

Appendix A

Standards for Open Marsh Water Management

STANDARDS FOR OPEN MARSH WATER MANAGEMENT (OMWM)

County mosquito commissions, Rutgers University and the New Jersey Division of Fish, Game and Shellfisheries have been perfecting one technique, Open Marsh Water Management (OMWM), for the control of all genera of salt marsh mosquitoes on open tidal marshes for more than two decades. Perfection is achieved by continued improvement and evaluation. In order to identify this management technique and ensure the finest quality work, certain standards are necessary. These standards should be included in any riparian or other permit. Improper adherence to these standards would be a violation of the permit and an infringement upon the quality of the management technique. The following standards shall be utilized and strictly adhered to in any OMWM project:

1. **NEED.** OMWM will be based entirely upon need and utilized on mosquito breeding marshes only.
 - a. OMWM will be confined to Spartina patens or mixed S. patens / short S. alterniflora marshes, or marshes composed of similar vegetation that are irregularly flooded by rains, spring or storm tides. OMWM will not be employed on marshes that are regularly inundated or effected by daily tides such as those dominated by tall saltmarsh cordgrass (Spartina alterniflora), wildrice (Zizania aquatica), cattail (Typha spp.), arrow arum (Peltandra virginica), threesquare (Scirpus olneyi) or similar vegetation.
 - b. All alterations must directly affect mosquito breeding depressions.
 - c. The direction and type of alteration used will depend on the distribution of the mosquito breeding depressions and their proximity to natural ponds and tidal ditches.
 - d. An experienced wildlife biologist, mosquito control worker, or both, shall stake out all breeding depressions ahead of the equipment. Depression marking shall be utilized to determine the least amount of alteration needed to eliminate mosquito breeding.
 - e. All mosquito or other ditches encountered that are not contributing to mosquito breeding will not be cleaned.

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2. ALTERATIONS. Three types of alterations (tidal ditches, ponds, and pond radials) will be used.

a. Tidal Ditches

(1) All tidal ditches will be dug with suitable equipment (preferably with a rotary ditcher.)

(2) When mosquito breeding depressions are located adjacent to a tidal, mosquito, or other ditch, a tidal ditch alteration will be utilized.

(3) When a tidal ditch is dug near a pond, the spoil should be deposited on the pond side.

(4) Attempts should be made to dig all tidal ditches to a depth of three feet. Meandering or straight ditches are acceptable.

(5) Main tidal ditches are used to provide tidal circulation through large areas. They should be connected to tidal sources on both ends where possible. Their location is determined by the distribution of breeding depressions.

(6) Lateral tidal ditches connect breeding depressions to main tidal ditches, natural tidal ditches, or other laterals. Such laterals often dead-end in breeding depressions.

(7) All mosquito or other ditches that are breeding will be cleaned.

(8) Spoil shall be used whenever possible to fill adjacent mosquito breeding depressions, or spread evenly over the marsh to encourage growth of existing vegetation.

b. Pond Radials

(1) Any mosquito breeding depression located near a natural or other permanent pond shall be connected to that pond by a pond radial. The radial will provide access for fish to prey upon mosquito larvae in the depression.

(2) All pond radials shall be constructed with suitable equipment (e.g., a rotary ditcher).

(3) To prevent pond drainage by muskrats or snow geese, pond radials shall terminate at sufficient distances from tidal ditches.

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c. Ponds

(1) Where a large number of mosquito breeding depressions are concentrated in a limited area, a pond alteration will be utilized.

(2) Ponds are constructed using a rotary ditcher, amphibious crane, or other suitable equipment.

(3) Ponds should be shallow (less than one foot in depth) to promote waterfowl, wading bird, and shorebird use.

(4) To prevent mosquito breeding during droughts, a reservoir three feet in depth shall be installed within each pond.

(5) Where large numbers of radials are used, reservoirs are unnecessary.

(6) In any natural pond that desiccates during drought, a reservoir for fish can be ensured by the construction of three foot ditches connecting the lowest areas within the pond.

(7) Pond spoil should be squashed without causing depressions, and reduced to the lowest possible level (approximate elevation of the existing marsh) to ensure the reestablishment of existing native vegetation.

(8) Ponds may take the shape of the breeding area or may be squared off to facilitate construction. The shape of a pond or ditch does not appreciably affect wildlife use. Depth, food potential and availability are the primary factors determining wildlife utilization.

3. OBJECTIVES

a. To adequately serve the three major objectives (control mosquitoes, eliminate insecticides, and enhance the tidal food web), all three alteration types (tidal ditches, ponds, and pond radials) shall be utilized on each section of marsh wherever possible. Diversity provides a better marsh environment, prevents marsh surface breeding by all genera of mosquitoes, and enhances both major branches of the tidal food web.

b. Insecticide use is gradually phased out as OMWM progresses toward elimination of mosquito breeding acreage. When a project is completed, all insecticide use should terminate.

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4. OTHER TECHNIQUES

Impoundments, stop ditches, and other management techniques are not considered OMWM techniques.

5. EVALUATION

Mosquito larval dip counts, vegetation plots, invertebrate samples, and wildlife censuses are to be conducted on the area treated with OMWM and compared to a control area of similar composition.

Appendix B

Intra-Service Section 7 Biological Evaluation Forms

ES-04/06

Pond Creek

Cape May Co.

INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION FORM

Originating Person: Robert SmithTelephone Number: (609) 646-9310Date: January 7, 2004

I. Region:

Region 5

II. Service Activity (Program)

U.S. Fish and Wildlife Service, Region 5, Ecological Services, New Jersey Field Office (NJFO), *Partners for Fish and Wildlife Program* proposes to restore 270 acres of estuarine intertidal emergent wetland habitat and to protect an additional 147 acres of freshwater wetlands as part of the Pond Creek wetland restoration project. The project is within the Higbee Beach Wildlife in Lower Township and the Borough of West Cape May, Cape May County, New Jersey.

III. Pertinent Species and Habitat:

A. Listed species and/or their critical habitat within the action area:

Piping plover (*Charadrius melodus*) nesting and foraging habitat exists along the beach within the project area. A piping plover was recorded using that stretch of beach in 1982. Additional piping plover habitat exists within 0.8, 0.9, and 2.4 miles from the project site.

An extant population of swamp pink (*Helonias bullata*) exists within 2.8 miles north of the project area in a different watershed. No swamp pink habitat exists within the project area.

B. Proposed species and/or proposed critical habitat within the action area:

None

C. Candidate species within the action area:

None

D. Include species/habitat occurrences on a map.

See attached map.

IV. Geographic area or station name and action:

New Jersey Field Office through the *Partners for Fish and Wildlife Program* proposes to restore 270 acres of estuarine intertidal emergent wetland habitat and to protect an additional 147 acres of freshwater to Pond Creek in Cape May County, New Jersey.

V. Location (attach map):

A. Ecoregion Number and Name:

Delaware River watershed

B. County and State:

Cape May County, New Jersey

C. Section, township, and range (or latitude and longitude):

Lower Township and Borough of West Cape May

D. Distance (miles) and direction to nearest town:

Immediately west of Borough of West Cape May

E. Species/habitat occurrence:

Piping plover

VI. Description of proposed action (attach additional pages as needed):

See attached Wetland Restoration Plan.

VII. Determination of effects:

A. Explanation of effects of the action on species and critical habitats in items III. A, B, and C (attach additional pages as needed):

Piping plover nesting and foraging habitat does occur within the project area. Excavating the new channel for Pond Creek to connect the Delaware Bay will destroy approximately 0.9 acres of piping plover habitat (beach / dune) by converting it to a tidal channel. The project could hinder a piping plover's ability to nest and rear its young.

Swamp pink habitat does not occur within the project area; therefore, the project will have no effect on swamp pink.

B. Explanation of actions to be implemented to reduce adverse effects:

The old tidal channel through the dunes will be converted to approximately 1.2 acres of piping plover habitat using material excavated from the new channel. Therefore, no net loss of piping plover habitat will be lost. There are no documented instances of piping plovers nesting along that stretch of beach since 1982. If piping plovers are found to nest at the site just before construction, construction will be restricted outside the nesting and young-rearing seasons.

VIII. Effect determination and response requested: [* = optional]

A. Listed species/designated critical habitat:

<u>Determination</u>	<u>Response requested</u>
no effect/no adverse modification (species: swamp pink _____)	<input type="checkbox"/> X <input type="checkbox"/> *Concurrence
may affect, but is not likely to adversely affect species/adversely modify critical habitat (species: piping plover _____)	<input checked="" type="checkbox"/> X <input type="checkbox"/> Concurrence
may affect, and is likely to adversely affect species/adversely modify critical habitat (species: _____)	<input type="checkbox"/> Formal Consultation

Robert V. Smith 1/7/04
 Project Biologist (Requestor), New Jersey Field Office Date

IX. Reviewing ESFO Evaluation:

- A. Concurrence Nonconcurrency
- B. Formal consultation required
- C. Conference required
- D. Informal conference required

E. Remarks (attach additional pages as needed):

Annette Scherer
Endangered Species Biologist (Reviewer),
New Jersey Field Office

2/24/04
Date

J. C. [Signature]
Assistant Supervisor, New Jersey Field Office Date

2/25/04

Appendix C

Relevant Correspondence



United States Department of the Interior

FISH AND WILDLIFE SERVICE



In Reply Refer to:

HR-05/02

New Jersey Field Office
Ecological Services
927 North Main Street, Building D
Pleasantville, New Jersey 08232
Tel: 609/646 9310
Fax: 609/646 0352
<http://njfieldoffice.fws.gov>

Lt. Colonel Robert J. Ruch
District Engineer, Philadelphia District
U.S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, Pennsylvania 19107-3390

JAN 18 2009

Dear Lt. Colonel Ruch:

This is the draft letter of the U.S. Fish and Wildlife Service (Service) on anticipated impacts to fish and wildlife resources from the U.S. Army Corps of Engineers, Philadelphia District (Corps) proposed Pond Creek Restoration Project. Cape May County, New Jersey. This letter was prepared pursuant to Section 2(b) of the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*).

This draft letter is provided based on plans and information provided in the Corps and Service's Environmental Assessment. The Service assisted in the preparation of the subject Environmental Assessment and participated in assessing impacts on fish and wildlife resources in that document.

A. PROJECT DESCRIPTION

The purpose of the Pond Creek Restoration Project is to restore 270 acres of estuarine intertidal emergent wetland habitat for fish and wildlife resources and to protect an additional 147 acres of freshwater wetlands for fish and wildlife including, threatened and endangered species and migratory birds. This will be accomplished by reintroducing tidal exchange in the Pond Creek wetlands to eliminate and control common reed (*Phragmites australis*), an exotic and invasive species which has formed an extensive, dense stand throughout most of Pond Creek marsh. Once established, *Phragmites* often outcompetes native salt marsh vegetation, creating habitat less suitable for wildlife. Control of common reed will allow the reestablishment of native salt marsh vegetation [e.g., smooth cordgrass (*Spartina alterniflora*), salt hay grass (*S. patens*), and spike grass (*Distichlis spicata*)], thus increasing habitat available for a variety of fish and wildlife resources, in particular, the diamondback terrapin (*Malaclemys terrapin*), egrets, herons, shorebirds, waterfowl and a variety of other wetland-dependent wildlife.

The project purpose would be accomplished through the restoration of tidal inundation to Pond Creek marsh by eliminating the existing tide gate at the mouth of Pond Creek. The preferred alternative involves the construction of a new 300-foot-long channel would be used to carry tidal water into Pond Creek wetlands. This alternative requires excavation through an existing spoil pile deposited by a previous property owner. Elimination of upland tidal flooding and preservation of 147 acres of freshwater wetlands would be accomplished by constructing a water-control structure through which the tidal water would pass. This water-control structure would essentially throttle the tidal flow into Pond Creek limiting tidal inundation to 270 acres. In addition, the existing railroad tracks to the south would prevent tidal waters from impacting freshwater wetland areas to the south. The water-control structure and the existing railroad tracks would prevent tidal flooding of agricultural lands and residential development to the south and east of the project area. The proposed project also protects the freshwater pond to the north of the project site identified as Davey's Lake.

B. METHODS AND PROCEDURES

The information and findings presented in this letter are based on review of the Pond Creek Restoration Project, Cape May County, New Jersey Section 206 Environmental Assessment (U.S. Army Corps of Engineers, 2004) and review of additional information made available to the Service by the Corps. The content of this letter is also based on the following: review of Service files and library material; coordination with the New Jersey Division of Fish and Wildlife (NJDFW) (including Endangered and Nongame Species Program (ENSP) and the National Marine Fisheries Service (NMFS); and, several site visits conducted by a Service biologist in 2002, 2003, and 2004.

C. PHYSICAL CHARACTERISTICS

Currently, western portion of the site is an undeveloped coastal beach and dune complex. The beach is bordered to the west by the Delaware Bay and to the east by primary dunes ranging in height from 8 to 15 feet. The dunes support American beach grass (*Ammophila breviligulata*), coastal panic grass (*Panicum amarum*), seaside goldenrod (*Solidago sempervirens*), bayberry (*Myrica pensylvanica*), rugose rose (*Rosa rugosa*), poison ivy (*Toxicodendron radicans*), among other plants. Dune and beach substrate is sand providing low-fertility, excessively drained soil.

Approximately 4.5 acres of the southern portion of the site is dominated by a disposal site associated with the Harbison Walker magnesite plant. This plant operating from 1941 to 1983 placed processed waste (primarily consisting of waste magnesite and spent or un-reacted dolomite with a high calcium and magnesium content). The deposition material is extremely basic (high pH) and as such limits vegetative growth. The majority of the deposition site remains barren, although efforts of the last two years of placing and diking in dredge spoil material have been successful at neutralizing the pH and initiating vegetative growth (mostly grasses).

Tidal marsh makes up the majority of the project site (over 270 acres). The tidal marsh has not been tidally flowed since 1917 when a tide gate and berm was installed. However, the substrate

in the wetlands remains a deep layer of muck with layers of soft silt loam and organic material. The muck substrate ranges from 1 foot to more than 10 feet thick with high organic matter and anaerobic conditions. The majority of the vegetation within the marsh is made up of *Phragmites*. No other plants were identified within the lower portion of Pond Creek west of Sassafras Island. Wetland areas east of Sassafras Island transition from *Phragmites* dominated wetlands to mixed forested wetlands dominated by conifers; deciduous forested wetlands, and deciduous scrub/shrub wetlands. There are a few areas east of Sassafras island that remain palustrine emergent wetlands with no *Phragmites*.

D. FISH AND WILDLIFE RESOURCES

The Service and the Corps completed a thorough review of fish and wildlife resources within the Pond Creek Environmental Assessment. Fish and wildlife resources inhabiting the project area include a variety of benthic organisms, finfish, shorebirds, colonial nesting waterbirds, waterfowl, and raptors. The diversity of habitat types and the limited development within the Pond Creek supports many estuarine and marine species including weakfish (*Cynoscion regalis*), Atlantic menhaden (*Brevoortia tyrannus*), bluefish (*Pomatomus saltatrix*), American eel (*Anguilla rostrata*), and white perch (*Morone americana*). The semi-anadromous striped bass (*Morone saxatilis*) could also occur within the lower portions of the Pond Creek wetlands. Perhaps most importantly the mummichog (*Fundulus heteroclitus*) would inhabit the Pond Creek wetlands providing an important forage base for predatory fish and wildlife, but also providing the primary control of mosquitoes within the wetlands. The proposed project would also open up additional foraging and possibly spawning areas for anadromous fish including blueback herring (*Alosa aestivalis*) and alewife (*Alosa pseudoharengus*).

The lower Cape May Peninsula is one of the most important migratory concentration areas in the world (Kerlinger, 1991; Mabey, 1992). The migratory population that uses the lower Cape May Peninsula includes 130 species of neotropical migrants, 20 species of waterfowl, American woodcock, 16 species of raptors, 4 species of owls, and many species of short-distance migrants. The surrounding beach, dune, and estuarine wetlands provide high quality habitat for a variety of migratory shorebirds. A variety of colonial waterbirds nest within approximately 3 miles of Pond Creek. In addition, the Pond Creek provides important resting and feeding areas for migratory waterfowl on the Atlantic flyway (New Jersey Division of Fish and Wildlife, 1994).

The primary purpose of the proposed project of restoring tidal inundation to Pond Creek would convert a palustrine emergent wetland dominated by *Phragmites* to an estuarine emergent wetland dominated by a variety of beneficial estuarine vegetation such as smooth cordgrass, salt hay grass, and spike grass. As a result of restoring and improving vegetative diversity and tidal exchange into these wetlands, wildlife habitat would be significantly improved. The proposed project would restore habitat for a variety of shorebirds, raptors, wading birds, and mammals, improving biological diversity within the Cape May peninsula.

According to the Service, Higbee Beach and the Delaware Bay shoreline adjacent to Pond Creek provide habitat for the piping plover (*Charadrius melodus*). A 0.1 acre area of beach would be excavated to construct the outlet channel for the Pond Creek restoration project. However, this

limited impact is unlikely to substantially affect the overall habitat availability of beach nesting habitat within the project area. As such, piping plovers would not be adversely affected by project implementation (see Intra-Service Section 7 biological evaluation forms in Environmental Assessment). Swamp pink (*Helonias bullata*), a federally threatened species, occurs approximately 2.8 miles north of the project area; however no swamp pink habitat occurs in the project area. The threatened bald eagle (*Haliaeetus leucocephalus*) is federally listed and is a transient visitor of the project area and may forage in open water areas near the project area. The proposed project will improve foraging opportunities for bald eagles by providing additional fish habitat within the project area.

Several birds-of-prey occur in the vicinity of the project area including the State-listed (endangered) northern harrier (*Circus cyaneus*) and short-eared owl (*Asio flammeus*), and the State-listed (threatened) osprey (*Pandion haliaetus*) (New Jersey Division of Fish and Wildlife, 1994). The State-listed (threatened) black rail (*Laterallus jamaicensis*) also inhabits the salt and brackish marshes in the vicinity of Pond Creek (New Jersey Division of Fish and Wildlife, 1994). Restoring estuarine wetlands within Pond Creek will improve habitat for these State-listed species. Several State-listed species also occur in the palustrine headwater areas of Pond Creek. The proposed project will not affect these freshwater areas and will not have an adverse impact on these State-listed species.

E. IDENTIFICATION OF BENEFITS, IMPACTS, AND MITIGATIVE MEASURES

1. Benefits

There will be a number of benefits derived from the Pond Creek Restoration project. Fish and wildlife habitat will be enhanced by increasing the diversity of vegetation within the wetlands. The Pond Creek wetlands currently provide limited habitat for fish and wildlife resources due to the overwhelming presence of dense stands of common reed, which provides limited habitat value for fish and wildlife. Reducing common reed will improve habitat value and diversity. Improving diversity within the wetland would also improve the aesthetics of the project site. By opening up the Pond Creek wetlands visually, the general public would be better able to fish, hunt, bird-watch, and conduct environmental studies. Eradicating *Phragmites* would also eliminate the need for the Cape May County Mosquito Commission to spray insecticides in and around marshes and residential areas. The project will also improve water quality within Pond Creek (e.g., total dissolved solids, biological oxygen demand, fecal contamination (coliforms)) by improving tidal flushing of the marsh. Reducing the biomass of *Phragmites* will also decrease the chance and risk of a catastrophic wildfire occurring and damaging residential property in the area. The project may also alleviate some current flooding problems that are experienced due to *Phragmites* blocking outlet structures and impeding upland drainage.

2. Impacts

Construction of a channel and hydraulic structure associated with the preferred option will result in the excavation of approximately 1.18 acres of palustrine emergent wetlands that are currently dominated by common reed. These excavated wetlands will be converted to an estuarine open water channel to provide tidal water to the Pond Creek wetlands following the original water course as it existed prior to 1917. In addition, a 0.10 acre area of palustrine open water at the current outlet of Pond Creek would be filled to plug the outlet and convert the area to coastal dune habitat.

The excavation of the new channel through a dune / beach complex will involve the conversion of approximately 0.9 acres of beach / dune complex to a tidal. However the existing channel through the dunes (approximately 350 feet long and 150 feet wide) would be converted to a beach / dune complex of approximately 1.2 acres using material excavated from the new channel. As such, the proposed project has no net loss of beach / dune habitat.

Portions of the Harbison Walker spoil pile would be excavated. This material would be deposited on other existing spoil piles in the area. Material used from the excavation of tidal channels in wetland areas would also be placed on upland spoil piles and disked into the spoil pile to neutralize the pH within the spoil pile. These areas would then be replanted with native warm-season grasses and shrubs to revegetate the spoil piles thereby improving upland buffers adjacent to the Pond Creek wetlands.

3. Mitigative Measures

The Service recommends avoiding use of construction equipment in estuarine wetlands; if operation is necessary in these areas, use wide-track equipment or construction mats to reduce compaction of the marsh surface.

F. CONCLUSIONS AND RECOMMENDATIONS

The Service and the NJDFW support removing the existing tide gates at the mouth of Pond Creek and constructing a new channel and water-control structure as the least costly and simplest method of reintroducing tidal flow to the marsh and controlling *Phragmites*. Upon removing the tide gates and digging the new channel, *Phragmites* will be eradicated or greatly controlled in the Pond Creek marsh, allowing native, more beneficial marsh vegetation to reestablish. The native vegetation will provide approximately 270 acres of greatly improved habitat for diamondback terrapins, migratory songbirds, wading birds, shorebirds, and waterfowl. In addition, the water-control structure will throttle the tidal inundation to Pond Creek protecting freshwater wetlands in the upper portions of the marsh.

A draft copy of this letter was forwarded to the NJDFW for concurrence and the Service is currently awaiting NJDFW's response. A copy of the Service's letter to the NJDFW is enclosed.

Additional information regarding Service comments can be provided by Eric Schradung of my staff. The Service would appreciate any written comments on this letter within 30 days.

Sincerely,

A handwritten signature in dark ink that reads "Clifford G. Day". The signature is written in a cursive style with a large, prominent "C" at the beginning.

Clifford G. Day
Supervisor

Enclosure

LITERATURE CITED

- Kerlinger, P. and D. Wiedner. 1991. The economics of birding at Cape May, New Jersey. *In* J. Kassler (ed.). Proceedings of the 2nd ecotourism symposium, Miami Beach, Florida. Holt, Rinehart, and Winston. New York, New York.
- Mabey, S.E., J. McCann, L.J. Niles, C. Bartlett, and P. Kerlinger. 1992. Neotropical migratory songbird regional coastal corridor study. Final Report. National Oceanic and Atmospheric Administration. Silver Spring, Maryland.
- New Jersey Division of Fish, Game and Wildlife. 1994. Notable Information on New Jersey Animals Database. New Jersey Department of Environmental Protection. Trenton, New Jersey.
- U.S. Army Corps of Engineers. 2004. Pond Creek Restoration Project, Cape May County, New Jersey Section 206 Environmental Assessment. U.S. Department of the Army, Corps of Engineers, Philadelphia District, Philadelphia, Pennsylvania. 18 pp. + appendices.



State of New Jersey
Department of Environmental Protection

Richard J. Codey
Acting Governor

Bradley M. Campbell
Commissioner

Division of Fish and Wildlife
Martin J. McHugh, Director
PO Box 400
Trenton, NJ 08625-0400
www.njfishandwildlife.com

May 11, 2005

Clifford G. Day, Administrator
U.S. Fish and Wildlife Service
927 N. Main St., Bldg. D
Pleasantville, NJ 08232

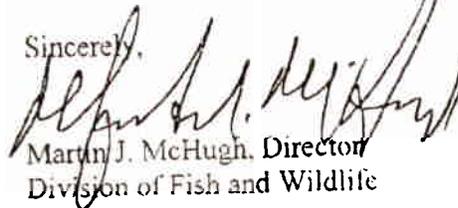
Dear Administrator Day:

I am writing to inform you that the Division of Fish and Wildlife (DFW) concurs with the *Draft Fish and Wildlife 2 (b) Coordination Act Report: Pond Creek Restoration Project in Lower Township, Cape May County, New Jersey*. This constitutes the USFWS' draft report on fish and wildlife impacts that can be expected to result from the ACOE's proposed project for Pond Creek.

The DFW agrees with the "Project Description" found in your letter for this joint project between our two agencies. Furthermore, the DFW appreciates the tremendous amount of work your agency has provided the DFW in assisting us with the project. This project will have a far-reaching positive ecological impact on this area's biodiversity. We agree with the list of species associated with the project, the positive benefit that the reintroduction of the mummichog (*Fundulus heteroclitus*) will have on the area's fish and wildlife, and the corresponding reduction of the local mosquito population.

I look forward to continuing the close working relationship of our two staffs and the staff of the ACOE on this project. I also look forward to our agencies collaborating on other future projects, as we strive to restore valuable fish and wildlife resources in New Jersey.

Sincerely,



Martin J. McHugh, Director
Division of Fish and Wildlife

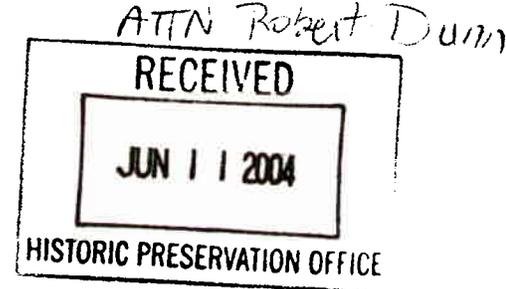
c. A. Didun, OER; Lee Widjeskog, Lands Mgmt; Donald Wilkinson, OER



REPLY TO
ATTENTION OF

Planning Division

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



Ms. Dorothy P. Guzzo, Administrator
New Jersey Historic Preservation Office
New Jersey Department of Environmental Protection
CN 404
Trenton, New Jersey 08625

JUN 09 2004
(Please see last page)
04-1821-1 OK
HPO-62004--250

Dear Ms. Guzzo:

This letter is in regard to our current planning for the Pond Creek Salt Marsh Restoration Project. Pond Creek marsh (totaling 417 acres) is located along the Delaware Bay and runs north of Sunset Boulevard in Lower Township and in the Borough of West Cape May, Cape May County, New Jersey (see Enclosures 1a & 1b). The purpose of the project is to restore 270 acres of estuarine intertidal emergent wetland habitat for fish and wildlife resources and to protect an additional 147 acres of freshwater wetlands for threatened and endangered species and migratory birds. This will be accomplished by reintroducing tidal flushing in the lower marsh areas of Pond Creek to eliminate and control common reed (*Phragmites australis*), an exotic and invasive species that has formed an extensive, dense stand throughout most of the Pond Creek marsh. Once a free-flowing estuarine tidal marsh before human disturbance, the marsh is part of the State of New Jersey's Higbee Beach Wildlife Management Area. The State's Division of Fish and Wildlife currently manages the marsh for migratory birds, waterfowl habitat, and human recreation.

The State of New Jersey and the U.S. Fish and Wildlife Service have determined that constructing a new channel and water-control structure is the least costly and simplest method of reintroducing tidal flow to the marsh and controlling *Phragmites*. The proposed project will include construction of a 920-foot section of new stream channel to shorten the distance between the Bay and the marsh, thus increasing the amount of tidal flow into the marsh and reducing the potential for inlet migration. *Phragmites* will be eradicated or greatly controlled in the Pond Creek marsh, allowing native, more beneficial marsh vegetation to reestablish. The native vegetation will provide approximately 270 acres of greatly improved habitat for diamondback terrapins, migratory songbirds, wading birds, shorebirds, and waterfowl. In addition, the water-control structure will throttle the tidal inundation to Pond Creek protecting freshwater wetlands in the upper portions of the marsh.

Pursuant to 36 CFR 800.4 (b) we wish to initiate Section 106 consultation on the preferred alternative described in the enclosed preliminary draft Environmental Assessment (Enclosure 2). At this time we are not aware of any historic architectural or archaeological resources in the area

of potential effect and the likelihood of deeply buried prehistoric archaeological sites appears to be very low. Tidal marsh makes up the majority of the project site (over 270 acres). The marsh has not received tidal flow since 1917 when a tide gate and berm was installed. According to the Cape May County soil survey the area of potential effect has a wetlands substrate that consists of a deep layer of muck with multiple layers of soft silt loam and organic material. The muck substrate ranges from 1 foot to more than 10 feet thick with high organic matter and anaerobic conditions.

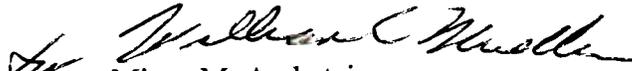
The preferred alternative, described in detail in the draft EA, involves excavating a new channel through a dune/beach complex to restore the original channel to Pond Creek, as it existed prior to 1917. This alternative will involve the conversion of approximately 0.9 acres of beach/dune complex to a tidal channel with 5 to 1 slopes (approximately 300 feet long and 125 feet wide). The existing channel through the dunes (approximately 350 feet long and 150 feet wide) would be converted to a beach/dune complex of approximately 1.2 acres using material excavated from the new channel. Given this trade-off, the preferred alternative has no net loss of beach/dune habitat. Portions of the Harbison Walker spoil pile would be excavated. The excavated material would be deposited on other existing spoil piles in the area. Material used from the excavation of tidal channels in wetland areas would also be placed on upland spoil piles and disked into the spoil pile to neutralize the high pH within the magnesite spoil pile. These areas would then be replanted with native warm-season grasses and shrubs to revegetate the spoil piles thereby improving upland buffers adjacent to the Pond Creek wetlands.

Soils will be stabilized on the access channel by using a 5 on 1 slope and revegetating the banks with appropriate vegetation (e.g., dune grass and bayberry in dune habitat, and *Spartina alterniflora* in wetland areas). All necessary soil erosion and sediment controls will be used during the construction to minimize impacts on Pond Creek wetlands and the Delaware Bay. Controls that would be implemented include the installation of soil erosion control fences to prevent runoff and debris from entering the creek. The construction contractor would be required to complete a plan that describes measures to prevent hazardous materials (e.g. oils) used during construction to enter the wetlands. Furthermore, all construction material would be disposed of in an appropriate manner.

From an archaeological perspective the major ground disturbing impact of this project is the excavation of an access channel twenty feet wide by six feet deep for the entrance of tidal waters into the salt marsh. In the preferred alternative the alignment of the channel follows an old streambed for some distance before cutting across the wetlands to the magnesite spoil pile where the new water control structure would be located. This entire distance is an area with very low archaeological site potential.

We request your review comments on the portions of the draft EA that deal with cultural resources and your staff's input on the project's potential impact to cultural resources. At this time, given the extremely low site potential, it does not appear that a phase 1b archaeological survey of the area of potential effect is necessary. Thank you for your assistance with our planning process. For additional information please contact Mr. Robert Dunn of our staff at (215) 656-6556.

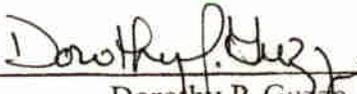
Sincerely,


Minas M. Arabatzis
Chief, Planning Division

Enclosures

Copy Furnished:
M. Eberle

I concur with your finding that there are no historic properties affected within the project's area of potential effects. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.


Dorothy P. Guzzo
Deputy State Historic Preservation Officer

7/27/04
Date

NP

Appendix D

Clean Air Assessment

General Conformity Analysis

Table 1. Project Emission Sources and Estimated Power

Table 2. Emission Estimates (NO_x)

Table 3. Emission Estimates (VOCs)

Table 4. Pollutant Emissions from Employee Vehicles

General Conformity Review and Emission Inventory for Pond Creek
 Table 1. Project Emission Sources and Estimated Power

hp-hr = # of engines*hp*LF*hrs of operation

Load Factor (LF) represents the average percentage of rated horsepower used during a source's operational profile.

Equipment/Engine Category	# of engines	hp	LF	hrs of operation	hp-hr
Air Compr, 200 CFM, 100 PSI	1	350	0.62	7	1519
Brush Chipper 22"	1	600	0.70	9	3780
Chainsaw, 24" to 42" Long Bar	1	5.7	0.74	9	37.962
Concrete Pump	1	210	0.70	13	1911
Crane, Hyd, TRK Mtd	1	177	0.43	53	4034
Crane, Dragline/Crawler, 2 c/y	1	125	0.43	906	48698
Ldr, F/E, Crwler, 1.5 cy bkt	1	90	0.55	114	5643
Ldr, BH, WH, 0.80 CY FE Bkt,	1	60	0.55	5	165
Tree, Log Skidder Tractor	1	121	0.70	3	254
Tree, Log Buncher	1	170	0.70	3	357
Pile Hammer, 80 ton	1	325	0.70	260	59150
Dozer Crawler, D-4	1	80	0.64	282	14438
Dozer Crawler, D-8	1	240	0.64	282	43315
Trk, HWY43,000GVW 6x4 3 axle	1	210	0.57	114	13646
Trk, HWY 45,000GVW	1	330	0.57	1195	224780
Trk, Off-HWY, R-Dump, 22-30 CY, 35T	1	450	0.57	117	30011
Concrete Vibrator, 2.5"	1	7.5	0.62	25	116
1 Ton Stake Body	1	275	0.70	38	7315
3/4 Ton pick-up	1	165	0.57	60	5643
Portable Generator, 5.5 KW	1	11	0.80	30	264
All Terrain Forklift	1	63	0.70	30	1323
Fuel Truck, 1.5 ton	1	185	0.57	80	8436
1/2 ton pick-up 4x4	1	117	0.57	400	26676
Concrete Truck	1	275	0.57	8	1254

Load Factors taken from the General Conformity Review and Emission Inventory for the Delaware River Main Channel Deepening Project. (May 2003). Prepared for the U.S. Army Corps of Engineers, Philadelphia District by Moffatt & Nichol Engineers

General Conformity Review and Emission Inventory for Pond Creek
 Table 2. Emission Estimates (NOx)

Emissions (g) = Power Demand (hp-hr) * Emission Factor (g/hp-hr)

Emissions (tons) = Emissions (g) * (1 ton/907200 g)

NOx Emissions Factor for Off-Road Construction Equipment is 9.20 g/hp-hr

Equipment/Engine Category	hp-hr	EF (g/hp-hr)	Emissions (tons)
Air Compr, 200 CFM, 100 PSI	1519	9.20	0.02
Brush Chipper 22"	3780	9.20	0.04
Chainsaw, 24" to 42" Long Bar	38	9.20	0.00
Concrete Pump	1911	9.20	0.02
Crane, Hyd, TRK Mtd	4034	9.20	0.04
Crane, Dragline/Crawler, 2 c/y	48698	9.20	0.494
Ldr, F/E, Crwler, 1.5 cy bkt	5643	9.20	0.06
Ldr, BH, WH, 0.80 CY FE Bkt,	165	9.20	0.00
Tree, Log Skidder Tractor	254	9.20	0.00
Tree, Log Buncher	357	9.20	0.00
Pile Hammer, 80 ton	59150	9.20	0.60
Dozer Crawler, D-4	14438	9.20	0.146
Dozer Crawler, D-8	43315	9.20	0.44
Trk, HWY43,000GVW 6x4 3 axle	13646	9.20	0.14
Trk, HWY 45,000GVW	224780	9.20	2.28
Trk, Off-HWY, R-Dump, 22-30 CY, 35T	30011	9.20	0.30
Concrete Vibrator, 2.5"	116	9.20	0.00
1 Ton Stake Body	7315	9.20	0.07
3/4 Ton pick-up	5643	9.20	0.06
Portable Generator, 5.5 KW	264	9.20	0.00
All Terrain Forklift	1323	9.20	0.01
Fuel Truck, 1.5 ton	8436	9.20	0.09
1/2 ton pick-up 4x4	26676	9.20	0.27
Concrete Truck	1254	9.20	0.01
Total NOx Project Emissions (tons) =			5.10

General Conformity Review and Emission Inventory for Pond Creek
 Table 3. Emission Estimates (VOCs)

Emissions (g) = Power Demand (hp-hr) * Emission Factor (g/hp-hr)

Emissions (tons) = Emissions (g) * (1 ton/907200 g)

VOC Emissions Factor for Off-Road Construction Equipment is 1.30 g/hp-hr

Equipment/Engine Category	hp-hr	EF (g/hp-hr)	Emissions (tons)
Air Compr, 200 CFM, 100 PSI	1519	1.30	0.00
Brush Chipper 22"	3780	1.30	0.005
Chainsaw, 24" to 42" Long Bar	38	1.30	0.000
Concrete Pump	1911	1.30	0.003
Crane, Hyd, TRK Mtd	4034	1.30	0.01
Crane, Dragline/Crawler, 2 c/y	48698	1.30	0.0698
Ldr, F/E, Crawler, 1.5 cy bkt	5643	1.30	0.01
Ldr, BH, WH, 0.80 CY FE Bkt,	165	1.30	0.00
Tree, Log Skidder Tractor	254	1.30	0.00
Tree, Log Buncher	357	1.30	0.00
Pile Hammer, 80 ton	59150	1.30	0.08
Dozer Crawler, D-4	14438	1.30	0.021
Dozer Crawler, D-8	43315	1.30	0.06
Trk, HWY43,000GVW 6x4 3 axle	13646	1.30	0.02
Trk, HWY 45,000GVW	224780	1.30	0.322
Trk, Off-HWY, R-Dump, 22-30 CY, 35T	30011	1.30	0.043
Concrete Vibrator, 2.5"	116	1.30	0.00
1 Ton Stake Body	7315	1.30	0.01
3/4 Ton pick-up	5643	1.30	0.01
Portable Generator, 5.5 KW	264	1.30	0.00
All Terrain Forklift	1323	1.30	0.00
Fuel Truck, 1.5 ton	8436	1.30	0.01
1/2 ton pick-up 4x4	26676	1.30	0.04
Concrete Truck	1254	1.30	0.00
Total VOCs Project Emissions (tons) =			0.72

General Conformity Review and Emission Inventory for Pond Creek

Table 4. Pollutant Emissions from Employee Vehicles

Assumptions:

Average trip distance (1 way) is 25 miles.

Average NOx vehicle emission factor is 0.96 g/mile.

Average VOC vehicle emission factor is 0.84 g/mile.

Work crew comprised of 21 people

Every member of the work crew drives their own vehicle.

Project construction period is 9 months.

Project construction occurs 5 days per week.

There are 7 holidays in a calendar year.

There are 4 weather days (no work) in a year.

Actual work days = 270 days - 78 weekend days off - 7 holidays off - 4 weather days off.

Actual work days = 181 days

NOx Calculation: 21 workers * 2 trips/work day * 181 work days * 25 miles/trip * 0.96 g of NOx/mile* (1 ton/907200 g)

Total NOx resulting from employee vehicles = 0.20 tons.

VOC Calculation: 21 workers * 2 trips/work day * 181 work days * 25 miles/trip * 0.84 g of VOC/mile* (1 ton/907200 g)

Total VOCs resulting from employee vehicles = 0.18 tons.

Pollutant emissions associated with employee vehicles derived from data found in: Marine and Land-Based Mobile Source Emission Estimates for 50-Foot Deepening Project. January 2002. Prepared for The Port Authority of New York and New Jersey by Killam Associates and Starcrest Consulting Group, LLC.

Total (construction and employees) NOx Project Emissions (tons) = 5.3

Total (construction and employees) VOCs Project Emissions (tons) = 0.9