon	β	β	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED														
Protozoa		4.9 (1)									3.4 (<1)		5.8 (<1)	
Coelenterata	178.3 (2)	2.0 (<1)											23.2 (1)	9.4 (<1)
Mollusca	82.8 (1)	2.4 (<1)	19.1 (2)	24.1 (1)	31.9 (2)	69.9 (3)	30.2 (2)	23.4 (1)	1.4 (<1)	22.4 (1)	3.4 (<1)	86.5 (1)	110.1 (3)	9.4 (<1)
Polychaeta	1037.8 (12)	10.2 (1)	33.5 (3)		31.9 (2)	39.5 (2)	2.0 (<1)	8.8 (<1)					5.8 (<1)	23.5 (1)
Crustacea nauplii	121.0 (1)	5.4 (1)	2.4 (<1)	26.3 (1)	14.5 (1)	66.8 (3)	6.0 (<1)		2.9 (1)	2.8 (<1)	20.4 (1)			18.8 (1)
cladocera	6.4 (<1)		16.7 (1)	13.1 (1)	23.2 (2)	27.3 (1)	76.6 (5)	14.6 (<1)	2.2 (1)		37.4 (2)		17.4 (1)	51.7 (2)
ostracoda								11.7 (<1)				38.4 (1)		
copepoda	1470.8 (17)	84.7 (10)	932.7 (80)	1280.1 (68)	1076.1 (79)	1020.6 (47)	1375.2 (86)	2583.3 (80)	201.1 (71)	1562.9 (90)	1759.0 (89)	4026.2 (63)	2630.4 (76)	1139.0 (37)
cirripedia (barnacle) nauplii	3056.3 (35)	691.2 (82)	21.5 (2)	352.3 (19)	8.7 (1)	689.5 (31)	16.1 (1)	280.5 (9)	0.7 (<1)	22.4 (1)		1614.3 (25)	86.9 (3)	1463.7 (47)
decapoda	261.3 (3)	9.9 (1)		37.3 (2)	20.3 (1)	45.4 (2)	4.0 (<1)	169.3 (5)		50.4 (3)		394.0 (6)	17.4 (1)	108.2 (4)
others	184.7 (2)	21.4 (3)	11.9 (1)	37.2 (2)	87.0 (6)	121.5 (6)	6.0 (<1)	52.5 (2)	12.9 (5)	36.5 (2)		173.0 (3)	370.8 (11)	28.2 (1)
Chaetognatha	6.4 (<1)	1.5 (<1)	2.4 (<1)		14.5 (1)	6.1 (<1)	8.0 (<1)	17.6 (1)	2.1 (1)			9.6 (<1)	23.2 (1)	
Echinodermata	95.5 (1)	1.0 (<1)											5.8 (<1)	
Chordata urochordata	2056.7 (24)	1.5 (<1)		13.1 (1)			10.0 (1)	5.8 (<1)		2.8 (<1)			81.1 (2)	207.1 (7)
fish	50.9 (1)	1.0 (<1)	83.7 (7)	28.5 (2)	17.4 (1)	15.2 (1)	22.1 (1)	2.9 (<1)	9.3 (3)	2.8 (<1)	51.0 (3)		11.6 (<1)	
Eggs	63.7 (1)	2.5 (<1)	45.4 (4)	61.3 (3)	26.1 (2)	88.1 (4)	50.4 (3)	78.9 (2)	50.4 (18)	36.5 (2)	102.1 (5)	57.6 (1)	57.9 (2)	23.5 (1)
Miscellaneous	12.7 (<1)		2.4 (<1)		2.9 (<1)									4.7 (<1)
SUBTOTAL UNDAMAGED	8685.3	839.6	1171.7	1873.3	1354.5	2189.9	1606.6	3249.3	283.0	1739.5	1976.7	6399.6	3447.4	3087.2
SUBTOTAL DAMAGED	191.1 (2)	8.3 (1)	35.9 (3)	78.8 (4)	118.9 (8)	85.1 (4)	98.7 (6)	309.6 (9)	36.7 (11)	182.4 (9)	23.8 (1)	345.9 (5)	92.8 (3)	61.2 (2)
TOTAL UNDAMAGED + DAMAGED	8876.4	847.9	1207.6	1952.1	1473.4	2275.0	1705.3	3558.9	319.7	1921.9	2000.5	6745.5	3540.2	3148.4

[a]β = Oblique; S = Surface; B = Bottom.

Table 2.2A-14
cont'd

DENSITY (no./m³) AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA
ST. LUCIE PLANT
17 MAY 1978

	Station and depth[a]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED														
Protozoa		1.3 (<1)		1.1 (<1)			0.5 (<1)							
Coelenterata	59.2 (1)				2.2 (<1)	14.2 (1)	1.5 (1)						2.6 (<1)	
Mollusca	66.6 (2)	27.0 (3)		1.1 (<1)		7.1 (1)	2.0 (1)	76.0 (1)	1.8 (1)	20.0 (1)		3.8 (<1)	5.2 (1)	11.3 (1)
Polychaeta	66.6 (2)	1.3 (<1)			2.2 (<1)		1.0 (<1)			4.0 (<1)	0.5 (<1)			
Crustacea														
nauplii	177.7 (4)	1.3 (<1)				4.7 (<1)	0.5 (<1)				0.5 (<1)			
cladocera	7.4 (<1)												1.3 (<1)	
ostracoda										4.0 (<1)				3.8 (<1)
copepoda	251.7 (6)	158.2 (18)	132.8 (44)	363.3 (67)	797.3 (85)	794.0 (80)	88.7 (34)	4576.8 (72)	86.0 (42)	1133.7 (52)	58.1 (36)	816.7 (62)	364.7 (65)	1015.4 (72)
cirripedia (barnacle) nauplii	880.9 (21)	702.0 (78)		2.2 (<1)				121.6 (2)	0.6 (<1)			30.4 (2)		
decapoda	7.4 (<1)	1.3 (<1)	3.1 (1)	8.8 (2)	6.5 (1)	47.5 (5)	4.0 (2)	288.8 (5)	0.6 (<1)	48.0 (2)	3.0 (2)	102.6 (8)		94.4 (7)
others				2.2 (<1)		2.4 (<1)	1.5 (1)	45.6 (1)		8.0 (<1)	1.0 (1)	3.8 (<1)		7.5 (1)
Chaetognatha	14.8 (<1)	3.9 (<1)		1.1 (<1)	10.9 (1)	16.6 (2)	3.0 (1)			8.0 (<1)	2.0 (1)	7.6 (1)	6.5 (1)	3.8 (<1)
Echinodermata	1532.4 (37)													
Chordata														
urochordata	1058.6 (26)		2.0 (1)	47.8 (9)	6.5 (1)	28.4 (3)	6.4 (2)	1003.5 (16)	3.6 (2)	901.3 (42)	1.5 (1)	220.3 (17)	19.7 (4)	184.3 (13)
fish	7.4 (<1)		0.5 (<1)	1.1 (<1)	4.3 (<1)		5.4 (2)		2.4 (1)		2.0 (1)		9.2 (2)	11.3 (1)
Eggs			165.0 (54)	115.5 (21)	107.7 (11)	82.7 (8)	148.3 (56)	212.9 (3)	110.9 (54)	36.1 (2)	91.0 (57)	125.4 (10)	152.2 (27)	75.2 (5)
Miscellaneous														
SUBTOTAL UNDAMAGED	4130.7	896.3	303.4	544.2	937.6	997.6	262.8	6325.2	205.9	2163.1	159.6	1310.6	561.4	1407.0
SUBTOTAL DAMAGED	81.4 (2)	3.9 (<1)	3.5 (1)	42.1 (7)	43.1 (4)	23.6 (2)	5.0 (2)	228.1 (3)	5.3 (3)	312.4 (13)	3.0 (2)	186.1 (12)	30.1 (5)	90.3 (6)
TOTAL UNDAMAGED + DAMAGED	4212 1	900.2	306.9	586.3	980.7	1021.2	267.8	6553.3	211.2	2475.5	162.6	1496.7	591.5	1497.3

[a]Ø = Oblique; S = Surface; B = Bottom.

Table 2.2A-14
cont'd

DENSITY (no./m³) AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA
ST. LUCIE PLANT
21 JUNE 1978

	Station and depth[a]													
	11	12	0		1		2		3		4		5	
Taxon	β	β	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED														
Protozoa							14.7 (<1)					4.0 (<1)	8.6 (<1)	
Coelenterata	7.0 (2)		17.4 (1)	3.9 (<1)	17.8 (1)	5.0 (<1)	14.7 (<1)	3.6 (<1)	27.8 (<1)	18.0 (<1)		20.2 (1)	8.6 (<1)	44.0 (1)
Mollusca	22.3 (6)	8.0 (2)	66.7 (2)	42.8 (2)	53.4 (2)	64.6 (4)	58.7 (1)	101.0 (4)	305.3 (4)	179.4 (5)	71.9 (4)	60.6 (2)	112.0 (3)	167.5 (4)
Polychaeta	0.7 (<1)	0.9 (<1)						7.2 (<1)					8.6 (<1)	44.0 (1)
Crustacea nauplii	11.1 (3)	16.1 (5)		3.9 (<1)	26.7 (1)			3.6 (<1)		26.9 (1)	7.0 (<1)	8.1 (<1)	8.6 (<1)	17.6 (<1)
cladocera												4.0 (<1)		
ostracoda														
copepoda	195.1 (49)	164.3 (51)	2365.0 (85)	1935.4 (72)	1896.0 (56)	932.8 (55)	4988.7 (70)	1236.9 (52)	3899.7 (46)	1820.1 (46)	1328.2 (79)	1603.6 (65)	2619.1 (65)	1789.6 (44)
cirripedia (barnacle) nauplii	19.5 (5)	88.4 (28)	8.7 (<1)	62.2 (2)	213.6 (6)	124.0 (7)	58.7 (1)	274.1 (11)	1415.6 (17)	842.8 (21)	7.0 (<1)	88.9 (4)	189.6 (5)	546.6 (13)
decapoda	34.3 (9)	17.0 (5)	72.5 (3)	276.2 (10)	640.8 (19)	248.2 (15)	1012.5 (14)	187.4 (8)	791.0 (9)	583.0 (15)	39.5 (2)	407.9 (17)	94.6 (2)	784.5 (19)
others	1.4 (<1)	5.4 (2)		3.9 (<1)	26.7 (1)	29.8 (2)	117.4 (2)	21.6 (1)	194.3 (2)	116.6 (3)	9.3 (1)	12.1 (<1)		193.9 (5)
Chaetognatha	2.1 (1)		49.3 (2)	23.4 (1)	8.9 (<1)	14.9 (1)	102.8 (1)	21.6 (1)	208.1 (2)	18.0 (<1)	16.3 (1)	44.3 (2)	17.2 (<1)	17.6 (<1)
Echinodermata	0.7 (<1)							21.6 (1)				4.0 (<1)	8.6 (<1)	35.2 (1)
Chordata urochordata	32.1 (8)	0.9 (<1)	130.6 (5)	209.9 (8)	364.9 (11)	203.4 (12)	322.8 (5)	385.8 (16)	1443.3 (17)	286.9 (7)	118.2 (7)	145.4 (6)	749.5 (19)	317.4 (8)
fish	0.7 (<1)		11.6 (<1)	11.7 (<1)	17.8 (<1)	24.8 (1)	205.4 (3)	25.2 (1)	41.7 (<1)	17.9 (<1)	30.2 (2)	12.1 (<1)		8.8 (<1)
Eggs	66.2 (17)	18.7 (6)	49.3 (2)	101.0 (4)	115.7 (3)	49.6 (3)	205.4 (3)	61.3 (3)	208.1 (2)	44.8 (1)	55.6 (3)	48.5 (2)	180.9 (5)	61.7 (2)
Miscellaneous	1.4 (<1)	0.9 (<1)			8.9 (<1)			39.6 (2)	13.9 (<1)			4.0 (<1)		79.3 (2)
SUBTOTAL UNDAMAGED	394.6	320.6	2771.1	2674.3	3391.2	1697.1	7101.8	2390.5	8548.8	3954.4	1683.2	2467.7	4005.9	4107.7
SUBTOTAL DAMAGED	15.4 (4)	35.8 (10)	63.8 (2)	206.1 (7)	231.4 (6)	153.9 (8)	410.8 (5)	274.0 (10)	527.3 (6)	269.0 (6)	118.3 (7)	149.5 (6)	335.9 (8)	176.2 (4)
TOTAL UNDAMAGED + DAMAGED	410.0	356.4	2834.9	2880.4	3622.6	1851.0	7512.6	2664.5	9076.1	4223.4	1801.5	2617.2	4341.8	4283.9

[a]β = Oblique; S = Surface; B = Bottom.

Table 2.2A-14
cont'd

DENSITY (no./m³) AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA
ST. LUCIE PLANT
12 JULY 1978

	Station and depth[a]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED														
Protozoa		0.8 (1)	2.0 (<1)	11.5 (<1)	12.8 (<1)		1.3 (<1)	8.3 (<1)	3.3 (1)					
Coelenterata			30.5 (1)	45.9 (1)			5.2 (1)	33.3 (<1)	1.4 (<1)	21.9 (1)		17.1 (<1)		18.9 (<1)
Mollusca	8.4 (4)	4.0 (3)	6.1 (<1)	68.8 (1)	76.5 (1)	16.6 (<1)	2.6 (<1)	33.3 (<1)	1.3 (<1)	5.5 (<1)	63.0 (1)	34.2 (<1)	8.3 (<1)	6.3 (<1)
Polychaeta	0.6 (<1)			22.9 (<1)			7.8 (1)	8.3 (<1)			21.0 (<1)	34.2 (<1)		18.9 (<1)
Crustacea nauplii				332.4 (5)			36.4 (4)	316.9 (4)	3.3 (1)	21.9 (1)	21.0 (<1)	410.4 (3)		6.3 (<1)
cladocera		0.8 (1)		45.9 (1)			49.4 (6)	492.1 (6)	2.7 (1)	21.9 (1)	21.0 (<1)	188.1 (2)	8.3 (<1)	18.9 (<1)
ostracoda				126.1 (2)			61.1 (7)	792.3 (9)	1.3 (<1)	32.8 (1)	21.0 (<1)	2787.4 (23)		176.3 (3)
copepoda	53.7 (24)	34.5 (23)	1617.6 (75)	4389.7 (65)	2130.5 (39)	5615.1 (91)	506.9 (59)	5045.6 (57)	187.0 (49)	1798.1 (72)	10093.9 (87)	6344.4 (52)	8230.1 (94)	3966.7 (79)
cirripedia (barnacle) nauplii	84.6 (38)	55.7 (37)		11.5 (<1)		8.3 (<1)	3.9 (1)							
decapoda	7.6 (3)	8.7 (6)	34.4 (2)	1157.8 (17)	127.8 (2)	240.8 (4)	76.7 (9)	658.6 (7)	28.1 (7)	218.8 (9)	251.9 (2)	1846.8 (15)	198.5 (2)	629.7 (13)
others	6.4 (3)	2.4 (2)	8.1 (<1)	45.9 (1)	12.8 (<1)	8.3 (<1)		83.3 (1)		11.0 (<1)	63.0 (1)	17.1 (<1)	8.3 (<1)	6.3 (<1)
Chaetognatha			26.4 (1)	80.3 (1)	38.3 (1)	66.5 (1)	24.7 (3)	383.6 (4)	9.3 (2)	125.8 (5)	293.9 (3)	239.4 (2)	49.6 (1)	94.5 (2)
Echinodermata														
Chordata urochordata	0.6 (<1)		134.1 (6)	217.8 (3)	25.5 (1)	49.8 (1)	65.0 (8)	700.5 (8)	30.0 (8)	82.0 (3)	293.8 (3)	324.9 (3)	33.1 (<1)	56.7 (1)
cephalochordata							1.3 (<1)	200.2 (2)						
fish			24.4 (1)	11.5 (<1)	2959.6 (54)	58.1 (1)		8.3 (<1)	1.3 (<1)	10.9 (<1)	63.0 (1)		16.5 (<1)	
Eggs	57.5 (26)	42.4 (28)	268.2 (13)	183.4 (3)	89.3 (2)	132.9 (2)	11.7 (1)	116.8 (1)	108.9 (29)	153.0 (6)	461.7 (4)	68.4 (1)	214.8 (2)	37.8 (1)
Miscellaneous	0.6 (<1)													
SUBTOTAL UNDAMAGED	220.0	149.3	2151.8	6751.4	5473.1	6196.4	854.0	8881.4	377.9	2503.6	11668.2	12312.4	8767.5	5037.3
SUBTOTAL DAMAGED	5.1 (2)	0.0 (0)	75.2 (3)	309.6 (4)	63.8 (1)	91.4 (2)	24.7 (3)	800.4 (8)	22.8 (6)	355.4 (12)	84.0 (1)	222.3 (2)	148.8 (2)	226.7 (4)
TOTAL UNDAMAGED + DAMAGED	225.1	149.3	2227.0	7061.0	5536.9	6287.8	878.7	9681.8	400.7	2859.0	11752.2	12534.7	8916.3	5264.0

[a]Ø = Oblique; S = Surface; B = Bottom.

Table 2.2A-14
cont'd

DENSITY (no./m³) AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA
ST. LUCIE PLANT
8 AUGUST 1978

	Station and depth[a]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED														
Protozoa		1.2 (<1)	9.2 (1)		47.4 (<1)	40.8 (<1)	22.4 (1)		3.3 (<1)		15.4 (<1)			
Coelenterata	2.9 (1)		1.8 (<1)		94.8 (<1)	68.1 (<1)		9.7 (<1)	6.7 (1)	5.0 (<1)				7.7 (<1)
Mollusca	8.7 (2)	6.1 (1)	36.6 (2)	113.2 (1)	521.4 (1)	163.3 (1)	31.3 (1)	77.7 (1)	11.7 (1)	19.9 (1)	46.0 (1)	81.5 (<1)	29.5 (1)	15.5 (<1)
Polychaeta	2.1 (<1)		1.8 (<1)		94.8 (<1)	95.2 (1)	4.5 (<1)	48.6 (1)		9.9 (<1)		81.5 (<1)	4.2 (<1)	7.7 (<1)
Crustacea nauplii	10.8 (3)	14.8 (2)	36.6 (2)	66.0 (1)	711.1 (1)	177.0 (1)	8.9 (<1)	145.7 (2)	20.1 (2)	74.7 (2)	15.3 (<1)	374.8 (2)	12.6 (1)	232.4 (3)
cladocera	0.7 (<1)		5.5 (<1)	132.0 (1)	189.6 (<1)		89.3 (3)		23.4 (2)	29.8 (1)	61.4 (1)	32.6 (<1)	67.5 (3)	30.9 (<1)
ostracoda				9.4 (<1)						9.9 (1)		16.3 (<1)		
copepoda	112.9 (27)	196.1 (25)	1149.4 (77)	7844.2 (86)	42284.9 (82)	10620.0 (75)	1781.9 (68)	4983.6 (82)	470.1 (47)	3014.7 (78)	4021.8 (82)	15189.0 (84)	2015.2 (81)	6080.6 (77)
cirripedia (barnacle) nauplii	239.4 (57)	531.4 (68)	3.7 (<1)	56.6 (1)	2796.9 (5)	1102.8 (8)	17.9 (1)	330.3 (5)	1.7 (<1)	24.9 (1)	61.4 (1)	1157.1 (6)	8.4 (<1)	735.9 (9)
decapoda	9.4 (2)	7.4 (1)	12.8 (1)	509.2 (6)	1753.9 (3)	680.6 (5)	4.5 (<1)	145.6 (2)	1.7 (<1)	194.3 (5)	61.4 (1)	603.0 (3)	8.4 (<1)	573.0 (7)
others	2.2 (1)	2.5 (<1)	16.5 (1)	56.6 (1)	948.1 (2)	653.5 (5)	4.5 (<1)	29.1 (<1)		19.9 (1)		228.2 (1)		38.7 (1)
Chaetognatha			12.8 (1)	18.9 (<1)	142.2 (<1)	40.8 (<1)	17.9 (1)	38.8 (1)	3.4 (<1)	59.8 (2)	23.1 (<1)	48.9 (<1)	21.0 (1)	7.7 (<1)
Echinodermata	0.7 (<1)													
Chordata urochordata	2.9 (1)	4.9 (1)	65.9 (4)	301.7 (3)	1469.6 (3)	435.7 (3)	250.1 (10)	194.3 (3)	175.6 (18)	299.0 (8)	429.8 (9)	228.2 (1)	194.0 (8)	100.7 (1)
fish			40.3 (3)		47.4 (<1)		218.8 (8)		66.9 (6)	5.0 (<1)	23.0 (<1)		8.4 (<1)	
Eggs	30.2 (7)	17.3 (2)	108.0 (7)	66.0 (1)	426.6 (1)	68.1 (<1)	160.8 (6)	58.3 (1)	209.1 (21)	104.6 (3)	115.2 (2)	97.8 (1)	105.4 (4)	46.5 (1)
Miscellaneous											7.7 (<1)			
SUBTOTAL UNDAMAGED	422.9	781.7	1500.9	9173.8	51528.7	14145.9	2612.8	6061.7	993.7	3881.4	4881.5	18138.9	2474.6	7877.3
SUBTOTAL DAMAGED	3.6 (1)	9.8 (1)	29.3 (2)	235.7 (3)	758.4 (2)	204.2 (1)	147.4 (5)	135.9 (2)	40.1 (4)	124.5 (3)	222.8 (4)	97.8 (1)	80.0 (3)	123.7 (2)
TOTAL UNDAMAGED + DAMAGED	426.5	791.5	1530.2	9409.5	52287.1	14350.1	2760.2	6197.6	1033.8	4005.9	5104.3	18236.7	2554.6	8001.0

[a]Ø = Oblique; S = Surface; B = Bottom.

Table 2.2A-14
cont'd

DENSITY (no./m³) AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA
ST. LUCIE PLANT
12 SEPTEMBER 1978

	Station and depth[a]													
	11	12	0			1	2			3		4		5
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED														
Protozoa														
Coelenterata	4.8 (1)		49.5 (1)	120.7 (5)	290.4 (4)	100.4 (3)	67.6 (1)	36.0 (1)	14.9 (<1)	15.4 (<1)	61.5 (1)	48.0 (1)	40.1 (1)	17.0 (<1)
Mollusca	380.3 (40)	64.8 (7)	841.6 (15)	198.8 (8)	2599.9 (36)	734.0 (23)	1536.5 (18)	204.1 (5)	425.5 (13)	616.9 (14)	2255.2 (30)	467.7 (14)	160.3 (5)	508.8 (3)
Polychaeta	42.5 (4)	10.0 (1)	181.5 (3)	21.3 (1)	158.4 (2)	92.7 (3)	84.4 (1)	12.0 (<1)	7.5 (<1)		20.5 (<1)		10.0 (<1)	67.8 (<1)
Crustacea nauplii	6.5 (1)	2.5 (<1)	49.5 (1)	42.6 (2)	224.4 (3)	7.7 (<1)	33.8 (<1)	60.0 (1)	7.5 (<1)	92.6 (2)	20.5 (<1)	36.0 (1)		169.6 (1)
cladocera	4.9 (1)		1237.6 (22)	340.8 (14)	554.3 (8)	255.0 (8)	2498.9 (29)	1848.6 (45)	679.1 (21)	1634.8 (38)	2316.7 (32)	1283.2 (39)	751.4 (23)	11785.6 (72)
ostracoda														
copepoda	119.6 (13)	181.9 (20)	2079.2 (37)	844.9 (36)	2190.9 (31)	1282.7 (40)	3511.9 (41)	924.4 (23)	1806.2 (55)	1017.8 (24)	2111.7 (29)	959.4 (29)	2073.7 (63)	2391.0 (15)
cirripedia (barnacle) nauplii	344.2 (36)	583.1 (63)	16.5 (<1)	71.0 (3)	184.8 (3)	131.3 (4)	50.7 (1)	96.0 (2)		46.3 (1)	20.5 (<1)	71.9 (2)	50.1 (2)	339.2 (2)
decapoda	27.7 (3)	57.4 (6)	445.5 (8)	418.9 (18)	422.4 (6)	401.8 (13)	236.6 (3)	528.0 (13)	201.5 (6)	262.3 (6)	205.0 (3)	227.9 (7)	50.0 (2)	254.5 (2)
others		5.0 (1)	16.5 (<1)		13.2 (<1)	23.2 (1)		72.0 (2)		15.4 (<1)				
Chaetognatha	3.3 (<1)		165.0 (3)	63.9 (3)	250.8 (4)	69.5 (2)	118.3 (1)	108.0 (3)	74.7 (2)	231.3 (5)	123.0 (2)	72.0 (2)	90.2 (3)	135.7 (1)
Echinodermata	1.6 (<1)					15.5 (<1)	101.3 (1)	24.0 (1)	22.4 (1)	30.9 (1)	41.0 (1)		60.1 (2)	356.1 (2)
Chordata urochordata	1.6 (<1)	17.5 (2)	462.1 (8)	248.5 (10)	224.4 (3)	77.3 (2)	253.3 (3)	192.0 (5)	52.3 (2)	323.9 (8)	82.0 (1)	120.0 (4)	30.1 (1)	237.5 (1)
cephalochordata	1.6 (<1)										20.5 (<1)	12.0 (<1)		17.0 (<1)
fish							16.9 (<1)			15.4 (<1)				17.0 (<1)
Eggs														
Miscellaneous	13.1 (1)	5.0 (1)	66.0 (1)		13.2 (<1)	7.7 (<1)	16.9 (<1)					12.0 (<1)		
SUBTOTAL UNDAMAGED	951.7	927.2	5610.5	2371.4	7127.1	3198.8	8527.1	4105.1	3291.6	4303.0	7278.1	3310.1	3316.0	16296.8
SUBTOTAL DAMAGED	8.2 (1)	42.5 (4)	132.0 (2)	163.3 (6)	211.2 (3)	92.7 (3)	270.2 (3)	276.0 (6)	134.4 (4)	370.2 (8)	348.5 (5)	275.9 (8)	130.4 (4)	678.5 (4)
TOTAL UNDAMAGED + DAMAGED	959.3	969.7	5742.5	2534.7	7338.3	3291.5	8797.3	4381.1	3426.0	4673.2	7626.6	3586.0	3446.4	16975.3

[a]Ø = Oblique; S = Surface; B = Bottom.

Table 2.2A-14
cont'd

DENSITY (no./m³) AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA
ST. LUCIE PLANT
3 OCTOBER 1978

	Station and depth[a]													
	11	12	0			1		2		3	4		5	
Taxon	β	β	S	B	S	B	S	B	S	B	S	B	S	β
UNDAMAGED														
Protozoa		3.1 (<1)			12.0 (<1)				13.4 (<1)		12.0 (<1)			
Coelenterata	7.9 (1)		4.4 (<1)	51.3 (1)	12.0 (<1)			13.6 (<1)			6.0 (<1)			47.1 (2)
Mollusca	17.4 (1)	12.5 (1)	106.2 (3)	222.6 (6)	1235.7 (22)	902.9 (25)	215.9 (4)	34.0 (1)	94.0 (1)	19.1 (<1)	60.0 (2)	36.5 (1)	116.8 (1)	198.1 (8)
Polychaeta					48.0 (1)	20.5 (1)						3.7 (<1)		
Crustacea nauplii	45.8 (4)	72.2 (4)	44.3 (1)	17.1 (<1)	120.0 (2)	20.5 (1)		13.6 (<1)	67.2 (1)	19.0 (<1)	6.0 (<1)	29.2 (1)	93.4 (1)	56.6 (2)
cladocera	41.1 (3)	6.3 (<1)	1353.7 (37)	1048.7 (30)	815.8 (15)	485.7 (14)	2898.8 (56)	3201.9 (76)	1504.0 (22)	4636.0 (89)	761.7 (20)	1197.9 (44)	992.6 (12)	1084.5 (44)
ostracoda														
copepoda	205.4 (16)	649.0 (40)	1720.8 (48)	1579.5 (46)	2675.4 (48)	1238.1 (35)	1569.8 (30)	625.5 (15)	3666.0 (54)	342.7 (7)	2045.1 (55)	1113.8 (41)	6726.7 (80)	537.6 (22)
cirripedia (barnacle) nauplii	907.1 (72)	837.3 (52)	35.4 (1)	17.1 (<1)	180.0 (3)	27.3 (1)	24.9 (<1)	34.0 (1)	134.3 (2)	38.1 (1)		32.9 (1)		75.5 (3)
decapoda	6.3 (<1)	3.1 (<1)	194.6 (5)	436.6 (13)	264.0 (5)	813.8 (23)	307.2 (6)	224.4 (5)	1101.0 (16)	104.8 (2)	683.7 (18)	289.0 (11)	280.3 (3)	405.4 (17)
others		25.0 (2)	4.4 (<1)			13.6 (<1)			13.4 (<1)		18.0 (<1)			
Chaetognatha	3.1 (<1)		132.7 (4)	55.6 (2)	96.0 (2)	41.0 (1)	74.8 (1)	6.8 (<1)	94.0 (1)		119.9 (3)	14.6 (1)	116.8 (1)	18.9 (1)
Echinodermata			8.8 (<1)	8.5 (<1)	12.0 (<1)	6.8 (<1)		20.4 (<1)						9.4 (<1)
Chordata urochordata	12.6 (1)	15.7 (1)	8.8 (<1)		84.0 (2)	13.7 (<1)	99.7 (2)	13.6 (<1)	120.9 (2)	28.6 (1)	36.0 (1)	3.7 (<1)	58.4 (1)	9.4 (<1)
fish	1.6 (<1)													
Eggs														
Miscellaneous	14.2 (1)			12.8 (<1)	12.0 (<1)				13.4 (<1)	9.5 (<1)				9.4 (<1)
SUBTOTAL UNDAMAGED	1262.5	1624.2	3614.1	3449.8	5566.9	3583.9	5191.1	4187.8	6821.6	5197.8	3748.4	2721.3	8385.0	2451.9
SUBTOTAL DAMAGED	1.6 (<1)	50.1 (3)	75.2 (2)	111.3 (3)	372.0 (6)	177.7 (5)	124.6 (2)	469.1 (10)	201.5 (3)	1275.5 (20)	66.0 (2)	482.2 (15)	268.6 (3)	273.5 (10)
TOTAL UNDAMAGED + DAMAGED	1264.1	1674.3	3689.3	3561.1	5938.9	3761.6	5315.7	4656.9	7023.1	6473.3	3814.4	3203.5	8653.6	2725.4

[a]β = Oblique; S = Surface; B = Bottom.

Table 2.2A-14
cont'd

DENSITY (no./m³) AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA
ST. LUCIE PLANT
7 NOVEMBER 1978

Taxon	Station and depth[a]													
	11	12	0		1		2		3		4		5	
	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED														
Protozoa							1.4 (<1)							
Coelenterata			13.4 (1)	3.5 (<1)	14.3 (1)								1.4 (<1)	
Mollusca	1.7 (<1)	3.4 (<1)	26.8 (2)	24.2 (1)	7.1 (<1)	3.8 (<1)		2.8 (1)	1.3 (<1)	2.5 (1)	16.6 (3)	3.3 (1)	2.8 (<1)	2.5 (1)
Polychaeta			2.7 (<1)				1.4 (<1)				6.7 (1)		2.9 (<1)	
Crustacea														
nauplii	5.2 (<1)		8.0 (1)	6.9 (<1)	17.8 (1)		7.0 (1)	2.7 (<1)			8.3 (1)		4.3 (1)	
cladocera														
ostracoda								13.5 (2)	1.3 (<1)	6.1 (1)	3.3 (1)	21.6 (4)		3.5 (2)
copepoda	41.8 (3)	197.5 (18)	955.2 (86)	1505.4 (86)	2578.4 (94)	1690.9 (98)	528.8 (71)	308.3 (56)	309.0 (65)	242.3 (59)	422.8 (70)	451.1 (75)	401.3 (65)	131.9 (76)
cirripedia (barnacle) nauplii	1164.3 (96)	889.6 (81)	8.0 (1)	27.6 (2)			32.4 (4)	5.4 (1)	9.1 (2)	3.7 (1)	21.7 (4)		64.7 (10)	1.8 (1)
decapoda		1.7 (<1)	48.1 (4)	69.2 (4)	67.8 (2)	3.8 (<1)	70.3 (9)	150.3 (27)	86.1 (18)	99.8 (24)	48.5 (8)	58.3 (10)	67.5 (11)	13.6 (8)
others				3.5 (<1)	3.6 (<1)			1.4 (<1)				5.0 (1)	1.4 (<1)	1.1 (1)
Chaetognatha			2.7 (<1)	13.9 (1)	14.3 (1)	26.8 (2)	4.2 (1)	19.0 (3)	1.3 (<1)	13.4 (3)	5.0 (1)	10.0 (2)	7.1 (1)	10.7 (6)
Echinodermata							1.4 (<1)		2.6 (1)		1.7 (<1)		1.4 (<1)	
Chordata														
urochordata	1.7 (<1)	1.7 (<1)					7.0 (1)	1.4 (<1)	1.3 (<1)				1.4 (<1)	0.7 (<1)
fish														
Eggs			45.5 (4)	96.7 (6)	28.5 (1)	3.8 (<1)	92.8 (12)	48.7 (9)	60.0 (13)	43.8 (11)	69.9 (12)	54.7 (9)	60.4 (10)	8.9 (5)
Miscellaneous							2.8 (<1)		6.5 (1)					
SUBTOTAL UNDAMAGED	1214.7	1093.9	1110.4	1750.9	2731.8	1729.1	749.5	553.5	478.5	411.6	604.5	604.0	616.6	174.7
SUBTOTAL DAMAGED	0.0	12.1 (1)	8.0 (1)	34.6 (2)	35.6 (1)	30.8 (2)	18.3 (2)	14.9 (3)	10.4 (2)	14.7 (3)	30.0 (5)	19.9 (3)	14.3 (2)	14.4 (8)
TOTAL UNDAMAGED + DAMAGED	1214.7	1106.0	1118.4	1785.5	2767.4	1759.9	767.8	568.4	488.9	426.3	634.5	623.9	630.9	189.1

[a]Ø = Oblique; S = Surface; B = Bottom.

Table 2.2A-14
cont'd

DENSITY (no./m³) AND PERCENTAGE COMPOSITION (%) OF MAJOR ZOOPLANKTON TAXA
ST. LUCIE PLANT
6 DECEMBER 1978

	Station and depth[a]													
	11	12	0		1		2		3		4		5	
Taxon	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
UNDAMAGED														
Protozoa		1.1 (<1)										6.7 (<1)		6.0 (<1)
Coelenterata	1.2 (1)		9.4 (1)	19.1 (1)			23.4 (1)				6.8 (1)	20.2 (1)	49.8 (1)	6.0 (<1)
Ctenophora										10.9 (1)				
Mollusca	13.5 (7)	4.3 (1)		57.1 (3)	87.8 (2)	259.1 (5)	17.6 (1)	17.8 (1)	150.3 (2)	32.7 (2)	6.8 (1)	33.7 (2)	24.9 (1)	53.7 (1)
Polychaeta	4.9 (2)			9.5 (1)	6.8 (<1)	7.4 (<1)						6.7 (<1)	41.5 (1)	23.9 (1)
Crustacea nauplii			25.1 (3)	4.8 (<1)	13.5 (<1)	44.4 (1)	17.6 (1)	8.9 (<1)	64.4 (1)		1.7 (<1)	13.5 (1)	8.3 (<1)	
cladocera														
ostracoda	1.2 (1)			23.8 (1)	13.5 (<1)	7.4 (<1)				21.8 (1)		87.7 (5)		
copepoda	34.3 (17)	102.0 (34)	551.9 (62)	1149.8 (67)	3193.7 (84)	4702.8 (86)	2582.9 (91)	2630.2 (77)	5302.7 (86)	1310.8 (72)	377.4 (57)	1167.0 (68)	3010.8 (69)	2545.9 (69)
cirripedia (barnacle) nauplii	55.2 (28)	102.0 (34)			27.0 (1)	7.4 (<1)					1.7 (<1)			
decapoda	2.4 (1)	1.1 (<1)	3.1 (<1)	237.7 (14)	33.9 (1)	162.8 (3)		363.2 (11)	21.5 (<1)	163.8 (9)	10.2 (2)	154.9 (9)	431.4 (10)	697.6 (19)
others	6.1 (3)	13.0 (4)			6.8 (<1)	7.4 (<1)								
Chaetognatha			9.4 (1)	4.8 (<1)	108.1 (3)	37.0 (1)	23.4 (1)	17.8 (1)	42.9 (1)	10.9 (1)	8.5 (1)	26.9 (2)	107.8 (2)	6.0 (<1)
Echinodermata				4.8 (<1)									8.3 (<1)	
Chordata urochordata	1.2 (1)	5.4 (2)	6.3 (1)	23.8 (1)	13.5 (<1)	29.6 (1)	17.6 (1)	17.8 (1)	300.5 (5)	98.3 (5)	3.4 (1)	67.5 (4)	431.3 (10)	23.9 (1)
fish								8.9 (<1)						
Eggs	78.4 (39)	72.7 (24)	279.1 (31)	166.3 (10)	290.3 (8)	207.4 (4)	146.4 (5)	371.9 (11)	257.6 (4)	174.8 (10)	249.9 (38)	134.9 (8)	248.8 (6)	310.0 (8)
Miscellaneous	1.2 (1)	1.1 (<1)	3.1 (<1)	4.8 (<1)		7.4 (<1)						6.7 (<1)		
SUBTOTAL UNDAMAGED	199.6	302.7	887.4	1706.3	3794.9	5480.1	2828.9	3436.5	6139.9	1824.0	666.4	1726.4	4362.9	3673.0
SUBTOTAL DAMAGED	0.0	8.7 (3)	9.4 (1)	23.9 (1)	94.6 (2)	51.8 (1)	41.0 (1)	70.9 (2)	193.2 (3)	32.7 (2)	11.9 (2)	26.9 (2)	174.2 (4)	77.6 (2)
TOTAL UNDAMAGED + DAMAGED	199.6	311.4	896.8	1730.2	3889.5	5531.9	2869.9	3507.4	6333.1	1856.7	678.3	1753.3	4537.1	3750.6

[a]Ø = Oblique; S = Surface; B = Bottom.

Table 2.2A-15

RESULTS OF ZOOPLANKTON BIOMASS ANALYSIS[a]
ST. LUCIE PLANT
MARCH-NOVEMBER 1976

	Station and depth[b]													
	11	12	0		1		2		3		4		5	
Date	Ø	Ø	S	B	S	B	S	B	S	B	S	B	S	B
26 MAR	0.390	0.096	0.004	1.122	0.864	0.175	1.335	16.752	0.887	0.760	6.496	0.700	3.282	1.223
21 APR	0.093	N.A.[c]	0.137	0.485	0.185	N.A.[c]	0.432	1.465	1.048	6.633	0.405	1.699	N.A.[c]	1.665
12 MAY	0.218	0.612	0.169	1.724	0.963	1.045	0.319	0.118	1.560	4.793	0.682	0.127	0.169	1.274
8 JUN	0.089	0.618	0.093	1.697	0.378	0.110	0.157	0.661	0.466	0.771	0.167	0.447	0.173	0.207
14 JUL	0.111	0.053	1.454	1.849	5.983	8.696	0.380	2.734	0.217	1.167	0.178	5.913	0.414	1.059
11 AUG	0.827	0.279	0.744	0.015	1.151	0.828	0.813	7.006	6.119	2.026	0.891	4.984	1.113	1.482
14 SEP	3.559	1.079	0.484	0.453	0.533	0.121	0.779	3.103	1.523	4.410	0.998	2.390	2.296	4.106
15 OCT	0.187	0.591	0.183	2.686	1.903	1.525	1.049	0.601	0.669	2.942	0.449	0.922	0.759	2.507
10 NOV	0.145	0.795	1.230	1.139	0.894	0.672	0.290	0.304	0.446	0.974	0.391	3.473	0.171	0.926
Station $\bar{x}$	0.624	0.515	0.499	1.241	1.428	1.646	0.617	3.638	1.437	2.719	1.184	2.280	1.047	1.605

[a] Ash-free dry weight expressed in $g/m^3 \times 10^{-2}$.
[b] Ø = Oblique; S = Surface; B = Bottom.
[c] Data not available.

Table 2.2A-15
cont'd

RESULTS OF ZOOPLANKTON BIOMASS ANALYSIS[a]
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

	Station and depth[b]										
	11	12	0			1			2		
	β	β	S	B	X	S	B	X	S	B	X
25 JAN	1.28	4.05	6.00	1.58	3.79	15.83	1.50	8.67	14.24	3.49	8.87
15 FEB	4.17	13.29	10.97	6.13	8.55	32.08	16.26	24.17	1.87	22.54	12.21
11 MAR	2.62	9.22	21.07	19.45	20.26	7.66	7.66	7.66	26.92	374.26	200.59
19-20 APR[c]	2.02	6.07	16.17	16.03	16.10	15.79	13.87	14.83	15.34	27.06	21.20
10 MAY	1.72	5.46	3.51	27.27	15.39	42.81	17.69	30.25	4.33	35.38	19.86
14 JUN	1.59	4.20	7.67	16.99	12.33	16.85	58.70	37.78	2.12	37.94	20.03
12 JUL	4.28	7.93	48.04	41.12	44.58	50.84	89.99	70.42	60.80	46.95	53.88
23 AUG	2.13	5.18	16.51	23.95	20.23	28.26	20.42	24.34	14.89	NA[d]	NA[d]
13 SEP	4.03	3.72	17.91	22.72	20.31	19.36	26.78	23.07	27.45	26.53	26.99
11-19 OCT[e]	6.62	12.88	3.60	0.85	2.23	10.84	38.22	24.50	7.92	2.44	5.18
2 NOV	2.22	4.21	5.24	5.12	5.18	36.12	40.41	38.27	3.38	11.39	7.39
1 DEC	0.84	1.22	5.63	11.49	8.56	11.34	14.43	12.89	31.66	16.07	23.87
MEAN	2.79	6.45	13.53	16.06	14.79	23.98	28.83	26.40	17.58	54.91	36.37

	Station and depth[b]								
	3			4			5		
	S	B	X	S	B	X	S	B	X
25 JAN	4.15	9.86	7.01	13.40	2.55	7.98	5.95	3.83	4.89
15 FEB	23.78	38.49	31.14	15.25	1.72	8.49	12.93	41.25	27.09
11 MAR	48.35	19.73	34.04	19.22	11.82	15.52	86.33	18.76	52.55
19-20 APR[c]	19.12	22.95	21.04	13.09	14.48	13.79	16.18	13.44	14.81
10 MAY	3.42	17.37	10.40	7.00	38.29	22.65	4.44	24.40	14.42
14 JUN	12.86	27.44	20.15	2.96	24.69	13.83	25.33	70.79	48.06
12 JUL	30.80	105.70	68.25	NA[d]	46.39	NA[d]	223.47	16.58	120.03
23 AUG	29.81	NA[d]	NA[d]	8.79	NA[d]	NA[d]	29.24	19.42	24.33
13 SEP	19.20	24.49	21.85	15.24	28.22	21.73	24.26	51.63	37.95
11-19 OCT[e]	2.41	1.47	1.94	2.91	4.08	3.50	3.70	6.19	5.00
2 NOV	8.37	11.86	10.12	11.21	10.09	10.65	3.86	14.13	9.00
1 DEC	10.37	10.98	10.68	17.20	21.38	19.29	7.36	85.87	46.62
MEAN	17.72	26.39	21.51	11.48	18.52	13.74	36.92	30.52	33.73

[a]Ash-free dry weight expressed in mg/m^3.
[b]β = Oblique; S = Surface; B = Bottom.
[c]Stations 11 and 12 collected 20 APR; all other stations collected 19 APR.
[d]Data not available.
[e]Stations 11 and 12 collected 11 OCT; all other stations collected 19 OCT.

Table 2.2A-15
cont'd

RESULTS OF ZOOPLANKTON BIOMASS ANALYSIS
ST. LUCIE PLANT
JANUARY-DECEMBER 1978

	Station and depth[a]																			
	11	12	0			1			2			3			4			5		
Date	Ø	Ø	S	B	$\bar{X}$	S	B	$\bar{X}$	S	B	$\bar{X}$	S	B	$\bar{X}$	S	B	$\bar{X}$	S	B	$\bar{X}$
23 JAN	1.89	2.24	14.63	14.48	14.56	17.37	2.55	9.96	9.42	11.76	10.59	4.71	21.90	13.31	10.29	13.14	11.72	31.13	25.85	28.49
13 FEB	2.66	5.05	8.86	7.65	8.26	21.96	36.79	29.38	3.47	5.13	4.30	9.25	6.49	7.87	1.76	11.40	6.58	2.17	5.71	3.94
15 MAR	8.23	6.79	2.01	4.33	3.17	17.66	5.99	11.83	1.75	35.03	18.39	4.56	33.05	18.81	2.53	39.38	20.96	2.92	13.31	8.12
25 APR	35.91	1.28	12.14	9.16	10.65	4.74	8.22	6.48	8.63	15.31	11.97	5.22	31.36	18.29	7.97	16.50	12.24	32.72	7.30	20.01
17 MAY	14.91	0.75	1.32	3.33	2.33	1.27	9.94	5.61	0.98	18.12	9.55	2.92	35.80	19.36	2.46	5.45	3.96	2.82	20.86	11.84
21 JUN	2.68	3.71	26.38	10.18	18.28	15.80	31.61	23.71	32.02	10.85	21.44	10.70	17.96	14.33	9.86	13.08	11.47	12.74	40.50	26.62
12 JUL	5.34	6.82	11.54	26.31	18.93	-[b]	25.69	-	25.74	52.58	39.16	5.56	26.29	15.93	54.70	32.21	43.46	55.63	57.13	56.38
8 AUG	0.65	2.64	7.78	20.59	14.19	95.52	94.83	95.18	24.21	33.54	28.88	4.09	26.52	15.31	23.10	93.40	58.25	23.94	47.66	35.80
12 SEP	1.50	4.71	11.18	23.56	17.37	24.86	31.72	28.29	26.58	43.31	34.95	19.22	25.55	22.39	31.04	32.79	31.92	19.72	55.57	37.65
3 OCT	1.78	2.29	10.63	18.44	14.54	21.42	37.64	29.53	12.06	44.11	28.09	18.50	41.83	30.17	9.75	17.04	13.40	71.41	54.44	62.93
7 NOV	0.64	0.75	5.13	4.18	4.66	15.32	6.46	10.89	2.28	10.04	6.16	2.30	2.42	2.36	2.61	2.73	2.67	2.18	0.87	1.53
6 DEC	0.32	1.21	7.76	32.93	20.35	19.50	36.50	28.00	10.97	41.19	26.08	75.35	48.96	62.16	2.34	18.75	10.55	39.34	30.57	34.96

[a]Ø = Oblique tow; S = Surface; B = Bottom.

[b]Anomalous data.

Table 2.2A-16

STATISTICAL COMPARISON OF UNDAMAGED ZOOPLANKTON
OFFSHORE SURFACE
ST. LUCIE PLANT
MARCH 1976 - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS X YEARS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	17	40.80057931	2.40003408
ERROR	178	201.35069815	1.13118370
CORRECTED TOTAL	195	242.15127746	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	17.08356846	3.02	0.0122
YEAR	2	17.74478628	7.84	0.0005
STATION*YEAR	10	5.97222457	0.53	0.8639

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=178 MS=1.13118

GROUPING		MEAN	N	STATION
	A	7.912775	32	1
B	A	7.493218	32	5
B		7.294188	33	2
B		7.205531	33	4
B		7.127263	33	3
B		7.006175	33	0

DUNCAN'S MULTIPLE RANGE TEST: YEARS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=178 MS=1.13118

GROUPING		MEAN	N	YEAR
	A	7.625795	71	77
	A	7.422713	66	78
	B	6.890769	59	76

Table 2.2A-16
cont'd

STATISTICAL COMPARISON OF UNDAMAGED ZOOPLANKTON
OFFSHORE BOTTOM
ST. LUCIE PLANT
JANUARY - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	5	2.34707939	0.46941588
ERROR	60	65.60962720	1.09349379
CORRECTED TOTAL	65	67.95670660	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	2.34707939	0.43	0.0273

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=60 MS=1.09349

GROUPING	MEAN	N	STATION
A	8.042260	11	2
A	7.683732	11	4
A	7.755644	11	5
A	7.727750	11	0
A	7.701945	11	1
A	7.422246	11	3

Table 2.2A-16
cont'd

ANALYSIS OF VARIANCE FOR ZOOPLANKTON DENSITY
ST. LUCIE PLANT
MARCH-NOVEMBER 1976[a]

Source	Degree of freedom	Sum of squares	Mean square	F values
Stations	7	17411775.99	2487396.57	0.8538
Months	7	53555876.59	7650839.51	2.6261*
Error	49	142752812.8	2913322.71	
TOTAL	63	213720465.4		

[a] September data not included in analysis.
* Significant at $\alpha = .05$.

Table 2.2A-16
cont'd

DIFFERENCES BETWEEN MONTHLY MEAN ZOOPLANKTON COUNTS
ST. LUCIE PLANT
MARCH-NOVEMBER 1976

Month (Mean)	APR (1306.8)	MAY (442.7)	JUN (1151.5)	JUL (2486.9)	AUG (3606.5)	SEP (7706.5)	OCT (2389.1)	NOV (2163.6)
MAR (1618.5)	311.7	1175.8	476.0	868.4	1988.0	6088.0*	770.6	545.1
APR (1306.8)		864.1	155.3	1180.1	2299.7	6399.7*	917.7	856.8
MAY (442.7)			708.8	2044.2	3163.8*	7263.8*	1946.4	1720.9
JUN (1151.5)				1335.4	2455.0	6555.0*	1237.6	1012.1
JUL (2486.9)					1119.6	5219.6*	2097.8	323.3
AUG (3606.5)						4100.0*	1217.4	1442.9
SEP (7706.5)							5317.4*	5542.9*
OCT (2389.1)								225.5

* Significant at α = .05, Tukey's HSD = 2703.5.

Table 2.2A-16
cont'd

DIFFERENCES BETWEEN MONTHLY MEAN ZOOPLANKTON DENSITIES (No./m^3)
UNDAMAGED ZOOPLANKTERS, OFFSHORE STATIONS (0-5)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Month (Mean)	FEB (3675.5)	MAR (7160.2)	APR (2730.1)	MAY (2289.2)	JUN (2923.6)	JUL (6867.6)	AUG (3727.0)	SEP (3194.0)	OCT (1731.9)	NOV (3383.9)	DEC (742.3)
JAN (1715.3)	1960.2	5444.9*	1014.8	573.9	1208.3	5152.3*	2011.7	1478.7	16.6	1668.6	973.0
FEB (3675.5)		3484.7	945.4	1386.3	751.9	3192.1	51.5	481.5	1943.6	291.6	2933.2
MAR (7160.2)			4430.1	4871.0*	4236.6	292.6	3433.2	3966.2	5428.3*	3776.3	6417.9*
APR (2730.1)				440.9	193.5	4137.5	996.9	463.9	998.2	653.8	1987.8
MAY (2289.2)					634.4	4578.4*	1437.8	904.8	557.3	1094.7	1546.9
JUN (2923.6)						3944.0	803.4	270.4	1191.7	460.3	2181.3
JUL (6867.6)							3140.6	3673.6	5135.7*	3483.7	6125.3*
AUG (3727.0)								533.0	1995.1	343.1	2984.7
SEP (3194.0)									1462.1	189.9	2451.7
OCT (1731.9)										1652.0	989.6
NOV (3383.9)											2641.6

*Significant at α = .05, Tukey's HSD = 4497.

Table 2.2A-16
cont'd

ANALYSIS OF VARIANCE FOR ZOOPLANKTON DENSITIES (No./m^3)
UNDAMAGED ZOOPLANKTERS, OFFSHORE STATIONS (0-5)
ST. LUCIE PLANT

January-December 1977				
Source	Degrees of freedom	Sum of Squares	Mean Square	F
Month (M)	11	4913657×10^2	4466960×10^1	4.29*
Station (S)	5	4678502×10^1	9357003	0.90
Depth (D)	1	7086271×10^1	7086270×10^1	6.81*
M x S	55	4533187×10^2	8242158	0.79
M x D	11	1118091×10^2	1016446×10^1	0.98
S x D	5	3589220×10^1	7178439	0.69
Error	55	5722304×10^2	1040419×10^1	
Total	143	1782264×10^3		

March 1976-December 1977[a]				
Source	Degrees of freedom	Sum of Squares	Mean Square	F
Year (Y)	1	1447572×10^2	1447572×10^2	18.57*
Month (M)	7	3146341×10^2	4494771×10^1	5.77*
Station (S)	5	5491369×10^1	1098274×10^1	1.41
Depth (D)	1	1177965×10^2	1177965×10^2	15.11*
Y x M	7	1548944×10^2	2212776×10^1	2.84*
Y x S	5	2414415×10^1	4828830	0.62
Y x D	1	6248683	6248683	0.80
M x S	35	2562377×10^2	7321078	0.94
M x D	7	5639042×10^1	8055773	1.03
S x D	5	2660252×10^1	5320503	0.68
Y x M x S	35	3393227×10^2	9694933	1.24
Y x M x D	7	5109795×10^1	7299707	0.94
Y x S x D	5	6274066×10^1	1254813×10^1	1.61
M x S x D	35	3947313×10^2	1127804×10^1	1.45
Error	35	2728689×10^2	7796253	
Total	191	2277381×10^3		

[a]Analysis includes March-August, October, and November, 1976 and 1977.

*Significant at $\alpha = .05$.

Table 2.2A-16
cont'd

DIFFERENCES BETWEEN MEAN ZOOPLANKTON DENSITIES (No./m^3)
UMDAMAGED ZOOPLANKTERS, OFFSHORE STATIONS (0-5)
ST. LUCIE PLANT
MARCH 1976 - DECEMBER 1977[a]

Annual		
1976	1977	Difference
2115.1	3851.7	1736.6*

Monthly							
Month (Mean)	APR (2152.1)	MAY (1384.3)	JUN (2166.4)	JUL (5067.3)	AUG (4026.8)	OCT (1813.2)	NOV (2744.9)
MAR (4512.0)	2359.9	3127.7*	2345.6	555.3	485.2	2698.8*	1767.1
APR (2152.1)		767.8	14.3	2915.2*	1874.7	338.9	592.8
MAY (1384.3)			782.1	3683.0*	2642.5*	428.9	1360.6
JUN (2166.4)				2900.9*	1860.4	353.2	578.5
JUL (5067.3)					1040.5	3254.1*	2322.4
AUG (4026.8)						2213.6	1281.9
OCT (1813.2)							931.7

[a]Analysis includes March-August, October, and November, 1976 and 1977.

*Significant at $\alpha \doteq .05$, Tukey's HSD = 2599.

Table 2.2A-16
cont'd

DIFFERENCES BETWEEN MONTHLY MEAN ZOOPLANKTON BIOMASS (mg/m^3)
OFFSHORE STATIONS (0-5)
ST. LUCIE PLANT
MARCH 1976 - DECEMBER 1977[a]

Month (Mean)	MAY (14.8)	JUN (14.9)	OCT (10.3)	NOV (11.3)
MAR (41.6)	26.8*	26.7*	31.3*	30.3*
MAY (14.8)		1.0	4.5	3.5
JUN (14.9)			4.6	3.6
OCT (10.3)				1.0

[a]Analysis includes March, May, June, October, and November, 1976 and 1977.

*Significant at $\alpha = .05$, Tukey's HSD = 17.65.

Table 2.2A-16
cont'd

STATISTICAL COMPARISON OF UNDAMAGED ZOOPLANKTON
OFFSHORE SURFACE
ST. LUCIE PLANT
JANUARY - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	5	10.77425225	2.15485045
ERROR	60	83.42900957	1.39048349
CORRECTED TOTAL	65	94.20326182	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	10.77425225	1.55	0.1873

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=60 MS=1.39048

GROUPING		MEAN	N	STATION
	A	8.199254	11	1
B	A	7.630394	11	5
B	A	7.303680	11	2
B	A	7.262677	11	4
B	A	7.220022	11	0
B		6.920253	11	3

Table 2.2A-17

STATISTICAL COMPARISON OF ZOOPLANKTON BIOMASS
OFFSHORE SURFACE
ST. LUCIE PLANT
MARCH 1976 - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS X YEARS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	17	25793.61557209	1517.55562777
ERROR	177	175996.15092278	994.33983572
CORRECTED TOTAL	194	201796.76649487	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	12196.07933766	2.45	0.0351
YEAR	2	3892.04228806	1.96	0.1443
STATION*YEAR	10	9710.49404617	0.98	0.4655

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=177 MS=994.34

GROUPING		MEAN	N	STATION
	A	31.300625	32	1
B	A	25.195312	32	5
B		13.075455	33	3
B		12.647576	33	2
B		12.430312	32	4
B		9.778788	33	0

DUNCAN'S MULTIPLE RANGE TEST: YEARS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=177 MS=994.34

GROUPING	MEAN	N	YEAR
A	20.371515	56	78
A	20.323662	71	77
A	10.167241	58	76

Table 2.2A-17
cont'd

STATISTICAL COMPARISON OF ZOOPLANKTON BIOMASS
OFFSHORE BOTTOM
ST. LUCIE PLANT
MARCH 1976 - NOVEMBER 1978

ANALYSIS OF VARIANCE: STATIONS X YEARS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
MODEL	17	17503.80323270	1029.63548423
ERROR	176	206511.96778586	1173.35345333
CORRECTED TOTAL	193	224015.77101856	

SOURCE	DF	TYPE I SS	F VALUE	PR > F
STATION	5	10100.80388863	1.72	0.1308
YEAR	2	1996.70041472	0.85	0.4283
STATION*YEAR	10	5406.29892934	0.46	0.9133

DUNCAN'S MULTIPLE RANGE TEST: STATIONS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=176 MS=1173.35

GROUPING		MEAN	N	STATION
	A	37.925937	32	2
B	A	26.552812	32	1
B	A	25.465789	33	5
B	A	25.404062	32	3
B	A	21.599687	32	4
B		13.591818	33	0

DUNCAN'S MULTIPLE RANGE TEST: YEARS

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=176 MS=1173.35

GROUPING		MEAN	N	YEAR
	A	29.029423	59	77
	A	24.074545	56	78
	A	21.432034	59	76

Table 2.2A-17
cont'd

ANALYSIS OF VARIANCE[a] FOR ZOOPLANKTON BIOMASS
ST. LUCIE PLANT
MARCH-NOVEMBER 1976[b]

Source	Degree of freedom	Sum of squares	Mean squares	F values
Stations	7	21.878266	3.125466571	1.206008414
Months	7	27.358464	3.908352	1.508096564
Error	49	126.987391	2.591579408	
TOTAL	63	176.224121		

[a] Critical F value for analysis of variance at $\alpha = .05$ with 7 df = 2.25.
[b] April data not included in analysis.

Table 2.2A-17
cont'd

ANALYSIS OF VARIANCE FOR ZOOPLANKTON BIOMASS (mg/m^3)
ST. LUCIE PLANT
JANUARY-DECEMBER 1977

Intake and Discharge Stations				
Source	Degrees of freedom	Sum of Squares	Mean Square	F
Month	11	143.2833	13.02576	3.72*
Station	1	80.3366	80.33655	22.9*
Error	11	38.4746	3.49769	
Total	23	262.0945		

Offshore Stations				
Source	Degrees of freedom	Sum of Squares	Mean Square	F
Month (M)	9	20148.17	2238.686	1.73
Station (S)	5	7532.92	1506.584	1.16
Depth (D)	1	3978.60	3978.603	3.08
M x S	45	54166.39	1203.698	0.93
M x D	9	5079.31	564.368	0.43
S x D	5	6112.52	1222.505	0.96
Error	45	58199.38	1293.319	
Total	119	155217.29		

*Significant at α = .05.