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AERIAL SURVEYS OF THE YORK HAVEN NATURE-LIKE FISHWAY PROJECT FOR NESTING BALD EAGLES: 2023 BREEDING SEASON

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Project Partners:
York Haven Power Company, LLC

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 with an average doubling time of less than 8 years 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. York Haven Power Company, LLC (YHPC) owns the York Haven Hydroelectric Project, which is the furthest upstream hydroelectric project, located near Harrisburg, PA. These facilities fall within, or are near, the Upper Chesapeake Bay-Susquehanna Bald Eagle Concentration Area. An investigation in 2018, by the Center for Conservation Biology, of the lower Susquehanna River identified 35 occupied bald eagle breeding territories and 19 active communal roosts (Watts and Paxton 2019). A separate survey in 2018 identified 4 active eagle nests in the area around Three Mile Island and York Haven (Paxton 2018). 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 eagle surveys near 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 along with lands associated with Three Mile Island and the York Haven hydroelectric plant; 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 at the north end of the Main Dam on the southwestern shoreline of Three Mile Island, and lands associated with Three Mile Island and the York Haven hydroelectric plant (Figure 1).

Bald Eagle Nest Survey

On March 16, 2023, 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 alphanumeric code. Previously known nests retained the codes assigned by the U.S. Fish and Wildlife Pennsylvania Field Office site or the Center for Conservation Biology. 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

The aerial bald eagle nest survey, conducted on 16 March 2023, confirmed 3 previously known nests (TMI-north, Three Mile Island_2, and YO-18-07) and located 2 new nests (YO-23-

01 and YO-23-02) within the study area (Table 1, Figure 2). The old historic Three Mile Island nest continues to be absent and one of the nests found in 2018 (LN-18-05) was absent during the 2023 survey flight. All 5 present nests were found to be active. All nests, except for TMI-north, contained small chicks or incubating adults. While TMI-north was empty with no adults attending, the matted fresh lining indicated that this nest was in use earlier in the season and likely experienced a recent failure.

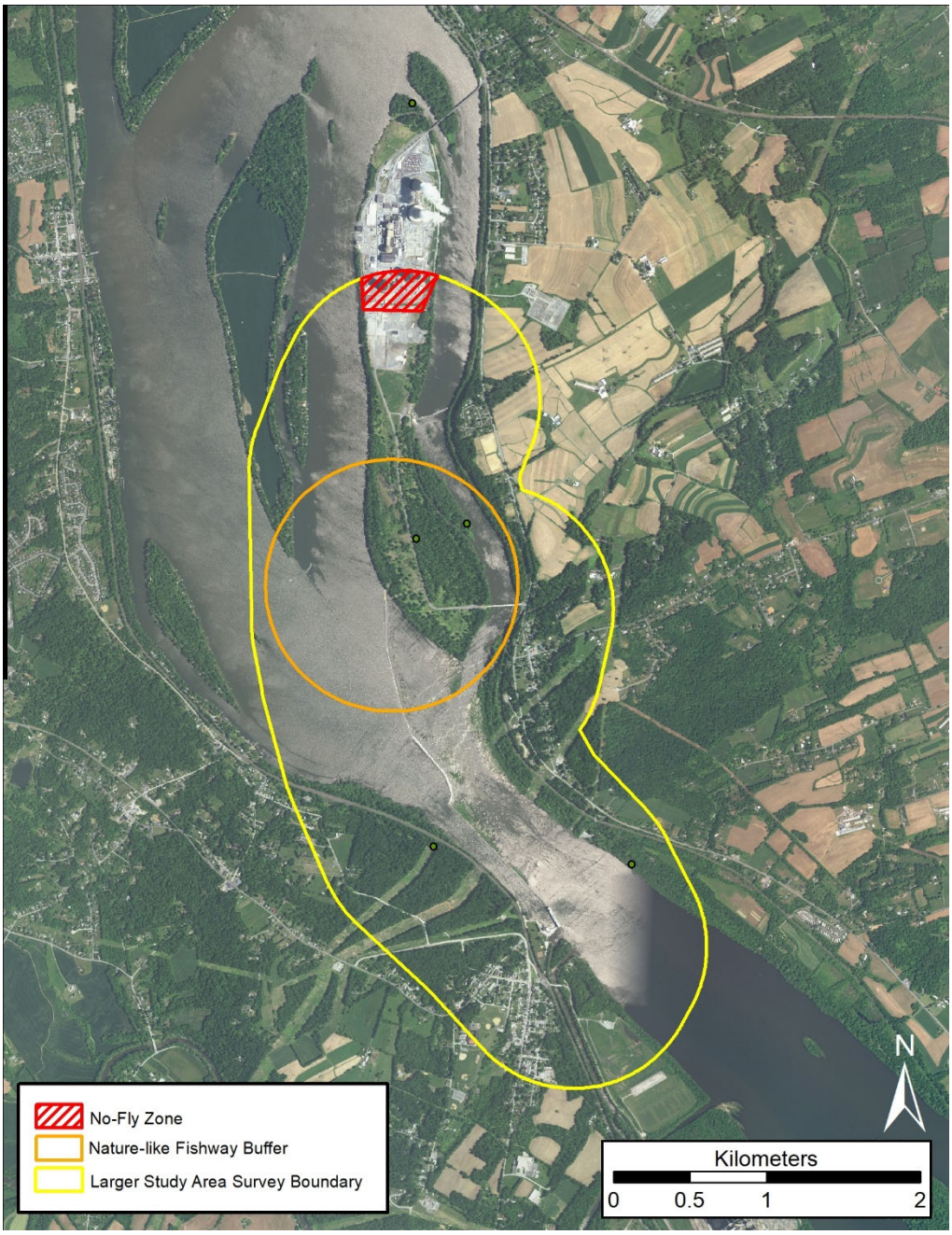

Figure 1. Aerial bald eagle nest survey area for the York Haven nature-like fishway project.

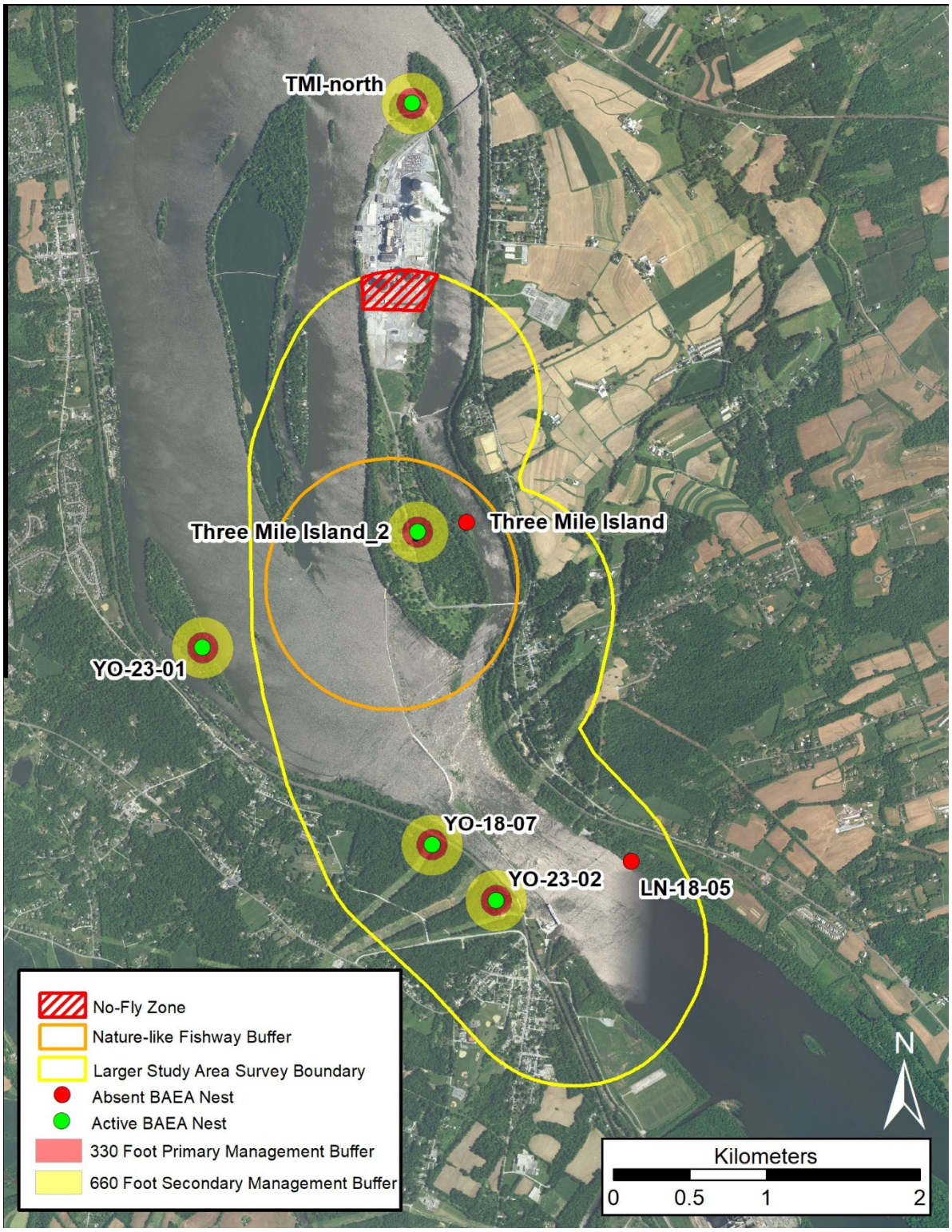

Figure 2. Map of 2023 bald eagle nests found within/near the York Haven nature-like fishway project study area with 330 foot primary management buffers, and 660 foot secondary management buffers.

Table 1. Bald eagle nests detected during 2023 aerial surveys with Latitude, Longitude, Nest Status, Nest Structure, and Nest observation.

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	40.136706	-76.722460	Active	Hardwood	Incubating
TMI-north	40.161907	-76.723519	Active	Hardwood	Recently Failed
LN-18-05	40.117525	-76.705588	Absent	Hardwood	Absent
YO-18-07	40.118295	-76.720892	Active	Tower	Small Chicks
YO-23-01	40.129657	-76.738749	Active	Hardwood	Incubating
YO-23-02	40.115098	-76.715891	Active	Hardwood	Incubating

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