

Michelle Moser

From: Alicia Williamson
Sent: Tuesday, July 01, 2008 4:11 PM
To: Michelle Moser
Subject: FW: NAPS Unit 3 COL Application - NRC's Environmental Review Supplemental Information Needs #8 & #10 - 06/26/08 E-mail 1 of 5
Attachments: USACE email 9-6-06.pdf; Lake Anna Early Site.doc.pdf; Monitoring Plan for Lake Anna, WHTF, NAR 2-08.pdf

From: Tony.Banks@dom.com [mailto:Tony.Banks@dom.com]
Sent: Thursday, June 26, 2008 6:01 PM
To: Alicia Williamson; Laura Quinn; Sandusky, William F III
Cc: Thomas Kevern; Joseph.Hegner@dom.com; Regina.Borsh@dom.com; Joyce.Livingstone@dom.com; Tony.Banks@dom.com
Subject: NAPS Unit 3 COL Application - NRC's Environmental Review Supplemental Information Needs #8 & #10 - 06/26/08 E-mail 1 of 5

On May 16, 22, and 29, 2008, NRC staff and its contractor, Pacific Northwest National Laboratory (PNNL), held conference calls with representatives from Dominion to discuss a number of supplemental "information needs" to support the North Anna Power Station Unit 3 (NAPS) combined license application environmental review. Several of these information needs were identified during the environmental site audit conducted the week of April 14, 2008. Others were identified by subject matter reviewers following the audit.

This e-mail provides some of the requested information listed in NRC's June 16, 2008 letter, which included a total of 35 items. In certain instances, the file size may dictate that more than one e-mail will be needed to transmit the information. In those instances, the e-mail will clearly be identified as "x of y" to ensure accountability.

Please note that Dominion will respond to some of the information needs via e-mail, and to others by letter. In every case, Dominion's goal is to provide complete and accurate information in a timely manner. The use of both e-mail and letters to achieve this goal has been discussed with the NRC project managers.

To ensure that you have received the information, please acknowledge receipt of this transmission.

I can be contacted at (804) 273-2170 or (tony.banks@dom.com) if there are questions.

Thank you -

Tony Banks, MPH, CHMM
Dominion
ESP/COL Project
Environmental Lead

Information Need Request #8

Please provide the COE (Corps of Engineers) report referenced in S4.4-49 that reviewed the DCR database and did not find threatened or endangered species located on property. (Reference: ER Section 4.3)

Dominion Response

The following attachments address Information Need #8:

Department of the Army, Corp of Engineers "Lake Anna Nuclear Early Site, Louisa County – Supplemental Preapplication Information"

(Please Note: The Word document received via e-mail from USACE was created with an active "date field" that reverts to the current date whenever it is opened. The original document was created on September 6, 2006, and was re-opened on June 2, 2008 in preparation for this transmittal. See annotation.)

Information Need Request #10

Provide a copy of the document "A Monitoring Plan for Lake Anna, the Waste Heat Treatment Facility and the North Anna River" prepared by Environmental Biology, Electric Environmental Services, Dominion Resources Services, dated February 2008.

Dominion Response

The following attachment addresses Information Need #10:

"A Monitoring Plan for Lake Anna, the Waste Heat Treatment Facility and the North Anna River", by Environmental Biology, Electric Environmental Services, Dominion Resources Services, February 2008

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Joyce
Livingstone/Generation/6/D
om

06/26/2008 03:10 PM

To
cc
bcc
Subject Fw: Lake Anna Letter for Delineation

Joyce B. Livingstone, REM, CEA
Environmental Specialist III - Dominion ESP/COL Project
Direct 804-273-2985 ; Tie Line 8-730-2985 ; Cell 804-921-7148
Email: joyce.livingstone@dom.com
----- Forwarded by Joyce Livingstone/Generation/6/Dom on 06/26/2008 03:10 PM -----



Glenn
Bishop/Services/6/Dom

06/02/2008 09:35 AM

To Joyce Livingstone/Generation/6/Dom@VANCPower
cc
Subject Fw: Lake Anna Letter for Delineation

Attached is reference to COE findings on T&E.

Glenn Bishop
Biologist III - Dominion Environmental Services
Direct 804-271-5375 ; Tie Line 8-731-5375
Email: Glenn.Bishop@dom.com
----- Forwarded by Glenn Bishop/Services/6/Dom on 06/02/2008 09:34 AM -----



Kenneth
Roller/IN/FH/VANCPower

09/07/2006 08:08 AM

To brue@eaest.com, bsadavis@aol.com, Chris Taylor/LR/FH/VANCPower@VANCPower, cleasure@eaest.com, Judson White/IN/FH/VANCPower@VANCPower, Glenn Bishop/LR/FH/VANCPower@VANCPower
cc Tony Banks/NUC/VANCPower@VANCPower, Robert M Bisha/IN/FH/VANCPower@VANCPower
Subject Fw: Lake Anna Letter for Delineation

Success!!!

Thanks to everyone for your efforts so far with the wetlands permitting!

Kenneth W. Roller
Dominion
Electric Environmental Services
Phone: (804) 273-3494
Fax: (804) 273-2964
kenneth_roller@dom.com

----- Forwarded by Kenneth Roller/IN/FH/VANCPower on 09/07/2006 08:03 AM -----



"Bronson, Regena D NAO"
<Regena.D.Bronson@nao0
2.usace.army.mil>

09/06/2006 04:55 PM

To <Tony_Banks@Dom.com>, <Kenneth_Roller@Dom.com>

cc

Subject Lake Anna Letter for Delineation

Ken and Tony,

Please find the attached letters for the Lake Anna Nuclear Site. If you have any other questions please call.

Thanks

Regena Bronson
Environmental Scientist
US Army Corps of Engineers
Potomac VA. Field Office
PO Box 1704
Leonardtown, MD 20650
PH 301.475.2720
Fax 301.475.3124



Lake Anna Nuclear Early Site.doc scan002.jpg



DEPARTMENT OF THE ARMY
NORFOLK DISTRICT, CORPS OF ENGINEERS
FORT NORFOLK, 803 FRONT STREET
NORFOLK, VIRGINIA 23510-1096

REPLY TO
ATTENTION OF:

September 6, 2006 (see attached page, JBL 6/2/08)
~~June 2, 2008~~

Lake Anna Nuclear Early Site, Louisa County
Supplemental Preapplication Information

1. A search of the Virginia Department of Historic Resources Data Sharing System revealed the following:

No known historic properties are located on the property.

The following known architectural resources are located on the property (see attached map and listing)

The following known archaeological resources are located on the property: 2 Cemeteries present on site.

2. A search of the Virginia Department of Conservation and Recreation data revealed the following:

No known populations of federally listed threatened or endangered species are located on the property.

The property is within a known concentration area for the following species:
Small whorled pogonia

3. We suggest the following avoidance, minimization, and compensatory mitigation measures be incorporated into any plans you prepare for the property: All road and driveway crossing should be placed perpendicular to streams.

Please note this information is being provided to you based on the preliminary data you submitted to the Corps relative to project boundaries and project plans. Consequently, these findings and recommendations are subject to change if the project scope changes or new information becomes available and the accuracy of the data. Lastly, the Corps only consulted the federally-listed species in the Virginia Department of Conservation & Recreation's database. You may also want to consult the Virginia Department of Game and Inland Fisheries' database at www.dgif.va.state.us

A Monitoring Plan for Lake Anna, the Waste Heat Treatment Facility and the North Anna River

by

Environmental Biology
Electric Environmental Services
Dominion Resources Services

February 2008

Background

The purpose of this monitoring plan is to address the requirements of the recently re-issued NPDES permit for North Anna Power Station (NAPS), permit VA00524541, Section E, item 13 i.e., Post 316(a) Monitoring, which states:

"In accordance with the original 316(a) study submittal, and the biological and temperature sampling conducted since then, the permittee shall continue to conduct temperature and biological monitoring of the Waste Heat Treatment Facility (WHTF), Lake Anna, and the North Anna River. The permittee shall submit to DEQ for approval, no later than March 31, 2008, a monitoring plan describing the sampling types, methods, locations, and frequencies for both physical-chemical and biological data. Any revisions to the approved plan shall be submitted to DEQ prior to implementation.

Temperature monitoring shall occur at a minimum of 11 stations; three in the WHTF, seven in Lake Anna, and one in the North Anna River. Fixed continuous temperature recorders shall be used at each location to record hourly temperature in degrees Celsius at a depth of one meter for all of the stations except at the station in Lake Anna closest to Dike 3 which shall be placed at a depth of three meters. Temperature recorders shall be field verified and calibrated annually. Biological monitoring shall include fish population surveys.

The permittee shall submit the results for the preceeding year's monitoring by March 31 of each year. With the annual report of results, the permittee shall provide an analysis of the data and recommendations for changes to the study design as appropriate."

1.0 Introduction

In 1972, the North Anna River was impounded to create Lake Anna, a 3885 hectare (9600 acres) reservoir (lake) that provides condenser cooling water for the North Anna Power Station (NAPS). NAPS utilizes a once-through cooling water system with a shoreline intake structure and a discharge canal. Adjacent to Lake Anna is a 1376 hectare (3400 acre) Waste Heat Treatment Facility (WHTF) that receives the cooling water.

Aquatic monitoring studies have been conducted on Lake Anna since its inception. In January, 1984, the Company initiated an extensive Section 316(a) demonstration study (P.L. 95-500) to determine if proposed effluent limitations on thermal discharges from the power station were more stringent than necessary to assure the protection and propagation of a balanced, indigenous community of shellfish, fish and wildlife in Lake Anna and the lower North Anna River. The final report (Virginia Power 316(a) Report 1986) successfully demonstrated that the operation of the power station had not resulted in appreciable harm to the biological community. The Virginia Water Control Board (VWCB) accepted the study as a successful demonstration in September, 1986. Subsequent to the 316(a) study, the Company committed with the VWCB to continue environmental monitoring on Lake Anna and the lower North Anna River as part of a post-316(a) agreement, using procedures developed and approved by VWCB, Virginia Department of Game and Inland Fisheries (VDGIF) and others.

Existing studies have been conducted over many years and in a consistent manner to allow for comparisons between and among years and for identifying data trending, if any. It is very important to maintain this consistency in order to continue these assessments. Therefore, this study plan is based on historical studies with two exceptions/additions: a smallmouth bass population study is being proposed for the North Anna River below the Lake Anna dam; and a mussel search with a possible subsequent monitoring plan is also being suggested.

Aquatic monitoring studies on Lake Anna and the WHTF have consisted of fixed continuous temperature monitoring (10 sites), quarterly synoptic temperature surveys (14 sites), quarterly gill netting (6 sites) and quarterly shoreline boat electrofishing (9 sites). Aquatic monitoring studies on the lower North Anna River have consisted of fixed continuous temperature monitoring (1 site) and electric seine and backpack electrofishing once per month each year in May, July and September (4 sites). In addition, this plan includes a mussel survey and a North Anna River smallmouth bass population study.

In addition, and similar to the existing post 316(a) agreement between VWCB and Dominion, opportunities to recommend either add to or delete studies (or even parts of studies) will be made at the end of each three (3) year period. For example, in the final report for 2010, if enough information has been captured in the NAR smallmouth bass study to complete the study objective (collection years 2008, 2009, 2010) then a recommendation to delete this study could be made.

2.0 Temperature Monitoring

Temperature monitoring shall consist of two methods; fixed continuous temperature monitoring and quarterly synoptic temperature surveys.

2.1 Fixed continuous temperature monitoring will occur at 11 stations; seven (7) in Lake Anna, three (3) in the (WHTF) and one (1) in the North Anna River (Figure 2.1)

Two types of data loggers will be utilized for recording continuous water temperature data:

(1) the In-situ Minitroll logger; and (2) the onset Hobo Water Temp Pro logger. The minitroll is a stainless steel cylindrical instrument powered by two AA batteries with an accuracy of $\pm 0.25^{\circ}\text{C}$. The onset water temperature pro logger is smaller and is constructed of plastic with factory replaceable lithium batteries and an accuracy of $\pm 0.20^{\circ}\text{C}$. The minitroll data logger

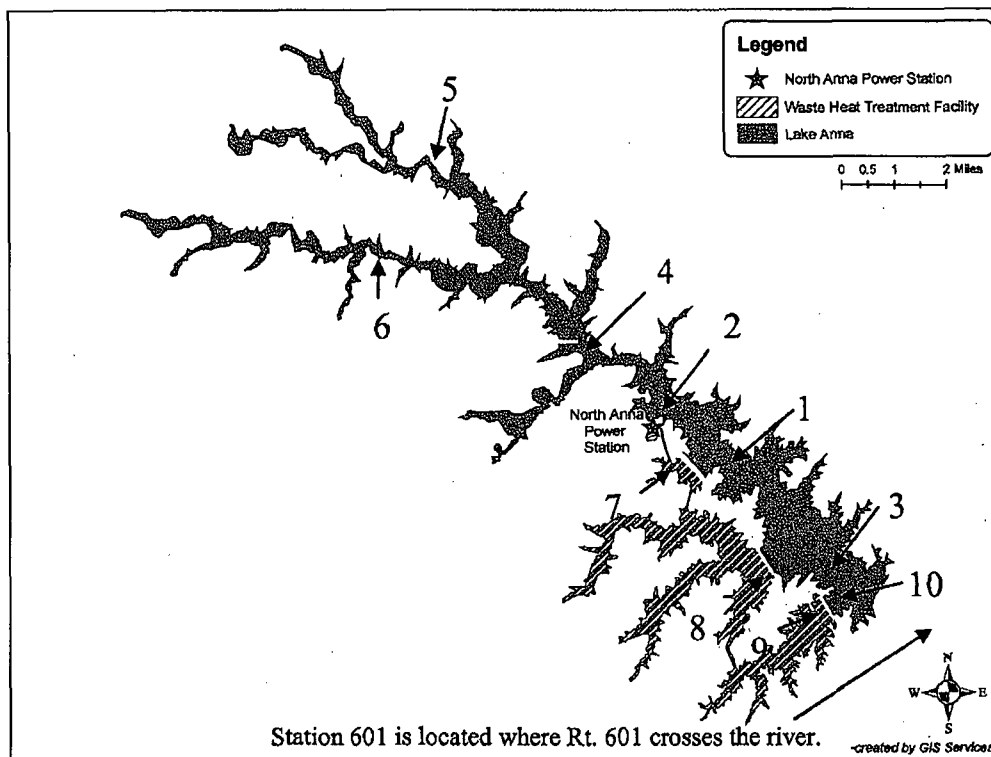


Figure 2.1 Lake Anna and WHTF Fixed Continuous Temperature Monitoring Stations

will be the primary logger with the onset logger serving as redundancy. All data loggers will be encased in protective, vented PVC tubing.

Before deployment, each logger is connected to the host computer for launching and initializing. The real time temperature is observed for each logger and then compared with each subsequent logger launched to verify temperature accuracy. If the temperature as measured by any logger is suspect, that logger is placed in a temperature-controlled water bath along with a NBS traceable thermometer to test for accuracy. Loggers determined to be outside of manufacturer specifications will be shipped to the factory for subsequent repair and calibration. Also, each year one complete set (11) of the minitrolls will be sent to the factory for refurbishment, calibration and certification.

When deploying the loggers, and again when retrieving the loggers, water temperatures will be measured at the one (1) meter depth at each deployment station with a Hydrolab data sonde. This Hydrolab has an accuracy of $\pm 0.1^{\circ}\text{C}$ and its accuracy is checked against a NBS

traceable thermometer in a stabilized water bath on an annual basis as recommended by Hydrolab. The fixed continuous temperature values will be recorded hourly (in degrees Celsius) at a depth of one (1) meter at all stations except for Station 10 in the lake near Dike 3 which shall be at a depth of three (3) meters.

2.2 The quarterly synoptic temperature surveys will consist of measuring water temperature surface to bottom at one (1) meter intervals at fourteen (14) stations in Lake Anna using a Hydrolab data sonde (Figure 2.2).

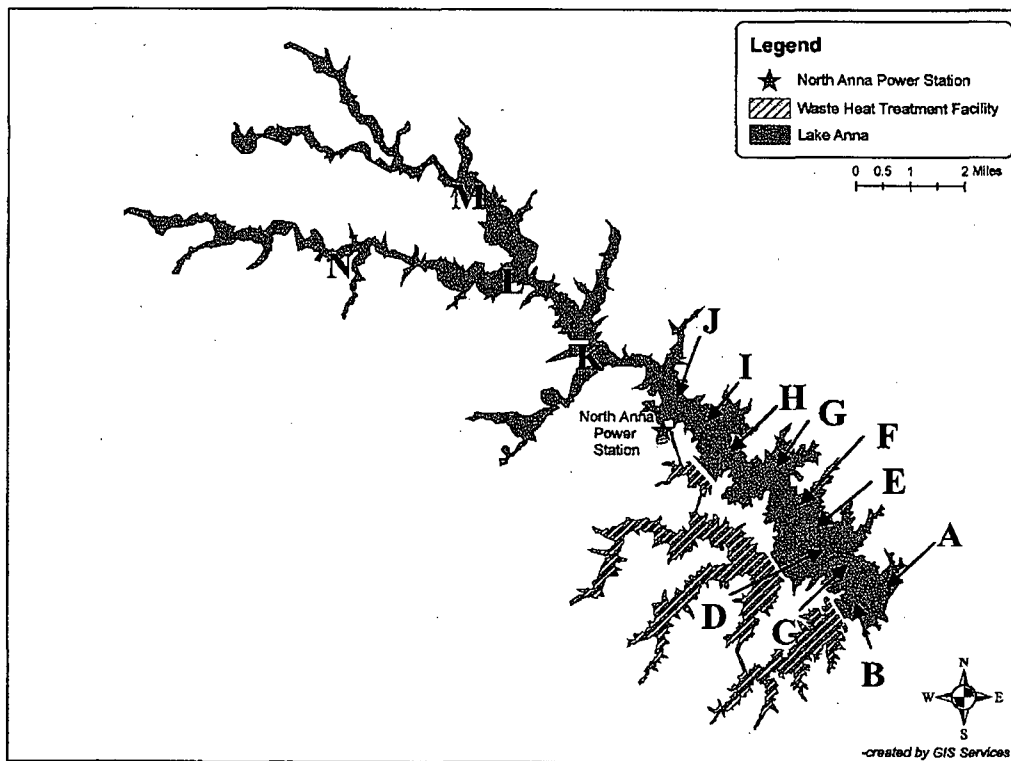


Figure 2.2 Lake Anna Quarterly Synoptic Plume Stations

3.0 Lake Anna Fisheries

Since the impoundment of the lake and the initiation of lake fisheries studies, two methods have been used, gill netting and boat electrofishing to collect representative fish samples. These methods have basically remained unchanged over the years and therefore are recommended for this monitoring plan.

3.1 Gill netting will be used to capture fishes which normally inhabit the deeper strata of the lake, or exhibit a diel movement to and from the shoreline. Each gill net consists of six, fifty foot long by six foot deep panels beginning with ½ inch mesh in the first panel (set next to the shoreline) and increasing by ½ inch increments ending with 3 inch mesh in the final panel. The gill nets are set near littoral drop-off areas for approximately 20 hours including an overnight time period. Gill net surveys will be conducted quarterly at the historical stations depicted in Figure 3.1.

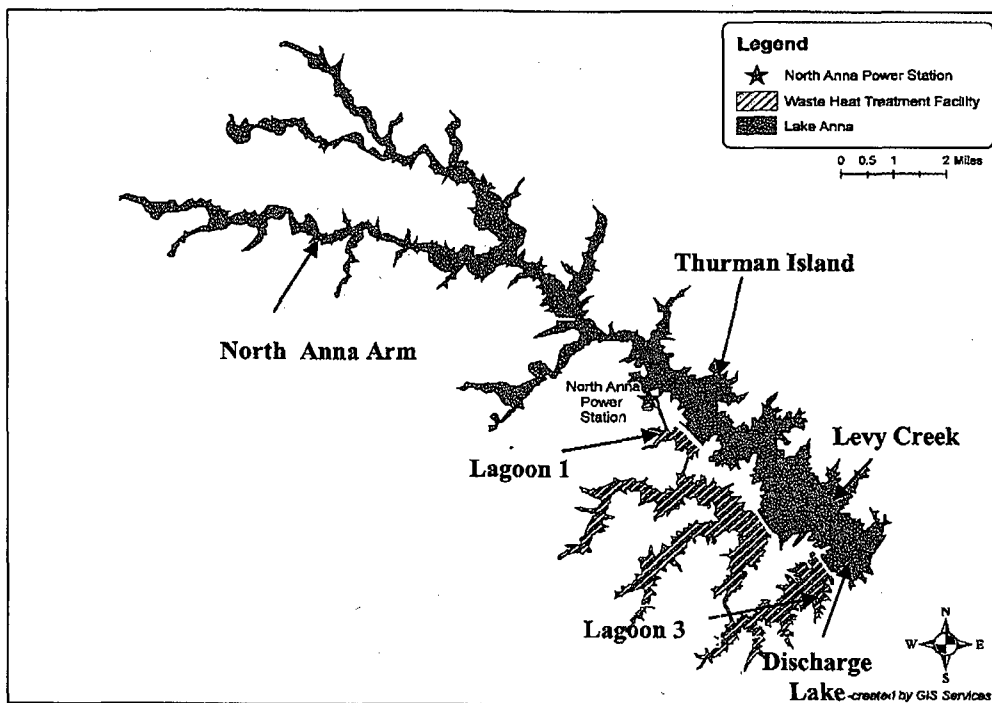


Figure 3.1 Lake Anna and WHTF Gill Net Sampling Stations

Fish collected by gill netting will be returned to the laboratory and up to 25 individuals of each species will be measured to the nearest millimeter total length and weighed to the nearest 0.1 gram. Those over 25 will be counted, bulk-weighted and noted on data sheets. Standard physicochemical measurements of surface water temperature ($^{\circ}\text{C}$), dissolved oxygen (mg/l), pH and conductivity (umhos) will be recorded at the time of each sample collection.

3.2 Boat electrofishing will be used to evaluate the assemblage and abundance of fish populations which normally occupy the shoreline habitat. Sampling will be performed quarterly at the historical stations identified in Figure 3.2. Each station consists of 100 meters of shoreline and normally includes a brush pile except for the dike stations which are comprised of uniform rip-rap.

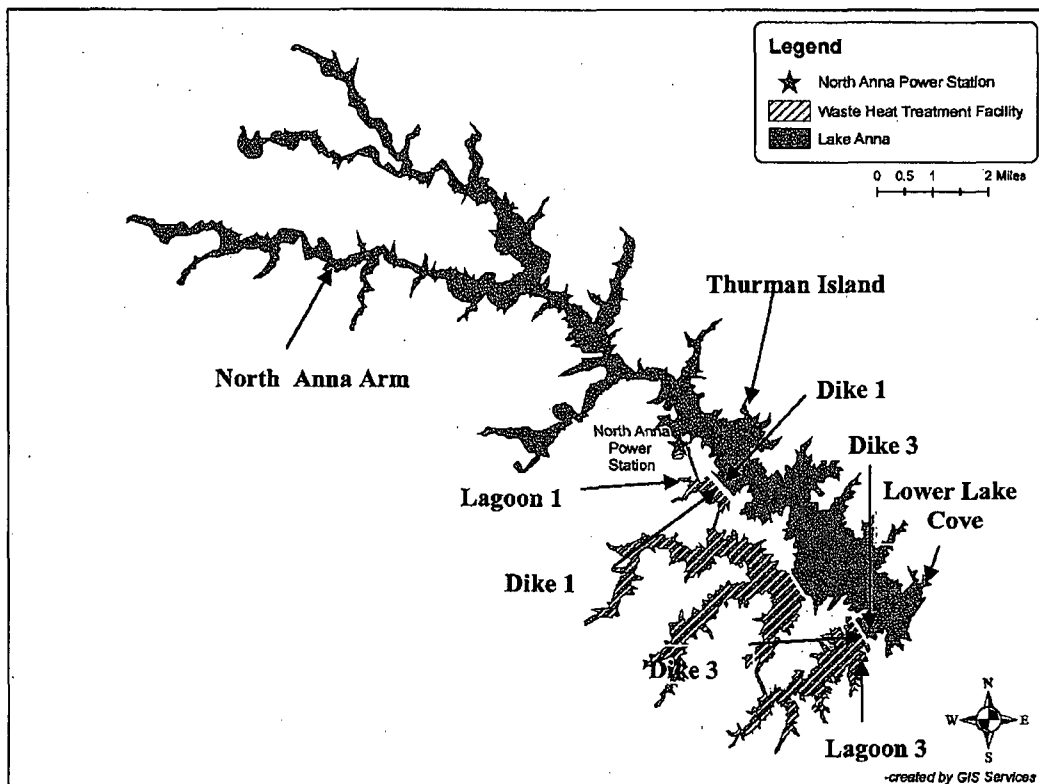


Figure 3.2 Lake Anna and WHTF Boat Electrofishing Stations

Fish collected will either be returned to the laboratory for processing or released in the field, i.e., larger game fish will be measured, weighed, and released in the field. In the laboratory, 25 of the individuals per species from each station will be measured to the nearest millimeter total length and weighed to the nearest 0.1 gram. The remaining fish of each species will be enumerated and bulk weighed.

Standard physicochemical measurements of surface water temperature (°C), dissolved oxygen (mg/l), pH and conductivity (µmhos) will be recorded at the time of each sample collection.

4.0 Shellfish

Shellfish have been monitored over the history of the impoundment via several programs, the most recent beginning in 1990 and continuing to date in response to NRC Generic Letter 89-13, which requires semi-annual monitoring of potential problematic biofouling clams and/or mussels.

4.1 In the most recent long-term studies, i.e. the NRC studies, shellfish have been collected twice per year at four (4) stations, two in the lake and two in the WHTF (Figure 4.1). The stations and methods selected in 1990 were based on stations and methods from previous studies.

Four replicate grabs will be taken twice per year at each sampling location using an Ekman dredge with a sampling area of 0.25ft² (0.023m²). Each replicate will be washed into a standard #30 mesh sieve bucket and preserved with a stained alcohol solution. Samples will be returned to the laboratory for appropriate sorting and identification. Standard physicochemical measurements of water temperature (°C), dissolved oxygen (mg/l), pH and conductivity (µmhos) will be recorded at the time of sample collection.

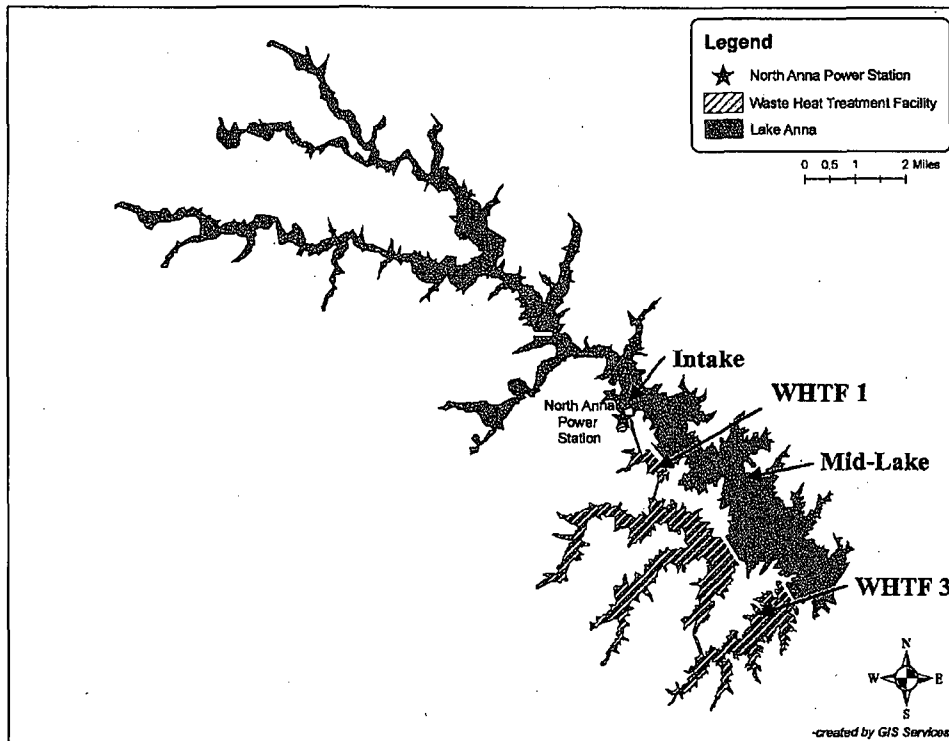


Figure 4.1 Lake Anna and WHTF Shellfish Monitoring Sampling

4.2 In addition, in the summer of 2008, surveys utilizing snorkeling and/or Scuba diving will be conducted at selected locations to determine if there are sufficient mussel populations to support future monitoring.

If sufficient and persistent mussel populations are located, Dominion will consult with the Virginia Department of Environmental Quality (DEQ), Virginia Department of Game and Inland Fisheries (DGIF) and appropriate mussel experts to design a monitoring plan for future years beginning in 2009.

5.0 Lower North Anna River Fishes

Fishes in the North Anna River have been assessed and/or monitored beginning prior to impoundment and continuing to the present. Station locations and fishery collection techniques have

remained virtually the same and are proposed to continue going forward. In addition, a method is suggested that will hopefully lead to a better assessment of the smallmouth bass population in the North Anna River.

5.1 Fish Population Studies

Abundance and species composition data for North Anna River fish assemblages will be collected using electrofishing. Consistent sampling techniques have been used in all historical North Anna River surveys including electric seining and backpack electrofishing. These techniques have been performed at the 4 historical stations, three (3) times per year (May, July, September) (Figure 5.1).

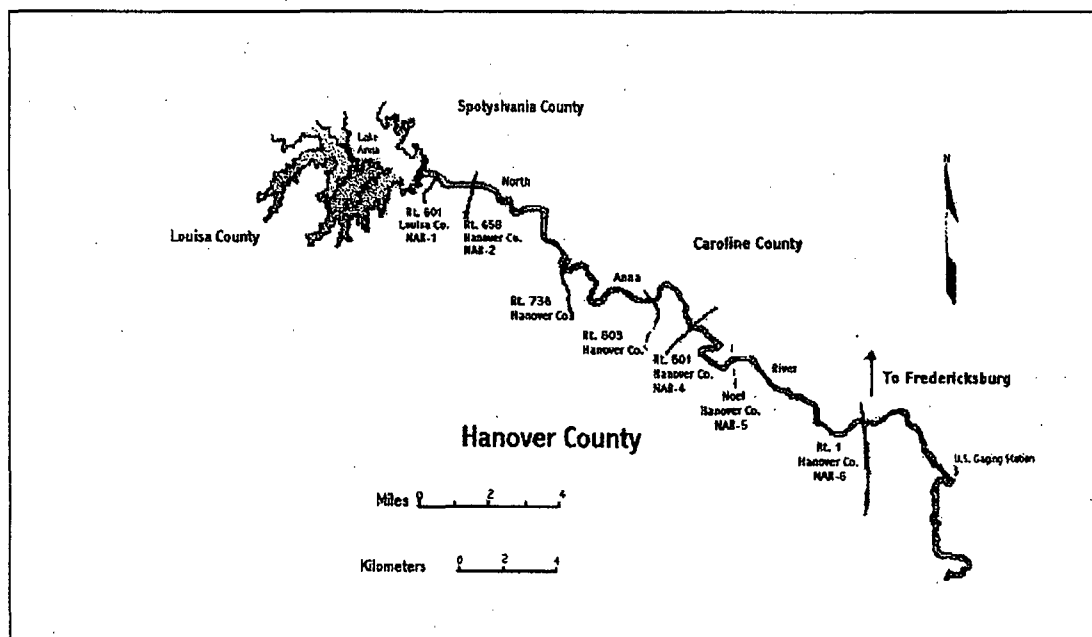


Figure 5.1 North Anna River Electrofishing Stations

The electric seine is designed to collect fish in riffle and run type habitats. Sampling is conducted by working the seine from bank to bank in a zigzag pattern. Fish are stunned and collected by netters. The sampling start and stop times are recorded as well as pertinent water quality data. Fish collected are either preserved in 10% formalin and transported to the laboratory for appropriate processing or larger fish are weighed, measured and released in the field.

Backpack electrofishing is also conducted at each station to sample pool type habitats adjacent to electric seine sampling areas. Backpack surveys are typically conducted at the conclusion of the electric seine runs. Sampling is conducted for 600 seconds (10 minutes) of effort at each station. The collected fish are either preserved and returned to the laboratory for processing or measured, weighed and released in the field.

5.2 Smallmouth Bass

The lower North Anna River has been reported by fishermen to have an outstanding smallmouth bass fishery. Past studies by Oak Ridge National Laboratory and Virginia Tech biologists as well as Dominion biologists have also indicated that the smallmouth fishery is healthy and thriving.

In order to obtain a better understanding of this species in the river, this additional study is proposed. Efforts will be expended for the next several years to collect young-of-year (YOY) and age one (1) smallmouth bass.

Smallmouth bass will primarily be collected by use of backpack electrofishing. However, the use of a tandem kayak outfitted for electrofishing and transport of backpack electrofishers will also be explored. The backpack electrofisher will be used in shallow waters amenable to wading, and the kayak will be used in deeper waters and for transport of the backpack electrofishers. This will enable longer reaches of the river to be sampled and reduce bias associated with sampling a limited area. Because 2008 will be the first year of study and because the North Anna River presents sampling challenges due to limited access and its shallow, rocky nature, the sampling equipment will be used in several ways to determine the most effective means to collect YOY and age one smallmouth bass.

It is anticipated sampling will be conducted between NAR-3 (Rt. 603) and NAR-4 (Rt. 601H) during June. Assuming most smallmouth bass in the North Anna River spawn in April and May (Lukas 1993), sampling in June is likely to allow YOY to disperse from nesting sites and grow to a length they can be effectively collected. An attempt to collect a minimum of 50 YOY for otolith examination will be made.

These collections will hopefully yield enough data and information to establish an index of YOY

class strength which can then be compared to similar data from other state smallmouth bass rivers, and YOY contribution to subsequent age one smallmouth bass population levels.

LITERATURE CITED

Lukas, J.A. 1993. Factors affecting reproductive success of smallmouth bass and redbreast sunfish in the North Anna River, Virginia. Master of Science thesis, Department of Fisheries and Wildlife Sciences, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Virginia Power. 1986. Section 316(a) demonstration for North Anna Power Station. Virginia Power, Richmond, Virginia.