**James Pond Channel Opening and Maintenance Plan**

***NOI Narrative – Revised Draft – January 12, 2024***

**Objective**

James Pond is a 37-acre salt pond in West Tisbury with an outlet subject to natural barrier beach closures. The James Pond outlet channel opening and maintenance plan seeks to resolve two limitations to marine fisheries and aquatic health: (1) sand obstructing the pond outlet channel and beach channel that prevents sufficient tidal flow to maintain adequate water quality to support shellfish, diadromous fish and other aquatic life; (2) sand obstructing the pond outlet channel and beach channel that prevents the safe and efficient passage of diadromous fish to spawning and nursery habitat in James Pond. The seasonal opening and grooming of both channels to promote tidal flow and to enhance the water depth is proposed to improve the population status of shellfish (soft-shell clams and quahogs) and diadromous fish (alewife, white perch and American eel). Two locations at James Pond require attention to maintain tidal flow: (1) the barrier beach channel connecting to Vineyard Sound that receives west-to-east transport of sand; and (2) the pond outlet channel that connects James Pond to the barrier beach channel (Figure 1). Maintenance of the pond outlet channel (pond channel) was approved by the Town of West Tisbury under an Order of Condition in 2017 (DEP File No. SE79-364, NHESP No. 06-19696). The present proposal seeks to permit seasonal maintenance of an approximately 80 ft channel at the barrier beach (beach channel).

**1. Regulatory Background**

The opening of a barrier beach to allow tidal flows into salt ponds is subject to review under the MA Wetland Protection Act (WPA; MGL chapter 131, section 40) and the West Tisbury Wetlands Protection Bylaw and Regulations. Activities related to the opening that can alter, dredge or fill adjacent natural resources areas cannot have an adverse impact on the marine fisheries or wildlife habitat (310 CMR 10.33(3) However, a salt pond opening can be authorized under specific provisions of 310 CMR 10.33(4) and Section XI of the Bylaw regulations that allow the maintenance of the depth and opening of a salt pond channel to maintain or enhance marine fisheries.

The MA Department of Environmental Protection (MassDEP) has a Wetlands Program Policy on salt ponds (91-2) to give guidance for evaluating salt pond opening proposals. The guidance is clear that the primary purpose of the opening is to manage, maintain or enhance marine fisheries. The applicant should demonstrate that the opening is necessary to manage, maintain, or enhance an existing or historically viable marine fisheries, and that the project prevents or minimizes adverse effects to Coastal Beaches, Coastal Dunes, Barrier Beaches and other applicable resource areas to the greatest extent possible. Despite the potential relation of water quality to fisheries status, the policy states that a proposed opening to control eutrophication or related odor or aesthetic concerns does not meet the threshold of the regulations in the absence of a demonstrated need to manage marine fisheries.

The Massachusetts Division of Marine Fisheries (DMF) is responsible under M.G.L. c. 130 § 19 to ensure that diadromous or sea-run fish can migrate from the ocean to freshwater habitats to complete their life history. Under this statute, DMF, has the authority to determine if fish passage is obstructed and what means are needed to restore passage. The WPA also identifies DMF as the agency to provide technical advice on how projects may impact diadromous fish runs and habitats (310 CMR 10.35).

**2. Site History**

There is a long history of concern over the health of James Pond and the interest to improve tidal flushing. Traditionally, openings were maintained locally as needed to support the shellfish population and river herring run, although these events are not well recorded. The construction of three groins or jetties (one in 1939 and two in the 1960s) at the Mohu property has been cited anecdotally as having a negative impact on sand transport and deposition near the inlet. The jetties constructed in the 1960s were conducted without suitable authorization, resulting in action to remove one of the three jetties leaving two in place presently. In the 1970s and 1980s, pond openings using a backhoe occurred when needed, and for part of this period, were approved with a Conservation Commission Order of Conditions (OOC). The OOC expired in the late 1980s at about the time that shellfish harvest was closed due to declining water quality. The following permits were previously issued by the Conservation Commission:

* **Order of Conditions dated 3/9/1976 for DEP File NO. 79-6.**
* **Order of Conditions dated 3/8/1984 for DEP file No. 79-16; with extension permit dated 5/24/1989.**

Ongoing concern over the closed shellfishery and declining water quality led to the preparation of a Notice of Intent (NOI) to open the James Pond outlet that was submitted by the Town’s Board of Selectmen in 1994. (DEP File No. 79-114) The NOI was reviewed by the West Tisbury Conservation Commission and denied in October 1994 on the basis that the proposal did not demonstrate that the purpose of breaching the barrier beach was to enhance a fishery. The opening concept was discussed again by the Town’s Conservation Commission in January 2003. The ongoing problem of poor water quality and odors were expressed along with the lost fishing opportunity and reduced ecological contributions from the shellfish and diadromous fish resources. Concern was expressed over the impact of the Mohu jetties on sand transport at the inlet. Structural solutions were discussed and water quality monitoring was initiated. No project advanced from these discussions, although the local interest and concerns remained.

A partnership with the Town of West Tisbury and DMF revised the concept of maintaining the James Pond outlet channel in 2015, submitting an NOI to the West Tisbury Conservation Commission in 2016, with approval granted under an Order of Condition in 2017 (DEP File No. SE79-364, NHESP No. 06-19696). The Town of West Tisbury was the applicant, DMF was the project representative, and Vineyard Land Surveying & Engineering, Inc., provide engineering and permitting services. The OOC allowed excavator use to maintain the James Pond outlet channel and hand digging to open the beach channel, all under the supervision of the Town Herring Warden. The project operated under this OOC during 2018-2020 and received a 3-year extension in 2021. With this experience, the Town of West Tisbury has learned that natural dynamics of sand transport at the beach channel will result in unsustainable conditions to practically maintain tidal flow to James Pond with hand digging. Therefore, the Town of West Tisbury seeks a new Order of Conditions that allows machine work on both the beach and pond channel, building on lessons learned from 2018 to present.

Interest from local property owners and the Buzzards Bay Coalition resulted in a study to investigate long-term solutions to the management of James Pond channel openings (WHG 2022). The study conducted oceanographic and geomorphological analyses that confirmed and quantified the instability of the James Pond inlet with increasing frequency and duration of the beach channel closure in recent years. The study demonstrated that James Pond is a sediment sink trapping sand moving in both directions along the shoreline. This dynamic with sand accumulation is complex, influenced by recent change in wind patterns, and is thought to recently be causing higher instability in beach channel closures and increasing sand accumulation at the delta associated with the inner pond channel.

**4. Activity under 2017 Permit**

**2018-2021 Activity.** Hand digging was the main method used to open the beach channel in 2018 and 2019, with an excavator brought in for one day in March each year to remove sand from the James Pond channel inside the barrier beach dune. In both years, evidence of river herring migrating into James Pond on a spawning migration was observed. In both years, hand digging occurred again in September at the beach channel to specifically allow juvenile river herring to emigrate. All spring and fall openings during 2018-2019 were short in duration as storms and natural coastal processes closed off the openings; typically, within 1-3 weeks. The activity during 2021 was similar to prior years, except extensive hand digging was needed on the beach channel on multiple occasions after the excavator was again used for one day in the spring on the pond channel. Hand digging continued into May with multiple observations of migrating river herring challenged by the shallow channel. Also contrary to 2018-2019, after the spring efforts and migrations, the beach channel remained open throughout the summer and into the fall to support the juvenile herring emigration.

**2022-2023 Activity.** No excavator work was conducted in 2022-23 while extensive hand digging was needed at the beach channel during spring and fall to assist the spawning run migration of river herring and juvenile herring emigration. The West Tisbury Shellfish Warden expressed concerns over the sustainability of hand digging on the beach and the interest to establish a more long-lasting channel. The 2022 Woods Hole Group study provided recommendations on three options for maintaining a channel for tidal flushing (WHG 2022). Their scenario #3 is similar in concept and approach to that proposed in this NOI. Their scenario #2 includes relocating the beach channel further west from the existing location. The Woods Hole Group study documented a trend of increasing sand deposition at the sand bar (tidal delta) inside of the pond outlet. This sand bar has increasingly become a concern for tidal flushing and fish passage. The study also includes useful topographic, wetlands and shoreline change analyses that can be referenced in support of this NOI. Grant applications by the Buzzard Bay Coalition seeking to fund one of the WHG study recommendations during 2022-2023 were not awarded. The present proposal intends to address the immediate degradation of diadromous fish migratory habitat and shellfish habitat in James Pond by allowing seasonal beach channel maintenance that can be coordinated with the presently authorized pond channel maintenance.

**5. Delineating Resource Areas.**

The following sections of 310 CMR 10.00 are applicable to this project:

**Land under the Ocean.** (Section10. 25): N/A.

**Coastal Beach (Section 10. 27).** The proposed project will not adversely impact the beach’s role in storm damage prevention, flood control or protection of wildlife habitat. The beach will continue to dissipate wave energy through its gentle slope, permeability and granular nature and will continue to serve as a source of beach sediment. Birds and tidal flats will be largely unaffected.

**Coastal ~~Beach~~ Dune (Section 10.28 ~~27~~).** The proposed project will not adversely impact the coastal dune. No work will be done on coastal dunes other than possible beach grass plantings in response to mitigation requirements.

**Barrier Beach (Section 10. 29).** The proposed project will minimally/temporarily impact the beach’s role in storm damage prevention, flood control or protection of wildlife habitat. The beach will continue to dissipate wave energy through its gentle slope, permeability and granular nature, and will continue to serve as a source of beach sediment. Birds and tidal flats will be largely unaffected. Excavated material will not be removed from the barrier beach; this material will be place within the barrier beach system as appropriated. Any sediment lost due to excavation and scouring will be replenished to the barrier beach system.

**Salt Marsh (Section 10.32)**. No salt marsh will be removed or impacted by the brief and temporary project disturbance. Salt marsh plantings will enhance the existing resource. Salt marsh planting details are provided in the project design report.

**Land under a Salt Pond (Section 10. 33).** The proposed project will serve to enhance the ponds water circulation, freshwater and saltwater inflow, productivity of plants and water quality, including the level of dissolved oxygen, nutrients temperature and turbidity.

**Land containing Shellfish (Section 10.34).** The proposed project shall enhance the pond shellfish, water quality and pond water circulation.

**Banks of or Land under the Ocean, Ponds etc. that underlie and Anadromous/Catadromous Fish Run (Section 10.35).** The proposed project will enhance the migration of fish, improve the volume and rate of water flow, and improve the capacity of spawning and nursery habitats necessary to sustain the various life stages of the river herring, American eel and white perch.

**Estimated Habitat (Section 10.37)**. The project area includes estimated habitat for state-listed shore birds (piping plover). The prior NOI to maintain the inner James Pond channel (DEP File No. SE79-364, NHESP No. 06-19696) included review and conditions by the MA Natural Heritage and Endangered Species Program. The present NOI for the outer beach channel will include documentation of the 2017 conditions and be submitted to NHESP for review.

**6. Impacts to Public and Private Water Supply**

There have been no known adverse impacts on private water supplies when the pond was opened in the past, and no known adverse impacts on private water supplies are anticipate as a result of the proposed opening. There is no public water supply in this area.

**7. Assessing Wildlife and Rare Species Habitat**

An inquiry to the Natural Heritage and Endangered Species Program (NHESP) on this topic in 2006 resulted in a letter from NHESP on April 25, 2006 that stated the project site was within Priority Habitat and future plans will need to be reviewed by NHESP for compliance with the state-listed rare species protection provisions of MESA (321 CMR 10.00) and or the WPA (310 CMR 10.00). A copy of this NOI will be forwarded to NHESP for review.

**8. History and Impacts of Storm Events (Taken from the 1994 NOI)**

Hurricane Bob in 1991 caused some change in the path of the meander near the pond proper. It is not anticipated that the proposed project will change the impact of storm events on the pond on the surrounding area.

**9. Relevant References from 2017 Permit.**

**Survey.** The Vineyard Land Surveying & Engineering, Inc., conducted a site survey in March 2017 (Site Plan attached) displaying 1 ft grade contours related to datum NAVD88. Update this survey?

**Resource Delineation.** The survey work conducted by Vineyard Land Surveying & Engineering, Inc., included delineation of the MHW, edge of beach, beach grass, marsh vegetation, and subtidal depth contours, and terrestrial grades. These delineations confirm the resource area language provided in Section 2 of the NOI Project Narrative (2-8-2016), and the survey provides a base map for the project.

**River Herring Spawning and Nursery Habitat Assessment.** The first year of a two-year river herring spawning and nursery habitat assessment was completed in 2016 through a cooperative effort. The assessment was conducted under a DMF QAPP (Chase 2010) and received field and technical guidance from DMF during the assessment. This work documented that fish passage is limited by the closed beach outlet and sand accumulation at the channel’s point bar. The habitat assessment results confirmed that water quality was generally supportive of river herring life history, with the exception, of higher salinity in much of the pond that was marginal for supporting early life stages. This finding demonstrates the need for one aspect of the outlet channel maintenance plan that is based on the traditional practice of carefully timed openings to allow the freshening of the pond prior to spring spawning and seasonal salting of the pond for shellfish and to allow juvenile herring emigration.

**Property Permissions.** Project access for an excavator and work crew has been granted by the landowners on the eastern approach to the project site, Susan E. Trees and Martha’s Vineyard Land Bank. The excavator path will be along the upland margin of the marsh grass as shown on the site plan.

**Work Time-of-Year.** The 2017 project plan called for a work period of January 1st to March 31st to avoid impacts to diadromous fish resources, marine resources and recreational activities. In reviewing the NOI, the Natural Heritage & Endangered Species Program required a no-work period of April 1st to August 31st of any year to avoid impacts to a state-listed wildlife species (letter dated 3-11-2016). Further review of MA barrier beach openings to allow sea-run fish passage has shown that natural conditions can cause March openings to fail, causing disruptions to river herring migrations that typically peak from mid-April to mid-May. This project proposes to coordinate with NHESP to develop observer guidelines to allow channel openings during the typical shorebird TOY closure for conditions when the channel becomes obstructed during the river herring migration period of March 15th to June 15th *.* Fall openings during September 15th to November 15th to release juvenile herring would not conflict with protected shorebird life history.

**James Pond Channel Opening and Maintenance Plan – 2023**

The James Pond outlet channel opening and maintenance plan seeks to resolve two limitations to marine fisheries and aquatic health: (1) sand obstructing the pond outlet channel and beach channel that prevents sufficient tidal flow to maintain adequate water quality to support shellfish, diadromous fish and other aquatic life; (2) sand obstructing the pond outlet channel and beach channel that prevents the safe and efficient passage of diadromous fish to spawning and nursery habitat in James Pond. The seasonal opening and grooming of both channels to promote tidal flow and to enhance the water depth is proposed to improve the population status of shellfish (soft-shell clams and quahogs) and diadromous fish (alewife, white perch and American eel).

Two locations at James Pond require attention to maintain tidal flow: (1) the barrier beach channel connecting to Vineyard Sound that receives west-to-east transport of sand; and (2) the pond outlet channel that connects James Pond to the barrier beach channel (Figure 1). The maintenance plan proposes to:

1.) Remove sand periodically from both channel locations to achieve a minimum low tide depth of 1 ft. An excavator can be used for spring and fall channel openings. Excavator work will be under the direction of the Town of West Tisbury Herring Warden and subject to the time-of-year

restrictions below. Handing digging to supplement channel grooming can be done at any time. The fall openings would occur during September 15th – November 15th in response to decisions made by the West Tisbury Herring Warden based on observations of juvenile herring staging near the outlet and favorable conditions of James Pond water levels, tides and wind.

2.) Use the dredged sand to fortify the northern dune bank between the barrier beach and James Pond outlet channel. Where bank has eroded, stake fiber rolls and add sand to build up bank around fiber rolls. Details on fiber roll placement will be provided in the project design report.

3.) Plant beach grass plugs (and salt marsh plugs where applicable) inside of fiber rolls.

**Seasonality and Duration.** Machine operations should occur during January- March 31stto avoid spawning and nursery periods for targeted marine resources, seasonal recreational uses, and impacts to state-listed species. However, work should be allowed during April 1st to May 15th in years when earlier openings were not successful due to natural conditions and/or the timing of earlier openings were not sufficient to allow sea run fish passage. Any work during the April 1st to May 15th period will require beach monitoring to confirm the presence or absence of protected species. Fall openings should target September 15th to November 15th.

**Monitoring.** A cooperative monitoring effort involving DMF, ~~T~~ the Town's Herring Warden and local partners is proposed to evaluate the success of the channel maintenance efforts, the sustainability of channel improvements, and improvements in habitat quality for marine resources. The monitoring is desirable to document the pond's response to openings and give guidance on future management. However, the openings are necessary to maintain diadromous fish passage and should occur with or without available funds for monitoring. Therefore, the proposed monitoring is recommended and should use the following protocols if funding is available for the project:

1.) All efforts to open channels with excavators and with hand digging should be documented with reporting on duration of opening, and appropriate weather and tide conditions.

2.) Three depth loggers should be deployed to monitor changes and fluctuations in water depth before and after channel maintenance. One should be set outside the outlet in marine waters and two located in James Pond near the outlet and the upper pond. A staff gauge should also be set in the pond and related to a common benchmark as the pond depth logger.

3.) Water quality will be monitored during biweekly trips during March-October for three years following the first opening. Three fixed stations will be visited along a transect from inside of the inlet to the opposite side of the pond. Protocols of the DMFQuality Assurance Program Plan for Diadromous Fish Habitat Monitoring (Chase 2010) will be followed. In addition, two random-stratified sampling stations should be selected and sampled with each trip. With each visit, the following parameters should be recorded at suitable depth intervals: water temperature, dissolved oxygen (DO), pH, specific conductivity, salinity and Secchi disk. If funding allows, total nitrogen and total phosphorus should be measured also. If funding allows, a temperature/salinity continuous logger would also be deployed for this period.

4.) Photographs on the channel locations where improvements were made should be taken in March and October for each year of monitoring. The photograph locations should be documented with GPS locations and accompanied with brief notations on site changes and observations.

5.) Salt marsh plantings should be visited and evaluated and counted each spring and fall to confirm survival percentage and planting success.

6.) When beach openings are necessary during the period of April 1st to May 15th, weekly visits will be conducted to the project site to document the presence/absence of protected species.

Annual reporting of the monitoring will be provided to the West Tisbury Conservation Commission by the monitoring partnership. ***Alternative Monitoring Option****:* in the event that funding cannot be secured for all the above monitoring features, the ~~more costly~~ costlier items #2-3 can be removed

and monitoring items #1 and 4-6 would be conducted.

**Citations**

Chase, B.C. 2010. Quality Assurance Program Plan (QAPP) for Water Quality Measurements Conducted for Diadromous Fish Habitat Monitoring. Version 1.0, 2008-2012. Massachusetts Division of Marine Fisheries Technical Re- port TR-42: [http://www.mass.gov/dfwele/dmf/publica- tions/tr42.pdf](http://www.mass.gov/dfwele/dmf/publica-%20tions/tr42.pdf)

WHG. 2022. James Pond Inlet Stability Evaluation, West Tisbury, Massachusetts. *Prepared* by Woods Hole Group, Bourne, MA, *for* Buzzards Bay Coalition, New Bedford, MA.

Figure 1. James Pond, West Tisbury

Map

Description automatically generated