

U. S. Department of the Interior FISH AND WILDLIFE SERVICE

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February 11, 2022

Kimberly Cole, Administrator Delaware Coastal Management Program Department of Natural Resources and Environmental Control 100 W. Water Street, Suite 7B Dover, Delaware 19904

RE: CONSISTENCY CERTIFICATION MARSH RESTORATION PROJECT (GOOSE POND) SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE BLOCK 5501, LOT 17 PENNSVILLE TOWNSHIP, SALEM COUNTY, NJ

To Kimberly Cole:

In order to maintain compliance with the Federal and Delaware State regulations regarding Consistency Certification for states with Approved State Coastal Zone Management (CZM) Programs, the United States Fish and Wildlife Service (the Service) is providing you with this Compliance Statement in support of a Department of the Army Nationwide Permit 3 (NWP-3). The Compliance Statement provides a detailed description of the proposed activities, including maps and diagrams, a signed Consistency Certification Statement, a copy of the NWP-3 application submitted to the United States Army Corps of Engineers (USACE) Philadelphia district engineer, and a brief assessment of the project activities compared to the relevant policies of the Delaware Coastal Management Program (DCMP).

Supawna Meadows National Wildlife Refuge received a Delaware Coastal Management Federal Consistency Certification letter for phase 1 of our Marsh Restoration project (FC#2017.0031) on February 6, 2017. We completed the construction for this permit by adding rocks to an existing breakwater in 2017 around Mill Creek in Pennsville, NJ in order to protect the marsh habitat and create a more resilient marsh.

The current NWP-3 was submitted for approval for activities associated with phase 2 of the restoration/alteration of another part of the existing breakwater dike located southeast from the Mill Creek site around Goose Pond, designated as part of the Supawna Meadows National Wildlife Refuge.

If there are any questions, please do not hesitate to call me at (609) 425-5122. Thank you,

Sincerely,

Leid Hark

Heidi Hanlon Acting Refuge Manager

DELAWARE COASTAL MANAGEMENT PROGRAM (DCMP) COMPLIANCE STATEMENT

For

Department of the Army Nationwide Permit 5

Supawna Meadows National Wildlife Refuge

Design/Build Marsh Restoration Project Block 5501, Lot 17 Township of Pennsville Salem County, New Jersey

February 2022

Prepared by:

United States Fish and Wildlife Service Cape May National Wildlife Refuge 24 Kimbles Beach Road Cape May Court House, New Jersey 08210





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LIST OF ACRONYMS

7 Del. C.	Title 7 of the Delaware Code
Amec Foster Wheeler	Amec Foster Wheeler Environment & Infrastructure, Inc.
BGEPA	Bald and Golden Eagle Protection Act
ССР	Comprehensive Conservation Plan
CFR	Code of Federal Regulations
DA1	Design Alternative 1
DA2	Design Alternative 2
DCMP	Delaware Coastal Management Program
DEBI	Delaware Estuary Benthic Inventory
DFW	Division of Fish and Wildlife
DLRP	Division of Land Resource Protection
DNREC	Delaware Department of Natural Resources and Environmental Control
DPS(s)	Distinct Population Segment(s)
EFH	Essential Fish Habitat
EFHA	EFH Areas Protected from Fishing
HAPC	Habitat Areas of Particular Concern
IPaC	Information, Planning, and Conservation
MBTA	Migratory Bird Treaty Act
Mid-TRAM	Mid-Atlantic Tidal Rapid Assessment Method
MHW	Mean high water
NAVD88	North American Vertical Datum of 1988
NEPA	National Environmental Policy Act
NHPA Section 106	National Historic Preservation Act of 1966
NJDEP	New Jersey Department of Environmental Protection
N.J.S.A.	New Jersey Statutes Annotated
NJSM	New Jersey State Museum
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NWI	National Wetlands Inventory
NWP-3	Department of the Army Nationwide Permit 3



LIST OF ACRONYMS (Continued)

NWR	National Wildlife Refuge	
PDE	Partnership of the Delaware Estuary	
Refuge	Supawna Meadows National Wildlife Refuge	
Service	United States Fish and Wildlife Service	
SHPO	State Historic Preservation Office	
SMA	Special Management Area	
SWQS	Surface Water Quality Standards	
USACE	United States Army Corps of Engineers	
WOTUS	Waters of the United States	



1.0 INTRODUCTION

This Compliance Statement is being provided in support of a Federal Consistency Determination for a Department of the Army Nationwide Permit 3 (NWP-3) submitted to the United States Army Corps of Engineers (USACE). This document will present the results of an evaluation of proposed regulated activities in a portion of the United States Fish and Wildlife Service's (the Service's) Supawna Meadows National Wildlife Refuge (NWR) (the refuge) with respect to the Delaware Coastal Management Program (DCMP) Rules (DCMP 2018). The refuge is part of the larger Cape May NWR Complex and is located in Pennsville Township, Salem County, New Jersey (**Figure 1**). It is situated off of Lighthouse Road, predominantly west of New Jersey State Route 49 (**Figure 2**). A copy of the complete Department of the Army NWP-3 application is presented in **Appendix A** as required by Section 3.2.2.1 in the DCMP policies and 15 Code of Federal Regulations (CFR) §930.58(a)(1).

Authorization for proposed restoration activities is also being sought under a Federal Consistency Determination from New Jersey's Department of Environmental Protection's (NJDEP) Division of Land Use Regulation (DLUR), State Historic Preservation Office (SHPO), and Division of Fish and Wildlife (DFW).

The proposed project activities will be conducted in a small area along the Delaware River front, identified by Pennsville Township as a portion of Block 5501, Lot 17 (**Figure 3**), consisting of a portion of a 2-mile long stone breakwater that was constructed circa 1900 (Project Area) (**Figure 4**) (the Project). The purpose of the Project is to protect the level of sediment retention and marsh expansion that has occurred since the 1930s in areas where human impacts have reduced the resilience of natural systems, and in light of anticipated climate change. The following restoration techniques are proposed at the refuge in an effort to achieve these objectives:

- Breakwater removal in select areas to improve tidal exchange
- Breakwater enhancement in select areas to provide shoreline protection



These activities will help facilitate a more natural hydrologic regime, ensure salt marsh resilience from impacts of sea level rise, large storm events, and other ecosystem stressors, and improve rates of accretion.

This Project would attempt to correct the current and projected degradation of the salt marsh from sea level rise and improper tidal hydrology, resulting in the protection and restoration of important wildlife habitat. Thus, the Project would fulfill the Service's mission for the conservation and management of wildlife habitat.



2.0 EXISTING ENVIRONMENTAL RESOURCES

This section describes the existing environmental resources within the refuge. The compliance of the proposed regulated activities, per the DCMP policies, is then evaluated against this background information in **Section 4.0** of this document. Photographs of the Project Area are located in **Appendix B**.

2.1 TOPOGRAPHY AND ELEVATION

The topography of the Project Area is relatively flat and is situated between 0 and 10 feet above mean sea level (**Figure 1**). Net local surface water drainage from the marsh in the refuge drains into unnamed tributaries of the Delaware River, Mill Creek, Baldridge Creek, or the Salem River, which ultimately flow into the adjacent Delaware River to the southwest (**Figure 4**).

2.2 GEOLOGY AND SOILS

The Project Area is located within the outer Coastal Plain Physiographic section of New Jersey (NJDEP 2014). The unconsolidated deposits of this province range in age from the Cretaceous to the Miocene (135 to 5.3 million years old) and gently dip to the southeast, towards the coast and extend beneath the Atlantic Ocean to the edge of the Continental Shelf (Dalton 2003; NJDEP 1999). The topography of the Coastal Plain is relatively flat to very gently undulating. The sediments consist of alternately-deposited layers of sand, silt, and clay which outcrop in irregular bands that trend northeast to southwest within deltaic and marine environments occurring at sea level (NJDEP 1999).

The bedrock geology of the Project Area is made up primarily of the Marshalltown Formation (NJDEP, 2014). The Marshalltown Formation is described as an upper Cretaceous to upper and medium Campanian Era aged unit that is composed primarily of a dark gray, fine- to medium-grained, quartz and glauconite sand that weathers to light brown or pale red (USGS 2016).

The surficial geology within the Project Area is primarily composed of Salt Marsh and Estuarine Deposits. These soils are described as dark in color, ranging from brown, dark brown, gray, or black, and composed of silt, sand, peat, and clay with minor pebble gravel. They contain abundant organic matter and were deposited during the Holocene Era in salt marshes, estuaries, and tidal channels and can be as thick as 300 feet in some areas (NJDEP 2014).



The Project Area is mapped to occur primarily over water. However, small portions of the affected area occur over Transquaking mucky peat, very frequently flooded soils with 0 to 1 percent slopes (**Figure 5**). This soil is described as mucky silt loam, silt loam and mucky peat associated with tidal marshes (Maser 2012).

2.3 SURFACE WATER RESOURCES

The Clean Water Act (40 CFR 230.3) defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

Using that definition, wetlands are defined based on certain characteristics of vegetation, soils, and hydrology. For vegetation, the majority of the plant species must be categorized as hydrophytic, or adapted to living in saturated areas. Soils are considered hydric (permanently or seasonally saturated by water) if they meet the criteria defined by the National Technical Committee for Hydric Soils (USDA 2016). Hydrology is determined based on having a sufficient amount of water, whether saltwater, brackish, or fresh, that the soil is saturated during long periods of the vegetative growing season (FIC 1989).

The most common method of characterizing wetlands is under the system developed by the Service. As described in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979), wetland types can be broken down into five basic categories. These categories include marine, estuarine, riverine, lacustrine, and palustrine wetlands. The major categories or systems are based mostly on the hydrologic base for the wetlands. Each of these systems can be further broken down into subsystems, classes, subclasses and dominance types based on the type of vegetation present and/or the bottom substrate for the wetlands.

Defining areas that meet the regulatory definition of a wetland (33 CFR 328.3(b)) is important in determining the jurisdiction of those areas by the Federal government (i.e. the USACE), and in some areas of the United States, state, county, and/or local governments. Jurisdiction over wetlands subsequently determines their regulation and the types of activities that are permittable. The USACE reviews permit applications for activities proposed within Waters of the United States (WOTUS). As the



Project occurs on jurisdictional wetlands, it is subject to regulation by the USACE, NJDEP, and the Delaware Department of Natural Resources and Environmental Control (DNREC).

<u>National Wetland Inventory (NWI)</u> - The main waterbodies on or near the refuge include the Delaware and Salem Rivers, Mill Creek, Baldridge Creek, other unnamed tributaries to the Delaware River, and an area impounded by the breakwater referred to as Goose Pond. The Service's NWI indicates that the wetlands within the Project Area boundaries are classified as follows (**Figure 6**):

- Estuarine, subtidal, unconsolidated bottom, subtidal, habitat (E1UBL).
- Estuarine, intertidal, emergent, persistent, regularly flooded habitat (E2EM1N).
- Estuarine, intertidal, emergent, Phragmites australis/persistent, irregularly flooded habitat (E2EM5P).
- Estuarine, intertidal, emergent, persistent, irregularly flooded habitat (E2EM1P).

<u>New Jersey Wetlands</u> - According to the New Jersey Wetlands Map, the following community types are mapped to occur within the Project Area (**Figure 7**):

- Freshwater tidal marshes.
- Tidal rivers, inland bays, and other tidal waters.
- Tidal mud flat.
- Phragmites dominant coastal wetlands.

<u>New Jersey Coastal Wetlands</u> – The New Jersey Upper Wetlands Boundary Map shows coastal wetlands that were delineated under the Wetlands Act of 1970 (New Jersey Statutes Annotated (N.J.S.A.) 13:9A-1 et seq). According to this map, the Project Area is within mapped coastal wetlands (**Figure 8**).

Tidelands

Tidelands, also known as riparian lands, are all lands that are currently or formerly flowed by the mean high tide of a natural waterway. They are protected under the Tidelands Act at N.J.S.A. 12:3. The entire Project Area contains natural waterways that are designated as tidelands associated with the tidal portion of the Delaware River.



The State of New Jersey claims ownership of tidelands and holds them in trust for the people of the State. Since tidelands are public lands, written permission from the State must be obtained in order to use these lands. However, the Project is located within the Supawna Meadows NWR, which is exempt from New Jersey Tidelands claims.

2.4 VEGETATION

The largest single habitat type within the Supawna Meadows NWR is slightly brackish tidal marsh (0 to 8 ppt), which composes 2,423 acres, or approximately 80 percent of the refuge. This habitat type includes both marsh habitat (1,931 acres) and open water tidal rivers and creeks (492 acres). The marshes associated with Baldridge Creek in the southwestern portion of the refuge contain a diversity of vegetation including species such as smooth cordgrass (*Spartina alterniflora*), pickerelweed (*Pontederia cordata*), water hemp (*Amaranthus cannabinus*), wild rice (*Zizania aquatica*), rice cutgrass (*Leersia oryzoides*), and common reed (*Phragmites australis*). The marshes associated with Mill Creek in the northwestern portion of the refuge are extensively dominated by common reed, which is the most prevalent invasive plant found within the Project Area boundaries. There are a few rare plant species that occur within the tidal marshes, such as seashore mallow (*Kosteletzkya virginica*) and long-awned sprangletop (*Leptochloa fascicularis* var. *maritima*) (USFWS 2011).

Forested wetlands in this refuge are closed canopy swamps interspersed with permanent and vernal ponds. These wetlands cover approximately 182 acres of the refuge and are dominated by deciduous species such as red maple (*Acer rubrum*), willow oak (*Quercus phellos*), sweetgum (*Liquidambar styraciflua*), and black gum (*Nyssa sylvatica*). Upland forested areas cover approximately 240 acres with at least 75 percent of the canopy coverage from deciduous trees. Dominant species include sweetgum, black gum, black cherry (*Prunus serotina*), black oak (*Quercus velutina*), southern red oak (*Quercus falcata*), American persimmon (*Diospyros virginiana*), American holly (*Ilex opaca*), and red maple (USFWS 2011).

Grassland habitat within the refuge composes approximately 86 acres and includes a diversity of grasses and forbs. Important grassland plant species include cool season grasses, such as orchard grass (*Dactylis glomerata*), warm season grasses, such as switch grass (*Panicum virgatum*), and forbs, such as goldenrods (*Euthamia* spp. and *Solidago* spp.), and eupatoriums (*Eupatorium* spp.) (USFWS 2011).



The approximately 122 acres of scrub/shrub and early successional habitats spread across the refuge are dominated by a mixture of native plants (e.g., blackberry (*Rubus* sp), goldenrod, grape (*Vitis* sp.), bayberry (*Myrica pensylvanica*)) and invasive plants (e.g., multiflora rose (*Rosa multiflora*), autumn olive (*Elaeagnus umbellata*), Japanese honeysuckle (*Lonicera japonica*), mile-a-minute (*Persicaria perfoliata*), and common reed) (USFWS 2011).

A field investigation was conducted within the marsh complex at the refuge (Supawna Meadows Marsh Complex) to assess the vegetation communities. During that investigation, the Mid-Atlantic Coastal Wetland Assessment method was used to assess the condition of the marsh. For this assessment, 100 points were randomly generated with an established 164-foot radius assessment area and 820-foot buffer area surrounding the center point. In the field, four 164-foot transects were run at 90-degree angles from each other. After all transects were measured, direct observations and aerial photography were used to make observations on hydrology, buffer condition, and overall plant community structure. The attributes were then averaged to provide a composite Mid-Atlantic Tidal Rapid Assessment Method (Mid-TRAM) final score (Haaf et al. 2015).

The Mid-TRAM results placed the Supawna Meadows Marsh Complex in the category of "moderately stressed" (< 81.4, but > 66.6) with an average final score of 67.4. That is the lowest scoring watershed to be named moderately stressed of those assessed to date (i.e., extreme low end of the category range). The Supawna Meadows Marsh Complex rated a score of 29.3 (severely stressed) for habitat metrics due to low plant diversity and lack of community structure driven by the prevalence of the invasive species common reed. Historical agricultural and mosquito control practices, which created a level of disturbance, may have allowed this invasive plant to prevail (Haaf et al. 2015).

2.5 WILDLIFE

The following sections describe the species typically found along the southwestern coast of New Jersey that either migrate through or reside in areas surrounding the Project Area. Information regarding these species has been collected by the Service, the National Oceanic and Atmospheric Administration (NOAA), and the NJDEP.



2.5.1 Fish and Shellfish

The tidal marshes, creeks, and ditches of the Supawna Meadows NWR provide spawning, nursery, and feeding habitat for a variety of fish common to the Delaware River. The most abundant forage fish is the mummichog (*Fundulus heteroclitus heteroclitus*). Striped bass (*Morone saxatilis*) and white perch (*Morone americana*) are two of the more important anadromous species on or near the refuge. American eel (*Anguilla rostrata*), a catadromous species, is also found within the Delaware River, and is currently a species of concern in New Jersey and for the Mid-Atlantic Fisheries Council. Other important fish species found near, and potentially affected by, Project activities include menhaden (*Brevoortia tyrannus*), blueback herring (*Alosa aestivalis*), alewife (*Alosa pseudoharengus*), American shad (*Alosa sapidissima*), brown trout (*Salmo trutta*), and bullhead (*Ameiurus spp.*). Blue crabs (*Callinectes sapidus*) are also found within tidal waters near the refuge and are part of the local recreational shellfishery (USFWS 2011).

Hard-bottom surveying during the Delaware Estuary Benthic Inventory (DEBI) research collection identified the most abundant single species at any station was the amethyst gem clam (*Gemma gemma*) (71,000 individuals per square meter) near Nantuxent Creek. Other common shellfish included oysters (*Crassostrea* spp.), whelks (*Busycon* spp. and *Busycotypus* spp.), hermit crabs (Paguriodea), blue crabs, lady crabs (*Ovalipes ocellatus*), spider crabs (*Libinia emarginata*), mud crabs (*Panopeus herbstii*), horseshoe crabs (Limulidae), dove snails (Columbellidae), moon snails (Naticidae), slipper snails (Calytraeidae), razor clams (*Ensis directus*), hard clams (*Mercenaria mercenaria*), and seven native species of mussels including the pond mussel (*Ligumia nasuta*), tidewater mucket (*Leptodea ochracea*), alewife floater (*Anodonta implicata*), creeper (*Strophitus undulatus*), eastern floater (*Pyganodon cataracta*), yellow lampmussel (*Lampsilis cariosa*), and eastern elliptio (*Elliptio complanata*) (Kreeger et al., 2011).

2.5.2 Essential Fish Habitat (EFH)

The 10' x 10' Square Coordinates data lists of the NOAA Guide to Essential Fish Habitat (EFH) Designations in the Northeastern United States and the aerial coverage from the EFH Designations for New England Skate Complex were used as preliminary consultation with the National Marine Fisheries Service (NMFS) to determine which fish species habitat may be located on or near the Project Area with the potential of being affected by the proposed Project (NOAA 2016). The NOAA Essential Fish Habitat Mapper tool was used to update the following table to include 2022 data (NOAA 2022). The closest designated EFH near the Project Area are shown in **Table 1** Page 8 below:



Table 1 Documented EFH Near the Project Area Based on NOAA's Guide to Essential Fish Habitat Designations in the Northeastern United States **Scientific Name Common Name** Life Stage Zone Habit Ground Eggs *Pseudopleuronectes* Larvae Pelagic/Ground Winter flounder Seasonal americanus Ground Ground Juveniles Adult Windowpane Juveniles Ground Scopthalmus aquosus Seasonal flounder Adult Ground Juveniles Pelagic Bluefish *Pomatomus saltatrix* Migratory Adult Pelagic Atlantic butterfish *Peprilus triacanthus* Juveniles Pelagic Seasonal Juveniles Demersal Summer flounder Paralichthys dentatus Seasonal Adult Demersal Scup Stenotomus chrysops Juveniles Demersal Seasonal Centropristis striata Black sea bass Juveniles Demersal Seasonal Pelagic Eggs Scomberomorus Larvae Pelagic King mackerel Migratory cavalla Juveniles Pelagic Adult Pelagic Pelagic Eggs Scomberomorus Larvae Pelagic Spanish mackerel Migratory Juveniles Pelagic maculatus Adult Pelagic Eggs Pelagic Rachycentron Larvae Pelagic Cobia Migratory canadum Juveniles Pelagic Adult Pelagic Juveniles Ground Clearnose skate Seasonal Raja eglanteria Adult Ground Juveniles Ground Little skate Leucoraja erinacea Seasonal Adult Ground Juveniles Ground Winter skate Leucoraja ocellata Year-round Adult Ground Juveniles Atlantic Herring *Clupea harengus* Seasonal Pelagic Adult Adult Demersal Red Hake Urophycis chuss Seasonal Doryteuthis (Amerigo) Longfin Inshore Seasonal Ground Eggs Squid pealeii



Based on the preliminary evaluation, a Habitat Area of Particular Concern (HAPC) was documented for Summer flounder on or near the Project Area (NOAA 2022). NOAA defines Habitat Areas of Particular Concern (HAPC) as "subsets of EFH that exhibit one or more of the following traits: rare, stressed by development, provide important ecological functions for federally managed species, or are especially vulnerable to anthropogenic degradation." (NOAA 2020). The Delaware Bay is an important nursery and summering area for adult and juvenile Summer Flounder, which are abundant in the lower and middle portions of the estuary but are rare in the upper estuary near the Project Area" (NOAA 1999).

The Proposed Action will have unavoidable, but temporary and minor impacts to marine resources and EFH/HAPC. A primary indirect impact of the project is increased turbidity at the work locations and the subsequent, but relatively minor sedimentation effects. Sediment suspension will occur but is expected to be limited to the immediate work area and not to be a long-term condition since a combination of settling and tidal flushing will attenuate the turbidity. A turbidity curtain will also be used throughout the project that will further mitigate impacts to marine resources. Mobile marine resources, such as gastropods, crustaceans, and fish can move away from disturbances and avoid areas where occurring. are Disturbance to marine resources will also be reduced in accordance with any time of year restrictions imposed by the regulatory permits that are required for this Project.



2.5.3 Birds

Over 300 species of birds can be observed throughout the year in Salem County. The refuge is located in the Atlantic Flyway and serves not only as an important migration stop, but also habitat for regionally and nationally significant species such as rails, neotropical migrants, and raptors (USFWS 2011; USFWS 2005).

The refuge also provides habitat for thousands of waterfowl that use the tidal marshes through winter and during migration (USFWS 2011). Coastal salt marsh wetland habitat, such as that found at the refuge, has been identified by the Black Duck Joint Venture as the most important habitat for wintering American black duck (*Anas rubripes*), annually wintering 34 percent of the entire Atlantic Flyway American black duck population (Black Duck Joint Venture 2008). During the 2009 midwinter count, inventory flights for the Salem River watershed averaged more than 2,000 dabbling ducks and more than 11,500 Canada geese (*Branta canadensis*) (USFWS 2009). Additional waterfowl species that can be found within the refuge include American widgeon (*Anas americana*), blue-winged teal (*Anas discors*), green-winged teal (*Anas acuta*), snow goose (*Chen caerulescens*), and tundra swan (*Cygnus columbianus*) (USFWS 2005).

Raptor species that have been observed at the refuge include sharp-shinned hawk (*Accipter striatus*), Cooper's hawk (*Accipter cooperii*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and peregrine falcon (*Falco peregrinus*). Cooper's hawks have also been noted within the forested areas of refuge. The forest also supports breeding populations of wood thrush (*Hylocichla mustelina*), eastern wood pewee (*Contopus virens*), northern flicker (*Colaptes auratus*), and Baltimore oriole (*Icterus galbula*) as well as migrating populations of black-and-white warbler (*Mniotilta varia*), hooded warbler (*Wilsonia citrina*), and Kentucky warbler (*Oporornis formosus*) (USFWS 2011).

The refuge's grassland habitat supports migrating and wintering songbirds, including the bobolink (*Dolichonyx oryzivorus*), vesper sparrow (*Pooecetes gramineus*), eastern meadowlark (*Sturnella magna*), and savannah sparrow (*Passerculus sandwichensis*), as well as raptor species such as northern harrier and short-eared owl (*Asio flammeus*) (USFWS 2011).



Pea Patch Island, one of the largest rookeries on the East Coast, is located in the center of the Delaware River, approximately 1.5 miles off shore of the Project Area. The refuge provides foraging habitat for the more than 6,000 pairs (9 species) of wading birds that nest on the island, including black-crowned night heron (*Nycticorax nycticorax*), yellow-crowned night heron (*Nycticorax nycticorax*), yellow-crowned night heron (*Nyctanassa violacea*), great egret (*Ardea alba*), and little blue heron (*Egretta caerulea*). These waders forage in the tidal marsh within the refuge boundaries throughout the breeding season. Because of its importance, Pea Patch Island and the surrounding area, including the refuge, have been designated as a Special Management Area (SMA) by the States of New Jersey and Delaware in accordance with the Coastal Zone Management Act (USFWS 2011).

Shorebirds also use the marshes within the refuge during spring and fall migrations, including species such as the least sandpiper (*Calidris minutilla*) and semipalmated sandpiper (*Calidris pusilla*). Species such as the king rail (*Rallus elegans*) and least bittern (*Ixobrychus exilis*) use the marshes for breeding. Based on the importance of the Delaware estuary to migrating shorebirds, both the New Jersey and Delaware shores of the Delaware Bay are designated as International Shorebird Preserves (USFWS 2011).

2.5.4 Mammals

Mammalian species that can be commonly found within the refuge include the meadow vole (*Microtus pennsylvanicus*), white-footed mouse (*Peromyscus leucopus*), short-tailed shrew (*Blarina brevicauda*), cottontail rabbit (*Sylvilagus floridana*), groundhog (*Marmota monax*), muskrat (*Ondatra zibethicus*), opossum (*Didelphis virginiana*), skunk (*Mephitis mephitis*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), mink (*Neovison vison*), long-tailed weasel (*Mustela frenata*), and river otter (*Lontra canadensis*). There is a large white-tailed deer (*Odocoileus virginianus*) population within the refuge, with an estimated density around Salem County Hunting Management Zone 63 to be 40.4 deer per square mile. A large maternity colony of more than 1,500 bats previously roosted in a barn on the refuge (USFWS 2011). This roost, primarily composed of little brown bats (*Myotis lucifugus*) was decimated by white nose syndrome.

2.5.5 Reptiles and Amphibians

A variety of amphibians and reptiles are found within the refuge, including the eastern painted turtle (*Chrysemys picta*), common snapping turtle (*Chelydra serpentina*), eastern garter snake (*Thamnophis*



sirtalis), black rat snake (*Elaphe obsoleta*), southern leopard frog (*Lithobates sphenocephalus*), green frog (*Rana clamitans melanota*), and American bullfrog (*Rana catesbeiana*) (USFWS 2011).

2.5.6 Threatened and Endangered Species

The unique habitats of the Supawna Meadows NWR attract a wide variety of wildlife including threatened and endangered species, and species of conservation concern. Sensitive mammalian species include the eastern small-footed myotis (*Myotis leibii*), eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silverhaired bat (*Lasionycteris noctivagans*), and southern bog lemming (*Synaptomys cooperi*). Federally listed endangered fish species recorded near the refuge include the short-nosed sturgeon (*Acipenser brevirostrum*), and the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*). The refuge also contains habitat to support reptilian and amphibian species of conservation concern, including northern diamondback terrapin (*Malaclemys terrapin*), eastern box turtle (*Terrapene carolina carolina*), spotted turtle (*Clemmys guttata*), and Fowler's toad (*Anaxyrus fowleri*). A number of State-listed endangered northern harriers (*Circus cyaneus*) and State-listed threatened osprey (*Pandion haliaetus*) have nested in the tidal marsh within the refuge and a pair of bald eagles (*Haliaeetus leucocephalus*) has nested there since 1998 (USFWS 2011).

The Service's online Information, Planning, and Conservation (IPaC) system indicated the presence of the following federally listed threatened and endangered species on or near the Project Area (**Table 2** below and **Appendix D** of the NWP-3 application):

Table 2 Service's IPaC Findings for Potential Federally Listed Threatened and Endangered Species On or Near the Project Area				
Common NameScientific NameFederal Status				
Red knot	Calidris canutus rufa	Threatened		
Sensitive joint-vetch	Aeschynomene virginica	Threatened		
Northern long-eared bat	Myotis septentrionalis	Threatened		
Bog turtleClemmys muhlenbergiiThreatened		Threatened		
Monarch butterflyDanaus plexippusCandidate				

There were no critical habitats documented within the Project Area. However, the Service's IPaC system indicated the presence of 19 migratory birds protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) that could potentially move through the Project Area, including the following (**Table 3** below and **Appendix D** of the NWP-3 application):



Table 3Service's IPaC Findings for Potential Migratory Bird Species On orNear the Project Area			
Common Name Scientific Name			
Bald Eagle	Haliaeetus leucocephalus		
Black-billed cuckoo	Coccyzus erythropthalmus		
Blue-winged Warbler	Vermivora pinus		
Bobolink	Dolichonyx oryzivorus		
Canada Warbler	Cardellina canadensis		
Common Loon	Gavia immer		
Double-crested Cormorant	Phalacrocorax auritus		
Kentucky Warbler	Oporornis Formosus		
Lesser Yellowlegs	Tringa flavipes		
Prairie Warbler	Dendroica discolor		
Prothonotary Warbler	Protonotaria citrea		
Red-breasted Merganser	Mergus serrator		
Red-headed Woodpecker	Melanerpes erythrocephalus		
Red-throated Loon	Gavia stellata		
Ring-billed Gull	Larus delawarensis		
Ruddy Turnstone	Arenaria interpres morinella		
Rusty Blackbird	Euphagus carolinus		
Short-billed Dowitcher	Limnodromus griseus		
Wood Thrush	Hylocichla Mustelina		

The NJDEP NJ-GeoWeb website (NJDEP 2014) Landscape Project indicated the presence of the following State-listed threatened and endangered species on or near the Project Area (**Table 4** below and **Appendix D** of the NWP-3 application):



Table 4 NJDEP Landscape Project Findings for Potential State-Listed Threatened and Endangered **Species On or Near the Project Area Common Name** Scientific Name **Federal Status State Status** Great blue heron Ardea herodias Not listed Special concern Osprey Pandion haliaetus Not listed Threatened Haliaeetus Bald eagle Not listed Threatened leucocephalus Passerculus Not listed Threatened Savannah sparrow sandwichensis Cooper's hawk Accipiter cooperii Not listed Special concern Acipenser brevirostrum Endangered Endangered Shortnose sturgeon Lycaena hyllus Not listed Endangered Bronze copper

Potential vernal pool habitat was also indicated within the refuge north of Harrisonville Lighthouse Road.

Since the NJDEP GeoWeb website is a preliminary screening tool, a formal written request was submitted to the NJDEP Natural Heritage Program to confirm the possible presence of these species. The March 15, 2016 findings of the Natural Heritage Program are presented in **Appendix D** of the NWP-3 application. These results indicated the following additional plant species that have the potential to occur on or near the Project Area (**Table 5** below and **Appendix D** of the NWP-3 application):

Table 5 NJDEP Natural Heritage Program Additional Findings for Potential State-Listed Threatened and Endangered Species On or Near the Project Area					
Common Name	Common Name Scientific Name Federal Status State Status				
Coast flat sedge	Cyperus polystachyos var. texensis	Not listed	S1-Critically imperiled in New Jersey because of extreme rarity. E-Native New Jersey plant species whose survival in the State or nation is in jeopardy.		
New England bulrush	Schoenoplectus angliae	Not listed	S2-Imperiled in New Jersey because of rarity.		



Table 5 NJDEP Natural Heritage Program Additional Findings for Potential State-Listed Threatened and Endangered Species On or Near the Project Area			
Common Name	Scientific Name	Federal Status	State Status
Floating marsh- pennywort	Hydrocotyl ranunculoides	Not listed	S1-Critically imperiled in New Jersey because of extreme rarity. E-Native New Jersey plant species whose survival in the State or nation is in jeopardy.

A formal written request was submitted to NOAA for Technical Assistance with regards to protected species under their jurisdiction. The November 7, 2016 NMFS findings are presented in **Appendix D** of the NWP-3 application. The results indicated the presence of the following threatened and endangered species in the Delaware River potentially near the Project Area (**Table 6** below and **Appendix D** of the NWP-3 application):

Table 6 NMFS Findings for Potential Federally Listed Threatened and Endangered Species in the					
Delaware River Near the Project Area					
Common name	Common name Scientific name Federal Status				
Shortnose sturgeon	Acipenser brevirostrum	Endangered			
Atlantic sturgeon	Acipenser oxyrinchus oxyrinchus				
Gulf of Maine DPS		Threatened			
New York Bight DPS		Endangered			
Chesapeake Bay DPS		Endangered			
Carolina DPS		Endangered			
South Atlantic DPS		Endangered			

There are five Atlantic sturgeon Distinct Population Segment (DPSs) that extend along the Atlantic coast from Canada to Cape Canaveral, Florida. The Delaware River and Bay is within the Atlantic sturgeon New York Bight DPS. However, Atlantic sturgeon originating from any of the five DPSs may be present in the Delaware River and Bay. The area in and around the Project Area is proposed to be designated as critical habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs.



3.0 PROJECT DESCRIPTION

This section presents a detailed description of the proposed activities for the site. The conceptual design plans are presented in **Appendix C**.

The Supawna Meadows NWR was originally established as an addition to the Killcohook Migratory Bird Refuge and now is composed of 3,016 acres of tidal waters and marsh, grassland, shrubland, and forest habitats. The refuge is located along the Delaware Bay, an area that is threatened by the effects of sea level rise. In 2010, a report by the Partnership of the Delaware Estuary (PDE) projected the future acreage of tidal wetland in the Delaware Estuary will decrease by approximately two-thirds by the year 2100 due to the rapid changes in sea levels. The resulting vegetation die-back, or changes in vegetative community structure, and reduction in rates of salt marsh accretion may lead to permanent loss of marsh land and conversion to open water, thereby exacerbating the vulnerability these critical wetlands have to sea level rise and coastal storm surge events. Such degradation and loss runs counter to the mission of the National Wildlife Refuge System, the purpose of the refuge, and the goals of the refuge outlined in the Supawna Meadows NWR Comprehensive Conservation Plan (CCP) (USFWS 2011).

Additional stressors on the refuge marshes that may have contributed to the loss of function include the thousands of miles of grid ditches that were dug in New Jersey during the late 18th century for agricultural purposes (salt hay farming) and in the early 20th century for mosquito control practices. These grid ditches were created for the purpose of draining water, thus creating more high marsh habitat for salt hay production and eliminating standing water where mosquitos bred (USFWS 2015). The impacts of grid ditching on salt marshes included a decrease in the time tidal waters took to recede off the salt marsh platform, a decrease in the temporal scale of standing water in the marsh platform during ebb tides, vegetation changes, and associated impacts on fish and bird habitat. Grid ditching also created a level of disturbance that may have allowed invasive species to prevail.

At the refuge, natural processes (e.g., sea level rise and erosion) began to damage the original dike system. Therefore, a more than 2-mile long stone breakwater was constructed circa 1900 along the marsh edge for the purposes of protecting the marsh and the original failing dike and ditch system (USFWS 2011). However, during the early 1930s, likely during Hurricane #6 of 1933, the stone breakwater



breached in a number of locations (Mitchell 1933). As a result, many of the salt hayfields flooded. This conversion of tidal marshes to open water and mudflats likely occurred for the following reasons: (1) a century's worth of agricultural practices that did not let these areas accrete the natural biomass necessary to help keep up with rising sea levels; (2) the agricultural practices that eliminated much of the micro-topography, leaving the marsh susceptible to wave scouring; (3) the breaches that did not support proper tidal flushing; and (4) the remaining earthen dikes and ditch system behind the failed stone breakwater that did not allow for natural drainage patterns.

Remains of the dike are still present between the marsh and the Delaware Bay Estuary, which may be leading to restricted tidal flow and decreased quality of the marsh habitat. Drainage ditches and earthen dikes are also still present within the tidal marsh, altering hydrology. Data suggests it is possible that water moving into the Supawna Meadows Marsh Complex on flood tides is unable to escape on ebb tide and is being confined within the intra-marsh creek system and in pools in the interior of the marsh platform (Haaf et al. 2015). The Marsh Futures Field Study Assessment performed by Haaf et al. (2015) summarized that there is potential for marsh expansion from sediment collecting along the interior edges and fringes of the marsh islands. However, the lack of accretion along the main river channel edge indicates that the historical stone breakwater system is currently contributing to the prevention of lateral change along this edge.

Increased water levels, inadequate tidal flushing, historical impacts (mosquito control and salt hay farming), erosion, and man-made barriers to tidal flow have degraded the condition and productivity of the tidal marshes within the refuge. The resulting vegetation die-back and reduction in rates of salt marsh accretion may lead to permanent loss of marsh land and conversion to open water, thereby exacerbating the vulnerability these critical wetlands have to sea level rise and coastal storm surge events. Therefore, the Service believes the Project Area would benefit from various modifications to the existing breakwater dike to combat future impacts to the Supawna Meadows Marsh Complex.

 Table 7 below presents the coordinates of the approximate center of the Project Area in various coordinate systems.



Table 7 Coordinates for the Approximate Center of the Project Area (NAD 1983)				
NJ State Plane (ft)NJ State Plane (ft)LatitudeLongitude(X)(Y)(N)(W)				
201976.383	275867.354	39°35.17398'	75°31.77288'	

The overarching goal and expected outcome of the project is more resilient wetlands that function as healthy living resources that provide ecosystem value. More specifically:

- Facilitate a more natural hydrologic regime.
- Enhance salt marsh resilience.
- Increase rates of accretion.

In order to achieve this goal, the Service researched plans to modify the stone breakwater to enhance functioning breaches and remove additional stone from other breaches that were identified to be detrimental to the resiliency of the Supawna Meadows Marsh Complex or were deemed no longer necessary. The removed stone, along with some additional new stone, would then be added to other areas of the breakwater dike to increase the height for added shoreline protection.

3.1 PROJECT DETAILS

In the consideration of potential stone breakwater removal, modification, and enhancements, the Supawna Meadows site was divided into nine potential work areas (Areas 1 through 9). These work areas were selected based upon existing marsh mouth openings within the Marsh Complex that would be targeted for either reduction or expansion in size and are shown in Diagram 1.





Diagram 1. Potential work locations for stone breakwater removal, modification, and enhancements (WHGRP 2016).

After reviewing existing conditions, model results from the hydrodynamic model and results from the assessment of short-term sediment transport potential, the Project was narrowed down to two possible design alternatives focusing activities within work areas 3, 4, 5, 6, and/or 7. Both of these design alternatives consist of a combination of rock placement and removal with the goal of reducing sediment transport potential on ebb tides to decrease the rate of sediment loss from the Supawna Meadows Marsh Complex. Of the two proposed designs, Design Alternative 2 was chosen, initiating Phase 1 of the Project within work areas 3 and 4 at the mouth of Mill Creek which was completed in August 2017. Phase 2, this Project, proposes the modification and enhancement of work areas 5, 6, and 7, which surround the entrance to Goose Pond.

3.1.1 Design Phase 1- Completed

In Phase 1, completed in 2017, rock was removed at Area 3A to deepen an existing breach in the stone breakwater to the elevation of the existing mudline (Diagram 2). Also under this Design, reclaimed rock was placed at Areas 3 and 4 to raise the stone breakwater elevation approximately to that of mean high water (2.56 feet North American Vertical Datum of 1988 (NAVD88)) along approximately 400 feet of the existing stone breakwater and to 1.56 feet NAVD88 along approximately 830 feet of the existing breakwater.



Diagram 2. DA 1 (WHGRP 2016).

3.1.2 Design Phase 2

Under Design Phase 2, rock will be removed at Area 5A (~330 ft) to deepen an existing breach in the stone breakwater to the elevation of the existing mudline (-5.15 feet NAVD88) (Diagram 3). Rock placement in Phase 2 would also raise the breakwater elevation to 2.56 feet NAVD88 along areas 5, 6, and 7.



Diagram 2. Design Phase 1 (WHGRP 2016).





Diagram.3. Design Phase 2 (WHGRP 2016).

3.1.3 Design Alternative Results

Phase 1, completed in 2017 provided added protection of the front edge of the Supawna Meadows Marsh Complex from wave action and reduced the risk of erosion during major storms. Phase 2, the proposed design, would also provide protection from waves and would result in an overall sediment transport benefit. A depiction of the proposed design plans are included in Appendix C. Components of the design are based on common design guidelines based on general USACE breakwater design guidance (USACE 1986) and include an approximate slope of 1V:2H with a crest width of approximately five feet.



3.2 PROJECT AREAS OF DISTURBANCE

Table 8 below presents the Project area of disturbance for Design Phase 2 in square feet:

Table 8 Area of Disturbance Calculations		
Project Component	Approximate Area of Disturbance (Square Feet)	
Breakwater Removal	12,900	
Breakwater Enhancement*	0	
Total Area of Disturbance	12,900	

*Note: The enhancement of portions of the breakwater will be completed within the footprint of existing areas already containing stone. Therefore, no additional disturbance will be created from this activity.

3.3 PROJECT PERMITTING

The Project will be performed in areas regulated by New Jersey, Delaware, and the Federal government, thus requiring permits through the NJDEP DLRP, the DNREC Division of Water, and the USACE. **Table 9** below lists the various state and Federal approvals the project will require prior to initiation.

Table 9 Municipal, State or Federal Permits Required		
Permit	Agency	Status
Waterfront Development and/or Coastal Wetlands Individual Permit	NJDEP DLRP	Application submitted.
Coastal Wetlands General Permit 24	NJDEP DLRP	Application submitted.
Nationwide Permit (NWP) 3	USACE	Application submitted.
Wetlands and Subaqueous Lands Section Lease	DNREC Division of Water	Application submitted.



4.0 COMPLIANCE WITH THE DELAWARE COASTAL MANAGEMENT PROGRAM (DCMP) RULES (DCMP 2018)

This section identifies and evaluates the specific policies of the DCMP, as implemented November 2018 (DCMP Rules), that may apply to the proposed regulated activity. Based on a review of the DCMP Rules, the following policies have been determined to be applicable to the proposed activity:

5.3	Coastal Waters Management
5.4	Subaqueous Lands and Coastal Strip Management
5.5	"Public Lands" Management
5.6	Natural Areas Management
5.10	Historic and Cultural Areas Management
5.11	Living Resources
5.13	State Owned Coastal Recreation and Conservation
5.14	Public Trust Doctrine

4.1 COASTAL WATERS MANAGEMENT (SECTION 5.3)

Per Section 5.3.1 of the DCMP Rules, the development and utilization of the land and water resources of the state shall be regulated to ensure that water resources are employed for beneficial uses and not wasted, to protect beneficial uses of water resources, and to assure adequate water resources for the future [Title 7 of the Delaware Code (7 Del. C.) §6001 (a)(2)(3)]

All waters within the Project Area are classified as FW2-NT/SE1 waters according to New Jersey Surface Water Quality Standards (SWQS) (NJDEP 2011). The FW2-NT/SE1 classification indicates a waterway in which there may be a freshwater/saltwater interface between a non-trout, freshwater stream (category 2) and a saline estuary with shellfish harvesting as a designated use.

The portion of the Delaware River (Zone 5), in which the Project Area is located, is classified as waters protected for the following uses (DRBC 2013):



- Industrial water supplies after reasonable treatment.
- Maintenance of resident fish and other aquatic life.
- Propagation of resident fish from river mile 70.0 to river mile 48.2.
- Passage of anadromous fish.
- Wildlife.
- Recreation.
- Navigation.

The proposed Project is not anticipated to be in violation of the Federal Clean Water Act, or Delaware State laws, rules, and regulations pertaining to water quality, including Delaware Surface Water Quality Standards. Project activities include alterations to an already existing breakwater dike located parallel to the shoreline. The direct disturbance will primarily be caused by the removal of a small portion of the breakwater. This disturbance would not lower water quality to such an extent as to violate State and Delaware River Basin Commission water quality standards, as the disturbance will be temporary in nature and localized to an area of approximately 0.29 acres. The construction portion of the project is anticipated to take 45 working days to complete. The Service will comply with all applicable seasonal restrictions so as not to disturb fish and other aquatic life movements. The Project Area is anticipated to return to stable conditions as sedimentation and tidal circulation occur over time. Therefore, the Project will not interfere with the designated uses as listed above. In addition, an indirect long-term benefit to the Project will be restored tidal hydrology and protection of the front edge of the Supawna Meadows marsh from wave action, reducing the risk of further erosion and impaired water quality.

The Project does not involve the discharge of liquid, radiological, chemical, biological, industrial, municipal, agricultural or other human-induced solid or hazardous wastes, thermal discharges, or the discharge of oil from a vessel, truck, pipeline, storage, tank or tank car. The Project Area is sited under water, therefore it is not subject to stormwater management regulations. It is also not located near a public water supply or a waterbody designated as an exceptional recreational or ecological significance (ERES) water. Finally, the Project does not involve the activities sited in Sections 5.3.1.19, 5.3.1.20, 5.3.1.23, 5.3.1.24, 5.3.1.25, or 5.3.1.26 of the DCMP Rules and does not involve a Marina (Section 5.3.2 of the DCMP Rules). Therefore, the permits and policies for such activities are not applicable.



Provided that the proposed activities meet the requirements of the DNREC with regard to the Clean Water Act and other State, local, or interagency requirements, the proposed Project will comply with the relevant policies of Section 5.3 of the DCMP Rules - Coastal Waters Management.

4.2 SUBAQUEOUS LANDS AND COASTAL STRIP MANAGEMENT (SECTION 5.4)

Per Section 5.4.1 of the DCMP Rules, the "coastal zone", referred to in these policies as the "coastal strip", is defined as all that area of the State, whether land, water or subaqueous land between the territorial limits of Delaware in the Delaware River, Delaware Bay and Atlantic Ocean, and a line formed by certain Delaware highways and roads. [7 Del. C. §7002]

Section 5.4.2 of the DCMP Rules states:

"The natural environment of the coastal strip shall be protected from the impacts of heavy industry and oil pollution for the purpose of recreation, tourism, fishing, crabbing, and gathering other marine life useful in food production. [7 Del. C. §§7001, 6201]"

Section 5.4.5 of the DCMP Rules states:

"The development and use of offshore oil, gas, and other mineral resources of the state shall be managed to make the maximum contribution to the public benefit and so as to balance their utilization, conservation, and protection [Delaware Oil, Gas and Mineral Exploration Regulations, 2.1, adopted September, 1971]"

The proposed Project is not related to heavy industry or the development and use of offshore oil, gas, or other mineral resources, nor does it involve any related activity such as drilling, seismic surveys, or construction of offshore pipelines. Therefore, the majority of the policies listed under Section 5.4 of the DCMP Rules do not apply.

However, Section 5.4.21 of the DCMP Rules requires a lease, permit, or letter of authorization from the DNREC for the repair and replacement of existing serviceable structures on public subaqueous lands. The existing breakwater would qualify as an existing serviceable structure. Therefore, the Service submitted a request for a Subaqueous Lands Permit to the DNREC in a Wetlands and Subaqueous Lands



Section Permit Application, as required. The submittal of the Subaqueous Lands Permit application is concurrent with the submittal of this Compliance Statement.

Provided that the proposed activities meet the requirements of the DNREC with regard to public interest (Section 5.4.22 of the DCMP Rules) and impacts on the environment (Sections 5.4.23 and 5.4.24 of the DCMP Rules), the proposed Project will comply with the relevant policies of Section 5.4 of the DCMP Rules - Subaqueous Lands and Coastal Strip Management.

4.3 "PUBLIC LANDS" MANAGEMENT (SECTION 5.5)

Per Section 5.5.1 of the DCMP Rules, State "public lands" shall be protected to preserve the scenic, historic, scientific, prehistoric and wildlife values of such areas. [7 Del. C. Chapters 45 and 47; Delaware Executive Order 42 and 43, August 15, 1996].

Section 5.5.5 states:

"These lands shall be managed for public recreation purposes and for the conservation and preservation of their natural resources and beauty."

The removal of one section of the breakwater (Section 5A), and enhancement of the breakwater in other select areas (Sections 5, 6, and 7), will not result in the substantial alteration or impairment of the scenic, historic, scientific, prehistoric or wildlife value of the Project Area, nor will it change public use or access to the Delaware River for recreational purposes. In contrast, the Project activities will function to improve marsh vegetation and habitat value within the Supawna Meadows Marsh Complex. The ecological uplift resulting from the restoration of healthy salt marsh habitat within their home range would have an indirect, long-term, and beneficial impact to sensitive wildlife species dependent on the marsh for breeding, feeding, or resting. This, in turn, could lead to increased interest in the area for wildlife viewing and other recreational purposes associated with such natural resources.

Therefore, the proposed activity will comply with the relevant policies of Section 5.5 of the DCMP Rules – "Public Lands" Management.



4.4 NATURAL AREAS MANAGEMENT (SECTION 5.6)

Per Section 5.6.1.5 of the DCMP Rules, aid should be provided in the establishment, restoration, and preservation of natural areas within the state and elsewhere than in the nature preserve system [7 Del. C. §§7307(8)].

This Project is located within an area already designated as a National Wildlife Refuge. Therefore, the policies of Section 5.6 of the DCMP Rules – Natural Areas Management do not apply to the proposed Project activities.

4.5 HISTORIC AND CULTURAL AREAS MANAGEMENT (SECTION 5.10)

Section 5.10.1.2 of the DCMP Rules states:

No person shall excavate, collect, deface, injure or destroy any archaeological resource or artifact, or otherwise disturb or alter an archaeological resource or artifact or its surrounding location in context, in or on lands owned or controlled by this State.... Archaeological resources and artifacts shall be defined to include any remains of past human life or activity that are at least 50 years old [7 Del. C. §5308].

Because the Project is located just offshore from New Jersey, Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) performed a file review at the offices of the NJDEP SHPO and the New Jersey State Museum (NJSM) pursuant to the National Historic Preservation Act (NHPA) (Section 106). The objective of the file review was to assess the potential for the proposed Project to impact archaeological, cultural, and historical resources, collectively termed here as historic properties.

The search indicated that the refuge contains a historic property (Samuel Urion/Yerkes Farmstead (circa 1820)) that was previously determined to be eligible for listing on the National Register of Historic Places. The NJDEP SHPO determined that the Samuel Urion/Yerkes Farmstead was eligible in 1994 because of its "association with Samuel Urion" and "as an example of architecture in Salem County during the latter half of the nineteenth century, particularly as a rural expression of the Italianate style."



The file searches also indicated that there are previously inventoried archaeological artifacts discovered within the refuge boundary. There is a historic district (Fort Mott and Finn's Point National Cemetery Historic District) listed on the National Register of Historic Places adjacent to the refuge to the northwest. **Appendix I** of the NWP-3 application presents relevant information from the NJDEP SHPO files concerning the historical background of the Samuel Urion/Yerkes Farmstead and previous cultural resource studies that have been conducted in the vicinity.

Although archeological artifacts were recovered and an eligible property is located within the Supawna Meadows NWR boundary, they are not contained within the Project Area boundary where activities are proposed. Therefore, the archaeological sensitivity of the Project Area is considered to be low and the proposed activities will have little potential to affect objects of archaeological significance. In addition, the Project will not incur any visual impacts on the nearby historic district, or the historic properties within the district, as there are no new structures being added to the viewshed.

However, if any historic or prehistoric artifacts are discovered during the completion of this Project, work would be stopped immediately and the refuge management would be contacted to determine how to proceed. The Service, in consultation with the NJDEP SHPO and the Delaware Division of Historical and Cultural Affairs, will determine the appropriate management actions and additional Tribal consultation that shall be completed before construction may resume.

Lastly, Section 106 consultation between the Service and the SHPO included discussions on the Finns Point Lighthouse, located approximately 1.5 miles to the north/northwest of the project area. The lighthouse was built in 1877 and is part of the Front Range light pair that guided vessels into the Delaware River. The dike serves to bolster the land area around the light. The results of the consultation found that no resources, including the lighthouse, would be adversely affected by the Project.

Based on the information gathered to date, the proposed activities will not excavate, collect, deface, injure or destroy any known archaeological resource or artifact, or otherwise disturb or alter any archaeological, cultural, or historical resources. Therefore, the proposed Project will comply with the relevant policies of Section 5.10 of the DCMP Rules – Historic and Cultural Areas Management.


4.6 LIVING RESOURCES (SECTION 5.11)

Section 5.11.1.1 of the DCMP Rules states:

"No activity shall have an adverse environmental effect on living resources and shall include consideration of the effect of site preparation and the proposed activity on the following wetland values:

5.11.1.1.1 Value of tidal ebb and flow

The Project is intended to preserve and enhance the salt marsh vegetation community by counteracting the deleterious effects of sea level rise and impaired tidal hydrology. The environmental consequence of the Project is the sustainment and improvement of the salt marshes' ability to provide water quality services in areas of currently healthy and degraded marsh, respectively. Nevertheless, there will be some unavoidable but temporary and minor adverse impacts resulting from the implementation of the Project activities.

The direct disturbance will primarily be caused by the removal of a small portion of the breakwater berm. This disturbance will be temporary and localized to an area of approximately 0.29 acres. This work area will return to stable conditions as sedimentation and tidal circulation occur over time. Sedimentation rates are difficult to predict and vary widely among different aquatic systems. While major factors such as grain size and water action play an obvious role, other factors such as the physiochemical interactions between saline and fresh water, the clay and organic matter content in the water column, temperature, and pH all play a role in determining the rate at which the clarity of the water will return (ERDC 2005). However, an indirect long-term benefit to the proposed Project will be restored tidal hydrology and protection of the front edge of the Supawna Meadows Marsh Complex from wave action, reducing the risk of further erosion and impaired water quality.

5.11.1.1.2 Habitat Value

The Project will have unavoidable, but temporary and minor impacts to submerged marine habitat. This potential impact is due to the predicted increase in turbidity at the work locations, and the subsequent, but

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relatively minor sedimentation effects. Sediment suspension is expected to be limited to the immediate area surrounding the breakwater removal section (approximately 330 feet long by an average width of 38 feet wide). Including a conservative five-foot buffer on each side of this portion of the breakwater, the total disturbance would be approximately 0.29 acres. This sedimentation would also not to be a long-term condition since a combination of settling and tidal flushing will attenuate the turbidity. Mobile marine resources, such as gastropods, crustaceans, and fish can move away from and avoid the area where disturbances are occurring. Many crustaceans and immobile invertebrates, such as molluscs, are also highly adapted to turbid conditions. Additionally, these temporary and localized disturbances are for the long-term benefit of the larger aquatic community.

The Project is designed to facilitate a more natural hydrologic regime, enhance salt marsh resilience from impacts of sea level rise, large storm events, and other ecosystem stressors, and improve rates of accretion within the refuge, resulting in the overall enhancement and naturalization of the refuge's unique marsh habitat. This will lead to long-term beneficial impacts to habitat for resident and migratory wildlife species, including waterfowl, wading birds, shorebirds, passerines, finfish, and shrimp, as well as rearing, nesting, and breeding grounds for various species. Habitat for non-game, rare, or endangered plants and animals, living on or near the Project Area, will also be protected and expanded.

Based on the information gathered to date, the proposed Project will comply with the relevant policies of Section 5.11 of the DCMP Rules – Living Resources.

4.7 STATE OWNED COASTAL RECREATION AND CONSERVATION (SECTION 5.13)

Per Section 5.13.1 of the DCMP Rules, State owned lands whose natural condition or present state of use would maintain important recreational areas and wildlife habitat, or would maintain or enhance the conservation of natural, cultural or historic resources shall be managed, preserved, and protected, for conservation and recreational use [7 Del. C. §§7301, 7504(6), 5305; 7 Del. C. Ch 45].

Currently the refuge is open to the public and receives 15,000 to 20,000 visitors each year participating in recreational activities such as hunting, fishing, crabbing, wildlife observation, photography, and interpretation (USFWS 2011). The Delaware River is also subject to public recreational activities such as fishing, crabbing, and boating. There will be some minor and temporary disruptions in the use of the Project Area by visitors. Disruptions may include the public avoiding the area during construction in



response to construction activities and noise. Disruption to hunters, fishermen, crabbers, and wildlife observers may also occur due to Project activities causing some wildlife to temporarily move out of the area.

However, visitation also has the potential to increase as the public becomes aware of, and curious about, the marsh restoration activities, which in turn also presents an educational opportunity for the public. Furthermore, the long-term benefit of the proposed Project is to enhance the marsh system, which in turn provides for better habitat for wildlife and, subsequently, better opportunities for the viewing and hunting public in the future. In addition, the work is scheduled to only take 45 days to complete. Thereafter, recreational disruptions will be minimized further. Therefore, the proposed Project will comply with the relevant policies of Section 5.13 of the DCMP Rules – State Owned Coastal Recreation and Conservation.

4.8 **PUBLIC TRUST DOCTRINE (SECTION 5.14)**

Per Section 5.14 of the DCMP Rules,

"The public have a right of navigation and fishery on all streams where the tide ebbs and flows... [Bickel v. Polk, Delaware Supr. 5 Harr. 325 (1851)]. ...the Public Trust Doctrine is applicable to those properties between the high and low water marks. [Bickel v. Polk, Delaware Supr. 5 Harr. 325 (1851); 7 DE Admin. Code 7504 subsection 2.2.2.3].

The Project is located in the Delaware River, between the high and low water marks. The Project will not change the ability of the public to navigate through, or fish from, the Delaware River or the waters within the refuge. Therefore, the proposed Project will comply with the relevant policies of Section 5.14 of the DCMP Rules – Public Trust Doctrine.



5.0 CONCLUSION

Based on the above analyses, the project is in compliance with the applicable policies and conditions under the DCMP Rules implemented in 2018 (DCMP 2018).



6.0 **REFERENCES**

- Black Duck Joint Venture (Black Duck Joint Venture Management Board). 2008. Black Duck Joint Venture Strategic Plan 2008-2013. U.S Fish and Wildlife Service, Laurel, Maryland; Canadian Wildlife Service, Ottawa, Ontario. 51 pp.
- Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service. FWS/OBS-79/31. Washington, DC.
- Dalton, R. 2003. Physiographic Provinces of New Jersey. New Jersey Geological Survey Information Circular. http://www.nj.gov/dep/njgs/enviroed/infocirc/provinces.pdf>. Accessed 11 June 2015.
- DCMP (Delaware Coastal Management Program). 2018. Delaware Coastal Management Program Comprehensive Update and Routine Program Implementation. November 2018. Program Summary to Supplement 1979 Document.
- DRBC (Delaware River Basin Commission). 2013. Administrative Manual Part III. Water Quality Regulations. With Amendments Through December 4, 2013. 18 CFR Part 410.
- FIC (Federal Interagency Committee for Wetland Delineation). 1989. Federal Manual for Identifying and Delineating Jurisdictional Wetlands. U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service. And U.S.D.A Soil Conservation Service, Washington D.C. Cooperative technical publication. 76 pp. plus appendices.
- Haaf, L., J. Moody, D. Kreeger, and A. Padeletti. 2015. Marsh Futures and Tidal Rapid Assessment of Marshes at Reeds Beach: Assessing the Status of the Marshes at Supawna Meadows, NJ through Two Techniques—PDE Report No 15-08sm. Partnership for the Delaware Estuary, A National Estuary Program.
- Kreeger, D., A.T. Padeletti, and D.C. Miller. 2011. Delaware Estuary Benthic Inventory (DEBI): An enhanced understanding of bottom ecology in the Delaware Bay and River. 2008-2010. Partnership for the Delaware Estuary.



- Maser (Maser Consulting P.A.). 2012. Environmental Resource Inventory. Township of Berkeley. Ocean County, New Jersey. January 2012.
- Mitchell, C. L. 1933. Tropical Disturbances of July 1933. Monthly Weather Review (American Meteorological Society). 61(7): 200-201.
- NJDEP (New Jersey Department of Environmental Protection). 1999. The Geology of New Jersey. Division of Science, Research and Technology. Geological Survey.
- NJDEP (New Jersey Department of Environmental Protection). 2011. New Jersey Surface Water Quality Standards. Available at: http://www.nj.gov/dep/rules/njac7_9b.pdf>.
- NJDEP (New Jersey Department of Environmental Protection). 2014. NJ-GeoWeb website. Available at: http://www.state.nj.us/dep/gis/newmapping.htm>. December 2014 release.
- NOAA (National Oceanic and Atmospheric Administration). 1999. Essential Fish Habitat Source Document: Summer Flounder, Paralichthys dentatus, Life History and Habitat Characteristics. Woods Hole, Massachusetts. September 1999.
- NOAA (National Oceanic and Atmospheric Administration). 2016. Guide to Essential Fish Habitat Designations in the Northeastern United States. Available at: https://www.greateratlantic.fisheries.noaa.gov/HCD/webintro.html.
- NOAA (National Oceanic and Atmospheric Administration). 2020. Habitat Areas of Particular Concern within Essential Fish Habitat. Available at: https://www.fisheries.noaa.gov/southeast/habitat-conservation/habitat-areas-particular-concern within-essential-fish-habitat>
- NOAA (National Oceanic and Atmospheric Administration). 2022. Habitat Conservation National Marine Fisheries Service. Essential Fish Habitat Mapper. Available at: http://www.habitat.noaa.gov/protection/efh/habitatmapper.html.
- USACE (United States Army Corps of Engineers). 1986. Engineering and Design Design of Breakwaters and Jetties. Washington, DC. Department of the Army.
- USDA (United States Department of Agriculture). 2016. Hydric Soils Definitions. Available at: http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/pr/soils/?cid=nrcs141p2_037283>.
- USFWS (United States Fish & Wildlife Service). 2005. Wildlife and Habitat Management Review Notebook. Supawna Meadows National Wildlife Refuge, Pennsville, New Jersey Unpublished report. July 2005, 52 pp.



- USFWS (United States Fish & Wildlife Service). 2009. USFWS Division of Migratory Bird Management. Midwinter Waterfowl Survey. Winter 2009. Available at: https://migbirdapps.fws.gov.
- USFWS (United States Fish & Wildlife Service). 2011. Supawna Meadows National Wildlife Refuge Comprehensive Conservation Plan. July 2011.
- USFWS (United States Fish & Wildlife Service). 2015. Statement of Work for Resiliency Project #37 Restoring Coastal Marshes in New Jersey National Wildlife Refuges Design/Build Marsh Enhancement and Telephone Pole Array Removal at the Edwin B. Forsythe National Wildlife Refuge, Oceanville, New Jersey. E.B. Forsythe National Wildlife Refuge. February 2015.
- USGS (United States Geological Society). 2016. Mineral Resources On-Line Spatial Data. Marshalltown Formation. Available at: http://mrdata.usgs.gov/geology/state/sgmc-unit.php?unit=NJKmt%3B1.

WHGRP (Woods Hole Group, Inc.). 2016. DRAFT Supawna Marsh Restoration. East Falmouth, MA.

Project Description and Compliance Statement Supawna Meadows National Wildlife Refuge Design/Build Marsh Restoration Project Block 5501 Lot 17 Pennsville Township, Salem Co., NJ



FIGURES













AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, 2016 Rev. By: CB Project No.: 3617157359

November 2016





Project Description and Compliance Statement Supawna Meadows National Wildlife Refuge Design/Build Marsh Restoration Project Block 5501 Lot 17 Pennsville Township, Salem Co., NJ



APPENDIX A

Department of the Army Nationwide Permit 3 Application



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Cape May & Supawna Meadows National Wildlife Refuges 24 Kimbles Beach Road Cape May Court House, NJ 08210 609-463-0994 609-463-1667 Fax

February 11, 2022

U.S Army Corps of Engineers Philadelphia District ATTN: Regulatory Branch 100 Penn Square East Wanamaker Building Philadelphia, PA 19107

Re: DEPARTMENT OF THE ARMY APPLICATION PRE-CONSTRUCTION NOTIFICATION FOR NAT ATIONWIDE PERMIT 3 (NWP 3) SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE MARSH RESTORATION PROJECT (GOOSE POND) BLOCK 5501, LOT 17 PENNSVILLE TOWNSHIP, SALEM COUNTY, NJ

To Whom It May Concern:

The United States Fish & Wildlife Service (the Service) is submitting this Department of the Army Application to the Philadelphia District of the U.S. Army Corps of Engineers as part of the Nationwide Permit 3 (NWP 3) Pre-ConstructionNotification (PCN) requirements for the restoration of tidal hydrology at the Supawna Meadows Marsh Restoration Project (Goose Pond) area. The project is located in Pennsville Township, Salem County, New Jersey.

In addition, an application for a Federal Consistency Determination under an Individual Waterfront Development Permit and a Coastal General Permit 24 (CGP 24) has been submitted to the New Jersey Department of Environmental Protection (NJDEP), and a Subaqueous Lands application has been submitted to the Delaware Department of Natural Resources and Environmental Control (DNREC).

Supawna Meadows National Wildlife Refuge received a Nationwide Permit for phase 1 of our marsh restoration project, CENAP-OP-R-2016-00505-86 (NWP 3) on June 28, 2017 and a modification letter on July 20, 2017. We completed construction for this permit by adding rocks to an existing breakwater in 2017 around Mill Creek in Pennsville, NJ to protect the marsh habitat and create a more resilient marsh.

The current NWP 3 was submitted for approval for activities associated with phase 2 the restoration/alteration of another part of the existing breakwater dike located around southeast from the Mill Creek site around Goose Pond, designated as part of the Supawna Meadows National Wildlife Refuge.

This NWP 3, the NJDEP Federal Consistency Determination, and the DNREC authorization are required in advance of the proposed restoration activities. If you have any questions regarding this application, please feel free to contact me at (609) 425-5122 or heidi_hanlon@f ws.gov. Thank you.

Sincerely,

Heiditte

Heidi Hanlon Acting Refuge Manager

DEPARTMENT OF THE ARMY

NATIONWIDE PERMIT 3

MARSH RESTORATION PROJECT (GOOSE POND)

Supawna Meadows National Wildlife Refuge Block 5501, Lot 17 Pennsville, Salem County, New Jersey

Prepared by:

United States Fish and Wildlife Service Cape May National Wildlife Refuge 24 Kimbles Beach Road Cape May Court House, New Jersey 08210

February 2022



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- Appendix E Results of SHPO/NJSM Cultural Resources File Review
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LIST OF ACRONYMS

BGEPA	Bald and Golden Eagle Protection Act
DA1	Design Alternative 1
DA2	Design Alternative 2
DNREC	Delaware Department of Natural Resources and Conservation
DPS(s)	Distinct Population Segments
DFW	Division of Fish and Wildlife
DLUR	Division of Land Use Regulation
EFH	Essential fish habitat
FEMA	Federal Emergency Management Agency
IPaC	Information, Planning, and Conservation
MBTA	Migratory Bird Treaty Act
MHW	Mean high water
NAV88	North American Vertical Datum of 1988
NHPA	National Historic Preservation Act
N.J.A.C.	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
NJSM	New Jersey State Museum
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NWP	Nationwide Permit
NWR	National Wildlife Refuge
PCN	Pre-construction Notification
Refuge	Supawna Meadows National Wildlife Refuge
Service	United States Fish and Wildlife Service
SHPO	State Historic Preservation Office
USACE	United States Army Corps of Engineers
WOTUS	Waters of the United States

1.0 INTRODUCTION

The United States Fish and Wildlife Service (the Service) is pleased to submit this permit application to allow for impacts occurring as a result of restoration activities planned within an area designated as the Supawna Meadows National Wildlife Refuge (NWR) (the refuge) within the larger Cape May NWR Complex. The Project consists of restoration and enhancement of portions of an existing stone breakwater in order to facilitate a more natural hydrologic regime, enhance marsh resilience, and improve rates of accretion. To complete the Project, a United States Army Corps of Engineers (USACE) Nationwide Permit 3 (NWP-3) from the Department of the Army is required. Restoration activities are being conducted under a Federal Consistency Determination from the New Jersey Department of Environmental Protection's (NJDEP) Division of Land Use Regulation (DLUR), State Historic Preservation Office (SHPO), Bureau of Tidelands Management, and Division of Fish and Wildlife (DFW). Approval from the Delaware Department of Natural Resources and Conservation's (DNREC) Division of Water is also being sought. The *Application for Department of the Army Permit* form (ENG Form 4345 and ENG Form 6082– February 2019) are provided in **Appendix A**.

The objective of this document is to describe the existing environmental conditions and natural resources at the Supawna Meadows NWR and to provide the results of an evaluation of the proposed activities against regulations established specifically for NWP-3. This document will also evaluate regulations for the Nationwide Permit General Conditions as set forth in the USACE document *Index of 2021 Nationwide Permits, Conditions, District Engineer's Decision, Further Information, and Definitions (with corrections).* The information will also be evaluated for its compliance with NWP-3 rules and regional conditions set forth in the USACE document *2021 Nationwide Permit Regional Conditions for NJ and DE.*

1.1 Site Description

The Supawna Meadows NWR was originally established as an addition to the Killcohook Migratory Bird Refuge and now is composed of 3,016 acres of tidal waters and marsh, grassland,

shrubland, and forest habitats. The refuge is located along the Delaware Bay, an area that is threatened by the effects of sea level rise (USFWS 2011).

The proposed project activities will be conducted along the Delaware River in Pennsville Township, Salem County, New Jersey (**Figure 1**). Work will be contained to a small portion of a 2-mile long stone breakwater dike, constructed to protect several marsh complexes located behind it (Project Area) (**Figure 2**). These marsh complexes make up the Supawna Meadows Marsh Complex (Marsh Complex), and are reclaimed agricultural land, having been abandoned sometime after 1938. These fields likely lost value as salt hay farming declined and soils became too saturated for other crops. The main tidal courses are Mill Creek, Baldridge Creek, and an area impounded by the stone breakwater locally referred to as Goose Pond. The Project Area is primarily contained within Block 5501, Lot 17, as identified on the Township of Pennsville tax map (**Figure 3**). Photographs of the refuge are located in **Appendix B**.

 Table 1 below presents the coordinates of the approximate center of the property in various coordinate systems.

Table 1				
Coordinates of Approximate Center of Project Area (NAD 1983)				
NJ State Plane (ft) (X)NJ State Plane (ft) (Y)Latitude (N)Longitude (W)				
201976.383	275867.354	39°35.17398	75°31.77288	

1.2 Site History

The region, including the refuge, was settled initially by Native Americans prior to permanent European settlement by the Swedes, Finns, and Quakers in the 1600s. During the late 1700s the marshes were extensively diked and ditches were dug to convert the marshland to salt hayfields. Eventually, natural processes began to damage the original dike system (USFWS 2011).

At the refuge, natural processes (e.g., sea level rise and erosion) began to damage the original dike system. Therefore, a more than 2-mile long stone breakwater was constructed circa 1900 along the marsh edge for the purposes of protecting the marsh and the original failing dike and ditch system (USFWS 2011). However, during the early 1930s, likely during Hurricane #6 of 1933, the stone breakwater breached in a number of locations (Mitchell 1933). As can be deduced from historical aerial photography, many of the salt hayfields flooded. This conversion of tidal marshes to open water and mudflats likely occurred for the following reasons: (1) a century's worth of agricultural practices that did not let these areas accrete the natural biomass necessary to help keep up with rising sea levels; (2) the agricultural practices that eliminated much of the micro-topography, leaving the marsh susceptible to wave scouring; (3) the breaches that did not support proper tidal flushing; and (4) the remaining earthen dikes and ditch system behind the failed stone breakwater that did not allow for natural drainage patterns.

During this time Mill Creek moved south hundreds of feet and Goose Pond greatly enlarged. Since then, it seems the Supawna Meadows Marsh Complex has been slowly returning to a state of equilibrium. This observed marsh rejuvenation trend, in the form of increased sediment retention and marsh expansion, has slowly continued since that time. This suggests that the existing portions of the stone breakwater are providing some level of protection to the marsh behind it. However, review of recent data suggests the rate of marsh formation is slowing, indicating that the current stone breakwater configuration can no longer support further marsh expansion.

The objective of this Project is to maintain the marsh formation equilibrium, taking into account the effects of sea level rise. The Proposed Action intends to maximize the benefits of a breach caused by historic natural processes in a key location while reinforcing the shore protection benefits of the breakwater in other areas to allow the marsh to continue re-building itself.

2.0 PRE-CONSTRUCTION NOTIFICATION

The following sections present information required for the pre-construction notification (PCN) and are provided in order to satisfy the requirements for the NWP-3 application. Additional information can be found in the *Application for Department of the Army Permit* form (ENG Form 4345 and ENG Form 6082– February 2019) provided in **Appendix A**.

2.1 Name, Address, Telephone of the Prospective Permittee

The applicant requesting the NWP-3 is as follows:

Heidi Hanlon, Acting Refuge Manager United States Fish and Wildlife Service Cape May National Wildlife Refuge 24 Kimbles Beach Road Cape May Court House, NJ 08210 Phone: 609-425-5122

2.2 Location of the Proposed Project

The Project is located at 199 Lighthouse Road, in the Township of Pennsville, Salem County, New Jersey.

2.3 Description of the Proposed Project

The purpose of the Project is to protect the level of sediment retention and marsh expansion that has occurred since the 1930s in areas where human impacts have reduced the resilience of natural systems, and in light of anticipated climate change. The following restoration techniques are proposed within the Project Area in an effort to achieve these objectives:

- Breakwater removal in select areas to improve tidal exchange
- Breakwater enhancement in select areas to provide shoreline protection

These activities will help facilitate a more natural hydrologic regime, ensure salt marsh resilience from impacts of sea level rise, large storm events, and other ecosystem stressors, and improve rates of accretion.

This Project would attempt to correct the current and projected degradation of the salt marsh from sea level rise and improper tidal hydrology, resulting in the protection and restoration of important wildlife habitat and improved marsh function. Thus, the Project would fulfill the Service's mission for the conservation and management of wildlife habitat.

In the consideration of potential stone breakwater removal, modification, and enhancements, the Supawna Meadows site was divided into nine potential work areas (Areas 1 through 9). These work areas were selected based upon existing marsh mouth openings within the Marsh Complex that would be targeted for either reduction or expansion in size and are shown in Diagram 1.



Diagram 1. Potential work locations for stone breakwater removal, modification, and enhancements (WHGRP 2016).

After reviewing existing conditions model results from the hydrodynamic model and results from the assessment of short-term sediment transport potential, the Project was narrowed down to two possible design alternatives focusing activities within work areas 3, 4, 5, 6, and 7. Of the two proposed designs, Design Alternative 2 was chosen, initiating Phase 1 of the Project within work areas 3 and 4 at the mouth of Mill Creek which was completed in August 2017. Phase 2, this project, proposes the modification and enhancement of work areas 5, 6, and 7, which surround the entrance to Goose Pond. Both of these design alternatives consist of a combination of rock placement and removal with the goal of reducing sediment transport

potential on ebb tides to decrease the rate of sediment loss from the Supawna Meadows Marsh Complex.

2.3.1 Design Phase 1- Completed

In Phase 1, completed in 2017, rock was removed at Area 3A to deepen an existing breach in the stone breakwater to the elevation of the existing mudline (Diagram 2). Also under this Design, reclaimed rock was placed at Areas 3 and 4 to raise the stone breakwater elevation approximately to that of mean high water (2.56 feet North American Vertical Datum of 1988 (NAVD88)) along approximately 400 feet of the existing stone breakwater and to 1.56 feet NAVD88 along approximately 830 feet of the existing breakwater.



Diagram 2. Design Phase 1 (WHGRP 2016).

2.3.2 Design Phase 2

Under Design Phase 2, rock will be removed at Area 5A (~330 ft) to deepen existing breaches in the stone breakwater to the elevation of the existing mudline (-5.15 feet NAVD88) (Diagram 3). Rock placement in Phase 2 would also raise the breakwater elevation to 2.56 feet NAVD88 in Areas 5, 6, and 7.



Diagram.3. Design Phase 2 (WHGRP 2016).

2.3.3 Design Alternative Results

Phase 1, completed in 2017 provided added protection of the front edge of the Supawna Meadows Marsh Complex from wave action and the reduced risk of erosion during major storms. Phase 2, the proposed design, would also provide protection from waves and would result in an overall sediment transport benefit. A depiction of the proposed design plans are included in Appendix C. Components of the design are based on common design guidelines based on general USACE breakwater design guidance (USACE 1986) and include an approximate slope of 1V:2H with a crest width of approximately five feet.

2.4 **Project Impacts**

The Proposed Action, which includes breakwater removal in one area to improve tidal flow and breakwater enhancement in other areas to provide shoreline protection within the Project Area, is considered to be the most direct and effective way of meeting the Project objectives. However, there will be minor and temporary impacts from Project-related activities.

The Project will result in direct changes in topography within the Project Area. However, these changes will occur to a man-made feature already present in the landscape. Indirect long-term changes in the topography will occur over many years as the Project Area equalizes to the restored tidal hydrology and sediment accretion rates increase within the marsh. These changes in topography are necessary to combat decreased quality of native marsh habitat. The restoration of proper tidal hydrology will create the conditions for which normal sediment exchange between the marsh and the Delaware Bay Estuary will occur.

There will also be unavoidable, but minor, adverse impacts to water quality resulting from the removal of the small portion of the breakwater dike. This disturbance will be temporary and localized to an area of approximately 0.29 acres. This work area will return to stable conditions as sedimentation and tidal circulation occur over time. Sedimentation rates are difficult to predict and vary widely among different aquatic systems. While major factors such as grain size and water action play an obvious role, other factors such as the physiochemical interactions between saline and fresh water, the clay and organic matter content in the water column, temperature, and pH all play a role in determining the rate at which the clarity of the water will return (ERDC 2005). However, an indirect long-term benefit to the Proposed Action will be restored tidal hydrology and protection of the front edge of the Supawna Meadows Marsh Complex from wave action, reducing the risk of further erosion and impaired water quality.

These disturbances are necessary to implement the Project and approval for the Project is anticipated from the NJDEP DLUR because the action is considered to be compliant with the appropriate State regulations and rules for coastal wetlands and State Open Waters. The amount of disturbance in these areas is detailed in **Table 2** below:

Table 2			
Summary of Encroachments			
Work Area	Proposed Activity	Disturbance (by area)	Loss of Waters of the United States (WOTUS) (by area)
Area 5A	Increase depth of existing breach through removal of stone	12,900 square feet or 0.29 acres	0.0 square feet/acres*
Areas 5,6, and 7	Increase height of existing breakwater through addition of stone	0.0 square feet/acres*	0.0 square feet/acres *

*Note: The Project will be completed within the footprint of existing areas already containing stone. Therefore, no additional disturbance/encroachment or loss of WOTUS will result from this activity.

There may be some minor sediment disruption of fish and/or shellfish habitat. However, these impacts are not considered significant and will be temporary in nature as the increase in turbidity during the breakwater improvement activities is expected to be equivalent to that experienced during natural storm events. Coastal storms can increase turbidity as a result of sediments that have been re-suspended from shallow beds, from sediments eroded from beaches, as well as from sediment-laden river plumes (IADC 2016). The Project will suspend sediments from shallow beds, but it will have no effect on up-stream river sediment plumes or eroded beach areas.

The Project will not have significant adverse long-term environmental impacts to migratory birds, wildlife, or Federal or State-listed threatened and endangered animal species. Although there may be some short-term avoidance of the construction area by wildlife as a result of increased noise and human activity during the construction period, these impacts are not considered significant and will be temporary in nature. The Project will result in long-term beneficial impacts to wildlife as a result of the overall enhancement and naturalization of the local environment and species habitats.

Although a listed historic property and inventoried archaeological artifacts have been documented within the refuge, the Project only involves the process of stone removal/movement along the man-made breakwater dike with no proposed below-ground work to be performed on native soils. In addition, the dike is not listed as eligible for inclusion in the National Register of Historic Places. Therefore, it has been concluded that the potential for intact cultural deposits within the Project Area would be low and the Proposed Action would not have impacts on historic properties or on known areas where historic or prehistoric archaeological artifacts have been previously recorded.

A complete evaluation of the potential impacts associated with the Project activities can be found in the Environmental Assessment (USFWS 2022).

2.5 **Project Permitting**

A number of agencies have been, and will continue to be, involved in the review and permitting of the Project. These agencies are as follows at the state level; NJDEP DLUR, NJDEP SHPO, NJDEP Bureau of Tidelands Management, NJDEP DFW, and DNREC Division of Water.

Coordination and consultation with state agencies have been conducted throughout the planning stages of this Project. **Table 3** below lists the various municipal, state and Federal approvals the Project will require prior to initiation.

Table 3			
Required Permits and Authorizations			
Permit or Authorization	Agency	Status	
Federal Equivalency for Coastal	NJDEP	Application submitted	
Wetlands General Permit #24			
Tidelands Instrument	NJDEP	Application submitted	
NWP-3	USACE	Current application	
Wetlands and Subaqueous Lands	DNREC Division of Water	Application submitted	
Section Permit			

2.6 Presence of Listed Species or Designated Critical Habitat

The unique habitats of the Supawna Meadows NWR attract a wide variety of wildlife including threatened and endangered species, and species of conservation concern. Sensitive mammalian species include the northern long-eared bat (*Myotis septentrionalis*), eastern small-footed myotis (*Myotis leibii*), eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silverhaired bat (*Lasionycteris noctivagans*), and southern bog lemming (*Synaptomys cooperi*). Federally listed endangered fish species recorded near the refuge include the short-nosed sturgeon (*Acipenser brevirostrum*) and the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*). The refuge also contains habitat to support reptilian and amphibian species of conservation concern, including northern diamondback terrapin (*Malaclemys terrapin*), eastern box turtle (*Terrapene carolina carolina*), spotted turtle (*Clemmys guttata*), and Fowler's toad (*Anaxyrus fowleri*). A number of State-listed endangered northern harriers (*Circus cyaneus*) and State-listed threatened osprey (*Pandion haliaetus*) have nested in the tidal marsh within the refuge and a pair of bald eagles (*Haliaeetus leucocephalus*) has nested there since 1998 (USFWS 2011).

The Service's online Information, Planning, and Conservation (IPaC) system indicated the presence of the following federally listed threatened and endangered species on or near the Project Area (**Table 4** below and **Appendix D**):

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Table 4			
Service's IPaC Findings for Potential Federally Listed Threatened and Endangered Species On or Near the Project Area			
Common Name	Scientific Name	Federal Status	
Red knot	Calidris canutus rufa	Threatened	
Sensitive joint-vetch	Aeschynomene virginica	Threatened	
Northern long-eared bat <i>Myotis septentrionalis</i> Threatened		Threatened	
Bog turtle	Clemmys muhlenbergii	Threatened	
Monarch butterfly	Danaus plexippus	Candidate	

There were no critical habitats documented within the Project Area. However, the Service's IPaC system indicated the presence of 19 migratory birds protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) that could potentially move through the Project Area, including the following (**Table 5** below and **Appendix D**):

Table 5			
Service's IPaC Findings for Potential Migratory Bird Species On or Near the Project Area			
Common Name Scientific Name			
Bald Eagle	Haliaeetus leucocephalus		
Black-billed cuckoo	Coccyzus erythropthalmus		
Blue-winged Warbler	Vermivora pinus		
Bobolink	Dolichonyx oryzivorus		
Canada Warbler	Cardellina canadensis		
Common Loon	Gavia immer		
Double-crested Cormorant	Phalacrocorax auritus		
Kentucky Warbler	Oporornis Formosus		
Lesser Yellowlegs	Tringa flavipes		
Prairie Warbler	Dendroica discolor		
Prothonotary Warbler	Protonotaria citrea		
Red-breasted Merganser Mergus serrator			
Red-headed Woodpecker	Melanerpes erythrocephalus		
Red-throated Loon	Gavia stellata		
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Table 5 Service's IPaC Findings for Potential Migratory Bird Species On orNear the Project Area				
Ruddy Turnstone	Arenaria interpres morinella			
Rusty Blackbird	Euphagus carolinus			
Short-billed Dowitcher	Limnodromus griseus			
Wood Thrush	Hylocichla Mustelina			

The NJDEP NJ-GeoWeb website (NJDEP 2014) Landscape Project indicated the presence of the following State-listed threatened and endangered species on or near the Project Area (**Table 6** below):

Table 6					
NJDEP Landscape Project Findings for Potential State-Listed Threatened and Endangered Species On or Near the Project Area					
Common Name	Scientific Name	Federal Status	State Status		
Great blue heron	Ardea herodias	Not listed	Special concern		
Osprey	Pandion haliaetus	Not listed	Threatened		
Bald eagle	Haliaeetus	Not listed	Threatened		
Savannah sparrow	Passerculus sandwichensis	Not listed	Threatened		
Cooper's hawk	Accipiter cooperii	Not listed	Special concern		
Shortnose sturgeon	Acipenser brevirostrum	Endangered	Endangered		
Bronze copper	Lycaena hyllus	Not listed	Endangered		

Potential vernal pool habitat was also indicated within the refuge north of Harrisonville Lighthouse Road.

Since the NJDEP GeoWeb website is a preliminary screening tool, a formal written request was submitted to the NJDEP Natural Heritage Program to confirm the possible presence of these species. The March 15, 2016 findings of the Natural Heritage Program are presented in **Appendix D**. These results indicated the following additional plant species that have the potential to occur on or near the Project area (**Table 7** below):

Table 7						
NJDEP Natural Heritage Program Additional Findings for Potential State-Listed Threatened and Endangered Species On or Near the Project Area						
Common Name	Scientific Name	Federal Status	State Status			
Coast flat sedge	Cyperus polystachyos var. texensis	Not listed	S1-Critically imperiled in New Jersey because of extreme rarity. E-Native New Jersey plant species whose survival in the State or nation is in jeopardy.			
New England bulrush	Schoenoplectus angliae	Not listed	S2-Imperiled in New Jersey because of rarity.			
Floating marsh- pennywort	Hydrocotyl ranunculoides		S1-Critically imperiled in New Jersey because of extreme rarity. E-Native New Jersey plant species whose survival in the State or nation is in jeopardy.			

A formal written request was submitted to the National Oceanic and Atmospheric Administration (NOAA) for Technical Assistance with regards to protected species under their jurisdiction. The November 7, 2016 National Marine Fisheries Service (NMFS) findings are presented in **Appendix D** of this Multiple Permit Application, a new NMFS consultation is being conducted concurrently. The results indicated the presence of the following threatened and

endangered species in the Delaware River potentially near the Project Area (Table 8 below):

Table 8

NMFS Findings for Potential Federally Listed Threatened and Endangered Species in the Delaware River on or Near the Project Area

Common name	Scientific name	Federal Status
Shortnose sturgeon	Acipenser brevirostrum	Endangered
Atlantic sturgeon	Acipenser oxyrinchus oxyrinchus	
Gulf of Maine DPS		Threatened
New York Bight DPS		Endangered
Chesapeake Bay DPS		Endangered
Carolina DPS		Endangered
South Atlantic DPS		Endangered

There are five Atlantic sturgeon Distinct Population Segments (DPSs) that extend along the Atlantic coast from Canada to Cape Canaveral, Florida. The Delaware River and Bay is within the Atlantic sturgeon New York Bight DPS. However, Atlantic sturgeon originating from any of the five DPSs may be present in the Delaware River and Bay. The area in and around the Project Area is proposed to be designated as critical habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay DPSs.

2.7 Presence of Properties Listed or Eligible for Listing on the National Register of Historic Places

Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to take into account the effects of their undertakings on historic properties that are included in the National Register of Historic Places or that meet the criteria for the National Register. Viewpoints of the public should be solicited and considered throughout the process, and Native American tribes must be consulted about undertakings on or affecting their lands under Executive Order 13175. If the agency's undertaking could affect historic properties, the next steps are to review background information, consult with the SHPO and any Indian tribe that may attach religious or cultural importance to them, seek information from knowledgeable parties, and conduct additional studies as necessary. If it is determined that the activity that has no potential to affect historic properties, the agency has no further Section 106 obligations (ACHP 2013).

To achieve compliance with the NHPA (Section 106), reviews of cultural resource files were performed at the offices of the NJDEP SHPO and the New Jersey State Museum (NJSM) to assess the potential for the Proposed Action to impact historic properties (listed or eligible for listing on the National Register of Historic Places) within the Project Area. Historic properties include archaeological sites, as well as historic structures and districts.

The search indicated that the refuge contains a historic property (Samuel Urion/Yerkes Farmstead (circa 1820)) that was previously determined to be eligible for listing on the National Register of Historic Places. The SHPO determined that the Samuel Urion/Yerkes Farmstead was eligible in 1994 because of its "association with Samuel Urion" and "as an example of architecture in Salem County during the latter half of the nineteenth century, particularly as a rural expression of the Italianate style."

The file searches also indicated that there are previously inventoried archaeological artifacts discovered within the refuge boundary. There is a historic district (Fort Mott and Finn's Point National Cemetery Historic District) listed on the National Register of Historic Places adjacent to the refuge to the northwest. **Appendix E** presents relevant information from the SHPO files concerning the historical background of the Samuel Urion/Yerkes Farmstead and previous cultural resource studies that have been conducted in the vicinity.

Although archeological artifacts were recovered and an eligible property is located within the Supawna Meadows NWR boundary, they are not contained within the Project Area boundary where activities are proposed. Therefore, the archaeological sensitivity of the Project Area is considered to be low and the Proposed Action will have little potential to affect objects of archaeological significance. In addition, the Project will not incur any visual impacts on the

nearby historic district, or the historic properties within the district, as there are no new structures being added to the viewshed.

Lastly, Section 106 consultation between the Service and the SHPO included discussions on the Finns Point Lighthouse, located approximately 1.5 miles to the north/northwest of the project area. The lighthouse was built in 1877 and is part of the Front Range light pair that guided vessels into the Delaware River. The dike serves to bolster the land area around the light. The results of the consultation found that no resources, including the lighthouse, would be adversely affected by the Project.

3.0 COMPLIANCE WITH NATIONWIDE PERMIT GENERAL CONDITIONS

This section demonstrates the Project's compliance with the *Index of 2021 Nationwide Permits, Conditions, District Engineer's Decision, Further Information, and Definitions (with corrections).* Section 4.0 demonstrates the Project's compliance with the 2021 NWP Regional Conditions in NJ and DE.

3.1 Navigation

The Nationwide Permit General Condition 1(a) states:

"No activity may cause more than a minimal adverse effect on navigation."

Navigability will not be prohibited during Project activities. Although the work will occur within the Delaware River, a navigable waterway, the Project activities do not extend beyond the current footprint of the breakwater dike wall and will not cause more than a minimal effect on navigation.

No safety lights or signals will be necessary as the structure will not be higher than the mean high water line. In addition, the Service understands and agrees to remove, relocate, or alter the breakwater if future operations by the United States require such actions or if it is determined to cause unreasonable obstruction to the free navigation of the navigable waters.

3.2 Aquatic Life Movements

The Nationwide Permit General Condition 2 states:

"No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water." The Project lies within the Delaware River which provides passage for the fish species listed as species of concern at New Jersey Administrative Code (N.J.A.C.) 7:7-9.5(b), including alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), American shad (*Alosa sapidissima*), striped bass (*Morone saxatilis*), Atlantic sturgeon, shortnose sturgeon, and American eel (*Anguilla rostrata*). Project activities include alterations to an already existing breakwater dike located parallel to the shoreline. Therefore, there will be no additional barrier created that would prevent the movement of fish along their migratory pathway. The construction portion of the project is anticipated to take 45 working days, the Service will comply with applicable seasonal restrictions, if required.

3.3 Spawning Areas

The Nationwide Permit General Condition 3 states:

"Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable..."

While there may be some minor sediment disruption of fish spawning habitat, these impacts are not considered significant and will be temporary in nature as the increase in turbidity during dike restoration activities is expected to be equivalent to that experienced during natural storm events. In addition, the Service will comply with applicable seasonal restrictions, and a turbidity curtain will help to limit effects.

3.4 Migratory Bird Breeding Areas

The Nationwide Permit General Condition 4 states:

"Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable." There are a total of 19 migratory bird species listed as having the potential to be in or near the Project Area. However, the Proposed Action will not have substantial long-term adverse impacts on these sensitive receptors. This is because of the temporary nature of the disturbance, the mobility of birds, and the resulting long-term benefits to wildlife from the ecological uplift that is the goal of the Proposed Action. Most importantly, the work is scheduled to be conducted along the off-shore breakwater, away from bird breeding habitat. No adverse impacts were identified to migratory species from the Project in the draft Environmental Assessment (USFWS 2022).

3.5 Shellfish Beds

The Nationwide Permit General Condition 5 states:

"No activity may occur in areas of concentrated shellfish populations..."

The Project area is not known to contain concentrated areas of shellfish populations. Therefore, this condition is not applicable to this Project.

3.6 Suitable Material

The Nationwide Permit General Condition 6 states:

"No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts..."

The proposed Project will not use any unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.) for restoration activities within the regulated wetlands or open water. All stone breakwater material will be free from toxic pollutants in toxic amounts.

3.7 Water Supply Intakes

The Nationwide Permit General Condition 7 states:

"No activity may occur in the proximity of a public water supply intake..."

The proposed Project is not located within the proximity of a public water supply intake. Therefore, this condition is not applicable to this Project.

3.8 Adverse Effects from Impoundments

The Nationwide Permit General Condition 8 states:

"If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable."

The rock dike that was built in 1900 along the marsh edge to prevent erosion failed early in the 1930s, re-flooding the tidal marsh. Remains of the dike are still present between the marsh and the Delaware Bay Estuary, which may be leading to restricted tidal flow and decreased quality of the marsh habitat. Drainage ditches and earthen dikes are also still present within the tidal marsh, altering hydrology. Data suggest it is possible that water moving into the Supawna Meadows Marsh Complex on flood tides is unable to escape on ebb tide and is being confined within the intra-marsh creek system and in pools in the interior of the marsh platform (Haaf et al. 2015). Thus, the purpose of the Project is to reconfigure the breakwater dike to facilitate a more natural hydrologic regime. The purpose is not to create an impoundment of water, therefore, this condition is not applicable to this Project.

3.9 Management of Water Flows

The Nationwide Permit General Condition 9 states:

"To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity,...The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water..."

The course, condition, capacity, and location of the open waters within the Project area will not be altered to complete the dike restorations. Therefore, this condition is not applicable to this Project.

3.10 Fills within 100-Year Floodplain

The Nationwide Permit General Condition 10 states:

"The activity must comply with the applicable FEMA-approved state or local floodplain management requirements."

The Project will be conducted along a breakwater dike. The dike structure constitutes the line between open water (outside the flood zone) and the floodplain (**Figure 4**). Because the dike will not be widened to encroach into the floodplain areas, the Federal Emergency Management Agency (FEMA)-approved State or local floodplain management requirements do not apply to this Project.

3.11 Equipment

The Nationwide Permit General Condition 11 states:

"Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance." Equipment used for Project activities will be attached to barges which will work along the dike within open water. Heavy equipment is not required to work in wetlands or mudflats to complete this Project. Therefore, this condition is not applicable.

3.12 Soil Erosion and Sediment Controls

The Nationwide Permit General Condition 12 states:

"Appropriate soil erosion and sediment controls must be used... and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date..."

Appropriate soil erosion and sediment controls will not be necessary as the addition of stone to the breakwater in Sections 5, 6, and 7 will not disturb any sediment. In addition, the removal of rock from Section 5A will occur underneath a man-made feature made of stone. The direct disturbance will primarily be caused by the removal of the stone down to the sediment line. This disturbance will be temporary and localized to an area of approximately 0.29 acres. This work area will return to stable conditions as sedimentation and tidal circulation occur over time.

However, an indirect long-term benefit to the Proposed Action will be restored tidal hydrology and protection of the front edge of the Supawna Meadows Marsh Complex from wave action, reducing the risk of future erosion and impaired water quality.

3.13 Removal of Temporary Structures and Fills

The Nationwide Permit General Condition 13 states:

"Temporary structures must be removed, to the maximum extent practicable..."

This Project does not involve the use of any temporary fills. Therefore, this condition is not applicable to this Project.

3.14 Proper Maintenance

The Nationwide Permit General Condition 14 states:

"Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization."

Efforts to restore the portions of the dike that require addition of stone, to the extent possible, will be accomplished by filling in with stone removed from Section 5A and/or new stone brought in. The fill will be properly maintained throughout the Project to ensure public safety and compliance with applicable general permit conditions, as well as activity-specific conditions added by the District Engineer.

3.15 Single and Complete Project

The Nationwide Permit General Condition 15 states:

"The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project."

The request for NWP-3 is for a single and complete project and will not be used more than once.

3.16 Wild and Scenic Rivers

The Nationwide Permit General Condition 16 states:

"No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system..."

The proposed Project is not within or near a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system. Therefore, this condition is not applicable to this Project.

3.17 Tribal Rights

The Nationwide Permit General Condition 17 states:

"No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights."

The proposed Project will not impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights. Nevertheless, the USACE has indicated during the Joint Permit Program Meeting (JPPM) that consultation with Native American representatives will be conducted by the USACE on behalf of the Service.

3.18 Endangered Species

The Nationwide Permit General Condition 18 (a) states:

"No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation...or which will directly or indirectly destroy or adversely modify the critical habitat of such species...."

There is one federally threatened plant species, sensitive joint-vetch, reported as having the potential to be within the Supawna Meadows Marsh Complex. However, this species is not

expected to occur in, or within the vicinity of, the proposed Project Area based on its preferred habitat. Sensitive joint-vetch, an annual legume, grows in fresh to slightly brackish tidal river systems within the intertidal zone, where populations are subject to flooding twice daily. It typically occurs at the outer fringe of marshes in localities where plant diversity is high and annual species are prevalent. Establishment and growth of this species relies on habitat containing bare to sparsely vegetated substrates (USFWS 2016b). There are only two documented populations of this species still in existence within southern New Jersey, one on the Wading River in Burlington County and one on the Manumuskin River in Cumberland County (USFWS 2012). The Project activities will occur over a breakwater dike near salt marsh habitat dominated by thick monotypic stands of common reed. As such, sensitive joint-vetch is not expected to be present within the Project Area. Therefore, the Proposed Action will not have significant long-term environmental impacts to this federally listed sensitive plant species.

The Proposed Action will also not have significant environmental impacts to the three federally listed threatened upland animal species documented as potentially in or near the Project Area. The northern long-eared bat uses mines and caves in the winter to hibernate and uses upland forests to forage and roost throughout the rest of the year. Bog turtles usually inhabit open-canopy emergent and scrub/shrub wetlands, such as shallow spring-fed fens, sphagnum bogs, swamps, marshy meadows, and wet pastures, bordered by wooded areas. They depend upon micro-habitats of interspersed wet and dry pockets, with soft muddy bottoms, vegetation dominated by low grasses and sedges, and a low volume of standing or slow-moving water (USFWS 2016c). The Project Area does not contain habitat sufficient to support these two species. Data records from the International Shorebird Survey eBird website on red knots (ACLO 2016) revealed the nearest sighting of this federally threatened species was from Pea Patch Island, which is over 1.5 miles west of the Project Area. This record was from a single survey day in which the observers documented them migrating overhead. They were not recorded as foraging or nesting in the area.

There may be some avoidance of the construction area by these federally listed threatened animal species, as well as the two federally listed fish species listed as present within the Delaware River near the Project Area (Atlantic sturgeon and shortnose sturgeon), as a result of increased noise and human activity. The additional State-listed threatened and endangered animal species or species of special concern that have the potential to be on or near the Project Area (i.e., 5 bird species, 1 invertebrate, 1 fish), would also be expected to avoid the Project Area due to the presence of the work crew and construction equipment. This indirect impact would be temporary, as the construction portion of the Project is only expected to take 45 working days to complete. In addition, the ecological uplift resulting from the restoration of healthy salt marsh habitat within their home range would have an indirect, long-term, and beneficial impact to these sensitive species, as well as other threatened and endangered wildlife living on or near the Project Area.

Although the Supawna Meadows NWR may contain suitable habitat for the three State-listed plant species documented as having the potential to be in or near the area (i.e., coast flat sedge, New England bulrush, and floating marsh-pennywort), the breakwater dike does not contain such habitat. Because this is the only area where Project activities will occur, the Proposed Action would not have the possibility of adversely impacting these species.

Therefore, the proposed restoration activities are not likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, nor will they directly or indirectly destroy, or adversely modify, the critical habitat of such species.

3.19 Migratory Birds and Bald and Golden Eagles

The Nationwide Permit General Condition 19 states:

"The permittee is responsible for ensuring that an action authorized by an NWP complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act..."

The proposed Project will not involve the taking of any wildlife covered under the MBTA or the BGEPA. Therefore, this condition is not applicable to this Project.

3.20 Historic Properties

The Nationwide Permit General Condition 20 (a) states:

"No activity is authorized under any NWP which may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied."

Results of file searches conducted at the New Jersey SHPO and NJSM indicated that the refuge contains a historic property (Samuel Urion/Yerkes Farmstead (circa 1820)) that was previously determined to be eligible for listing on the National Register of Historic Places. It was determined to be eligible in 1994 because of its "association with Samuel Urion" and "as an example of architecture in Salem County during the latter half of the nineteenth century, particularly as a rural expression of the Italianate style."

The file searches also indicated that there are previously inventoried archaeological artifacts discovered within the refuge boundary. There is a historic district (Fort Mott and Finn's Point National Cemetery Historic District) listed on the National Register of Historic Places adjacent to the refuge to the northwest. **Appendix E** presents relevant information from the SHPO files concerning the historical background of the Samuel Urion/Yerkes Farmstead and previous cultural resource studies that have been conducted in the vicinity.

Although archeological artifacts were recovered and an eligible property is located within the Supawna Meadows NWR boundary, they are not contained within the Project Area boundary where activities are proposed. Therefore, the archaeological sensitivity of the Project Area is

considered to be low and the Proposed Action will have little potential to affect objects of archaeological significance. In addition, the Project will not incur any visual impacts on the nearby historic district, or the historic properties within the district, as there are no new structures being added to the viewshed.

Lastly, Section 106 consultation between the Service and the SHPO included discussions on the Finns Point Lighthouse, located approximately 1.5 miles to the north/northwest of the project area. The lighthouse was built in 1877 and is part of the Front Range light pair that guided vessels into the Delaware River. The dike serves to bolster the land area around the light. The results of the consultation found that no resources, including the lighthouse, would be adversely affected by the Project.

No adverse impacts were identified to historic properties from the Project in the draft Environmental Assessment (USFWS 2021).

3.21 Discovery of Previously Unknown Remains and Artifacts

The Nationwide Permit General Condition 21 states:

"Permittees that discover any previously unknown historic, cultural, or archaeological remains and artifacts while accomplishing the activity authorized by tan NWP, they must immediately notify the district engineer of what they have found, and... avoid construction activities that may affect the remains and artifacts until the required coordination has been completed..."

The permittee understands and agrees that if any previously unknown historic, cultural, or archaeological remains and artifacts are discovered, that the District Engineer will be notified immediately and that any construction activities that may affect the remains and artifacts will be avoided, to the maximum extent practicable, until the required coordination has been completed.

3.22 Designated Critical Resource Waters

The Nationwide Permit General Condition 22 states:

"Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves..."

The Nationwide Permit General Condition 22 (b) states:

"For NWPs 3,...27,...and 38, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters......"

The proposed Project is not within the boundaries of a waterway designated as a Critical Resource Water. As such, this condition is not applicable to this Project.

3.23 Mitigation

The Nationwide Permit General Condition 23 (a) states:

"The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site)."

Compensatory mitigation is not required for activities authorized under a NWP 3 since the activities result in a net increase in aquatic resource function and services. Therefore, Nationwide Permit General Conditions 23 (e), (f), (g), and (h) are not applicable to this Project.

3.24 Safety of Impoundment Structures

The Nationwide Permit General Condition 24 states:

"To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state or federal dam safety criteria..."

The Project does not involve the construction of an impoundment. As such, this condition is not applicable to this Project.

3.25 Water Quality

The Nationwide Permit General Condition 25 states:

"Where the certifying authority (state, authorized tribe, or EPA, as appropriate) has not previously certified compliance of an NWP with CWA section 401, a CWA section 401 water quality certification for the proposed discharge must be obtained or waived..."

The proposed restoration activities will not impact water quality to such an extent as to interfere with biota or to violate state water quality standards. A Section 401 Water Quality Certification has been requested by the applicant from the NJDEP through the New Jersey permitting process and a Wetlands and Subaqueous Lands Section Permit has been requested through the DNREC Division of Water Quality.

3.26 Coastal Zone Management

The Nationwide Permit General Condition 26 states:

"In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur..."

The Project is in compliance with the New Jersey coastal zone management requirements as documented in the *Existing Conditions and Compliance Statement* submitted to the NJDEP in support of a Federal Consistency Determination Application. The Project is also in compliance with the Delaware coastal zone management requirements as documented in the *Existing Conditions and Compliance Statement* submitted to the Delaware Coastal Management Program in support of this Department of the Army permit application (**Appendix F**).

3.27 Regional and Case-By-Case Conditions

The Nationwide Permit General Condition 27 states:

"The activity must comply with any regional conditions that may have been added by the Division Engineer...and with any case specific conditions added by the Corps or by the state..."

Section 4.0 of this application demonstrates the Project's compliance with the 2021 *NWP Regional Conditions in NJ and DE*. Additionally, the permittee understands and agrees that case-by-case conditions may be added by the USACE, the District Engineer, or by the states, and agrees to abide by any such conditions.

3.28 Use of Multiple Nationwide Permits

The Nationwide Permit General Condition 28 states:

"The use of more than one NWP for a single and complete project is authorized, subject to the following restrictions..."

The Project is a single and complete project that does not require the use of more than one NWP.

3.29 Transfer of Nationwide Permit Verifications

The Nationwide Permit General Condition 29 states:

"If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer..."

If the applicant sells the property in the future, the applicant will submit the required letter and permit verification as required in Nationwide Permit General Condition 29 of the *Index* of 2021 Nationwide Permits, Conditions, District Engineer's Decision, Further Information, and Definitions (with corrections).

3.30 Compliance Certification

The Nationwide Permit General Condition 30 states:

"Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation..."

The permittee will provide a signed certification documenting the completion of the authorized activity in accordance with the language and structure presented in Nationwide Permit General Conditions 30 (a) through 30 (c) of the *Index of 2021 Nationwide Permits, Conditions, District's Engineer's Decision, Further Information, and Definitions (with corrections).*

3.31 Activities Affecting Structures or Works Built by the United States.

The Nationwide Permit General Condition 31 states:

"If an NWP activity also requires review by, or permission from, the Corps... because it will alter temporarily or permanently occupy or use a USACE federally authorized Civil Works project..."

The proposed project activity does not affect a structure built by the United States.

3.32 Pre-Construction Notification.

The Nationwide Permit General Condition 32 (a) states:

"<u>Timing.</u> Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible..."

Section 2.0 of this permit application serves as the PCN required for a NWP-3, and satisfies all of the conditions presented in Nationwide Permit General Conditions 32 (a) through 32 (d).

3.33 Conclusion

Based on the above analyses, the Project is in compliance with the Index of 2021 Nationwide Permits, Conditions, District's Engineer's Decision, Further Information, and Definitions (with corrections).

4.0 COMPLIANCE WITH NATIONWIDE PERMIT REGIONAL CONDITIONS

This section demonstrates the Project's compliance with the 2021 NWP Regional Conditions in NJ and DE. Section 3.0 demonstrates the project's compliance with the Index of 2021 Nationwide Permits, Conditions, District's Engineer's Decision, Further Information, and Definitions (with corrections.)

4.1 Regional Conditions for New Jersey

The following sections evaluate the Project's compliance with the NWP Regional Conditions for New Jersey (January 13, 2021).

4.1.1 Regional General Condition-1 (G-1)

The Regional General Condition G-1 states:

"The permittee shall notify the Corps of Engineers in accordance with General Condition 32 by using a signed application form (ENG Form 6082)."

"The PCN shall include the following information: All preconstruction notifications (PCNs) to the Corps of Engineers shall describe all activities that the applicant plans to undertake that are reasonably related to the same project..."

The signed ENG Form 6082 is in Appendix A after ENG4345 Form.

The proposed Project requires a PCN to the Corps of Engineers. **Section 2.0** and the various appendices contain the required elements of the notification, including required plans, maps and photographs, threatened and endangered species consultation, National Register of Historic Places documentation, and information regarding measures taken to avoid impacts to aquatic resources, measures to avoid/minimize discharges into wetlands or WOTUS, and measuresdeveloped to compensate for impacts to wetlands or waters of the United States, satisfying Regional General Conditions G-1 (2) A through C.

4.1.2 Regional General Condition-2 (G-2)

The Regional General Condition G-2 states:

"Coordination between the applicant and the National Park Service is required for any activity potentially affecting a component of the National Wild and Scenic River System..."

The proposed Project is not located within a waterway designated as part of the National Wild and Scenic River System. Therefore, this regional condition is not applicable to this Project.

4.1.3 Regional General Condition-3 (G-3)

The Regional General Condition G-3 states:

"Prior to any work the applicant shall document that they have followed the consultation guidance published on the New Jersey Field Office website <u>http://www.fws.gov/northeast/njfieldoffice/endangered/consultation.html</u> to determine if a proposed NWP activity may affect a listed species..."

This Project is required to submit a PCN to the Corps of Engineers. The Service's on-line IPaC website was consulted for potential conflicts between the proposed activities and federally listed species. The results showed that there is one federally threatened plant species listed as having the potential tobe in or near the refuge. However this species is not expected to occur in, or within the vicinity of, the proposed work areas based on its preferred habitat. Therefore, the proposed Project will not have significant adverse long-term environmental impacts to this federally listed sensitive plant species.

In addition, the Project will not have significant adverse environmental impacts to the three federally threatened animal species and one candidate invertebrate species, as they are not expected to occur in, or within the vicinity of, the proposed work areas based on their preferred habitats. If these sensitive species are in the area, there may be some avoidance of the construction area as a result of increased noise and human activity; however, these impacts are not considered significant and will be temporary in nature. It is anticipated that the Project will result in the overall enhancement and naturalization of the local environment and threatened and endangered species habitat. Activities will result in a net increase in aquatic resource function and services. Therefore benefiting fish species of concern as well.

Based on the above information, the proposed activities will not directly, or through secondary impacts, adversely affect federally listed species under jurisdiction of the Service.

4.1.4 Regional General Condition-4 (G-4)

The Regional General Condition G-4 states:

"Prior to any work the applicant shall generate a list of federally listed species by accessing the NOAA Fisheries ESA Section 7 Mapper found at <u>https://www.fisheries.noaa.gov/new-england-</u> <u>mid-atlantic/consultations/section-7-species-critical-habitat-information-maps-greater#esa-section-7-</u> <u>mapper...</u>"

This Project is required to submit a PCN to the Corps of Engineers. Based on the NOAA Fisheries ESA Section 7 Mapper, Atlantic and shortnose sturgeon were identified as well as in or near the critical habitat for Atlantic sturgeon. The life stages of Atlantic sturgeon identified to occur in or near the project area include post yolk-sac larvae, young of the year, juvenile, subadult, and adult migrating and foraging in the Delaware River. The life stages of shortnose sturgeon identified to occur in or near the project area include post yolk-sac larvae, young of the year, juvenile and adult migrating and foraging in the Delaware River as well as juvenile overwintering in the Delaware River. The project area was identified in or near critical habitat for Atlantic sturgeon in New York Bight Unit 4: Delaware River (Appendix D).

The Proposed Action will have unavoidable, but temporary and minor impacts to marine resources and EFH. A primary indirect impact of the project is increased turbidity at the work locations and the subsequent, but relatively minor sedimentation effects. A turbidity curtain will be used during construction which will limit impacts. Sediment suspension will occur but is expected to be limited to the immediate work area and not to be a long-term condition since a combination of settling and tidal flushing will attenuate the turbidity. Mobile marine resources, such as gastropods, crustaceans, and fish can move away from and avoid areas where disturbances are occurring. Disturbance to marine resources will also be reduced in accordance with any time of year restrictions imposed by the regulatory permits that are required for this Project.

4.1.5 Regional General Condition-5 (G-5)

The Regional General Condition G-5 states:

"Provided the applicant complies with the general conditions and terms of the NWP's, as applicable... has determined the adverse effect on EFH is not substantial for all activities verified under the 2021 NWP's..."

"In order to protect diadromous fish migrations, spawning activities, and EFH, in-water work shall be avoided in accordance to the following time of year restrictions..."

"For ALL NWP activities proposing the construction and/or replacement of structures in

areas mapped as shellfish habitat as defined in the NJDEP..."

This Project is required to submit a PCN to the Corps of Engineers. The area of impact is 0.29 acres and less than ½ acre and SAV habitat is not within 50' of the project area. The Service has consulted with NMFS to make sure adverse impacts to Essential Fish Habitat are identified. A preliminary consultation with NMFS was conducted to determine which fish species were located on or near the Project area. The data lists of the NOAA Guide to Essential Fish Habitat Mapper tool were used to determine that 16 fish species have the potential of being affected by the proposed Project. A Habitat Area of Particular Concern (HAPC) was documented for summer flounder on or near the Project Area (NOAA 2022). NOAA defines Habitat Areas of Particular Concern (HAPC) as "subsets of EFH that exhibit one or more of the following traits: rare, stressed by development, provide important ecological functions for federally managed species, or are abundant in the lower and middle portions of the estuary but are rare in the upper estuary near the Project Area" (NOAA 1999).

The Proposed Action will have unavoidable, but temporary and minor impacts to marine resources and EFH/HAPC. A primary indirect impact of the project is increased turbidity at the work locations and the subsequent, but relatively minor sedimentation effects. A turbidity curtain will be used during construction which will limit impacts. Sediment suspension will occur but is expected to be limited to the immediate work area and not to be a long-term condition since a combination of settling and tidal flushing will attenuate the turbidity. Mobile marine resources, such as gastropods, crustaceans, and fish can move away from and avoid areas where disturbances are occurring. Disturbance to marine resources will also be reduced in accordance with any time of year restrictions imposed by the regulatory permits that are required for this Project.

The Project is not located in an area designated as shellfish habitat as defined in N.J.A.C. 7:7E-3.2(a)(1-4). Therefore, this regional condition is not applicable to this Project.

4.1.6 Regional General Condition-6 (G-6)

The Regional General Condition G-6 states:

"In order to protect the American horseshoe crab (Limulus Polyphemus), a NOAA Trust Resource, in-water work shall be avoided from..."

"For all activities requiring the use of poured concrete in waters of the United States..."

The Project is not located in an area designated as horseshoe crab habitat. Therefore, this regional condition is not applicable to this Project.

The Project does not involve pouring concrete. Therefore, this regional condition is not applicable to this Project.

4.1.7 Regional General Condition-7 (G-7)

The Regional General Condition G-7 states:

"Discharges of dredged or fill material into waters of the United States are NOT authorized in NWP's... for any activity within, or directly affecting the Jacques Cousteau National Research Reserves."

"For NWP's 3... for any activity proposed within the Jacques Cousteau National Research Reserve..."

The Project is not located in the *Jacques Cousteau National Research Reserve*. Therefore, these regional conditions are not applicable to this Project.

4.1.8 Activity Specific Nationwide Permit Regional Conditions

The Specific Nationwide Permit Regional Conditions are not applicable to this Project.

4.2 **Regional Conditions for Delaware**

The following sections evaluate the Project's compliance with the 2021 NWP Regional Conditions for Delaware (January 13, 2021).

4.2.1 Regional General Condition-1 (G-1)

The Regional General Condition G-1 states:

"The permittee shall notify the Corps of Engineers in accordance with General Condition 32 by using a signed application form (ENG Form 6082)."

"The PCN shall include the following information: All PCNs to the Corps of Engineers shall describe all activities that the applicant plans to undertake that are reasonably related to the same project..."

The signed ENG Form 6082 is in Appendix A after ENG4345 Form.

The proposed Project requires a PCN to the Corps of Engineers. **Section 2.0** and the various appendices contain the required elements of the notification, including required plans, maps and photographs, threatened and endangered species consultation, National Register of Historic Places documentation, and information regarding measures taken to avoid impacts to aquatic resources, measures to avoid/minimize discharges into wetlands or WOTUS, and measures developed to compensate for impacts to wetlands or waters of the United States, satisfying Regional General Conditions G-1 (2) A through C.

A Wetlands and Subaqueous Lands Section Permit application has been submitted to DNREC Division of Water.

A Delaware Coastal Management Program Compliance Statement application has been submitted to DNREC Delaware Coastal Management Program.

The proposed project is not located within a State Natural Heritage site or National Estuarine Research Reserve.

4.2.2 Regional General Condition-2 (G-2)

The Regional General Condition G-2 states:

"Coordination between the applicant and the National Park Service is required for any activity potentially affecting a component of the National Wild and Scenic River System..."

The proposed Project is not located within a waterway designated as part of the National Wild and Scenic River System. Therefore, this regional condition is not applicable to this Project.

4.2.3 Regional General Condition-3 (G-3)

The Regional General Condition G-3 states:

"Prior to any work the applicant shall document that they have followed the consultation guidance published on the Chesapeake Bay Field Office website <u>http://www.fws.gov/chesapeakebay/saving-wildlife/project-review/index.html</u> to determine if a proposed NWP activity may affect a listed species..."

This Project is required to submit a PCN to the Corps of Engineers. The Service's on-line IPaC website was consulted for potential conflicts between the proposed activities and federally listed species. The results showed that there is one federally threatened plant species listed as having the potential tobe in or near the refuge. However this species is not expected to occur in, or within the vicinity of, the proposed work areas based on its preferred habitat. Therefore, the proposed Project will not have significant adverse long-term environmental impacts to this federally listed sensitive plant species.

In addition, the Project will not have significant adverse environmental impacts to the three federally threatened animal species and one candidate invertebrate species, as they are not expected to occur in, or within the vicinity of, the proposed work areas based on their preferred habitats. If these sensitive species are in the area, there may be some avoidance of the construction area as a result of increased noise and human activity; however, these impacts are not considered significant and will be temporary in nature. It is anticipated that the Project will result in the overall enhancement and naturalization of the local environment and threatened and endangered species habitat.

Based on the above information, the proposed activities will not directly, or through secondary impacts, adversely affect federally listed species under jurisdiction of the Service.

4.2.4 Regional General Condition-4 (G-4)

The Regional General Condition G-4 states:

"Prior to any work, the applicant shall conduct an online project review by accessing the NOAA Fisheries ESA Section 7 Mapper found at <u>https://www.fisheries.noaa.gov/new-england-mid-</u>

atlantic/consultations/section-7-species-critical-habitat-information-maps-greater#esa-section-7-mapper..."

This Project is required to submit a PCN to the Corps of Engineers. Based on the NOAA Fisheries ESA Section 7 Mapper, Atlantic and shortnose sturgeon were identified as well as in or near the critical habitat for Atlantic sturgeon. The life stages of Atlantic sturgeon identified to occur in or near the project area include post yolk-sac larvae, young of the year, juvenile, subadult, and adult migrating and foraging in the Delaware River. The life stages of shortnose sturgeon identified to occur in or near the project area include post yolk-sac larvae, young of the year, juvenile and adult migrating and foraging in the Delaware River. The life stages of shortnose sturgeon identified to occur in or near the project area include post yolk-sac larvae, young of the year, juvenile and adult migrating and foraging in the Delaware River as well as juvenile overwintering in the Delaware River. The project area was identified in or near critical habitat for Atlantic sturgeon in New York Bight Unit 4: Delaware River (Appendix D).

The Proposed Action will have unavoidable, but temporary and minor impacts to marine resources and EFH. A primary indirect impact of the project is increased turbidity at the work locations and the subsequent, but relatively minor sedimentation effects. A turbidity curtain will be used during construction which will limit impacts. Sediment suspension will occur but is expected to be limited to the immediate work area and not to be a long-term condition since a combination of settling and tidal flushing will attenuate the turbidity. Mobile marine resources, such as gastropods, crustaceans, and fish can move away from and avoid areas where disturbances are occurring. Disturbance to marine resources will also be reduced in accordance with any time of year restrictions imposed by the regulatory permits that are required for this Project. Activities will result in a net increase in aquatic resource function and services.

4.2.5 Regional General Condition-5 (G-5)

The Regional General Condition G-5 states:

"Provided the applicant complies with the general conditions and terms of the NWP's, as applicable... has determined the adverse effect on EFH is not substantial for all activities verified under the 2021 NWP's..."

"In order to protect diadromous fish migrations, spawning activities, and EFH, in-water work shall be avoided in accordance to the following time of year restrictions..."

This Project is required to submit a PCN to the Corps of Engineers. The area of impact is 0.29 acres and less than ¹/₂ acre and SAV habitat is not within 50' of the project area. The Service has consulted with NMFS to make sure adverse impacts to Essential Fish Habitat are identified. A preliminary consultation with NMFS was conducted to determine which fish species were located

on or near the Project area. The data lists of the NOAA Guide to Essential Fish Habitat Designations in the Northeastern United States as well as the NOAA Essential Fish Habitat Mapper tool were used to determine that 16 fish species have the potential of being affected by the proposed Project. A Habitat Area of Particular Concern (HAPC) was documented for summer flounder on or near the Project Area (NOAA 2022). NOAA defines Habitat Areas of Particular Concern (HAPC) as "subsets of EFH that exhibit one or more of the following traits: rare, stressed by development, provide important ecological functions for federally managed species, or are especially vulnerable to anthropogenic degradation." (NOAA 2020). The Delaware Bay is an important nursery and summering area for adult and juvenile Summer Flounder, which are abundant in the lower and middle portions of the estuary but are rare in the upper estuary near the Project Area" (NOAA 1999).

The Proposed Action will have unavoidable, but temporary and minor impacts to marine resources and EFH/HAPC. A primary indirect impact of the project is increased turbidity at the work locations and the subsequent, but relatively minor sedimentation effects. A turbidity curtain will be used during construction which will limit impacts. Sediment suspension will occur but is expected to be limited to the immediate work area and not to be a long-term condition since a combination of settling and tidal flushing will attenuate the turbidity. Mobile marine resources, such as gastropods, crustaceans, and fish can move away from and avoid areas where disturbances are occurring. Disturbance to marine resources will also be reduced in accordance with any time of year restrictions imposed by the regulatory permits that are required for this Project. Activities will result in a net increase in aquatic resource function and services.

4.2.6 Regional General Condition-6 (G-6)

The Regional General Condition G-6 states:

"In order to protect the American horseshoe crab (Limulus Polyphemus), a NOAA Trust Resource, in-water work shall be avoided from..."

"For all activities requiring the use of poured concrete in waters of the United States..."

The Project is not located in an area designated as horseshoe crab habitat. Therefore, this regional condition is not applicable to this Project.

The Project does not involve pouring concrete. Therefore, this regional condition is not applicable

to this Project.

4.2.7 Regional General Condition-7 (G-7)

The Regional General Condition G-7 states:

"In the State of Delaware, State Natural Heritage Sites are included as critical resource waters and are subject to the terms and limitations specified in general condition 22..."

"Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves..."

The proposed project is not located in a Natural Heritage Site. Therefore, this regional condition is not applicable to this Project.

The proposed project is not located in a NOAA-managed marine sanctuary, marine monument, or National Estuarine Research Reserve. Therefore, this regional condition is not applicable to this Project.

4.2.8 Activity Specific Nationwide Permit Regional Conditions

The Specific Nationwide Permit Regional Conditions are not applicable to this Project.

5.0 CONCLUSION

Based on the analysis of the proposed Project activities with the standards and requirements for the NWP-3 the modifications to the stone breakwater have been determined to be in compliance with all applicable Nationwide Permit General Conditions in the *Index of 2021 Nationwide Permits, Conditions, District's Engineer's Decision, Further Information, and Definitions (with corrections.)*, and all New Jersey and Delaware State Regional Conditions listed in the *2021 NWP Regional Conditions in NJ and DE*.

6.0 **REFERENCES**

- ACHP (Advisory Council on Historic Preservation). 2013. Section 106 Regulations Summary. <<u>http://www.achp.gov/106summary.html</u>>. Last updated 18 April 2013.
- ACLO (Audubon and Cornell Lab of Ornithology). 2016. International Shorebird Survey eBird. Available at: <<u>http://ebird.org/content/iss/</u>>.
- ERDC. 2005. Sedimentation: Potential Biological Effects of Dredging Operations in Estuarine and Marine Environments. ERDC TN-DOER-E20. May 2005. 14pp.
- Haaf, L., J. Moody, D. Kreeger, and A. Padeletti. 2015. Marsh Futures and Tidal Rapid
 Assessment of Marshes at Reeds Beach: Assessing the Status of the Marshes at Supawna
 Meadows, NJ through Two Techniques—PDE Report No 15-08sm. Partnership for the
 Delaware Estuary, A National Estuary Program.
- IADC (International Association of Dredging Companies). 2016. Facts About An Information Update from the IADC. Turbidity and Dredging. <<u>http://www.iadc-</u> <u>dredging.com/ul/cms/fck-uploaded/documents/PDF%20Facts%20About/facts-about-</u> <u>turbidity.pdf</u>>. Copyright 2015, IADC, the Netherlands.
- Mitchell, C. L. 1933. Tropical Disturbances of July 1933. Monthly Weather Review (American Meteorological Society). 61(7): 200-201.
- NJDEP (New Jersey Department of Environmental Protection). 2014. NJ-GeoWeb website. Available at: <<u>http://www.state.nj.us/dep/gis/newmapping.htm</u>>. December 2014 release.
- NOAA (National Oceanic and Atmospheric Administration). 1999. Essential Fish Habitat Source Document: Summer Flounder, Paralichthys dentatus, Life History and Habitat Characteristics. Woods Hole, Massachusetts. September 1999.
- NOAA (National Oceanic and Atmospheric Administration). 2016. Guide to Essential Fish Habitat Designations in the Northeastern United States. Available <https://www.greateratlantic.fisheries.noaa.gov/HCD/webintro.html>.
- NOAA (National Oceanic and Atmospheric Administration). 2020. Habitat Areas of Particular Concern within Essential Fish Habitat. Available at: <u>https://www.fisheries.noaa.gov/southeast/habitat-conservation/habitat-areas-particularconcern within-essential-fish-habitat</u>
- NOAA (National Oceanic and Atmospheric Administration). 2022. Habitat Conservation National Marine Fisheries Service. Essential Fish Habitat Mapper. Available at: http://www.habitat.noaa.gov/protection/efh/habitatmapper.html.
- USACE (United States Army Corps of Engineers). 1986. Engineering and Design Design of Breakwaters and Jetties. Washington, DC. Department of the Army.

- USFWS (United States Fish & Wildlife Service). 2011. Supawna Meadows National Wildlife Refuge Comprehensive Conservation Plan. July 2011.
- USFWS (United States Fish & Wildlife Service). 2012. Sensitive Joint-Vetch (Aeschynomene virginica) 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service. Virginia Field Office. Gloucester, Virginia. February 2012.
- USFWS (United States Fish & Wildlife Service). 2022. Supawna Meadows National Wildlife Refuge. Design Build Marsh Restoration Project. Environmental Assessment Draft. February 2022.
- USFWS (United States Fish & Wildlife Service). 2016b. Sensitive joint vetch (Aeschynomene virginica). Environmental Conservation Online System. Available at: <<u>https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=Q24J#lifeHistory</u>>.
- USFWS (United States Fish & Wildlife Service). 2016c. Bog Turtle (Clemmys [=Glyptemys] muhlenbergii). New York Field Office. Available at: <<u>https://www.fws.gov/northeast/nyfo/es/bogturtle.htm</u>>.
- WHGRP (Woods Hole Group, Inc.). 2016. DRAFT Supawna Marsh Restoration. East Falmouth, MA.

NWP-3 Supawna Meadows National Wildlife Refuge Marsh Restoration Project (Goose Pond) Pennsville, Salem County, New Jersey

FIGURES










Rev. By: CB Project No.: 3617157359

November 2016





APPENDIX A

ENG4345 Form

and

ENG Form 6082

U.S. Army Corps of Engineers (USACE)	Form Approved -
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT	OMB No. 0710-0003
33 CFR 325. The proponent agency is CECW-CO-R.	Expires: 02-28-2022

The public reporting burden for this collection of information, OMB Control Number 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR APPLICATION TO THE ABOVE EMAIL.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: http://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.		2. FIELD OFFICE CODE		3. DATE RECEIVED	4. DATE APPL	ICATION COMPLETE
		(ITEMS BELOW TO BE	FILLED BY AP	PLICANT)		
5. APPLICANT'S NAME			8. AUTHORIZ	ED AGENT'S NAME A	ND TITLE (agent	is not required)
First - Heidi	Middle -	Last - Hanlon	First -	Middle	- Las	t-
Company - U.S. Fish and W	/ildlife Service		Company -			
E-mail Address - heidi_hanlo	n@fws.gov		E-mail Addres	s -		
6. APPLICANTS ADDRESS:			9. AGENT'S A	ADDRESS:		
Address- 24 Kimbles Beach	h Road		Address-			
City - Cape May CH Si	tate - NJ Z	Zip - 08210 Country - USA	City -	State -	Zip -	Country -
7. APPLICANT'S PHONE NOS. WAREA CODE 10. AGENTS PHONE NO				PHONE NOs. w/AREA	CODE	
a. Residence b. 609	Business 9-425-5122	c. Fax	a. Residence	b. Busines	is c	, Fax
1		STATEMENT OF	AUTHORIZATI	ON		
11. I hereby authorize, supplemental information	in support of this	to act in my behalf as permit application.	my agent in the	processing of this applic	cation and to furn	ish, upon request,
		SIGNATURE OF APPLIC	ANT	DATE		
	NA	ME, LOCATION, AND DESCR	PTION OF PRO	JECT OR ACTIVITY		
12. PROJECT NAME OR TIT Supawna Meadows Nation	LE (see instructio al Wildlife Ref	ns) uge Marsh Restoration Proje	ect (Goose Pon	ud)		
13. NAME OF WATERBODY,	IF KNOWN (if ap	oplicable)	14. PROJECT	STREET ADDRESS (if	f applicable)	
Delaware River/Mill Creek			Address 199	Lighthouse Road		
15. LOCATION OF PROJECT	Г		1			
Latitude: •N 39 35.3224010	Longitu	ude: •W -75 31.8621834	City - Pennsy	ville S	state- NJ	Zip- 08070
16. OTHER LOCATION DES	CRIPTIONS, IF K	NOWN (see instructions)				
State Tax Parcel ID Block 5	501, Lot 17	Municipality Pen	nsville			
Section -	Township -	Pennsville Township	Range	2 -		
ENG FORM 4345, FEB	2019	PREVIOUS E	DITIONS ARE O	BSOLETE.		Page 1 of 3

Page 1 of 3

17. DIRECTIONS TO THE SITE

From the north, take I-95 South to 295 South. At Exit 1, bear right onto Rt 49 East towards Salem/Pennsville. Turn right onto Fort Mott Road/ CR-630. Keep left to stay on Fort Mott Road/CR-632. Arrive at Lighthouse Road.CR-632. Supawna Meadows NWR is directly ahead.

18. Nature of Activity (Description of project, include all features)

The Proposed Action involves modifying portions of an existing stone breakwater to reinforce marsh protective features, enhance functioning breaches, and remove additional stone from other breaches that are identified to be detrimental to the resiliency of Supawna Meadows Marsh Complex or are otherwise no longer necessary.

19. Project Purpose (Describe the reason or purpose of the project, see instructions) The modifications are proposed to combat future impacts to the Supawna Meadows Marsh Complex from the detrimental effects of sea level rise and help repair damage caused from decades of agriculture and mosquito control practices.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Stone will be added on top of portions of existing breakwater to the necessary height so it can function to protect the marsh complex located behind it.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards Type Amount in Cubic Yards Type Amount in Cubic Yards

Stone, 4088

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres None - the addition of stone will be over areas already containing the stone breakwater structure.

or

Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

The stone fill will only be added to the section of breakwater that already exist. There will be no new areas of breakwater added, thereby reducing impacts and avoiding the need for compensation.

24. Is Any Portion of the	Work Already Complete?	Yes No IF YES,	DESCRIBE THE COMPLETE	D WORK	
Phase 1 was completed removed from a breact	d in 2017. Stone was plac th to allow better tidal flow	ed on the existing breat w into the channel.	kwater around Mill Creek	(adjacent to Goose Pon	d). Stone was also
25. Addresses of Adjoini	ing Property Owners, Lesse	es, Etc., Whose Property A	Adjoins the Waterbody (if more the	nan can be entered here, please att;	ach a supplemental list).
a. Address- 329 Thoma	as Landing Road				
	14				
City - Middleton		State - I	DE	Zip - 19709	
b. Address- 381 Fort M	lott Road				
City - Pennsville		State -]	NJ	Zip - 08070	
c. Address-					
City -		State -		Zip -	
d. Address-					
City -		State -		Zip -	
e. Address-					
City -		State -		Zip -	
26. List of Other Certifica	ates or Approvals/Denials rec	ceived from other Federal,	State, or Local Agencies for V	Nork Described in This App	plication.
AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
NJDEP	Federal Consistency	Pending	February 2022 (conc		
DNREC	Wetlands & Subaqueo	Pending	February 2022 (conc		
* Would include but is no		a, and flood plain permits	·		
27. Application is hereby complete and accurate.	/ made for permit or permits t I further certify that I possess	to authorize the work desc the authority to undertake	ribed in this application. I cer e the work described herein or	tify that this information in t r am acting as the duly aut	his application is horized agent of the
applicant.	sh	2/11/22			
SIGNATUR	E OF APPLICANT	' DATE who desires to undertak	SIGNATUR	E OF AGENT oplicant) or it may be sig	DATE ned by a duly
authorized agent if the	statement in block 11 ha	s been filled out and sig	gned.	, ,	, ,
18 U.S.C. Section 100	1 provides that: Whoever	; in any manner within t	the jurisdiction of any depa	intment or agency of the	United States
statements or represe	ntations or makes or uses	s any false writing or do	cument knowing same to c	contain any false, fictitio	us or fraudulent
statements or entry, sh	hall be fined not more that	n \$10,000 or imprisone	d not more than five years	or both.	

	U.S. A	rmy Corps of Engineers (USACE)			Form Approved -
	NATIONWIDE PERM	IT PRE-CONSTRUCTION	NOTIFICAT	ION (PCN)		OMB No. 0710-0003
	33 CFR 3	330. The proponent agency is CE	ECW-CO-R.			Lxpires. 02-20-2022
		DATA REQUIRED BY T	HE PRIVACY A	CT OF 1974		
Authority	Rivers and Harbors Act, Se Engineers; Final Rule 33 C	ection 10, 33 USC 403; Clean W CFR 320-332.	ater Act, Sectior	1 404, 33 USC 1344; Re	gulatory Pr	ograms of the Corps of
Principal Purpose	Information provided on the	is form will be used in evaluating	the nationwide	permit pre-construction	notification.	
Routine Uses	may be made available as	part of the agency coordination	process.	ederal, state, and local g	overnment	agencies, and the public and
Disclosure	Submission of requested in a permit be issued.	nformation is voluntary, however	, if information is	not provided the permit	application	a cannot be evaluated nor can
The public reporting instructions, search comments regarding whs.mc-alex.esd.m subject to any pena	burden for this collection o ing existing data sources, g g the burden estimate or bu bx.dd-dod-information-colle lty for failing to comply with	f information, 0710-0003, is estiin athering and maintaining the dat inden reduction suggestions to the ctions@mail.mil. Respondents s a collection of information if it do EASE DO NOT RETURN YOUR	mated to average a needed, and de le Department of hould be aware bes not display a RESPONSE TO	e 11 hours per response completing and reviewing f Defense, Washington H that notwithstanding any currently valid OMB cor	e, including g the collect Headquarte y other prov ntrol numbe	the time for reviewing tion of information. Send rs Services, at ision of law, no person shall be er.
One set of original of sample drawings ar not completed in ful	drawings or good reproducil ad/or instructions) and be su I will be returned.	ble copies which show the location abmitted to the District Engineer	on and character having jurisdictio	r of the proposed activity on over the location of th	r must be a e proposed	ttached to this application (<i>see</i> I activity. An application that is
		(ITEMS 1 THRU 4 TO B	E FILLED BY TH	IE CORPS)		
1. APPLICATION N	IO.	2. FIELD OFFICE CODE		3. DATE RECEIVED	4. DATE	APPLICATION COMPLETE
		(ITEMS BELOW TO BE	FILLED BY AP	PLICANT)		
5. APPLICANT'S N	AME		8. AUTHORIZ	ZED AGENT'S NAME A	ND TITLE (agent is not required)
First - Heidi	Middle -	Last - Hanlon	First -	Middle	-	Last -
Company - U.S. F	ish and Wildlife Service		Company -			
Company Title - A	cting Refuge Manager		E-mail Addres	is -		
E-mail Address - he	idi hanlon@fws.gov					
6. APPLICANT'S A	DDRESS:		9. AGENT'S	ADDRESS:		
Address- 24 Kimi	oles Beach Road		Address-			
City - Cape May	CH State - NJ	Zip - 08210 Country - USA	City -	State -	Zi	p - Country -
7. APPLICANT'S P	HONE NOs. with AREA CO	DE	10. AGENT'S	PHONE NOs, with ARE	ACODE	
a. Residence	b. Business c. Fax 609-425-5122	d. Mobile	a. Residence	b. Business	c. Fax	d. Mobile
		STATEMENT OF	AUTHORIZAT	ION		
11. I hereby author	ize,	to act in my behalf as	my agent in the	processing of this this n	nationwide p	permit pre-construction
notification and to fu	urnish, upon request, supple	emental information in support of	f this nationwide	permit pre-construction	notification	•
		SIGNATURE OF APPLIC	ANT	DATE		
	N	AME, LOCATION, AND DESCR	IPTION OF PRO	JECT OR ACTIVITY		
12. PROJECT NAM	E or TITLE (see instruction	s)				
Supawna Meadov	ws National Wildlife Re	fuge Marsh Restoration Proj	ect (Goose Por	nd)		
	2 .ILIN 2019					Date 1 of 6

NAME, LOCATION, AND DES	RIPTION OF PROJECT OR ACTIVITY
13. NAME OF WATERBODY, IF KNOWN (<i>if applicable</i>) Delaware River/Mill Creek	14. PROPOSED ACTIVITY STREET ADDRESS (<i>if applicable</i>) 199 Lighthouse Road
15. LOCATION OF PROPOSED ACTIVITY (see instructions) Latitude °N Longitude °W 39 35.3224010 -75 31.862183	City: State: Zip: Pennsville NJ 08070
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)	
State Tax Parcel ID Block 5501, Lot 17	Municipality
Section Township Pennsville Township	Range
17. DIRECTIONS TO THE SITE. From the north, take I-95 South to 295 South. At Exit 1, bear right CR-630. Keep left to stay on Fort Mott Road/CR-632. Arrive at Lig	nto Rt 49 East towards Salem/Pennsville. Turn right onto Fort Mott Road hthouse Road.CR-632. Supawna Meadows NWR is directly ahead.
18. IDENTIFY THE SPECIFIC NATIONWIDE PERMIT(S) YOU PROPOSE Nationwide Permit 3	O USE:
19. DESCRIPTION OF PROPOSED NATIONWIDE PERMIT ACTIVITY (see The Proposed Action involves modifying portions of an existing sto breaches, and remove additional stone from other breaches that are Complex or are otherwise no longer necessary. Stone would be bro 2.56 feet NAVD88 at an approximate slope of 1V:2H with a crest w (~330 ft) to deepen existing breaches in the stone breakwater to the	<i>instructions</i>) ne breakwater to reinforce marsh protective features, enhance functioning identified to be detrimental to the resiliency of Supawna Meadows Marsh ught in by barge and placed on the existing breakwater to the elevation of <i>i</i> dth of approximately five feet. Rock will be removed in one section elevation of the existing mulline (-5.15 feet NAVD88).
20. DESCRIPTION OF PROPOSED MITIGATION MEASURES (see instruc A turbidity curtain will also be used throughout the project that will marine resources will also be reduced in accordance with any time this Project.	ons) help to mitigate impacts to marine resources. Disturbance to wildlife and of year restrictions imposed by the regulatory permits that are required for
21. PURPOSE OF NATIONWIDE PERMIT ACTIVITY (<i>Describe the reason</i> The modifications are proposed to combat future impacts to the Surrise and help repair damage caused from decades of agriculture and regard to time of year restrictions identified through the permitting 45 days to complete.	or purpose of the project, see instructions) awna Meadows Marsh Complex from the detrimental effects of sea level mosquito control practices. The proposed project would take place with process, likely winter of 2022/2023. The work would take approximately
22. Quantity of Wetlands, Streams, or Other Types of Waters Directly Affect	d by Proposed Nationwide Permit Activity (see instructions)
Acres Linear Feet 0.29	Cubic Yards Dredged or Discharged Stone placement- 4088 cubic yards
Each PCN must include a delineation of wetlands, other special aquati and ephemeral st	sites, and other waters, such as lakes and ponds, and perennial, intermittent eams, on the project site.
 23. List any other NWP(s), regional general permit(s), or individual permit(s) related activity (see instructions) Federal Equivalency for Coastal General Permit #24, NJDEP Wetlands and Subaqueous Lands Section Permit, DNREC Delaware Coastal Management Program Compliance Statement, D Department of the Army, Nationwide Permit 3, ACOE 	used or intended to be used to authorize any part of the proposed project on any ${\sf NREC}$
24. If the proposed activity will result in the loss of greater than 1/10-acre of mitigation requirement in paragraph (c) of general condition 23 will be sa and why compensatory mitigation should not be required for the propose. There will be unavoidable, but minor, adverse impacts to water qua. This disturbance will be temporary and localized to an area of appr sedimentation and tidal circulation occur over time.	retlands and requires pre-construction notification, explain how the compensatory isfied, or explain why the adverse environmental effects are no more than minimal d activity. lity resulting from the removal of the small portion of the breakwater dike eximately 0.29 acres. This work area will return to stable conditions as

25. Is Any Portion of the Nationwide Permit Activity Already Complete? Yes No If Yes, describe the completed work:
Phase 1 of this project around Mill Creek was completed in 2017. Portions of the rock breakwater were removed and portions were added.
This Phase 2 of the Mill Creek area in Goose Pond has not been permitted yet,
26. List the name(s) of any species listed as endangered or threatened under the Endangered Species Act that might be affected by the proposed NWP activity
Section 2.6 and Appendix D list species consultations. No listed species will be negatively impacted. Species that may be present in the
proposed project area include Atlantic sturgeon and shortnose sturgeon. Activities will result in a net increase in aquatic resource
function and services.
27 List any historic properties that have the potential to be affected by the proposed NWP activity or include a vicinity man indication the location of the historic
property or properties. (see instructions)
Section 2.7 and Appendix E list species consultations. No historic properties have the potential to be affected by the proposed project
28. For a proposed NWP activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a
The proposed Project is not within or near a component of the National Wild and Scenic River System, or in a river officially designated by
Congress as a "study river".
29. If the proposed NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or
use a U.S. Army Corps of Engineers federally authorized civil works project, have you submitted a written request for section 408 permission from the Corps
district having jurisdiction over that project?
If "yes", please provide the date your request was submitted to the Corps District:
30. If the terms of the NWP(s) you want to use require additional information to be included in the PCN, please include that information in this space or provide it
on an additional sheet of paper marked Block 30. (see instructions)
31. Pre-construction notification is hereby made for one or more nationwide permit(s) to authorize the work described in this notification. I certify that this
information in this pre-construction notification is complete and accurate. I further certify that I possess the authority to undertake the work described herein
or am acting as the duly authorized agent of the applicant.
Jedallan han 2/11/22
SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE
The Pre-Construction Notification must be signed by the person who desires to undertake the proposed activity (applicant) and, if the statement in block 11 has
been filled out and signed, the authorized agent.
18 U.S.C. Section 1001 provides that: Minewer, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully
falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes
or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or
imprisoned not more than five years or both.

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APPENDIX B

Photograph Log



General view of Project Area along canals, facing northwest from Salem River



Photo 2

Typical view of common reed (*Phragmites australis*). Dominant habitat within Project Area.

PHOTOGRAPHIC LOG

Cape May National Wildlife Refuge Supawna Meadows Project Area Salem County, New Jersey





Eastern portion of breakwater, facing northeast. Showing breach (structure is present beneath the water).



Photo 4

Alternate view of eastern portion of breakwater, facing northeast. Showing breach (structure is present beneath the water).

PHOTOGRAPHIC LOG

Cape May National Wildlife Refuge Supawna Meadows Project Area Salem County, New Jersey





Breach in eastern portion of the breakwater (structure is present beneath the water).



Photo 6

Central portion of the breakwater, facing north.

PHOTOGRAPHIC LOG

Cape May National Wildlife Refuge Supawna Meadows Project Area Salem County, New Jersey





Central portion of the breakwater, facing northwest.



Photo 8

Central portion of the breakwater, facing northwest. Showing breach (structure is present beneath the water).

PHOTOGRAPHIC LOG

Cape May National Wildlife Refuge Supawna Meadows Project Area Salem County, New Jersey





Westernmost breakwater breach (structure is present beneath the water).

Photo 10

Westernmost portion of breakwater, facing north.

PHOTOGRAPHIC LOG

Cape May National Wildlife Refuge Supawna Meadows Project Area Salem County, New Jersey



APPENDIX C

Site Plans

SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE **RESTORATION OF BRACKISH TIDAL WETLANDS PENNSVILLE, NEW JERSEY PERMITTING DRAWING SET**



LOCATION MAP SCALE: 1" = 2,500 FEET



NOT TO SCALE



PREPARED FOR:

DUCKS UNLIMITED 7322 NEWMAN BLVD, BUILDING 1 DEXTER, MI 48130



PROJECT PARTNER:

U.S. FISH & WILDLIFE SERVICE CAPE MAY NATIONAL WILDLIFE REFUGE 24 KIMBLES BEACH ROAD CAPE MAY COURT HOUSE, NEW JERSEY 08210 VICINITY MAP

SHEET	LIST

DRAWING NO.	SHEET NO.	DRAWING TITLE
G-001	1	TITLE SHEET
G-002	2	GENERAL NOTES AND LEGEND
C-101	3	EXISTING CONDITIONS PLAN
C-102	4	PROPOSED CONDITIONS PLAN
C-201	5	BREAKWATER PROFILE AND SECTIONS
C-202	6	BREAKWATER PROFILE AND SECTIONS

SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE RESTORATION OF BRACKISH TIDAL WATERS PENNSVILLE, NEW JERSEY TITLE, NEW JERSEY	DESIGN INFORMATION	DESIGNED BY: NO. DATE BY AEH DRAWN BY:	SMB CHECKED BY:	GAT PROJECT MANAGER:	MM
	SEAL	SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE RESTORATION OF BRACKISH TIDAL WATERS	PENNSVILLE, NEW JERSEY	TITLE SHEET	

MAP NOTES AND REFERENCES:

- BENCHMARKS AND CONTROL POINTS WILL BE REFERENCED TO HORIZONTAL: NEW JERSEY STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD83) AND VERTICAL: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). ALL VERTICAL ELEVATIONS SPECIFYING BREAKWATER TOP ELEVATION, MHW, AND MLW REFERENCE NAVD88.
- 2. EXISTING SITE FEATURES AS SHOWN ARE BASED ON SURVEY AND LIDAR DATA COLLECTED BY AXIS GEOSPATIAL, INC. ON 26 JULY 2015 AND BATHYMETRY DATA COLLECTED BY EA ENGINEERING, SCIENCE, AND TECHNOLOGY INC., PBC SEPTEMBER 2015.
- 3. AERIAL PHOTOGRAPHS WERE COLLECTED BY AXIS GEOSPATIAL, INC. ON 26 JULY 2015.

GENERAL CONSTRUCTION NOTES:

- THE CONTRACTOR SHALL VERIFY THE PROPOSED LAYOUT OF THE WORK. THE CONTRACTOR SHALL ALSO VERIFY ALL DIMENSIONS, SITE CONDITIONS, AND MATERIAL SPECIFICATIONS AND SHALL NOTIFY USFWS AND THE ENGINEER OF ANY ERRORS, OMISSIONS, OR DISCREPANCIES BEFORE COMMENCING OR PROCEEDING WITH WORK.
- 2. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE SYSTEM OF ANY CONSTRUCTION LAYOUT BENCHMARKS AND BASELINES FOR THE DURATION OF THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE HORIZONTAL AND VERTICAL ACCURACY DURING ALL CONSTRUCTION ACTIVITIES.
- 3. DEVIATIONS OR CHANGES FROM THESE PLANS WILL NOT BE ALLOWED UNLESS APPROVED BY THE PRIME CONTRACTOR, ENGINEER, AND USFWS.
- 4. CONTRACTOR SHALL PROTECT OTHER STRUCTURES WITHIN OR ADJACENT TO THE PROJECT AREAS WHICH ARE SCHEDULED TO REMAIN. ANY DAMAGE TO SUCH STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER AND USFWS.
- 5. CONTRACTOR SHALL PROCEED IN ACCORDANCE WITH USFWS APPROVED HEALTH AND SAFETY PLAN AND QUALITY CONTROL PLAN.
- 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUOUSLY MAINTAINING THE POSITION OF THE EXCAVATING EQUIPMENT WITHIN THE PRESCRIBED CONSTRUCTION AND REMOVAL OF BREAKWATER LIMITS. CONTRACTOR SHALL CONTINUOUSLY MONITOR TIDE LEVELS AND DEPTH OF EXCAVATION TO ENSURE THAT THE PROPOSED DEPTH IS NOT EXCEEDED. THE CONTRACTOR SHALL HAVE ADEQUATE PERSONNEL ONSITE WITH THE ABILITY TO SET ACCURATE CONTROL FOR THE PLANNED EXCAVATION OPERATIONS.
- THE MARSH RESTORATION STUDY REPORT AND ALTERNATIVE ANALYSIS FOR SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE, DATED OCTOBER 2016, SERVES AS A BASIS OF DESIGN AND IS A SOURCE OF ADDITIONAL BATHYMETRIC DATA FOR THE EXISTING BREAKWATER AND THE AREA IMMEDIATELY ADJACENT.

UTILITIES:

- 1. THE CONTRACTOR SHALL CONFIRM THAT NO UTILITIES EXIST WITHIN THE LIMITS OF EXCAVATION.
- 2. NOTIFY DIGSAFE AND/OR PUBLIC UTILITIES AT LEAST 3 BUSINESS DAYS PRIOR TO SITEWORK ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD LOCATION/VERIFICATION AND PROTECTION OF ALL SUBSURFACE AND OVERHEAD UTILITIES.
- 3. NO KNOWN UNDERGROUND UTILITIES HAVE BEEN DOCUMENTED WITHIN THE LIMITS OF WORK. SHOULD UNCHARTED UTILITIES BE IDENTIFIED PRIOR TO EARTHWORK ACTIVITIES, OR ENCOUNTERED DURING EXCAVATION, CONSULT ENGINEER FOR DIRECTION.
- 4. PRIOR TO ANY EARTHWORK ACTIVITIES:
- A. LOCATE ALL UTILITIES WITHIN THE LIMITS OF WORK AND DETERMINE WHETHER UTILITIES ARE ACTIVE. B. LAYOUT WORK LIMIT STATIONS.
- C. INSTALL EROSION AND SEDIMENTATION CONTROL MEASURES.

SPILL PREVENTION AND RESPONSE PLAN:

1. CONTRACTOR SHALL FOLLOW PROCEDURES DESCRIBED IN SPILL PREVENTION AND RESPONSE PLAN PREPARED BY CONTRACTOR AND APPROVED BY USFWS.

EROSION AND SEDIMENT CONTROL MEASURES:

- CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION AND MAINTENANCE OF THE APPROVED QUALITY CONTROL PLAN AND OTHER MEASURES NECESSARY TO CONTROL, FILTER OR PREVENT SEDIMENT FROM LEAVING THE CONTAINED AREA.
- 2. CONTRACTOR WILL INSTALL A TURBIDITY CURTAIN AROUND CURRENT WORK AREA IN ACCORDANCE WITH THE QUALITY CONTROL PLAN.

ACCESS AND HOURS OF OPERATION:

- BARGES WILL BE MOBILIZED AND LOADED WITH STONE MATERIALS FROM VESSELS LAUNCHED AT OFF SITE STAGING AREAS.
- WORK HOURS WILL BE TIDALLY DEPENDENT. A TYPICAL WORK DAY MIGHT INCLUDE TRANSPORTING MATERIAL TO THE WORK SITE FROM THE STAGING SITE AT SLACK LOW TIDE, ARRIVE AT MID TIDE, WORK THROUGH HIGH TIDE AND LEAVE THE PROJECT SITE AT THE MID TIDE TO RETURN TO THE STAGING AREA. BARGES ON SITE WILL BE STATIONED NEAR THE WORK AREA IN ANCHORAGES APPROVED BY USCG, AND IN WATER DEPTHS SUFFICIENT TO PREVENT BARGE GROUNDING DURING PERIODS OF LOW TIDE. HOURS OF WORK WILL VARY AS APPROPRIATE TO MATCH DAILY TIDE CYCLES DURING DAYLIGHT HOURS.
- 3. CONTRACTOR WILL FOLLOW ALL US COAST GUARD REGULATIONS CONCERNING BARGES AND BOATS, AND BE SENSITIVE TO NON-PROJECT RELATED VESSELS DURING WORK.

MATERIAL EXCAVATION REQUIREMENTS:

MATERIAL PLACEMENT REQUIREMENTS:

- BREAKWATER.
- PLACEMENT AS PRACTICAL.
- 3. MINIMIZE EXCESS TURBIDITY DURING PLACEMENT.
- THE PROPOSED ELEVATION.

MATERIAL REQUIREMENTS:

- WATER, OR HANDLING.
- THE 6 INCH.
- Α. STONE UNIT WEIGHT CERTIFICATION Β.

MOBILIZATION AND SEQUENCE OF WORK:

THE CONTRACTOR SHALL FOLLOW THE SEQUENCING PLAN DESCRIBED BELOW WHILE CONSTRUCTING BREAKWATER. CHANGES ARE PERMITTED WITH THE WRITTEN APPROVAL OF THE ENGINEER.

- UNSUITABLE SOIL PLACEMENT.
- SECTOR WILL BE MAINTAINED TO INSURE THE PROPER DISTRIBUTION OF MATERIAL ON THE PROJECT.
- QUALITY.
- BE MOVED OUT INTO SAFER WATER DEPTHS.

PERMITTING REQUIREMENTS:

FEDERAL CONSISTENCY DETERMINATION NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF LAND USE REGULATION UPLAND WATERFRONT DEVELOPMENT PERMIT, COASTAL GENERAL PERMIT 24, SECTION 401 WATER QUALITY CERTIFICATE NJDEP FILE NO. XXXX

WETLANDS AND SUBAQUEOUS LANDS PERMIT DNREC FILE NO. XXXX

UNITED STATES ARMY CORPS OF ENGINEERS DEPARTMENT OF ARMY PERMIT NATIONWIDE PERMIT XXXX

- 3. A COPY OF ALL PERMITS WILL BE AVAILABLE ON SITE.

AC A 1. STONE EXCAVATED FROM THE BREAKWATER STRUCTURE WILL BE REUSED IN THE BREAKWATER STRUCTURE. IF NOT DEEMED SUITABLE FOR USE IN THE BREAKWATER STRUCTURE, MATERIAL WILL BE APPRX PLACED ON THE NORTH SIDE OF THE EXISTING BREAKWATER FROM STATIONS 6+14 TO 7+45. ASTM A BLDG CATV CA 1. ANCHORING AND SPUDDING TO BE ACCOMPLISHED IN A MANNER AS TO NOT DISTURB EXISTING CMP COMM 2. STONE WILL BE PLACED MECHANICALLY OR BY A METHOD THAT LIMITS WASTE OR LOSS DURING CONC DA DIA DOT 4. THE TOP OF THE FINISHED BREAKWATER STRUCTURE WILL BE AN AVERAGE ELEVATION OF ±4 INCHES FROM FL/FLF\ ECP 5. THE PROPOSED QUANTITY OF STONE TO BE FURNISHED AND PLACED IS 4,080 CUBIC YARDS. EPA ESC ESD EX/EXIST 1. STONE SHALL BE HARD AND ANGULAR, FREE FROM LAMINATIONS, WEAK CLEAVAGES OR UNDESIRABLE FEMA WEATHERING AND OF SUCH CHARACTER THAT IT WILL NOT DISINTEGRATE FROM THE ACTION OF AIR, FT FT BGS 2. STONE DENSITY = 160 LB/CF. STONE SIZE SHALL MEET THE FOLLOWING SIZE AND GRADATION: 100 PERCENT GPS GI PASSING 24 INCHES WITH 15-50 PERCENT PASSING 12 INCHES WITH NO MORE THAN 15 PERCENT PASSING IN\ MHW 3. SUBMITTALS FOR APPROVAL OF STONE PRIOR TO DELIVERY TO THE SITE WILL INCLUDE: MLW MSL STONE CLASSIFICATION CERTIFICATION BY SUPPLIER NA C. STONE SIZE CONFORMANCE FOR MATERIALS DELIVERED TO THE PROJECT SITE NAD 83

1. MOBILIZATION OF BARGES AND EQUIPMENT, AND TRANSFER OF STONE ONTO BARGES FOR TRANSPORT WILL OCCUR AT OFF SITE STAGING AREAS. BARGES WILL BE LIGHT LOADED TO LIMIT DRAFT TO ~4' OR LESS.

2. WORK WILL PROCEED FROM NORTH (STA. -0+20) TO SOUTH (STA. 25+11). RANGE AND ELEVATION MARKERS WILL BE INSTALLED FOR CONTROL OF STONE PLACEMENT IN ACCORDANCE WITH THE PLAN SHEETS C-102 THROUGH C-202. TURBIDITY CURTAIN WILL BE PLACED AROUND THE AREA OF EXCAVATION AND AREA OF

3. IN ADDITION TO THE USE OF LAYOUT MARKERS, A RECORD OF THE QUANTITY OF STONE PLACED IN EACH

4. EACH WORKDAY, DURING A PERIOD OF FLOOD TIDE, THE EQUIPMENT WILL BE MOVED INTO WORKING POSITION, AS CONDITIONS ALLOW. BEFORE ANY STONE PLACEMENT OR EXCAVATION BEGINS, ANY REQUIRED TURBIDITY CURTAIN WILL BE DEPLOYED AND/OR REPAIRED.

5. CONSTRUCTION PERSONNEL WILL BE PRESENT ON THE BREAKWATER WHILE STONE IS BEING PLACED TO SPOT STONE PLACEMENT VIA A CLAM BUCKET OR GRAPPLE, AND TO VISUALLY INSPECT CONSTRUCTION

6. WORK WILL BE LIMITED BY THE AVAILABLE FLOATATION. WATER DEPTH AND TIDAL CONDITIONS WILL BE MONITORED AND, WHEN CONDITIONS WARRANT, THE OPERATION WILL BE STOPPED AND THE BARGES WILL

1. THIS PROJECT IS SUBJECT TO THE CONDITIONS OF THE FOLLOWING PERMITS:

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

2. CONSTRUCTION MAY NOT PROCEED UNTIL THE ABOVE PERMITS ARE RECEIVED AND CONDITIONS HAVE BEEN REVIEWED AND ACCEPTED BY THE ENGINEER, AND USFWS.



NOTE:

NAVD 88

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CONDITIONS

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NOT DRAWING PERMITTING

SHEET: 5 OF 6

GRAPHIC SCALE IN FEET



DRAWING PERMITTING

## **APPENDIX D**

# **Threatened and Endangered Species Findings**



# United States Department of the Interior

FISH AND WILDLIFE SERVICE New Jersey Ecological Services Field Office 4 E. Jimmie Leeds Road, Suite 4 Galloway, NJ 08205 Phone: (609) 646-9310 Fax: (609) 646-0352 http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.html



In Reply Refer To: January 20, 2022 Consultation Code: 05E2NJ00-2020-SLI-1050 Event Code: 05E2NJ00-2022-E-01547 Project Name: Supawna Meadows National Wildlife Refuge Design/Build Marsh Restoration Project

Subject: Updated list of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species that may occur in your proposed action area and/or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*)

If the enclosed list indicates that any listed species may be present in your action area, please visit the New Jersey Field Office consultation web page as the next step in evaluating potential project impacts: <u>http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.html</u>

On the New Jersey Field Office consultation web page you will find:

- habitat descriptions, survey protocols, and recommended best management practices for listed species;
- recommended procedures for submitting information to this office; and
- links to other Federal and State agencies, the Section 7 Consultation Handbook, the Service's wind energy guidelines, communication tower recommendations, the National Bald Eagle Management Guidelines, and other resources and recommendations for protecting wildlife resources.

The enclosed list may change as new information about listed species becomes available. As per Federal regulations at 50 CFR 402.12(e), the enclosed list is only valid for 90 days. Please return to the ECOS-IPaC website at regular intervals during project planning and implementation to obtain an updated species list. When using ECOS-IPaC, be careful about drawing the boundary of your Project Location. Remember that your action area under the ESA is not limited to just the

footprint of the project. The action area also includes all areas that may be indirectly affected through impacts such as noise, visual disturbance, erosion, sedimentation, hydrologic change, chemical exposure, reduced availability or access to food resources, barriers to movement, increased human intrusions or access, and all areas affected by reasonably forseeable future that would not occur without ("but for") the project that is currently being proposed.

We appreciate your concern for threatened and endangered species. The Service encourages Federal and non-Federal project proponents to consider listed, proposed, and candidate species early in the planning process. Feel free to contact this office if you would like more information or assistance evaluating potential project impacts to federally listed species or other wildlife resources. Please include the Consultation Tracking Number in the header of this letter with any correspondence about your project.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

# Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

#### New Jersey Ecological Services Field Office

4 E. Jimmie Leeds Road, Suite 4 Galloway, NJ 08205 (609) 646-9310

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

#### **Chesapeake Bay Ecological Services Field Office**

177 Admiral Cochrane Drive Annapolis, MD 21401-7307 (410) 573-4599

# **Project Summary**

Consultation Code:	05E2NJ00-2020-SLI-1050
Event Code:	Some(05E2NJ00-2022-E-01547)
Project Name:	Supawna Meadows National Wildlife Refuge Design/Build Marsh
	Restoration Project
Project Type:	LAND - RESTORATION / ENHANCEMENT
Project Description:	The refuge is located along the Delaware Bay, an area that is threatened by the effects of sea level rise. In 2010, a report by the PDE projected the future acreage of tidal wetland in the Delaware Estuary will decrease by approximately two-thirds by the year 2100 due to the rapid changes in sea levels.
	The Supawna Meadows NWR Proposed Action area consists of an old stone breakwater along the Delaware River and approximately 262 acres of open water and marsh complexes located around it.
	The purpose of the project is to increase the resiliency of degraded salt marshes within the Supawna Meadows National Wildlife Refuge (refuge) in response to ecosystem stressors, through a viable and cost-effective manner that upholds the United States Fish and Wildlife Service's (Service) and refuge's missions, purposes, and goals.
	The Proposed Action is the restoration of tidal marsh hydrology at the Supawna Meadows Project Area (Project) through implementation of the following restoration techniques:
	• Removal of portions of an offshore stone breakwater dike in select areas to improve tidal exchange
	• Enhancement of the stone breakwater dike in select areas to provide shoreline protection
Project Location:	1
Approximate loc	ation of the project can be viewed in Google Maps: <u>https://</u>

Approximate location of the project can be viewed in Google Maps: <u>https:/</u> www.google.com/maps/@39.59924349400012,-75.5233338948172,14z



Counties: Delaware and New Jersey

# **Endangered Species Act Species**

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 3 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. <u>NOAA Fisheries</u>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

#### Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i>	Threatened
No critical habitat has been designated for this species.	
This species only needs to be considered under the following conditions:	
<ul> <li>Projects with a federal nexus that have tree clearing = to or &gt; 15 acres: 1. REQUEST A</li> </ul>	
SPECIES LIST 2. NEXT STEP: EVALUATE DETERMINATION KEYS 3. SELECT	
EVALUATE under the Northern Long-Eared Bat (NLEB) Consultation and 4(d) Rule	
Consistency key	
<ul> <li>The specified area occurs within the range of the northern long-eared bat.</li> </ul>	
Species profile: <u>https://ecos.fws.gov/ecp/species/9045</u>	
Birds	

NAME	STATUS
Red Knot Calidris canutus rufa	Threatened
There is <b>proposed</b> critical habitat for this species. The location of the critical habitat is not	
available.	
This species only needs to be considered under the following conditions:	
<ul> <li>This activity area is upstream of red knot habitat. Consultation is needed ONLY for</li> </ul>	
proposed new or changed petroleum product storage or transport, and for spill response	
planning. No other activity types are expected to affect red knots in this area.	

Species profile: https://ecos.fws.gov/ecp/species/1864

# Reptiles

NAME	STATUS
Bog Turtle <i>Glyptemys muhlenbergii</i>	Threatened
No critical habitat has been designated for this species	
This species only needs to be considered under the following conditions:	
• Activity is in a supporting watershed for known/suspected bog turtle habitat. Consultation	
recommended only for activities involving significant changes to surface/ground water,	
including stormwater. See details on FWS NJFO website.	
Species profile: <u>https://ecos.fws.gov/ecp/species/6962</u>	
Insects	
NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i>	Candidate
No critical habitat has been designated for this species.	
Species profile: <u>https://ecos.fws.gov/ecp/species/9743</u>	
Eloworing Diants	
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NAME	STATUS
Sensitive Joint-vetch Aeschynomene virginica	Threatened
No critical habitat has been designated for this species.	

**Critical habitats** 

Species profile: <u>https://ecos.fws.gov/ecp/species/855</u>

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

# USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the <u>National Wildlife Refuge</u> system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

The following FWS National Wildlife Refuge Lands and Fish Hatcheries lie fully or partially within your project area:

FACILITY NAME	ACRES
SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE	3,503.729
https://www.fws.gov/refuges/profiles/index.cfm?id=52571	
# **Migratory Birds**

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described <u>below</u>.

- 1. The <u>Migratory Birds Treaty Act</u> of 1918.
- 2. The <u>Bald and Golden Eagle Protection Act</u> of 1940.
- 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the <u>USFWS</u> <u>Birds of Conservation Concern</u> (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ <u>below</u>. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the <u>E-bird data</u> <u>mapping tool</u> (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found <u>below</u>.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. <u>https://ecos.fws.gov/ecp/species/1626</u>	Breeds Oct 15 to Aug 31
Black-billed Cuckoo Coccyzus erythropthalmus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/9399</u>	Breeds May 15 to Oct 10

NAME	BREEDING SEASON
Blue-winged Warbler <i>Vermivora pinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jun 30
Bobolink Dolichonyx oryzivorus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler <i>Cardellina canadensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Common Loon gavia immer This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. <u>https://ecos.fws.gov/ecp/species/4464</u>	Breeds Apr 15 to Oct 31
Double-crested Cormorant <i>phalacrocorax auritus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. <u>https://ecos.fws.gov/ecp/species/3478</u>	Breeds Apr 20 to Aug 31
Kentucky Warbler <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/9679</u>	Breeds elsewhere
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-breasted Merganser <i>Mergus serrator</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds elsewhere
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

NAME	BREEDING SEASON
Red-throated Loon <i>Gavia stellata</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds elsewhere
Ring-billed Gull <i>Larus delawarensis</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds elsewhere
Ruddy Turnstone <i>Arenaria interpres morinella</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Short-billed Dowitcher Limnodromus griseus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/9480</u>	Breeds elsewhere
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

### **Probability Of Presence Summary**

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

#### **Probability of Presence** (**■**)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee

was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

- 2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
- 3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

#### Breeding Season (=)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

#### Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

#### No Data (-)

A week is marked as having no data if there were no survey events for that week.

#### **Survey Timeframe**

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Bobolink BCC Rangewide (CON)	++++ +	+++ -	++++	++++	++++++	• • • • •	• • • • •	+		++++	++++	++-+
Canada Warbler BCC Rangewide (CON)	+++++	+++ -	++++	++++	I‡ <mark>I</mark> +	• • • • •	• • • • •	+++1	· 1   +	++++	++++	++-+
Common Loon Non-BCC Vulnerable	++++ +	+++-	++++	+++	++++	• • • • •	•+++	++++	•+++	++++	++++	++-+
Double-crested Cormorant Non-BCC Vulnerable	11++	11	111	1111	1111	( + 1 1	• • • •	1111	-111	1   1 1	•1••	++1
Kentucky Warbler BCC Rangewide (CON)	++++ +	+++-	<u>+</u> +++	++++	∐+∐+	• • • • •	• • • • •	++++	-+++	++++	+++++	+++
Lesser Yellowlegs BCC Rangewide (CON)	++++ +	+++-	+ • + +	<b>I+II</b>	<b> </b> #++	+++	++++	++ <b>I</b> +	-++  +	+	+++++	+-++
Prairie Warbler BCC Rangewide (CON)	++++ +	+++-	<u>+</u> +++	++	∐+∐+	• • • • •	•+++	++++		++++	+++++	++-+
Prothonotary Warbler BCC Rangewide (CON)	++++ +	+++-	<u>+</u> +++	┼┼┼	∎∔∔+	• • • • •	• • • • •	++++	-+++	++++	*+**	++-++
Red-breasted Merganser Non-BCC Vulnerable	++++	+++-	+1+1	+ <b>1</b> ++	++++	++++	*+++	++++	-+++	++++	*+**	1++
SPECIES	JAN F	EB 1	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Red-headed Woodpecker BCC Rangewide (CON)	++++ +	+++ -	<u>+</u> +++	++++	++++	• • • • •	• • • • •	++++	<b>-</b> +++	++1+	*+**	+++
Red-throated Loon Non-BCC Vulnerable	+++++	1++ -	++++	<b>*</b> +++	++++	+++	++++	++++	-++++	++++	*+**	++-+
Ring-billed Gull Non-BCC Vulnerable	+	11			111	+ · ++	()])	1111		111	(1))	1-++
Ruddy Turnstone BCC - BCR	++++ +	+++ -	++++	++++	++++	+++	++++	1+++	-+++	++++	++++	+++
Rusty Blackbird BCC - BCR	++++ +	+   +	<b> ++ </b>	+ <b>I</b> ++	++++	+++	++++	++++	-+++	+ ++++	++ ı ı	++-+
Short-billed Dowitcher	+++++ +	+++-	++++	++++	++++	+++	++++	++1+	-+++	++++	++++	++-+

BCC Rangewide (CON)

Additional information can be found using the following links:

- Birds of Conservation Concern <u>http://www.fws.gov/birds/management/managed-species/</u> <u>birds-of-conservation-concern.php</u>
- Measures for avoiding and minimizing impacts to birds <u>http://www.fws.gov/birds/</u> <u>management/project-assessment-tools-and-guidance/</u> <u>conservation-measures.php</u>
- Nationwide conservation measures for birds <u>http://www.fws.gov/migratorybirds/pdf/</u> management/nationwidestandardconservationmeasures.pdf

### **Migratory Birds FAQ**

# Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

<u>Nationwide Conservation Measures</u> describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. <u>Additional measures</u> or <u>permits</u> may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

# What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS <u>Birds of Conservation Concern</u> (<u>BCC</u>) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the <u>Avian</u> <u>Knowledge Network (AKN)</u>. The AKN data is based on a growing collection of <u>survey</u>, <u>banding</u>, <u>and citizen science datasets</u> and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (<u>Eagle Act</u> requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the <u>AKN Phenology Tool</u>.

# What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the <u>Avian Knowledge Network (AKN)</u>. This data is derived from a growing collection of <u>survey, banding, and citizen science datasets</u>.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

# How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: <u>The Cornell Lab</u> of <u>Ornithology All About Birds Bird Guide</u>, or (if you are unsuccessful in locating the bird of interest there), the <u>Cornell Lab of Ornithology Neotropical Birds guide</u>. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

#### What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

- 1. "BCC Rangewide" birds are <u>Birds of Conservation Concern</u> (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
- 2. "BCC BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
- 3. "Non-BCC Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the <u>Eagle Act</u> requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

#### Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the <u>Northeast Ocean Data Portal</u>. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the <u>NOAA NCCOS Integrative Statistical</u> <u>Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic</u> <u>Outer Continental Shelf</u> project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the <u>Diving Bird Study</u> and the <u>nanotag studies</u> or contact <u>Caleb Spiegel</u> or <u>Pam Loring</u>.

#### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to <u>obtain a permit</u> to avoid violating the Eagle Act should such impacts occur.

#### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAO "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Wetlands

Impacts to <u>NWI wetlands</u> and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local <u>U.S. Army Corps of</u> <u>Engineers District</u>.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT <u>HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML</u> OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.



## United States Department of the Interior





January 20, 2022

In Reply Refer To: Consultation Code: 05E2CB00-2020-SLI-1156 Event Code: 05E2CB00-2022-E-01649 Project Name: Supawna Meadows National Wildlife Refuge Design/Build Marsh Restoration Project

Subject: Updated list of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

#### http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan

(http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

http://

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

# **Official Species List**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

#### **Chesapeake Bay Ecological Services Field Office**

177 Admiral Cochrane Drive Annapolis, MD 21401-7307 (410) 573-4599

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

#### New Jersey Ecological Services Field Office

4 E. Jimmie Leeds Road, Suite 4 Galloway, NJ 08205 (609) 646-9310

## **Project Summary**

Consultation Code:	05E2CB00-2020-SLI-1156
Event Code:	Some(05E2CB00-2022-E-01649)
Project Name:	Supawna Meadows National Wildlife Refuge Design/Build Marsh Restoration Project
Project Type	I AND - RESTORATION / ENHANCEMENT
Project Description:	The refuge is located along the Delaware Bay, an area that is threatened by the effects of sea level rise. In 2010, a report by the PDE projected the future acreage of tidal wetland in the Delaware Estuary will decrease by approximately two-thirds by the year 2100 due to the rapid changes in sea levels.
	The Supawna Meadows NWR Proposed Action area consists of an old stone breakwater along the Delaware River and approximately 262 acres of open water and marsh complexes located around it.
	The purpose of the project is to increase the resiliency of degraded salt marshes within the Supawna Meadows National Wildlife Refuge (refuge) in response to ecosystem stressors, through a viable and cost-effective manner that upholds the United States Fish and Wildlife Service's (Service) and refuge's missions, purposes, and goals.
	The Proposed Action is the restoration of tidal marsh hydrology at the
	Supawna Meadows Project Area (Project) through implementation of the following restoration techniques:
	• Removal of portions of an offshore stone breakwater dike in select areas to improve tidal exchange
	• Enhancement of the stone breakwater dike in select areas to provide shoreline protection
Project Location.	subremie protection
Approximate loc	ation of the project can be viewed in Google Maps: https://

Approximate location of the project can be viewed in Google Maps: <u>https://www.google.com/maps/@39.59924349400012,-75.5233338948172,14z</u>



Counties: Delaware and New Jersey

### **Endangered Species Act Species**

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 3 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. <u>NOAA Fisheries</u>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

### Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i>	Threatened
No critical habitat has been designated for this species.	
This species only needs to be considered under the following conditions:	
<ul> <li>Projects with a federal nexus that have tree clearing = to or &gt; 15 acres: 1. REQUEST A</li> </ul>	
SPECIES LIST 2. NEXT STEP: EVALUATE DETERMINATION KEYS 3. SELECT	
EVALUATE under the Northern Long-Eared Bat (NLEB) Consultation and 4(d) Rule	
Consistency key	
Species profile: <u>https://ecos.fws.gov/ecp/species/9045</u>	
Birds	
NAME	STATUS

Red Knot Calidris canutus rufa	Threatened
There is <b>proposed</b> critical habitat for this species. The location of the critical habitat is not	
available.	
This species only needs to be considered under the following conditions:	
<ul> <li>This activity area is upstream of red knot habitat. Consultation is needed ONLY for</li> </ul>	
proposed new or changed petroleum product storage or transport, and for spill response	
planning. No other activity types are expected to affect red knots in this area.	

Species profile: https://ecos.fws.gov/ecp/species/1864

### Reptiles

NAME	STATUS
<ul> <li>Bog Turtle <i>Glyptemys muhlenbergii</i></li> <li>Population: Wherever found, except GA, NC, SC, TN, VA</li> <li>No critical habitat has been designated for this species.</li> <li>This species only needs to be considered under the following conditions: <ul> <li>Activity is in a supporting watershed for known/suspected bog turtle habitat. Consultation recommended only for activities involving significant changes to surface/ground water, including stormwater. See details on FWS NJFO website.</li> </ul> </li> <li>Species profile: <a href="https://ecos.fws.gov/ecp/species/6962">https://ecos.fws.gov/ecp/species/6962</a></li> </ul>	Threatened
Insects NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/9743</u>	Candidate
Flowering Plants	STATUS
Sensitive Joint-vetch <i>Aeschynomene virginica</i> No critical habitat has been designated for this species.	Threatened

### **Critical habitats**

Species profile: <u>https://ecos.fws.gov/ecp/species/855</u>

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

# USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the <u>National Wildlife Refuge</u> system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

The following FWS National Wildlife Refuge Lands and Fish Hatcheries lie fully or partially within your project area:

FACILITY NAME	ACRES
SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE	3,154.488
https://www.fws.gov/refuges/profiles/index.cfm?id=52571	

## Wetlands

Impacts to <u>NWI wetlands</u> and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local <u>U.S. Army Corps of</u> <u>Engineers District</u>.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT <u>HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML</u> OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION Division of Parks & Forestry State Forestry Service Mail Code 501-04 Office of Natural Lands Management – Natural Heritage Program P.O. Box 420 Trenton, NJ 08625-0420

Tel. (609) 984-1339 FAX (609) 984-1427

BOB MARTIN Commissioner

March 15, 2016

Christy L. Benes AMEC Foster Wheeler Environment & Infrastructure, Inc. 285 Davidson Avenue, Suite 405 Somerset, NJ 08873

Re: Cape May National Wildlife Refuge Complex - Marsh Enhancement/Design Project - Supawna Meadows Block(s) - 5501; 4701, Lot(s) - 6 and 17; 25 Pennsville Township, Salem County

Dear Ms. Benes:

Thank you for your data request regarding rare species information for the above referenced project site in Pennsville Township, Salem County.

Searches of the Natural Heritage Database and the Landscape Project (Version 3.1) are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the topographic map(s) submitted with the Request for Data into our Geographic Information System. We do not typically verify that your project bounds are accurate, or check them against other sources.

We have checked the Landscape Project habitat mapping and the Biotics Database for occurrences of any rare wildlife species or wildlife habitat on the referenced site. The Natural Heritage Database was searched for occurrences of rare plant species or ecological communities that may be on the project site. Please refer to Table 1 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented on site. A detailed report is provided for each category coded as 'Yes' in Table 1.

We have also checked the Landscape Project habitat mapping and Biotics Database for occurrences of rare wildlife species or wildlife habitat in the immediate vicinity (within ¼ mile) of the referenced site. Additionally, the Natural Heritage Database was checked for occurrences of rare plant species or ecological communities within ¼ mile of the site. Please refer to Table 2 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented within the immediate vicinity of the site. Detailed reports are provided for all categories coded as 'Yes' in Table 2. These reports may include species that have also been documented on the project site.

The Natural Heritage Program reviews its data periodically to identify priority sites for natural diversity in the State. Included as priority sites are some of the State's best habitats for rare and endangered species and ecological communities. Please refer to Tables 1 and 2 (attached) to determine if any priority sites are located on or in the vicinity of the site.

A list of rare plant species and ecological communities that have been documented from the county (or counties), referenced above, can be downloaded from http://www.state.nj.us/dep/parksandforests/natural/heritage/countylist.html. If suitable habitat is present at the project site, the species in that list have potential to be present.

Status and rank codes used in the tables and lists are defined in EXPLANATION OF CODES USED IN NATURAL HERITAGE REPORTS, which can be downloaded from http://www.state.nj.us/dep/parksandforests/natural/heritage/nhpcodes_2010.pdf.

NHP File No. 16-3907555-9531

CHRIS CHRISTIE Governor

KIM GUADAGNO Lt. Governor If you have questions concerning the wildlife records or wildlife species mentioned in this response, we recommend that you visit the interactive NJ-GeoWeb website at the following URL, http://www.state.nj.us/dep/gis/geowebsplash.htm or contact the Division of Fish and Wildlife, Endangered and Nongame Species Program at (609) 292-9400.

PLEASE SEE 'CAUTIONS AND RESTRICTIONS ON NHP DATA', which can be downloaded from http://www.state.nj.us/dep/parksandforests/natural/heritage/newcaution2008.pdf.

Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,

Robert J. Cartica Administrator

c: NHP File No. 16-3907555-9531

### Table 1: On Site Data Request Search Results (7 Possible Reports)

Report Name	<b>Included</b>	Number of Pages
1. Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	Yes	1 page(s) included
2. On or In the Immediate Vicinity of the Project Site Based on Search of the Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	Yes	1 page(s) included
3. Natural Heritage Priority Sites On Site	No	0 pages included
4. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.1 Species Based Patches	Yes	1 page(s) included
5. Vernal Pool Habitat on the Project Site Based on Search of Landscape Project 3.1	Yes	1 page(s) included
6. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.1 Stream Habitat File	No	0 pages included
7. Other Animal Species On the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

		Po: Natura Ecologica	Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database				nd New		
Scientific Name	Common Name	Federal Protection Status	State Protection Status	Regional Status	Grank	Srank	Identified	Last Observed	Location
Terrestrial Com	munity - Other Cla	ssification							
Brackish tidal marsh complex	Brackish Tidal Marsh Complex				G4	\$2?	Y - Yes	1972-08-15	MANNINGTON MEADOW, KATES CREEK MEADOW, AND PINE ISLAND MEADOW.

Total number of records:

1

On or In the Immediate Vicinity of the
Project Site Based on Search of the
Natural Heritage Database: Rare Plant Species and
<b>Ecological Communities Currently Recorded in the New</b>
Jersey Natural Heritage Database

Scientific Name	Common Name	Federal Protection Status	State Protection Status	Regional Status	Grank	Srank	Identified	Last Observed	Location
Vascular Plants									
Cyperus polystachyos var. texensis	Coast Flat Sedge		E	LP, HL	G5T5	S1	Y - Yes	1934-10-29	Along Delaware River 2 miles southwest of Harrisonville.
Schoenoplectus novae- angliae	New England Bulrush			HL	G5	S2	Y - Yes	1934-11-05	Along Delaware River, 2 miles southwest of Harrisonville.

Total number of records: 2

A.

Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.1 Species Based Patches								
Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
Aves								
	Bald Eagle	Haliaeetus leucocephalus	Foraging	4	NA	State Endangered	G5	S1B,S2N
	Bald Eagle	Haliaeetus leucocephalus	Nest	4	NA	State Endangered	G5	S1B,S2N
	Bald Eagle	Haliaeetus leucocephalus	Wintering	3	NA	State Threatened	G5	S1B,S2N
	Great Blue Heron	Ardea herodias	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Osprey	Pandion haliaetus	Foraging	3	NA	State Threatened	G5	S2B
	Osprey	Pandion haliaetus	Nest	3	NA	State Threatened	G5	S2B
Insecta								
	Bronze Copper	Lycaena hyllus	Breeding/Courtship	4	NA	State Endangered	G4G5	<b>S</b> 1
Osteichthyes								
	Shortnose Sturgeon	Acipenser brevirostrum	Migration Corridor - Adult Sighting	5	Federally Listed Endangered	State Endangered	G3	S1

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### Vernal Pool Habitat on the Project Site Based on Search of Landscape Project 3.1

Vernal Pool Habitat Type		Vernal Pool Habitat ID					
Potential vernal habitat area		723					
Potential vernal habitat area		791					
Total number of records:	2						

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### Table 2: Vicinity Data Request Search Results (6 possible reports)

<u>Report Name</u>	Included	Number of Pages
1. Immediate Vicinity of the Project Site Based on Search of Natural Heritage Database Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	Yes	1 page(s) included
2. Natural Heritage Priority Sites within the Vicinity	Yes	See emailed attachments
3. Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.1 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat In the Immediate Vicinity of Project Site Based on Search of Landscape Project 3.1	Yes	1 page(s) included
5. Rare Wildlife Species or Wildlife Habitat In the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.1 Stream Habitat File	No	0 pages included
6. Other Animal Species In the Immediate Vicinity of the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

		l Based Rare Plant Specie the	Immediate Vic I on Search of es and Ecologi New Jersey N	in					
Scientific Name	Common Name	Federal Protection Status	State Protection Status	Regional Status	Grank	Srank	Identified	Last Observed	Location
Vascular Plants									
Cyperus polystachyos var. texensis	Coast Flat Sedge		Е	LP, HL	G5T5	S1	Y - Yes	1934-10-29	Along Delaware River 2 miles southwest of Harrisonville.
Hydrocotyle ranunculoide	s Floating Marsh-pennyw	ort	Е	LP, HL	G5	S1	Y - Yes	1985-09-15	North side of Lighthouse Road ca. 0.7 mile west-northwest of Harrisonville.
Schoenoplectus novae- angliae	New England Bulrush			HL	G5	S2	Y - Yes	1934-11-05	Along Delaware River, 2 miles southwest of Harrisonville.
Total number of reco	rds: 3								
Terrestrial Com	munity - Other C	lassification							
Brackish tidal marsh complex	Brackish Tidal Marsh Complex				G4	S2?	Y - Yes	1972-08-15	MANNINGTON MEADOW, KATES CREEK MEADOW, AND PINE ISLAND MEADOW.

Total number of records: 1

		Rare V Immedia La	Vildlife Species or W te Vicinity of the Pro ndscape Project 3.1	f				
Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
Aves								
	Bald Eagle	Haliaeetus leucocephalus	Foraging	4	NA	State Endangered	G5	S1B,S2N
	Bald Eagle	Haliaeetus leucocephalus	Nest	4	NA	State Endangered	G5	S1B,S2N
	Bald Eagle	Haliaeetus leucocephalus	Wintering	3	NA	State Threatened	G5	S1B,S2N
	Cooper's Hawk	Accipiter cooperii	Nest	2	NA	Special Concern	G5	S3B,S4N
	Great Blue Heron	Ardea herodias	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Osprey	Pandion haliaetus	Foraging	3	NA	State Threatened	G5	S2B
	Osprey	Pandion haliaetus	Nest	3	NA	State Threatened	G5	S2B
	Savannah Sparrow	Passerculus sandwichensis	Breeding Sighting	3	NA	State Threatened	G5	S2B,S4N
Insecta								
	Bronze Copper	Lycaena hyllus	Breeding/Courtship	4	NA	State Endangered	G4G5	S1
Osteichthyes								
5	Shortnose Sturgeon	Acipenser brevirostrum	Migration Corridor - Adult Sighting	5	Federally Listed Endangered	State Endangered	G3	S1

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	Vernal Pool Habitat In the Immediate Vicinity of Project Site Based on Search of Landscape Project 3.1	
Vernal Pool Habitat Type	Vernal Pool Habitat ID	
Potential vernal habitat area	723	
Potential vernal habitat area	791	
Total number of records: 2		

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#### Area of Interest (AOI) Information

Area : 2.41 acres

Feb 9 2022 10:35:25 Eastern Standard Time



Atlantic Sturgeon In or Near Critical Habitat

1:18,056 0 0.1 0.2 0.4 mi 0 0.1 0.35 0.7 km axar, State of New Jensy, Excl. HERE, Gammi, GeoTacthologes, Isc.

#### about:blank

#### Summary

Name	Count	Area(acres)	Length(mi)
Atlantic Sturgeon	5	11.97	N/A
Shortnose Sturgeon	5	11.97	N/A
Atlantic Salmon	0	0	N/A
Sea Turtles	0	0	N/A
Atlantic Large Whales	0	0	N/A
In or Near Critical Habitat	1	2.39	N/A

#### Atlantic Sturgeon

#	Feature ID	Species	Life Stage	Behavior	Zone	From	Until	From (2)	Until (2)	Area(acres )
1	ANS_DEL_ PYL_MAF	Atlantic sturgeon	Post Yolk- sac Larvae	Migrating & Foraging	Delaware River	04/01	09/30	N/A	N/A	2.39
2	ANS_DEL_ SUB_MAF	Atlantic sturgeon	Subadult	Migrating & Foraging	Delaware River	03/15	11/30	N/A	N/A	2.39
3	ANS_DEL_ YOY_MAF	Atlantic sturgeon	Young of year	Migrating & Foraging	Delaware River	01/01	12/31	N/A	N/A	2.39
4	ANS_DEL_ ADU_MAF	Atlantic sturgeon	Adult	Migrating & Foraging	Delaware River	03/15	11/30	N/A	N/A	2.39
5	ANS_DEL_ JUV_MAF	Atlantic sturgeon	Juvenile	Migrating & Foraging	Delaware River	01/01	12/31	N/A	N/A	2.39

#### Shortnose Sturgeon

#	Feature ID	Species	Life Stage	Behavior	Zone	From	Until	From (2)	Until (2)	Area(acres )
1	SNS_DEL_ YOY_MAF	Shortnose sturgeon	Young of year	Migrating & Foraging	Delaware River	01/01	12/31	N/A	N/A	2.39
2	SNS_DEL_ PYL_MAF	Shortnose sturgeon	Post Yolk- sac Larvae	Migrating & Foraging	Delaware River	03/15	07/31	N/A	N/A	2.39
3	SNS_DEL_ JUV_WIN	Shortnose sturgeon	Juvenile	Overwinteri ng	Delaware River	11/01	03/31	N/A	N/A	2.39
4	SNS_DEL_ JUV_MAF	Shortnose sturgeon	Juvenile	Migrating & Foraging	Delaware River	01/01	12/31	N/A	N/A	2.39
5	SNS_DEL_ ADU_MAF	Shortnose sturgeon	Adult	Migrating & Foraging	Delaware River	01/01	12/31	N/A	N/A	2.39

#### In or Near Critical Habitat

#	Species	In or Near Critical Habitat Unit	Area(acres)
1	Atlantic Sturgeon	New York Bight Unit 4: Delaware River	2.39

DISCLAIMER: Use of this App does NOT replace the Endangered Species Act (ESA) Section 7 consultation process; it is a first step in determining if a proposed Federal action overlaps with listed species or critical habitat presence. Because the data provided through this App are updated regularly, reporting results must include the date they were generated. The report outputs (map/tables) depend on the options picked by the user, including the shape and size of the action area drawn, the layers marked as visible or selectable, and the buffer distance specified when using the "Draw your Action Area" (muction. Area calculations represent the size of overlap between the user-drawn Area of Interest (with buffer) and the specified S7 Consultation Area. Summary table areas represent the sum of these overlapping areas for each species group.

#### **EFH Data Notice**

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

<u>Greater Atlantic Regional Office</u> <u>Atlantic Highly Migratory Species Management Division</u>

### **Query Results**

. . . .

Degrees, Minutes, Seconds: Latitude = 39° 35' 12" N, Longitude = 76° 28' 13" W Decimal Degrees: Latitude = 39.587, Longitude = -75.530

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

### *** W A R N I N G ***

Please note under "Life Stage(s) Found at Location" the category "ALL" indicates that all life stages of that species share the same map and are designated at the queried location.

ELH					
Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
Þ	Θ	Little Skate	Juvenile Adult	New England	Amendment 2 to the Northeast Skate Complex FMP
P	Θ	Atlantic Herring	Juvenile Adult	New England	Amendment 3 to the Atlantic Herring FMP
P	Θ	Red Hake	Adult	New England	Amendment 14 to the Northeast Multispecies FMP
P	Θ	Windowpane Flounder	Adult Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
P	Θ	Winter Skate	Adult Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
P	0	Clearnose Skate	Adult Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
A	0	Longfin Inshore Squid	Eggs	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
A	0	Bluefish	Adult Juvenile	Mid-Atlantic	Bluefish

Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
P	Θ	Atlantic Butterfish	Larvae Adult Juvenile	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
P	Θ	Scup	Juvenile Adult	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
P	Θ	Summer Flounder	Juvenile Adult	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
P	0	Black Sea Bass	Juvenile Adult	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass

### Salmon EFH

No Pacific Salmon Essential Fish Habitat (EFH) were identified at the report location.

#### **HAPCs**

Link Data Caveats		HAPC Name	Management Council	
	0	Summer Flounder	Mid-Atlantic	

### EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data. **For links to all EFH text descriptions see the complete data inventory: <u>open data inventory --></u> All spatial data is currently available for the Mid-Atlantic and New England councils, Secretarial EFH, Bigeye Sand Tiger Shark, Bigeye Sixgill Shark, Caribbean Sharpnose Shark, Galapagos Shark,

Narrowtooth Shark, Sevengill Shark, Sixgill Shark, Smooth Hammerhead Shark, Smalltail Shark

#### Re: [EXTERNAL] Re: Supawna Meadows NWR Phase 2 marsh restoration project

Wilson, Bartholomew D <bartholomew_wilson@fws.gov>

Wed 4/14/2021 6:07 AM

To: keith.hanson <keith.hanson@noaa.gov>

Cc: Peter B Johnsen - NOAA Federal peter.b.johnsen@noaa.gov>; Hanlon, Heidi <heidi_hanlon@fws.gov>; Braudis, Brian <brian_braudis@fws.gov>; Turner, Noel L <noel_turner@fws.gov>; Karen Greene - NOAA Federal <karen.greene@noaa.gov>

Keith

That would be great.

Thanks

Bart

Bartholomew Wilson P.G., Ph D. Project Manager U.S. Fish and Wildlife Service Coastal Delaware National Wildlife Refuge Complex Cell: (302) 222-7602 Office: (302) 653-9345 Bartholomew_Wilson@fws.gov

From: Keith Hanson - NOAA Federal <keith.hanson@noaa.gov>
Sent: Monday, April 12, 2021 1:02 PM
To: Wilson, Bartholomew D <bartholomew_wilson@fws.gov>
Cc: Peter B Johnsen - NOAA Federal peter.b.johnsen@noaa.gov>; Hanlon, Heidi <heidi_hanlon@fws.gov>; Braudis, Brian <brian_braudis@fws.gov>; Turner, Noel L <noel_turner@fws.gov>; Karen Greene - NOAA Federal <karen.greene@noaa.gov>
Subject: Re: [EXTERNAL] Re: Supawna Meadows NWR Phase 2 marsh restoration project

Sure thing. Or I can send a google meeting invite, which allows for "screen sharing", if you all could benefit from that.

Let me know.

Keith

On Mon, Apr 12, 2021 at 12:57 PM Wilson, Bartholomew D <<u>bartholomew wilson@fws.gov</u>> wrote: | let's plan to have a meeting with both NMFS and ESA, and we can plan for 10-11 am on Friday.

I'll send out call number.

Bart

Bartholomew Wilson P.G., Ph D. Project Manager U.S. Fish and Wildlife Service Coastal Delaware National Wildlife Refuge Complex Cell: (302) 222-7602 Office: (302) 653-9345 Bartholomew_Wilson@fws.gov

 From: Peter B Johnsen - NOAA Federal peter.b.johnsen@noaa.gov>

 Sent: Monday, April 12, 2021 10:54 AM

 To: Wilson, Bartholomew D <bartholomew wilson@fws.gov>

 Cc: keith.hanson <keith.hanson@noaa.gov>; Hanlon, Heidi <heidi_hanlon@fws.gov>; Braudis, Brian <br/>braudis@fws.gov>; Turner, Noel L

 <noel_turner@fws.gov>; Karen Greene - NOAA Federal <</td>

 Subject: Re: [EXTERNAL] Re: Supawna Meadows NWR Phase 2 marsh restoration project

I would be available for a meeting to discuss the potential need for initiating an ESA consultation on Friday, April 16. I could either join the times suggested by Keith or if you prefer to meet separately with HESD and PRD, any other time on Friday.

Peter

On Mon, Apr 12, 2021 at 9:08 AM Wilson, Bartholomew D <<u>bartholomew wilson@fws.gov</u>> wrote: | I'll get right back to you on what works for us.

Bartholomew Wilson P.G., Ph D. Project Manager

U.S. Fish and Wildlife Service Coastal Delaware National Wildlife Refuge Complex Cell: (302) 222-7602 Office: (302) 653-9345 Bartholomew_Wilson@fws.gov

From: Keith Hanson - NOAA Federal <<u>keith.hanson@noaa.gov</u>> Sent: Monday, April 12, 2021 9:01 AM

To: Wilson, Bartholomew D <<u>bartholomew_wilson@fws.gov</u>>

**Cc:** Peter B Johnsen - NOAA Federal <<u>peter.b.johnsen@noaa.gov</u>>; Hanlon, Heidi <<u>heidi_hanlon@fws.gov</u>>; Braudis, Brian <<u>brian_braudis@fws.gov</u>>; Turner, Noel L <<u>noel_turner@fws.gov</u>>; Karen Greene - NOAA Federal <<u>Karen.Greene@noaa.gov</u>>

Subject: Re: [EXTERNAL] Re: Supawna Meadows NWR Phase 2 marsh restoration project

To be more clear, those are all 1-hour windows of availability for me, so from 8-9am and 1-2pm on Thursday and 10-11am and 1-2pm on Friday.

Thanks, Keith

On Mon, Apr 12, 2021 at 8:50 AM Keith Hanson - NOAA Federal <<u>keith.hanson@noaa.gov</u>> wrote: Hi All,

Pretty jammed up this week, but Thursday at 8am or 1pm would work for me. 10AM or 1pm would work on Friday.

The NWP 27 permit should be a good start for our EFH purposes if you don't mind forwarding that along.

Thanks!

Keith

On Mon, Apr 12, 2021 at 8:44 AM Wilson, Bartholomew D <<u>bartholomew wilson@fws.gov</u>> wrote:

Keith

Could we squeeze something in this week? The Refuge would like to get a sense of what will be needed and work to satisfy those needs for EFH assessment.

What does your schedule look like on Wednesday through Friday?

I can put a doodle poll together if there are blocks that are free for you.

Heidi, could you send out a project description?

Thanks so much!

Bart

Bartholomew Wilson P.G., Ph D. Project Manager U.S. Fish and Wildlife Service Coastal Delaware National Wildlife Refuge Complex Cell: (302) 222-7602 Office: (302) 653-9345 Bartholomew_Wilson@fws.gov

From: Keith Hanson - NOAA Federal <<u>keith.hanson@noaa.gov</u>> Sent: Friday, April 9, 2021 10:31 AM

To: Wilson, Bartholomew D <<u>bartholomew_wilson@fws.gov</u>> Cc: Peter B Johnsen - NOAA Federal <<u>peter.b.johnsen@noaa.gov</u>>; Hanlon, Heidi <<u>heidi_hanlon@fws.gov</u>>; undefined <<u>karen.greene@noaa.gov</u>>; Braudis, Brian <<u>brian_braudis@fws.gov</u>>; Turner, Noel L <<u>noel_turner@fws.gov</u>> Cwhiaeth De [CYTENNAL De Graenee Meedew NWD Rheee 2 meeter bestereigte explicit.

Subject: Re: [EXTERNAL] Re: Supawna Meadows NWR Phase 2 marsh restoration project

Hi Bart,

I'm definitely open to the idea of a call, but it would be good to get some "read ahead" information to review, such as the previous documents/consultations, project descriptions, copy of the permit, etc.

I think my best availability would be the weeks of April 26 and May 3rd, but could try to squeeze something in earlier even if it is EFH/FWCA-only chat and you chat with Peter separately.

)7 PM	Mail - Hanlon, Heidi - Outlook
Thanks, Keith	
On Fri, Apr 9, 202 Keith and Peter	21 at 7:15 AM Wilson, Bartholomew D < <u>bartholomew wilson@fws.gov</u> > wrote: r
Would it be he through questi	lpful to setup a call to discuss the details (i.e. scope, timelines, phases, etc.) of the project and provide an opportunity to talk ons (rather than emailing back and forth)?
Maybe someth	ing later next week?
Thanks	
Bart	
Bartholomew V Project Manage U.S. Fish and V Coastal Delawa	Vilson P.G., Ph D. er Vildlife Service are National Wildlife Refuge Complex
Cell: (302) 222 Office: (302) 6 Bartholomew	-7602 53-9345 <u>Wilson@fws.gov</u>
From: Keith Han Sent: Thursday, <i>i</i> To: Peter B John: Cc: Hanlon, Heid Brian < <u>brian_bra</u> Subject: [EXTERI	son - NOAA Federal < <u>keith.hanson@noaa.gov</u> > April 8, 2021 12:02 PM sen - NOAA Federal < <u>peter.b.johnsen@noaa.gov</u> > li < <u>heidi hanlon@fws.gov</u> >; undefined < <u>karen.greene@noaa.gov</u> >; Wilson, Bartholomew D < <u>bartholomew_wilson@fws.gov</u> >; Braudis, <u>audis@fws.gov</u> >; Turner, Noel L < <u>noel_turner@fws.gov</u> > NAL] Re: Supawna Meadows NWR Phase 2 marsh restoration project
This email h	as been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.
Hi Heidi, I'm a little uncl	ear of the EFH/FWCA timeline for this project and if it would be a reinitiation or a separate consultation. If you have the
phase 1?	
Thanks!	
On Thu, Apr 8, Hi Heidi,	2021 at 11:42 AM Peter B Johnsen - NOAA Federal < <u>peter.b.johnsen@noaa.gov</u> > wrote:
As I do not k the consultar occurrence c modified in s or designatio	show the exact details of the project, I cannot give you an answer with regard to whether you need to reinitiate tion. As you know, there are <u>four reinitiation triggers</u> : 1) exceedance of allowable incidental take (or for an informal, the of any take), 2) new information that shows effects that were not considered in the previous consultation, 3) the project is such a manner that it will result in effects that were not considered in the previous consultation, and 4) new species listing on of critical habitat.
As far as I an included in t consider whe consultation modification	n aware, initiation triggers 1 and 2 are not applicable. With regard to trigger #3, I cannot remember if Phase 2 was he consultation. If it was, then trigger 3 should not be applicable. If Phase 2 was not included, then you will have to ether the planned activities may affect listed species or critical habitat in ways that were not considered in our previous . The important part here is for you to consider if there are new effects, not only whether there are new activities (or s to the project) that were not previously considered.
We have not Atlantic stur adversely mo then, we issu think the sec	proposed or listed species since the consultation. <b>However, at the time of the consultation for the project, the</b> <b>rgeon Critical Habitat was only proposed.</b> Because we concluded that the proposed project would not destroy or odify the proposed critical habitat, we did not conduct a conference consultation on the proposed critical habitat. Since led a final designation of Atlantic sturgeon critical habitat. You may want to consider reinitiating the consultation if you cond phase may affect the Atlantic sturgeon critical habitat.

I hope that helps. Feel free to call me if you want to discuss this issue further.
Sincerely,	
Peter	

On Tue, Mar 30, 2021 at 12:44 PM Hanlon, Heidi <<u>heidi hanlon@fws.gov</u>> wrote: Supawna Meadows National Wildlife Refuge submitted for section 7 of the ESA consultation for the first phase of marsh restoration for a breakwater project in 2017.

We completed the construction for this consultation by adding rocks to an existing breakwater in 2017 around Mill Creek in Pennsville, NJ in order to protect the marsh habitat and create a more resilient marsh. We are proposing to conduct the second phase of this project by adding rocks to this existing breakwater southeast from the Mill Creek site around Goose Pond.

The project details are the same from the 2017 Mill Creek site to the proposed Goose Pond site and the 2017 consultation application references the Goose Pond site.

Would we need to submit an entirely new package for a new consultation or would the existing consultation cover this action?

Thank you in advance for your help. Heidi

Heidi Hanlon Wildlife Biologist Cape May and Supawna Meadows NWR 24 Kimbles Beach Road Cape May Court House, NJ 08210 609-463-0994 Ex. 2372

Keith M. Hanson (he, him, his) Marine Habitat Resource Specialist NOAA Fisheries Greater Atlantic Region Habitat & Ecosystem Services Division (Habitat Conservation) Annapolis, MD Field Office

NOTE: All NOAA staff are teleworking until further notice. Please do not hesitate to contact me repeatedly through email. Please put URGENT in the subject line for any emergency issues.

https://www.fisheries.noaa.gov/about/greater-atlantic-regional-fisheries-office



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Keith M. Hanson (he, him, his) Marine Habitat Resource Specialist NOAA Fisheries Greater Atlantic Region Habitat & Ecosystem Services Division (Habitat Conservation) Annapolis, MD Field Office

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https://www.fisheries.noaa.gov/about/greater-atlantic-regional-fisheries-office



From: Peter Johnsen - NOAA Federal [mailto:peter.b.johnsen@noaa.gov]
Sent: Monday, November 07, 2016 3:12 PM
To: Mitchell, Shoshana <<u>shoshana.mitchell@amecfw.com</u>>
Subject: Re: NOAA NMFS Submittal - Supawna Meadows Marsh Enhancement Design/Build Project

Mitchell,

Sorry for the Indian Bay, a copy and paste mistake. The correct should be Delaware River.

You requested information on the presence near Supawna Meadows National Wildlife Refuge in Pennsville, New Jersey, of Endangered Species Act (ESA) threatened and endangered species listed under the jurisdiction of NOAA's National Marine Fisheries Service (NMFS). We offer the following comments:

#### **Endangered Species**

The Delaware River adjacent to the Supawna Meadows March Enhancement Design/Build Project supports two ESA listed species under our jurisdiction. These are the Atlantic sturgeon and shortnose sturgeon (see below). Whether these species may occur at the specific project location may be determined based on local information such as depth, available habitat, surveys conducted, opinions of species experts intimately familiar with the location, and other site specific information. With regard to consultation with NMFS on ESA listed species, this will be conducted by the Federal agency (probably the U.S. Army Corps of Engineers) that will permit your work or that funds the project. In preparing your permit or material to the lead Federal agency, you should include information about listed species that may be within the action area and information about the status of habitat for these species at the project location. Information should include such as possibility for listed species to access the project area, depth of the channel leading to the project area and at the project area, presence of benthic invertebrates and submerged aquatic vegetation within the channel and project area, level of human activity (esp. vessel traffic) adjacent to the project area and the channel leading into it, and other information pertinent to determining presence of species and effects from the proposed project.

I've included some listed species information and details on the section 7 process under the ESA. Let me know if you have any questions. I am happy to provide further explanation via email or on the phone.

#### **Species**

The following ESA-listed species under our jurisdiction may occur in the Delaware River:

Common name	Scientific name	ESA Status	Federal Register/Recovery Plan
Shortnose sturgeon	Acipenser brevirostrum	Endangered	32 FR 4001; Recovery plan: NMFS 1998
Atlantic sturgeon	Acipenser oxyrinchus oxyrinchus		77 FR 5880 and 77 FR 5914
Gulf of Maine DPS		Threatened	
New York Bight DPS		Endangered	
Chesapeake Bay DPS		Endangered	
Carolina DPS		Endangered	
South Atlantic DPS		Endangered	

The Delaware River and Bay is within the Atlantic sturgeon New York Bight Distinct Population Segment (DPS). However, the marine range of all five Atlantic sturgeon DPSs extends along the Atlantic coast from Canada to Cape Canaveral, Florida; therefore, Atlantic sturgeon originating from any of the five DPSs may be present in the Delaware River and Bay.

Occurrence maps and species tables for the above species in the Greater Atlantic Region can be found on our website at:<u>http://www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/maps/index.html</u>.

Species maps and tables are intended to aid Federal action agencies during their section 7 consultation responsibilities under the ESA and with their determination whether activities authorized, funded, or carried out by a Federal agency may affect species we listed under the ESA.

You can find more information on the biology and life history of shortnose sturgeon at <u>https://www.greateratlantic.fisheries.noaa.gov/protected/snsturgeon/</u>

You can find more information on the biology and life history Atlantic sturgeon at <u>http://www.greateratlantic.fisheries.noaa.gov/protected/atlsturgeon/</u>

#### **Effects Consideration**

As listed species occur within the vicinity of your proposed project, any proposed inwater work has the potential to impact these species. As project plans develop, we recommend you consider the following mitigation/minimization measures for all of the proposed project's activities that might affect sturgeon.

• For activities that increase levels of suspended sediment, consider the use of silt management and/or soil erosion best practices (i.e., silt curtains and/or cofferdams).

• For activities that may cause the suspension of contaminated sediment, consider the use of appropriate containment measures.

• For work that will increase vessel traffic within the project area, consider restricting the number of trips taken by each vessel and restricting the speed at which the vessel can travel.

• For any impacts to habitat or conditions that temporarily render affected water bodies unsuitable for the above-mentioned species, consider the use of timing restrictions for in-water work.

• For pile driving or other activities that may affect underwater noise levels, consider the use of a soft start, vibratory hammer, cushion blocks, and other noise attenuating tools and strategies to avoid reaching noise levels that will cause injury or behavioral disturbance to sturgeon (see the table below for more information regarding noise criteria for injury/behavioral disturbance in sturgeon).

Species Classification	Size	Injury Threshold	Behavioral Modification Threshold
Sturgeon	> 2g	206 dBpeak/187 cSEL	150 dB re 1 μPa RMS
	< 2g	206 dBpeak/183 cSEL	150 dB re 1 μPa RMS

As project details become finalized, a consultation, pursuant to section 7 of the ESA, may be necessary. If the final project plans have the potential to affect listed species, and it is being approved, permitted, or funded by a Federal agency, the lead Federal agency, or their designated non-Federal representative, is responsible for determining whether the proposed action is likely to affect the listed species. The Federal agency would submit their determination along with justification for their determination and a request for concurrence to <u>NMFS.GAR.ESA.Section7@Noaa.gov</u>

For additional technical guidance on the ESA section 7 process, please visit our website, here:

http://www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/consultation/index.ht ml

## Proposed Critical Habitat

On June 3, 2016, we issued two proposed rules to designate critical habitat for the five listed distinct population segments (DPSs) of Atlantic sturgeon found in U.S. waters (Gulf of Maine, New York Bight, and Chesapeake Bay DPSs: 81 FR 35701; Carolina and South Atlantic DPSs: 81 FR 36078). Federal agencies are required to confer with us on any action that is likely to jeopardize the continued existence of any species proposed for listing or result in destruction or adverse modification of proposed critical habitat (50 CFR §402.10). "Destruction or adverse modification" is defined as a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species (50 CFR § 402.02). The action you have inquired about will occur in an area proposed to be designated as critical habitat Gulf of Maine, New York Bight, and Chesapeake Bay DPSs.

The proposed rules identified the following four essential physical and biological features necessary for the conservation of the species. The term "physical or biological features" is defined as the features that support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species or other features.

• Hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0 to 0.5 parts per thousand range) for settlement of fertilized eggs, refuge, growth, and development of early life stages;

• Aquatic habitat with a gradual downstream salinity gradient of 0.5 to 30 parts per thousand and soft substrate (e.g., sand, mud) downstream of spawning sites for juvenile foraging and physiological development;

• Water of appropriate depth and absent physical barriers to passage (e.g., locks, dams, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support: (1) Unimpeded movement of adults to and from spawning sites; (2) seasonal and physiologically dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary; and (3) staging, resting, or holding of subadults or spawning condition adults. Water depths in main river channels must also be deep enough (e.g.,  $\geq 1.2$  m) to ensure continuous flow in the main channel at all times when any sturgeon life stage would be in the river; and

• Water, especially in the bottom meter of the water column, with the temperature, salinity, and oxygen values that, combined, support: (1) spawning; (2) annual and interannual adult, subadult, larval, and juvenile survival; and (3) larval, juvenile, and subadult growth, development, and recruitment (e.g., 13 °C to 26 °C for spawning habitat and no more than 30 °C for juvenile rearing habitat, and 6 mg/L dissolved oxygen for juvenile rearing habitat).

## Magnuson-Stevens Fishery and Conservation and Management Act

Essential Fish Habitat (EFH) is present in the area, and depending upon the activities proposed, you may need to initiate consultation with us under the Magnuson Stevens Fishery and Management Act. For questions related to EFH please contact Michelle Magliocca with our Habitat Conservation Division by phone at (<u>410) 573-4559</u> or by email (<u>Michelle.Magliocca@noaa.gov</u>).

Kind regards,

Peter

# **APPENDIX E**

# **Results of SHPO/NJSM Cultural Resources File Review**



#### Memo

ToCharles HarmanFile no.: TBDFromChristy Benescc:Tel732.302.9500FaxFax732.302.9504JateDateSeptember 18, 2015Jate

#### Subject Cultural Search

This memo has been prepared to inform you that on September 15, 2015, I visited the New Jersey Department of Environmental Protection's Historic Preservation Office (SHPO) and the New Jersey State Museum's Bureau of Archaeology and Ethnology. While there, I performed a cultural resources search for the areas surrounding the Supawna Meadows National Wildlife Refuge (the Refuge). The results of the preliminary search indicated that there are historic structures and archaeological sites where historic and prehistoric artifacts were recovered on the property.

Two separate reports were located at the SHPO that studied the cultural and historic resources on the property in the vicinity of project activities. The results of these studies are provided below:

- Heite, E.F. and L.B. Heite, 1986; Preliminary Cultural Resource Reconnaissance Investigation in Connection With Comprehensive Navigation Study. Delaware River, Delaware and New Jersey.
   The purpose of this study was to report the results of a preliminary cultural resource reconnaissance at proposed United States Army Corps of Engineers (USACOE) disposal areas along the Delaware River. The Refuge property was the site of two of the proposed disposal areas investigated (24CC and 24T). Only area 24CC lies within an area of the Refuge in which activities are presently scheduled. Investigation of area 24CC revealed two historic buildings standing next to the disposal area and a cemetery located near Lighthouse Road. In addition, six distinct archaeological sites or concentrations were discovered within this tract. The authors recommended that any development of this area should be preceded by further archaeological survey since known historic and prehistoric artifacts were recovered and are known to lie between this area and Salem Cove.
- <u>GAI Consultants, Inc. (GAI), 1993; Phase I Cultural Resources Investigation of Wetland Mitigation Areas. Salem River Navigation Project, Pennsville Township, Salem County, New Jersey.</u>
   In this study, GAI investigated three parcels of land, measuring a total of approximately 15 acres, located within the Refuge on behalf of the USACOE. GAI identified the location of three sites that contained prehistoric artifacts (28-Sa-121 Area A, 28-Sa-122 Area B, and 28-Sa-123 Area C) likely representing a series of Late Woodland

period camps. From these sites, 92 prehistoric and 64 historic historic/modern artifacts were recovered. They also discovered the nineteenth-century farm complex associated with Samuel Urion on the property, which at that point was considered potentially eligible for nomination to the National Register of Historic Places. The authors recommended that additional Phase II archaeological surveys be conducted on the grounds and, if any impacts to the farm buildings were proposed, that additional architectural research and a Phase I investigation of the buildings be performed.

Additional information was recovered from the SHPO with regard to the Samuel Urion/Yerkes Farmstead (c. 1820) located within the Refuge property boundaries, and near where project activities are slated. This farm complex has been listed as eligible for inclusion in the National Register of Historic Places. During the SHPO's review of this complex, they noted additional historic structures that border the Refuge property which have not been listed or investigated, but they felt would be eligible should the owners care to pursue. These buildings included, but were not limited to, the Mecum house (1735), the Copner house (c. 1740), the James Johnson house (c. 1815), the John Johnson house (c. 1800), and the Supawna house on the Salem River (c. 1726). The Pennsville Historical Society is working to get these other structures included in the register.

The search at the New Jersey State Museum revealed the results of four of the six archaeological dig sites from the Heite and Heite investigation (28-Sa-65, 28-Sa-66, 28-Sa-67, and 28-Sa-68) and the three areas documented by GAI (28-Sa-121, 28-Sa-122, and 28-Sa-123).

There are other registered historic landmarks and documented archaeological sites on or adjacent to the Supawna Meadows National Wildlife Refuge that are not presented in this memo, as they are not located in areas where project activities are scheduled.

Because there are historical structures and archaeological sites with documented cultural resources recovered on, or near, where project activities are scheduled, it may be necessary to conduct further archaeological investigations at the exact locations where piezometers will be installed.

Christy L. Benes, B.S. Senior Biologist



Department of the Interior United States Fish and Wildlife Service Cape May National Wildlife Refuge 24 Kimbles Beach Road Cape May Court House, NJ 08210



16 - 1782 -2 1400 - JQ016 - 163 RECEIVED

August 10, 2016

Ms. Katherine Marcopul Deputy State Historic Preservation Officer New Jersey Historic Preservation Office P.O. Box 420 Trenton, NJ 08625-0420

Dear Ms. Marcopul:

The U.S. Fish and Wildlife Service (Service) requests your comment under Section 106 of the National Historic Preservation Act regarding the effect of a proposed undertaking that will restore brackish marsh habitat at Supawna Meadows National Wildlife Refuge (Refuge). The Service has jurisdiction over the project area and is the lead agency for the project. The project is funded by the Disaster Relief Appropriations Act of 2013 (Public Law 113-12). The proposed activities will be performed directly off the shoreline of the Refuge, in Pennsville Township in Salem County (please refer to Enclosures 1-3 for maps and photographs of the project area).

The project involves modification of a stone revetment, or breakwater, which runs along the Refuge shoreline for approximately 5 km along the New Jersey-Delaware boundary. The project is focusing on a 1.5-km section of the revetment between the mouth of Mill Creek and the southeast edge of Goose Pond (please refer to Enclosure 4). At three locations, stone will be removed from the revetment to create openings that will enhance and restore marsh resiliency through better tidal flushing, increased sediment transport, reduced wave energies, decreased scouring in channels, and increased marsh attenuation behind the breakwater. The three openings will be 330 feet, 140 feet, and 125 feet wide respectively (all approximate widths). At six other locations, stone removed from the openings will be used to fill existing gaps in the revetment, in order to improve protection of the saltmarsh during major storm events. If there is a deficit of fill material, extra stone or concrete pyramidal wave-attenuation devices will be brought in. Any addition of rock to the revetment will not exceed the original height of the wall. The project will not entail any land-based construction, or any terrestrial access or staging areas. The project will not incur any visual impacts on significant historic structures or historic districts.

The Service has sought information concerning the age and origins of the revetment, but the Service has not been able to ascertain who built the revetment, or precisely when it was built. Apparently, the original intent was to retain land in a stable condition and to preserve the elevation of land along the historic shoreline, for agricultural use. The historian at the Fort Mott State Park has speculated that the revetment may have been constructed ca. 1921 to protect aiming towers and the Finns Point Front Range Light that had been built in the saltmarsh.

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HISTORIC PREASING OFFICE

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The revetment was not maintained during the twentieth century, and its overall integrity is poor. Data obtained from side-scan sonar, historic aerial imagery, and bathymetric soundings show that the wall has not been maintained since the original construction. The wall has experienced varying degrees of subsidence, movement due to wave energy, and general deterioration of form since that time. While it is a coastal landscape feature that constitutes a form of historic property, the revetment has poor historical integrity and its historical significance appears to be minimal. Consequently, the Service has determined that the revetment is not eligible for listing in the National Register of Historic Places. We believe that the project will not cause an adverse effect under NHPA (Sec. 106).

We would appreciate receiving your concurrence with this finding within 30 days, as prescribed in the Regulations of the Advisory Council on Historic Preservation [36 CFR 800.4 (d)]. If you have any questions or need further information, please contact me at (609) 652-1665.

Sincerely,

**Brian Braudis Refuge Manager** 

Enclosure 1 – Aerial photography with Refuge lands and Resiliency project area. Enclosure 2 - Topographic map of Supawna Meadows National Wildlife Refuge. Enclosure 3 – Photographs showing typical existing conditions along the stone breakwater. Enclosure 4 – Computer model images of proposed management area and detail of sites.

Cc: Timothy Binzen, NWRS

The New Jersey Historic Preservation Office concurs with the U.S. Fish and Wildlife Service that the undertaking described above will have no adverse effect on National Registereligible historic properties in the project area.

Signature KATHERINE J. MARCEPUL

10/27/2016

C. JACK SZCZEPANSKI, USF+WS

# **APPENDIX F**

# **Consistency Certification**



Cape May National Wildlife Refuge 24 Kimbles Beach Road Cape May Court House, NJ 08210 609-463-0994 FAX 609-463-1667 http://capemay.fws.gov/



February 11, 2022

Kimberly Cole, Administrator Delaware Coastal Management Program Department of Natural Resources and Environmental Control 100 W. Water Street, Suite 7B Dover, Delaware 19904

#### RE: CONSISTENCY CERTIFICATION MARSH RESTORATION PROJECT (GOOSE POND) SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE BLOCK 5501, LOT 17 PENNSVILLE TOWNSHIP, SALEM COUNTY, NJ

To Kimberly Cole:

In order to maintain compliance with the Federal and Delaware State regulations regarding Consistency Certification for states with Approved State Coastal Zone Management (CZM) Programs, the United States Fish and Wildlife Service (the Service) is providing you with this Compliance Statement in support of a Department of the Army Nationwide Permit 3 (NWP-3). The Compliance Statement provides a detailed description of the proposed activities, including maps and diagrams, a signed Consistency Certification Statement, a copy of the NWP-3 application submitted to the United States Army Corps of Engineers (USACE) Philadelphia district engineer, and a brief assessment of the project activities compared to the relevant policies of the Delaware Coastal Management Program (DCMP).

Supawna Meadows National Wildlife Refuge received a Delaware Coastal Management Federal Consistency Certification letter for phase 1 of our Marsh Restoration project (FC#2017.0031) on February 6, 2017. We completed the construction for this permit by adding rocks to an existing breakwater in 2017 around Mill Creek in Pennsville, NJ in order to protect the marsh habitat and create a more resilient marsh.

The current NWP-3 was submitted for approval for activities associated with phase 2 of the restoration/alteration of another part of the existing breakwater dike located southeast from the Mill Creek site around Goose Pond, designated as part of the Supawna Meadows National Wildlife Refuge.

If there are any questions, please do not hesitate to call me at (609) 425-5122. Thank you,

Le: di Hark

Heidi Hanlon Acting Refuge Manager

#### DELAWARE COASTAL MANAGEMENT PROGRAM CONSISTENCY CERTIFICATION

SUBJECT: "Consistency Certification" with Approved Coastal Zone Management Program.

Federal regulations require that applicants for Department of the Army permits to perform work in waters of the United States, which fall under the jurisdiction of a State with a Coastal Zone Management (CZM) Program approved by the Secretary of Commerce, must provide a signed consistency statement to the Corps of Engineers with their application for a Department of the Army permit.

On August 21, 1979, a CZM Program was approved for the State of Delaware by the U.S Department of Commerce. Therefore, the applicant (the United States Fish and Wildlife Service (the Service)) for a Department of the Army permit for work in Delaware's designated Coastal Zone, which is the entire State of Delaware, is required to provide this signed Consistency Certification. As such, the Service issues the following statement:

"The proposed activity complies with Delaware's approved coastal management program and will be conducted in a manner consistent with such program."

<u>Yeid</u> Hanh-Signature of Applicant

# **APPENDIX G**

# **Agency Notification Requirements**



Cape May National Wildlife Refuge 24 Kimbles Beach Road Cape May Court House, NJ 08210 609-463-0994 FAX 609-463-1667 http://capemay.fws.gov/



February 11, 2022

Kimberly Cole, Administrator Delaware Coastal Management Program Department of Natural Resources and Environmental Control 100 W. Water Street, Suite 7B Dover, Delaware 19904

#### RE: CONSISTENCY CERTIFICATION MARSH RESTORATION PROJECT (GOOSE POND) SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE BLOCK 5501, LOT 17 PENNSVILLE TOWNSHIP, SALEM COUNTY, NJ

To Kimberly Cole:

In order to maintain compliance with the Federal and Delaware State regulations regarding Consistency Certification for states with Approved State Coastal Zone Management (CZM) Programs, the United States Fish and Wildlife Service (the Service) is providing you with this Compliance Statement in support of a Department of the Army Nationwide Permit 3 (NWP-3). The Compliance Statement provides a detailed description of the proposed activities, including maps and diagrams, a signed Consistency Certification Statement, a copy of the NWP-3 application submitted to the United States Army Corps of Engineers (USACE) Philadelphia district engineer, and a brief assessment of the project activities compared to the relevant policies of the Delaware Coastal Management Program (DCMP).

Supawna Meadows National Wildlife Refuge received a Delaware Coastal Management Federal Consistency Certification letter for phase 1 of our Marsh Restoration project (FC#2017.0031) on February 6, 2017. We completed the construction for this permit by adding rocks to an existing breakwater in 2017 around Mill Creek in Pennsville, NJ in order to protect the marsh habitat and create a more resilient marsh.

The current NWP-3 was submitted for approval for activities associated with phase 2 of the restoration/alteration of another part of the existing breakwater dike located southeast from the Mill Creek site around Goose Pond, designated as part of the Supawna Meadows National Wildlife Refuge.

If there are any questions, please do not hesitate to call me at (609) 425-5122. Thank you,

Leid Hark

Heidi Hanlon Acting Refuge Manager



Cape May National Wildlife Refuge 24 Kimbles Beach Road Cape May Court House, NJ 08210 609-463-0994 FAX 609-463-1667 http://capemay.fws.gov/



February 11, 2022

Department of Natural Resources and Environmental Control Wetlands and Subaqueous Lands Section 89 Kings Highway P.O. Box 1401 Dover, DE 19901

#### RE: SUBAQUEOUS LANDS PERMIT MARSH RESTORATION PROJECT (GOOSE POND) SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE BLOCK 5501, LOT 17 PENNSVILLE TOWNSHIP, SALEM COUNTY, NJ

To Whom it May Concern:

In order to maintain compliance with the Federal and Delaware State regulations regarding Subaqueous Lands, the United States Fish and Wildlife Service (the Service) is providing you with this Wetlands and Subaqueous Lands Section Permit Application in support of a Department of the Army Nationwide Permit 3 (NWP-3). The Wetlands and Subaqueous Lands Section Permit Application provides two relevant application forms, a detailed description of the proposed activities, including maps and diagrams, site plans, and a copy of the property deed/survey.

Supawna Meadows National Wildlife Refuge received a Subaqueous Lands Permit for phase 1 of our marsh restoration project (SP 507/16) on June 6, 2017. We completed construction for this permit by adding rocks to an existing breakwater in 2017 around Mill Creek in Pennsville, NJ to protect the marsh habitat and create a more resilient marsh.

The current NWP-3 was submitted for approval for activities associated with phase 2 and the restoration/ alteration of another part of the existing breakwater located southeast from the Mill Creek site around Goose Pond, designated as part of the Supawna Meadows National Wildlife Refuge.

If there are any questions, please do not hesitate to call me at (609) 425-5122. Thank you.

Heidittanh

Heidi Hanlon Acting Refuge Manager



Cape May National Wildlife Refuge 24 Kimbles Beach Road Cape May Court House, NJ 08210 609-463-0994 FAX 609-463-1667 http://capemay.fws.gov/



February 10, 2022

New Jersey Department of Environmental Protection Division of Land Resource Protection P.O. Box 420, Code 501-02A 501 East State Street Trenton, New Jersey 08625

#### Re: PUBLIC NOTIFICATION DESIGN/BUILD MARSH RESTORATION PROJECT SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE BLOCK 5501, LOT 17 PENNSVILLE TOWNSHIP, SALEM COUNTY, NJ

To Whom It May Concern:

The United States Fish & Wildlife Service (the Service) is submitting this Federal Consistency Determination under a Waterfront Development/Coastal Wetlands Individual Permit, and a Coastal General Permit 24 (CGP 24) for the restoration of tidal hydrology at the Supawna Meadows Design/Build Marsh Restoration Project area. The project is located in Pennsville Township, Salem County, New Jersey.

In addition, a Pre-Construction Notification (PCN) for a Nationwide Permit 3 (NWP 3) has been submitted to the U.S. Army Corps of Engineers, and an application for a Subaqueous Lands authorization has been submitted to the Delaware Department of Natural Resources and Environmental Control (DNREC).

This Federal Consistency Determination, the NWP 3, and the DNREC authorization are required in advance of the proposed restoration activities. A previous and similar breakwater restoration project for Supawna Meadows NWR was permitted under Federal Consistency Determination File No. 1708-03-0012.1 CDT170001. If you have any questions regarding this application, please feel free to contact me at (609) 425-5122. Thank you.

editent

Heidi Hanlon Acting Refuge Manager



# United States Department of the Interior



### FISH AND WILDLIFE SERVICE

Cape May & Supawna Meadows National Wildlife Refuges 24 Kimbles Beach Road Cape May Court House, NJ 08210 609-463-0994 609-463-1667 Fax

February 11, 2022

National Marine Fisheries Service Habitat Conservation Division 74 Magruder Road, Sandy Hook Highlands, NJ 07732

#### Re: NATIONWIDE PERMIT 3 MARSH RESTORATION PROJECT (GOOSE POND) SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE BLOCK 5501, LOT 17 PENNSVILLE TOWNSHIP, SALEM COUNTY, NJ

To Whom It May Concern:

In order to maintain compliance with the Nationwide Permit Regional Conditions for New Jersey and Delaware, the United States Fish and Wildlife Service (the Service) is providing you with a copy of the pre-construction notification in support of a Nationwide Permit 3 (NWP-3), submitted to the United States Army Corp of Engineers (USACE) Philadelphia district engineer. The NWP-3 was submitted for approval for activities associated with the restoration/alteration of a breakwater dike located within an area designated as part of the Supawna Meadows National Wildlife Refuge.

If there are any questions, please do not hesitate to call me at (609) 425-5122. Thank you.

Heidi Hanh

Heidi Hanlon Acting Refuge Manager

# **APPENDIX H**

# **Previous ACOE NWP-3 approval letters**



#### CERTIFIED MAIL- RETURN RECEIPT REQUESTED

DEPARTMENT OF THE ARMY PHILADELPHIA DISTRICT CORPS OF ENGINEERS WANAMAKER BUILDING, 100 PENN SQUARE EAST PHILADELPHIA, PENNSYLVANIA 19107-3390

## JUN 28 2017

Regulatory Branch Application Section I

SUBJECT:CENAP-OP-R-2016-00505-86 (NWP 3)Project Name:U.S. Fish and Wildlife Service Supawna MeadowsDDNREC #:SP-507/16NJDEP #:1708-03-0012.1 CDT170001Latitude and Longitude:39.591° N, -75.535° W (NAD 83)

U.S. Fish and Wildlife Service Supawna Meadows Brian Braudis 24 Kimbles Beach Road Cape May Court House, NJ 08210

Dear Mr. Braudis:

This is in regard to your proposal to make modifications and perform maintenance to an existing stone breakwater located in 199 Lighthouse Road, Pennsville, Salem County, New Jersey. The project plans provide for modifications to portions of an existing breakwater to reinforce marsh protective features, enhance functioning breaches, and remove additional stone from other breaches that are detrimental to Supawna Meadows Marsh Complex. The stated purpose of the project is to combat future impacts to the Supawna Meadows Marsh Complex from the detrimental effects of seas level rise and help repair damage caused from decades of agricultural and mosquito control practices.

Under current Federal regulations, a Department of the Army permit is required for work or structures in navigable waters of the United States and/or the discharge of dredged or fill material into waters of the United States including wetlands.

Based upon our review of the information you have provided, it has been determined that your project is approved by the existing Department of the Army Nationwide Permit (NWP) described below, provided the work is conducted in compliance with the NWP general conditions, regional conditions, and the project specific special conditions.

**NWP 3. Maintenance.** (a) The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are

authorized. This NWP also authorizes the removal of previously authorized structures or fills. Any stream channel modification is limited to the minimum necessary for the repair, rehabilitation, or replacement of the structure or fill; such modifications, including the removal of material from the stream channel, must be immediately adjacent to the project. This NWP also authorizes the removal of accumulated sediment and debris within, and in the immediate vicinity of, the structure or fill. This NWP also authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, this two-year limit may be waived by the district engineer, provided the permittee can demonstrate funding, contract, or other similar delays.

(b) This NWP also authorizes the removal of accumulated sediments and debris outside the immediate vicinity of existing structures (*e.g.*, bridges, culverted road crossings, water intake structures, etc.). The removal of sediment is limited to the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend farther than 200 feet in any direction from the structure. This 200 foot limit does not apply to maintenance dredging to remove accumulated sediments blocking or restricting outfall and intake structures or to maintenance dredging to remove accumulated sediments from canals associated with outfall and intake structures. All dredged or excavated materials must be deposited and retained in an area that has no waters of the United States unless otherwise specifically approved by the district engineer under separate authorization.

(c) This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the maintenance activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. After conducting the maintenance activity, temporary fills must be removed in their entirety and the affected areas returned to preconstruction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

(d) This NWP does not authorize maintenance dredging for the primary purpose of navigation. This NWP does not authorize beach restoration. This NWP does not authorize new stream channelization or stream relocation projects.

*Notification:* For activities authorized by paragraph (b) of this NWP, the permittee must submit a preconstruction notification to the district engineer prior to commencing the activity (see general condition 32). The pre-construction notification must include information regarding the original design capacities and configurations of the outfalls, intakes, small impoundments, and canals.

(Authorities: Section 10 of the Rivers and Harbors Act of 1899 and section 404 of the Clean Water Act (Sections 10 and 404))

**Note**: This NWP authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the Clean Water Act section 404(f) exemption for maintenance.

A copy of the NWP General Conditions and the Philadelphia District 2017 NWP Regional Permit Conditions for Delaware and New Jersey, for which this verification is subject to, can be found at:

http://www.nap.usace.army.mil/Portals/39/docs/regulatory/publicnotices/2017%20Nationwide% 20Permit%20General%20Conditions.pdf

http://www.nap.usace.army.mil/Portals/39/docs/regulatory/publicnotices/2017_DE_Reg%20Con d_Final.pdf

http://www.nap.usace.army.mil/Portals/39/docs/regulatory/nwp/reg cond NJ_16Mar2012.pdf

In instances where you are unable to access a digital copy of the 2017 NWP General conditions and/or the 2017 NWP Regional Permit Conditions for Delaware and New Jersey, a hard copy will be transmitted by registered mail to you per request. It is further noted that you may request a copy by email at any time in which the NWP General Conditions and Regional Permit Conditions will be provided to you by facsimile or other electronic means per your request.

You should carefully note that this NWP authorization is based upon your agreement to comply with the terms and conditions of this NWP, including any and all attached project specific special conditions listed below. Initiation of any authorized work shall constitute your agreement to comply with all of the NWP's conditions. You should also note that the authorized work may be subject to periodic inspections by a representative of this office. The verification of a Nationwide Permit including all general and special conditions is not subject to appeal.

It is noted that CZM consistency from the State is only required for those activities in or affecting a State's coastal zone. Additionally, some of the NWPs do not involve a discharge of dredged or fill material, and as such, do not require a 401 WQC. If the State has denied the required WQC and/or not concurred with the Corps' CZM consistency determination, the NWP authorization is considered denied without prejudice until an individual project specific WQC and/or CZM approval is obtained. This approval must be obtained in order for the activity to be authorized under the NWP and a copy provided to this office before work begins. Any project specific conditions required by the State for the WQC and/or CZM approval will automatically become part of the NWP authorization.

A copy of the table that identifies those NWPs which have been denied WQC and/or CZM consistency by the DDNREC and NJDEP can be found at:

#### http://www.nap.usace.army.mil/Portals/39/docs/regulatory/publicnotices/NWP_Status_Table_for __CZM_and_WQC.pdf

You are advised that this verification of NWP authorization is valid until the Nationwide Permits expire on March 18, 2022, unless the NWP authorization is modified, suspended, or revoked prior to this date. In the event that the NWP authorization is modified during that time period, this expiration date will remain valid, provided the activity complies with any subsequent modification of the NWP authorization.

Activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon an NWP will remain authorized, provided the activity is completed within twelve months of the date of an NWP's expiration, modification, or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5 (c) or (d). Activities completed under the authorization of an NWP which was in effect at the time the activity was completed continue to be authorized by that NWP.

#### **PROJECT SPECIFIC SPECIAL CONDITIONS:**

1. All work performed in association with the above noted project shall be conducted in accordance with the attached project plans prepared by .EA Engineering, Science, and Technology, Inc., PBC; dated October 2016, unrevised, entitled: "SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE RESTORATION OF BRAKISH TIDAL WETLANDS, SALEM TOWNSHIP, NEW JERSEY," sheets 1 through 7 of 7.

2. Construction activities shall not result in the disturbance or alteration of greater than 0.70 acre of waters of the United States.

3. Any deviation in construction methodology or project design from that shown on the above noted drawings or repair plan must be approved by this office, in writing, prior to performance of the work. All modifications to the above noted project plans shall be approved, in writing, by this office. No work shall be performed prior to written approval of this office.

4. This office shall be notified prior to the commencement of authorized work by completing and signing the enclosed Notification/ Certification of Work Commencement Form (Enclosure 1). This office shall also be notified within 10 days of the completion of the authorized work by completing and signing the enclosed Notification/Certification of Work Completion/Compliance Form (Enclosure 2). All notifications required by this condition shall be in writing. The Notification of Commencement of work may be sent to this office by facsimile or other electronic means; all other notification shall be transmitted to this office by registered mail. Oral notifications are not acceptable. Similar notification is required each time maintenance work is to be done under the terms of this Corps of Engineers permit.

5. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

6. To ensure compliance with Regional Condition – 6 (G-6) to protect Essential Fish Habitat (EFH) species, their prey species, and/or their habitats the permittee shall not conduct any in water work from August  $1^{st}$  to October  $31^{st}$ .

Also enclosed is a pre-addressed postal card (Enclosure 3) soliciting your comments on the processing of your application. Any comments, positive or otherwise, on the procedures, timeliness, fairness, etc., may be made on this card. If you should have any questions regarding this matter, please contact Genevieve Rybicki at (215) 656-8597 or write to the above address.

Sincerely,

Ehre

Edward E. Bonner Chief, Regulatory Branch

Enclosures



#### DEPARTMENT OF THE ARMY

PHILADELPHIA DISTRICT CORPS OF ENGINEERS WANAMAKER BUILDING, 100 PENN SQUARE EAST PHILADELPHIA. PENNSYLVANIA 19107-3390

## JUL 2 0 2017

Regulatory Branch Applications Section I

SUBJECT: CENAP-OP-R-2016-00505-86 U.S. Fish and Wildlife Service Supawna Meadowns

U.S. Fish and Wildlife Service Supawna MeadowsBrian Braudis24 Kimbles Beach RoadCape May Court House, NJ 08210

Dear Mr. Braudis:

Reference is made of the Department of the Army permit June 28, 2017 which authorized U.S. Fish and Wildlife Service to make modifications and perform maintenance to an existing stone breakwater located in 199 Lighthouse Road, Pennsville, Salem County, New Jersey

In your e-mail July 5, 2016, you requested authorization to change the seasonal restriction to match National Marine Fisheries' request for when in water work can be done. In accordance with your request, the following Special Condition is hereby modified:

 To ensure compliance with Regional Condition – 6 (G-6) to protect Essential Fish Habitat (EFH) species, their prey species, and/or their habitats the permittee shall only conduct any in water work from August 1st to October 31st.

All other conditions to which this permit was made subject remain in full force and effect. This authorization does not affect your responsibility to obtain any other Federal, State or local approvals required by law for this project before beginning work.

If you should have any questions regarding this matter, please contact Genevieve Rybicki at (215) 656-8597 or write to the above address.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

dward Broken

Edward E. Bonner Chief, Regulatory Branch

for:

Michael A. Bliss, P.E. Lieutenant Colonel, Corps of Engineers District Commander Project Description and Compliance Statement Supawna Meadows National Wildlife Refuge Design/Build Marsh Restoration Project Block 5501 Lot 17 Pennsville Township, Salem Co., NJ



# **APPENDIX B**

# **Photograph Log**



General view of Project Area along canals, facing northwest from Salem River



#### Photo 2

Typical view of common reed (*Phragmites australis*). Dominant habitat within Project Area.

## PHOTOGRAPHIC LOG

Cape May National Wildlife Refuge Supawna Meadows Project Area Salem County, New Jersey





Eastern portion of breakwater, facing northeast. Showing breach (structure is present beneath the water).



#### Photo 4

Alternate view of eastern portion of breakwater, facing northeast. Showing breach (structure is present beneath the water).

## PHOTOGRAPHIC LOG

Cape May National Wildlife Refuge Supawna Meadows Project Area Salem County, New Jersey





Breach in eastern portion of the breakwater (structure is present beneath the water).



#### Photo 6

Central portion of the breakwater, facing north.

## PHOTOGRAPHIC LOG

Cape May National Wildlife Refuge Supawna Meadows Project Area Salem County, New Jersey





Central portion of the breakwater, facing northwest.



#### Photo 8

Central portion of the breakwater, facing northwest. Showing breach (structure is present beneath the water).

## PHOTOGRAPHIC LOG

Cape May National Wildlife Refuge Supawna Meadows Project Area Salem County, New Jersey





Westernmost breakwater breach (structure is present beneath the water).

## Photo 10

Westernmost portion of breakwater, facing north.

## PHOTOGRAPHIC LOG

Cape May National Wildlife Refuge Supawna Meadows Project Area Salem County, New Jersey



Project Description and Compliance Statement Supawna Meadows National Wildlife Refuge Design/Build Marsh Restoration Project Block 5501 Lot 17 Pennsville Township, Salem Co., NJ



# **APPENDIX C**

# **Site Plans**

# **SUPAWNA MEADOWS** NATIONAL WILDLIFE REFUGE **RESTORATION OF BRACKISH TIDAL WETLANDS PENNSVILLE, NEW JERSEY PERMITTING DRAWING SET**



LOCATION MAP SCALE: 1" = 2,500 FEET



NOT TO SCALE



**PREPARED FOR:** 

DUCKS UNLIMITED 7322 NEWMAN BLVD, BUILDING 1 DEXTER, MI 48130



**PROJECT PARTNER:** 

U.S. FISH & WILDLIFE SERVICE CAPE MAY NATIONAL WILDLIFE REFUGE 24 KIMBLES BEACH ROAD CAPE MAY COURT HOUSE, NEW JERSEY 08210 VICINITY MAP

SHEET	LIST

DRAWING NO.	SHEET NO.	DRAWING TITLE
G-001	1	TITLE SHEET
G-002	2	GENERAL NOTES AND LEGEND
C-101	3	EXISTING CONDITIONS PLAN
C-102	4	PROPOSED CONDITIONS PLAN
C-201	5	BREAKWATER PROFILE AND SECTIONS
C-202	6	BREAKWATER PROFILE AND SECTIONS

SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE RESTORATION OF BRACKISH TIDAL WATERS PENNSVILLE, NEW JERSEY TITLE, NEW JERSEY	DESIGN INFORMATION REVISIONS	DESIGNED BY: NO. DATE BY AEH DRAWN BY:	SMB CHECKED BY:	GAT PROJECT MANAGER:	MM
	SEAL	SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE RESTORATION OF BRACKISH TIDAL WATERS	PENNSVILLE, NEW JERSEY	TITLE SHEET	

## MAP NOTES AND REFERENCES:

- BENCHMARKS AND CONTROL POINTS WILL BE REFERENCED TO HORIZONTAL: NEW JERSEY STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD83) AND VERTICAL: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). ALL VERTICAL ELEVATIONS SPECIFYING BREAKWATER TOP ELEVATION, MHW, AND MLW REFERENCE NAVD88.
- 2. EXISTING SITE FEATURES AS SHOWN ARE BASED ON SURVEY AND LIDAR DATA COLLECTED BY AXIS GEOSPATIAL, INC. ON 26 JULY 2015 AND BATHYMETRY DATA COLLECTED BY EA ENGINEERING, SCIENCE, AND TECHNOLOGY INC., PBC SEPTEMBER 2015.
- 3. AERIAL PHOTOGRAPHS WERE COLLECTED BY AXIS GEOSPATIAL, INC. ON 26 JULY 2015.

## GENERAL CONSTRUCTION NOTES:

- THE CONTRACTOR SHALL VERIFY THE PROPOSED LAYOUT OF THE WORK. THE CONTRACTOR SHALL ALSO VERIFY ALL DIMENSIONS, SITE CONDITIONS, AND MATERIAL SPECIFICATIONS AND SHALL NOTIFY USFWS AND THE ENGINEER OF ANY ERRORS, OMISSIONS, OR DISCREPANCIES BEFORE COMMENCING OR PROCEEDING WITH WORK.
- 2. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE SYSTEM OF ANY CONSTRUCTION LAYOUT BENCHMARKS AND BASELINES FOR THE DURATION OF THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE HORIZONTAL AND VERTICAL ACCURACY DURING ALL CONSTRUCTION ACTIVITIES.
- 3. DEVIATIONS OR CHANGES FROM THESE PLANS WILL NOT BE ALLOWED UNLESS APPROVED BY THE PRIME CONTRACTOR, ENGINEER, AND USFWS.
- 4. CONTRACTOR SHALL PROTECT OTHER STRUCTURES WITHIN OR ADJACENT TO THE PROJECT AREAS WHICH ARE SCHEDULED TO REMAIN. ANY DAMAGE TO SUCH STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER AND USFWS.
- 5. CONTRACTOR SHALL PROCEED IN ACCORDANCE WITH USFWS APPROVED HEALTH AND SAFETY PLAN AND QUALITY CONTROL PLAN.
- 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUOUSLY MAINTAINING THE POSITION OF THE EXCAVATING EQUIPMENT WITHIN THE PRESCRIBED CONSTRUCTION AND REMOVAL OF BREAKWATER LIMITS. CONTRACTOR SHALL CONTINUOUSLY MONITOR TIDE LEVELS AND DEPTH OF EXCAVATION TO ENSURE THAT THE PROPOSED DEPTH IS NOT EXCEEDED. THE CONTRACTOR SHALL HAVE ADEQUATE PERSONNEL ONSITE WITH THE ABILITY TO SET ACCURATE CONTROL FOR THE PLANNED EXCAVATION OPERATIONS.
- THE MARSH RESTORATION STUDY REPORT AND ALTERNATIVE ANALYSIS FOR SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE, DATED OCTOBER 2016, SERVES AS A BASIS OF DESIGN AND IS A SOURCE OF ADDITIONAL BATHYMETRIC DATA FOR THE EXISTING BREAKWATER AND THE AREA IMMEDIATELY ADJACENT.

## UTILITIES:

- 1. THE CONTRACTOR SHALL CONFIRM THAT NO UTILITIES EXIST WITHIN THE LIMITS OF EXCAVATION.
- 2. NOTIFY DIGSAFE AND/OR PUBLIC UTILITIES AT LEAST 3 BUSINESS DAYS PRIOR TO SITEWORK ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD LOCATION/VERIFICATION AND PROTECTION OF ALL SUBSURFACE AND OVERHEAD UTILITIES.
- 3. NO KNOWN UNDERGROUND UTILITIES HAVE BEEN DOCUMENTED WITHIN THE LIMITS OF WORK. SHOULD UNCHARTED UTILITIES BE IDENTIFIED PRIOR TO EARTHWORK ACTIVITIES, OR ENCOUNTERED DURING EXCAVATION, CONSULT ENGINEER FOR DIRECTION.
- 4. PRIOR TO ANY EARTHWORK ACTIVITIES:
- A. LOCATE ALL UTILITIES WITHIN THE LIMITS OF WORK AND DETERMINE WHETHER UTILITIES ARE ACTIVE. B. LAYOUT WORK LIMIT STATIONS.
- C. INSTALL EROSION AND SEDIMENTATION CONTROL MEASURES.

#### SPILL PREVENTION AND RESPONSE PLAN:

1. CONTRACTOR SHALL FOLLOW PROCEDURES DESCRIBED IN SPILL PREVENTION AND RESPONSE PLAN PREPARED BY CONTRACTOR AND APPROVED BY USFWS.

#### **EROSION AND SEDIMENT CONTROL MEASURES:**

- CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION AND MAINTENANCE OF THE APPROVED QUALITY CONTROL PLAN AND OTHER MEASURES NECESSARY TO CONTROL, FILTER OR PREVENT SEDIMENT FROM LEAVING THE CONTAINED AREA.
- 2. CONTRACTOR WILL INSTALL A TURBIDITY CURTAIN AROUND CURRENT WORK AREA IN ACCORDANCE WITH THE QUALITY CONTROL PLAN.

#### ACCESS AND HOURS OF OPERATION:

- BARGES WILL BE MOBILIZED AND LOADED WITH STONE MATERIALS FROM VESSELS LAUNCHED AT OFF SITE STAGING AREAS.
- WORK HOURS WILL BE TIDALLY DEPENDENT. A TYPICAL WORK DAY MIGHT INCLUDE TRANSPORTING MATERIAL TO THE WORK SITE FROM THE STAGING SITE AT SLACK LOW TIDE, ARRIVE AT MID TIDE, WORK THROUGH HIGH TIDE AND LEAVE THE PROJECT SITE AT THE MID TIDE TO RETURN TO THE STAGING AREA. BARGES ON SITE WILL BE STATIONED NEAR THE WORK AREA IN ANCHORAGES APPROVED BY USCG, AND IN WATER DEPTHS SUFFICIENT TO PREVENT BARGE GROUNDING DURING PERIODS OF LOW TIDE. HOURS OF WORK WILL VARY AS APPROPRIATE TO MATCH DAILY TIDE CYCLES DURING DAYLIGHT HOURS.
- 3. CONTRACTOR WILL FOLLOW ALL US COAST GUARD REGULATIONS CONCERNING BARGES AND BOATS, AND BE SENSITIVE TO NON-PROJECT RELATED VESSELS DURING WORK.

# MATERIAL EXCAVATION REQUIREMENTS:

## MATERIAL PLACEMENT REQUIREMENTS:

- BREAKWATER.
- PLACEMENT AS PRACTICAL.
- 3. MINIMIZE EXCESS TURBIDITY DURING PLACEMENT.
- THE PROPOSED ELEVATION.

# MATERIAL REQUIREMENTS:

WATER, OR HANDLING.

- THE 6 INCH.
- Α. STONE UNIT WEIGHT CERTIFICATION Β.

# **MOBILIZATION AND SEQUENCE OF WORK:**

THE CONTRACTOR SHALL FOLLOW THE SEQUENCING PLAN DESCRIBED BELOW WHILE CONSTRUCTING BREAKWATER. CHANGES ARE PERMITTED WITH THE WRITTEN APPROVAL OF THE ENGINEER.

- UNSUITABLE SOIL PLACEMENT.
- SECTOR WILL BE MAINTAINED TO INSURE THE PROPER DISTRIBUTION OF MATERIAL ON THE PROJECT.
- QUALITY.
- BE MOVED OUT INTO SAFER WATER DEPTHS.

#### PERMITTING REQUIREMENTS:

FEDERAL CONSISTENCY DETERMINATION NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF LAND USE REGULATION UPLAND WATERFRONT DEVELOPMENT PERMIT, COASTAL GENERAL PERMIT 24, SECTION 401 WATER QUALITY CERTIFICATE NJDEP FILE NO. XXXX

WETLANDS AND SUBAQUEOUS LANDS PERMIT DNREC FILE NO. XXXX

UNITED STATES ARMY CORPS OF ENGINEERS DEPARTMENT OF ARMY PERMIT NATIONWIDE PERMIT XXXX

- BEEN REVIEWED AND ACCEPTED BY THE ENGINEER, AND USFWS.
- 3. A COPY OF ALL PERMITS WILL BE AVAILABLE ON SITE.

AC A 1. STONE EXCAVATED FROM THE BREAKWATER STRUCTURE WILL BE REUSED IN THE BREAKWATER STRUCTURE. IF NOT DEEMED SUITABLE FOR USE IN THE BREAKWATER STRUCTURE, MATERIAL WILL BE APPRX PLACED ON THE NORTH SIDE OF THE EXISTING BREAKWATER FROM STATIONS 6+14 TO 7+45. ASTM A BLDG CATV CA 1. ANCHORING AND SPUDDING TO BE ACCOMPLISHED IN A MANNER AS TO NOT DISTURB EXISTING CMP COMM 2. STONE WILL BE PLACED MECHANICALLY OR BY A METHOD THAT LIMITS WASTE OR LOSS DURING CONC DA DIA DOT 4. THE TOP OF THE FINISHED BREAKWATER STRUCTURE WILL BE AN AVERAGE ELEVATION OF ±4 INCHES FROM FL/FLF\ ECP 5. THE PROPOSED QUANTITY OF STONE TO BE FURNISHED AND PLACED IS 4,080 CUBIC YARDS. EPA ESC ESD EX/EXIST 1. STONE SHALL BE HARD AND ANGULAR, FREE FROM LAMINATIONS, WEAK CLEAVAGES OR UNDESIRABLE FEMA WEATHERING AND OF SUCH CHARACTER THAT IT WILL NOT DISINTEGRATE FROM THE ACTION OF AIR, FT FT BGS 2. STONE DENSITY = 160 LB/CF. STONE SIZE SHALL MEET THE FOLLOWING SIZE AND GRADATION: 100 PERCENT GPS GI PASSING 24 INCHES WITH 15-50 PERCENT PASSING 12 INCHES WITH NO MORE THAN 15 PERCENT PASSING IN\ MHW 3. SUBMITTALS FOR APPROVAL OF STONE PRIOR TO DELIVERY TO THE SITE WILL INCLUDE: MLW MSL STONE CLASSIFICATION CERTIFICATION BY SUPPLIER NA C. STONE SIZE CONFORMANCE FOR MATERIALS DELIVERED TO THE PROJECT SITE NAD 83

1. MOBILIZATION OF BARGES AND EQUIPMENT, AND TRANSFER OF STONE ONTO BARGES FOR TRANSPORT WILL OCCUR AT OFF SITE STAGING AREAS. BARGES WILL BE LIGHT LOADED TO LIMIT DRAFT TO ~4' OR LESS.

2. WORK WILL PROCEED FROM NORTH (STA. -0+20) TO SOUTH (STA. 25+11). RANGE AND ELEVATION MARKERS WILL BE INSTALLED FOR CONTROL OF STONE PLACEMENT IN ACCORDANCE WITH THE PLAN SHEETS C-102 THROUGH C-202. TURBIDITY CURTAIN WILL BE PLACED AROUND THE AREA OF EXCAVATION AND AREA OF

3. IN ADDITION TO THE USE OF LAYOUT MARKERS, A RECORD OF THE QUANTITY OF STONE PLACED IN EACH

4. EACH WORKDAY, DURING A PERIOD OF FLOOD TIDE, THE EQUIPMENT WILL BE MOVED INTO WORKING POSITION, AS CONDITIONS ALLOW. BEFORE ANY STONE PLACEMENT OR EXCAVATION BEGINS, ANY REQUIRED TURBIDITY CURTAIN WILL BE DEPLOYED AND/OR REPAIRED.

5. CONSTRUCTION PERSONNEL WILL BE PRESENT ON THE BREAKWATER WHILE STONE IS BEING PLACED TO SPOT STONE PLACEMENT VIA A CLAM BUCKET OR GRAPPLE, AND TO VISUALLY INSPECT CONSTRUCTION

6. WORK WILL BE LIMITED BY THE AVAILABLE FLOATATION. WATER DEPTH AND TIDAL CONDITIONS WILL BE MONITORED AND, WHEN CONDITIONS WARRANT, THE OPERATION WILL BE STOPPED AND THE BARGES WILL

1. THIS PROJECT IS SUBJECT TO THE CONDITIONS OF THE FOLLOWING PERMITS:

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

2. CONSTRUCTION MAY NOT PROCEED UNTIL THE ABOVE PERMITS ARE RECEIVED AND CONDITIONS HAVE



NOTE:

NAVD 88

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RCP

RTK

SCH

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SQ FT

SWM

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U.S.

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UGND/UG

OVHD/OH

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NOT DRAWING PERMITTING

SHEET: 5 OF 6

GRAPHIC SCALE IN FEET



DRAWING PERMITTING Project Description and Compliance Statement Supawna Meadows National Wildlife Refuge Design/Build Marsh Restoration Project Block 5501 Lot 17 Pennsville Township, Salem Co., NJ



## **APPENDIX D**

## **Signed Consistency Certification**

## DELAWARE COASTAL MANAGEMENT PROGRAM CONSISTENCY CERTIFICATION

SUBJECT: "Consistency Certification" with Approved Coastal Zone Management Program.

Federal regulations require that applicants for Department of the Army permits to perform work in waters of the United States, which fall under the jurisdiction of a State with a Coastal Zone Management (CZM) Program approved by the Secretary of Commerce, must provide a signed consistency statement to the Corps of Engineers with their application for a Department of the Army permit.

On August 21, 1979, a CZM Program was approved for the State of Delaware by the U.S Department of Commerce. Therefore, the applicant (the United States Fish and Wildlife Service (the Service)) for a Department of the Army permit for work in Delaware's designated Coastal Zone, which is the entire State of Delaware, is required to provide this signed Consistency Certification. As such, the Service issues the following statement:

"The proposed activity complies with Delaware's approved coastal management program and will be conducted in a manner consistent with such program."

<u>Yeid</u> Hanh-Signature of Applicant