2018

Aerial surveys of the proposed York Haven nature like fishway project for nesting bald eagles: 2018 breeding season

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AERIAL SURVEYS OF THE PROPOSED YORK HAVEN NATURE LIKE FISHWAY PROJECT FOR NESTING BALD EAGLES: 2018 BEEDING SEASON

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Project Partners:
Cube Hydro

The Center for Conservation Biology is an organization dedicated to discovering innovative solutions to environmental problems that are both scientifically sound and practical within today's social context. Our philosophy has been to use a general systems approach to locate critical information needs and to plot a deliberate course of action to reach what we believe are essential information endpoints.

BACKGROUND

Context

The United States Fish and Wildlife Service (FWS) originally listed the bald eagle as federally endangered on 11 March 1967 under The Endangered Species Protection Act of 1966 (16 U.S.C. 668aa-668cc) and subsequently under The Endangered Species Act of 1973 (16 U.S.C. 1531 et seq). The primary reason cited for the original listing was broad-scale population declines linked to dichloro-dephenyl-trichloroethane (DDT) and associated reproductive failure. On December 31, 1972, DDT was banned from use in the United States. Since the ban on DDT and formal listing under The Endangered Species Act, bald eagle populations have increased dramatically across much of the lower 48 states. During a periodic population review, the FWS determined that specific reclassification goals had been reached as outlined in regional recovery plans. On 12 July, 1994, the FWS published the proposed rule to reclassify the bald eagle from endangered to threatened in most of the lower 48 states (59 FR 35584). This proposal was followed on 12 July 1995 by the formal downlisting of most bald eagle populations (60 FR 36000). In the lower 48 states bald eagles have increased from an estimated low in 1963 of 417 pairs (Sprunt 1963) to an estimated 5,748 pairs by 1998 (Millar 1999). On 6 July, 1999, the FWS published an Advance Notice of Intent to remove the bald eagle from the list of endangered and threatened wildlife (64 FR 36453). On 16 February, 2006 the U.S. Fish and Wildlife Service published a second Advance Notice of Intent to remove the bald eagle from the list of endangered and threatened wildlife (71 FR 8238). On 28 June, 2007 the bald eagle was formally removed from the list of endangered and threatened species. Since delisting The Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d) has become the lead federal legislation protecting the bald eagle population. As interpreted in the Notice (71 FR 8238) and the subsequent definition of terms (71 FR 8265) protection of bald eagles and their habitats under the BGEPA will be very similar to that provided under the ESA. The national management guidelines presented along with the Notice follow very closely the guidelines that have been used to manage eagles since the 1970s including the use of spatial buffers and activity restrictions to comply with the definition of “disturb”.

The Chesapeake Bay supports significant resident and migratory populations of bald eagles including an estimated 30,000 individuals during the course of the annual cycle (Watts et al. 2007). The resident breeding population has grown exponentially since the 1970s and is now the largest population in eastern North America with an estimated 2,000 breeding pairs (Watts et al. 2008). In addition to being an important breeding area, the Bay is a convergence area for populations throughout New England and the Canadian Maritimes that migrate south and spend the winter months and for populations throughout the Southeast that migrate north and spend the summer months (Watts et al. 2007). Both breeding and migratory eagles congregate within lower saline waters and form eagle concentration areas (Watts et al. 2006, 2007). One of six concentration areas recognized throughout the Chesapeake is the Upper Chesapeake Bay-Susquehanna Bald Eagle Concentration Area. Concentration areas support high breeding densities, dense foraging areas and networks of communal roosts (Watts 2007, Watts and Mojica 2012).

The waters of the lower Susquehanna River support several power generating stations including: 2 nuclear power plants, 4 conventional hydroelectric, 1 pumped storage hydroelectric, and 1 fossil fueled power plant between the Chesapeake Bay and Harrisburg. Cube Hydro owns the furthest upstream hydroelectric project near Harrisburg, PA. These facilities fall within, or are near, the Upper Chesapeake Bay-Susquehanna Bald Eagle Concentration Area. An investigation in 2011, by the Center for Conservation Biology, of the lower Susquehanna River identified 12 occupied bald eagle breeding territories and 19 active communal roosts (Mojica et al. 2011). While the bald eagle status in Pennsylvania was changed from Threatened to Protected in January of 2014, it is still protected under the Pennsylvania Game and Wildlife Code and by the Federal Bald and Golden Eagle Protection Act. In accordance with the Bald and Golden Eagle Protection Act, surveys for nesting bald eagles should be conducted prior to any construction that may disturb nesting bald eagles.

Objectives

Objectives for conducting an eagle survey near the proposed York Haven nature like fishway project are: 1) to document the location, condition, and status, of nesting pairs on lands within an approximate 0.5 mile buffer of proposed construction activities; 2) to provide updated

information to pertinent parties; and 3) to increase our understanding of bald eagle natural history in the upper Chesapeake Bay Watershed.

METHODS

Study Area

The survey area included all suitable bald eagle nesting habitat within and near a 0.5 mile buffer surrounding the proposed York Haven nature like fishway project (Fig 1.) The actual nature like fishway project is located on the Susquehanna River, in Pennsylvania, construction activities have been proposed to occur from Three Mile Island to the York Haven Hydroelectric station.

Bald Eagle Nest Survey

Prior to the aerial survey, a search of the USFWS PA field office site (https://www.fws.gov/northeast/pafo/bald_eagle_map.html) was conducted to identify any previously known bald eagle nest near the study area. All suitable bald eagle nesting habitat within and near a 0.5 mile buffer surrounding the proposed York Haven nature like fishway project was surveyed for evidence of nesting bald eagles. A high-wing Cessna 172 aircraft was used to systematically overfly the land surface at an altitude of approximately 100 m to detect eagle nests. All new nests detected were plotted on recent aerial imagery layers on GPS enabled tablet computers and given a unique alpha-numeric code. Previously known nests retained the codes from the USFWS PA field office site. Each nest was examined to determine its structural condition, the type and condition of nest tree/structure, and the condition of the surrounding landscape.

RESULTS

Bald Eagle Nests

A search of the USFWS PA field office site resulted in 3 previously known nests in the immediate vicinity of study area. The aerial bald eagle nest survey, conducted on 19 March 2018 confirmed 2 of these previously known nests and located 2, additional, new nests within the study area (Tab. 1, Fig. 2). One of the previously known nests (Three Mile Island) was

found to be absent. While the remaining 4 nests within the study area were found to be active with adult bald eagles incubating eggs.

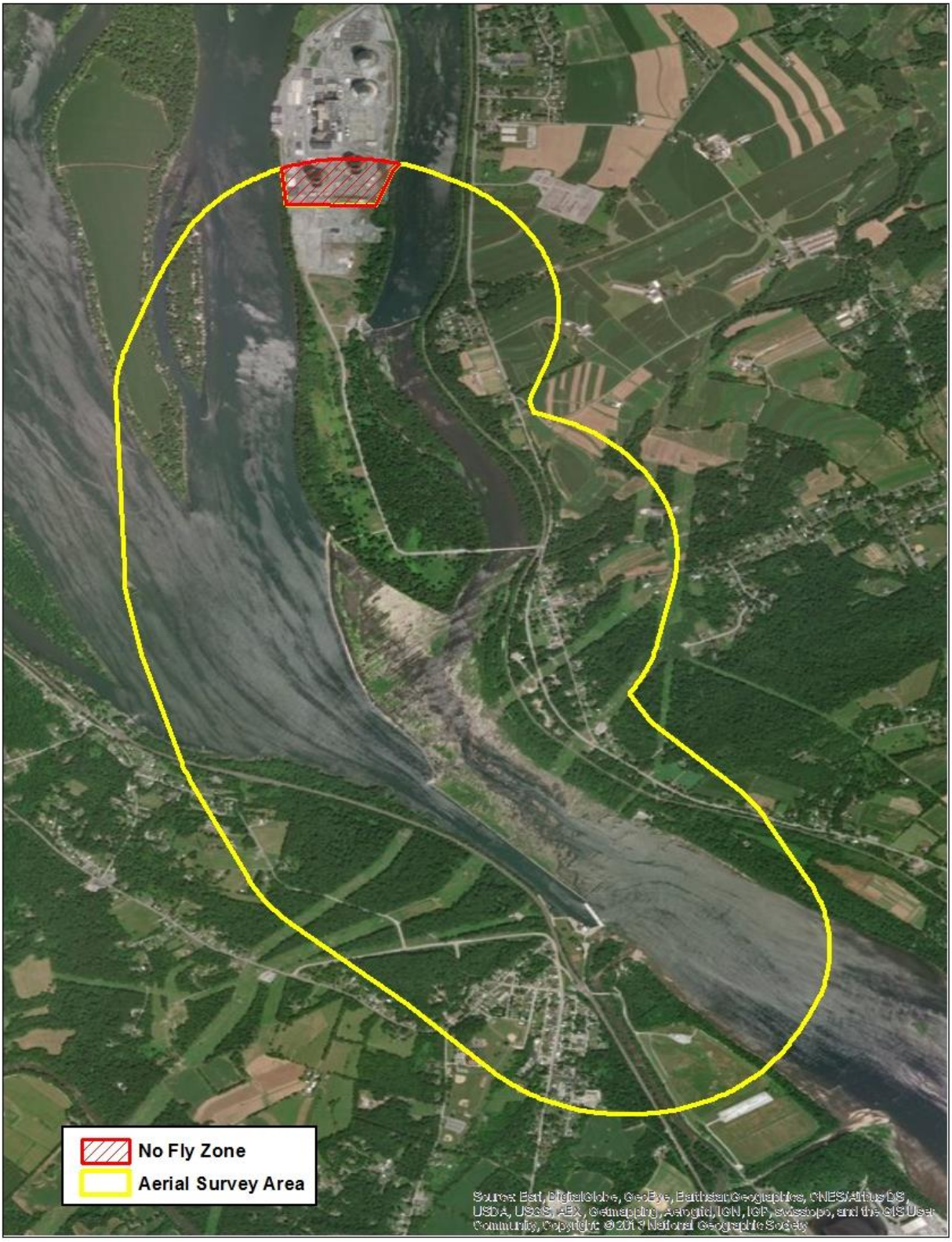

Figure 1. Map of the study area for the aerial bald eagle nest survey for the proposed York Haven nature like fishway project.

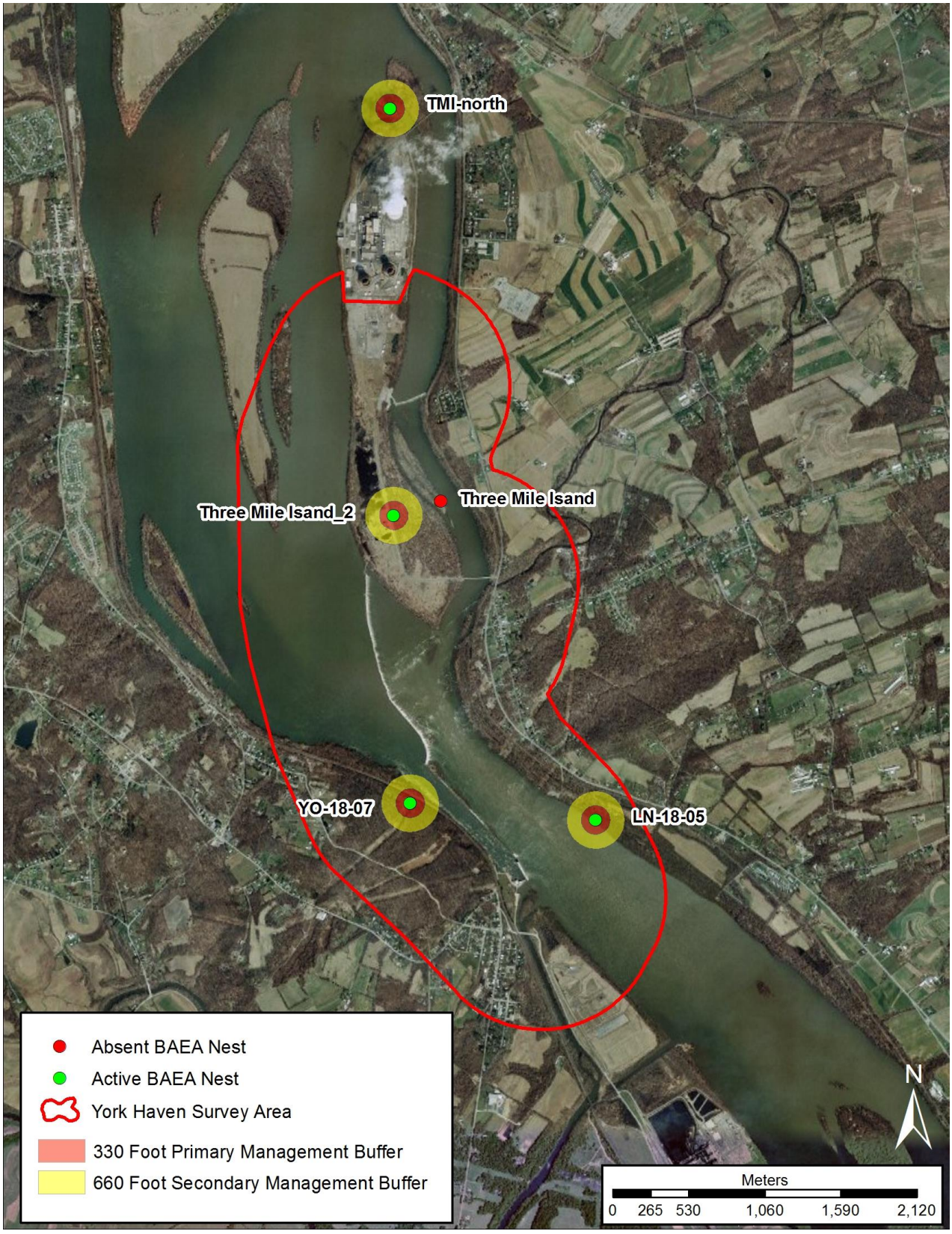
TMI-north
Three Mile Isand_2
Three Mile Isand
YO-18-07
LN-18-05
Absent BAEA Nest
Active BAEA Nest
York Haven Survey Area
330 Foot Primary Management Buffer
660 Foot Secondary Management Buffer
N
Meters
0 265 530 1,060 1,590 2,120

Figure 2. Map of bald eagle nest found within/near the proposed York Haven nature like fishway project study area with 330 foot primary management buffers, and 660 foot secondary management buffers.

Table 1. Bald eagle nests detected during aerial survey with Latitude, Longitude, Nest Status, Nest Structure, and Nest observation. The location of the now absent Three Mile Island nest is included.

Nest Code	Latitude	Longitude	Nest Status	Nest Structure	Nest Observation
Three Mile Island	40.137333	-76.718722	Absent	N/A	Absent
Three Mile Isand_2	40.136380	-76.722570	Active	Hardwood	Incubating
TMI-north	40.161907	-76.723519	Active	Hardwood	Incubating
LN-18-05	40.117525	-76.705588	Active	Hardwood	Incubating
YO-18-07	40.118355	-76.720776	Active	Tower	Incubating

LITERATURE CITED

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