

## TurkeyPointLANPEM Resource

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**From:** Klett, Audrey  
**Sent:** Saturday, July 19, 2014 7:47 PM  
**To:** Grange, Briana  
**Cc:** Regner, Lisa  
**Subject:** FW: NRC Response - Crocodile  
**Attachments:** image001.png

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**From:** Tomonto, Bob [Bob.Tomonto@fpl.com]  
**Sent:** Saturday, July 19, 2014 7:32 PM  
**To:** Klett, Audrey; Regner, Lisa  
**Subject:** FW: NRC Response - Crocodile

In 2011, Florida Power & Light Company (FPL) increased the crocodile monitoring in the cooling canal system (CCS). FPL and University of Florida (UF) conducted several years of pre-Uprate crocodile monitoring to assess the spatial distribution, growth and survivorship of the crocodiles. FPL committed to a minimum of 2 years post-Uprate monitoring to ensure the increase in temperature and salinity will have no impact to the crocodile population utilizing the CCS. Both Units have been operating in the Uprated mode since June of 2013. The surveys consist of spotlight surveys every other month (2011-2013) and capture and tagging surveys three times a year. In 2014, after approval of the Fish and Wildlife Conservation Commission, the spotlight surveys were reduced to quarterly. The data indicate that the crocodiles are distributed in the canals with the most concentrated area in the Southern and SW corner of the CCS.

The crocodiles utilize the CCS for courting, nesting and basking. When the canals were dug in the early 70's, there were berms created in between each canal. The mix of marl and muck that the berms consist of are ideal habitat the nesting adults. The nests are elevated and the nest do not come into contact with the canals. The data in the table below indicate any increase in temperature and salinity that has resulted from the Uprate has not had an impact on the crocodiles use of the CCS nor their nesting on the berms.

Year

Spotlight Surveys Observances

Number of Captures

Number of Nest/Tagged Hatchlings

2011

747

117

15/268

2012

675

93

18/229

2013

646

102

25/429

2014

2231

64

25/3982

1 Through May 2013 and spotlight surveys. In 2014, reduced from Bi-monthly to Quarterly  
2 Three more nest expected to hatch

FPL has several stations that monitor temperature in the CCS on an hourly basis. Below is a time series temperature plot for 4 of those stations. The attached map identifies the station locations. Station CCS-3 is a station in the area that is utilized most by the crocodiles. The data indicates the temperature fluctuates throughout the year with temperature typically peaking in the month of July. The factor that restricts American crocodiles across their range is access to fresh water for their hatchlings to develop salt excreting glands. The Turkey Point Nuclear Power Plant Cooling Canal System is an ideal situation in order for the population to recruit more individuals. Within the CCS there are numerous fresh water and lower saline ponds where females place the hatchlings for the purpose of developing their salt excreting glands.

Joe Wasilewski is a wildlife biologist that specializes in working on the natural history of apex predators (crocodilians) within wetlands of south Florida. FPL consulted with Mr. Wasilewski and he stated "Since 1978, the numbers of nests and hatchlings have steadily risen, there have been 424 successful nests at Turkey Point and 6,597 hatchlings captured, processed and released. The question remains as to carrying capacity of the cooling canal system. In April of 2005, American crocodiles were down listed from an Endangered Species to a Threatened Species. A major factor in the down listing was the success of the crocodile nesting at Turkey Point. Even though the CCS has historically been a super saline environment, there has always been access to fresh water and less saline refugia. During the normal course of the year the salinity and temperature fluctuates on a seasonal basis. Although the CCS temperatures are rising, the interior ponds should be constant in terms of temperature and salinity content. Crocodiles within the CCS have adapted to these changing salinities and temperature variations. They have the capability for access/egress on a daily basis. They typically use the CCS for feeding, nesting and rearing their young. Otherwise they move into and out of Biscayne Bay, C-107, C-106, the Interceptor Ditch." Based on the information provided by Mr. Wasilewski, a slight increase in temperature would likely have no effect on the Crocodile population using the CCS. FPL will continue to conduct the surveys described about to assess any potential impacts. The next survey is being conducted in August.

[\[cid:image001.png@01CFA373.66A61280\]](#)

Thanks,

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**From:** Klett, Audrey

**Created By:** Audrey.Klett@nrc.gov

**Recipients:**

"Regner, Lisa" <Lisa.Regner@nrc.gov>  
Tracking Status: None  
"Grange, Briana" <Briana.Grange@nrc.gov>  
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