

APPLICATION FORM
RESTORATION PRIORITY PROJECTS
 FY21 RFR ID: DER 2021-02

Applicants must complete this form and provide required attachments (see bottom) to nominate a potential restoration project for Priority Project status. If submitting more than one project for consideration, separate applications for each project should be completed. Use additional space as needed, but please limit yourself to 25 pages TOTAL, including attachments.

Please refer to the evaluation criteria in the Request for Responses (RFR) for how projects will be assessed. Please provide as much information as you can based on your experience and knowledge of the site. DER will use available resources to evaluate the site and may conduct a site visit.

APPLICANT INFORMATION

i. Applicant’s Name: Chatham Conservation Foundation, Inc. (Contact: Gerry Stahl, Treasurer; President: Robert Lear; Executive Director: Dorothy Bassett)	ii. Email/Phone: Gerry@GerryStahl.net 1-(215)-260-7467
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iii. **Project Name:** Frost Fish Creek Restoration Project

iv. **Restoration Project Category:** *Check all that apply.*

<input type="checkbox"/> Cranberry Bog Wetland Restoration	<input type="checkbox"/> Dam Removal and River Restoration	<input checked="" type="checkbox"/> Coastal Wetland Restoration
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1. SITE & RESTORATION INFORMATION

PLEASE USE AS MUCH SPACE AS NEEDED. THE BOXES WILL EXPAND AS YOU FILL THEM.

I. Project Location and Setting: Describe the project site and general location. What natural features are present, such as streams, wetlands, and forests? What kind of buildings, roadways, or other human-built features are nearby?

Frost Fish Creek is a 90-acre conservation area and Critical Natural Landscape in Northeast Chatham with a variety of natural features. In 1987, it was designated by the state as part of the Pleasant Bay Area of Critical Environmental Concern (ACEC).¹ The Creek is a tidally influenced system directly connected to Ryder’s Cove, Bassing Harbor, Pleasant Bay and the Atlantic. There is a major tidal restriction at Route 28, which is slated for replacement. There are other tidal restrictions that historically supported agriculture, especially cranberry bogs. The Creek is fed from a large wetland (the “Bog” in the project area map), which collects runoff from residential and small-industry neighborhoods, as well as from a forested wetland (the “Marsh” in the project area map—currently wooded swamp, shrub swamp and upland, but potentially a salt marsh migration site), which historically included a herring run to Lovers Lake and Stillwater Pond. The tidal restrictions and other anthropogenic activities have harmed the health of the salt marsh system, as indicated by phragmites, reduced extent of salt marsh and poor water quality. With restoration of ecological functions, the salt marsh in the Creek area could potentially migrate to the Bog and Marsh areas in response to sea-level rise.

The project site is owned by the project applicant, the Chatham Conservation Foundation, Inc., Cape Cod’s oldest land trust. The project aims to evaluate and, where indicated, restore routine tidal action and healthy stream flow to extensive estuarine habitats as well as associated brackish and freshwater wetlands for the benefit of the people, plants, animals and ecosystems of Chatham, as well as to sequester coastal blue carbon, restore fish runs, improve natural habitats and increase recreational opportunities.

The following paragraphs detail the major sites within the project area:

¹ The ACEC includes the entire project area plus Lovers Lake and Stillwater Pond that were connected to it by a herring run.

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For project location, see **Appendix 1. Site Visit**. Appendix 1 includes three maps and a collection of photographs describing the extent, ownership and major features of the project area, overlaid on the Town of Chatham assessor's map.

The first map shows the project area with numbered arrows corresponding to the photography sites located at existing culverts. Certain sections of the project area are labelled for the sake of reference in this application.

The second map is a projection of future flooding areas, showing how the areas marked "Bog" and "Marsh" on the first map are likely migration paths for the salt marsh to be formed around Frost Fish Creek if the tidal restrictions at sites 1, 2 and 3 are removed. This would provide floodplain connectivity, supporting a natural flow regime under projected effects of climate change.

The third map shows wetland lines connecting Frost Fish Creek to Lovers Lake and Stillwater Pond—historic and potentially future herring runs.

Much of the land in the project area owned by Chatham Conservation Foundation (CCF) is currently forested. CCF's most popular public trail goes along the entire length of the east side of Frost Fish Creek. The area marked "Bog" is a former cranberry bog and is partially flooded and maintained at a water level about two feet higher than the Creek. The area marked "Marsh" is currently partially forested and includes two vernal pools that CCF maintains for use by the local school.

The photographic site visit begins at *site #1*, immediately downstream of a deteriorated culvert under Route 28. *Site #2* is immediately upstream of that culvert. Currently, two flows of water pass through this culvert. There is a metal pipe visible at both ends, partially below low-tide level. There is a smaller flow of water, whose entrance and exit are invisible below low-tide level. This culvert is not on CCF property. However, CCF is partnering with MassDOT to replace that culvert in order to restore optimal tidal flow to Frost Fish Creek. MassDOT is submitting a separate application to DER for the culvert replacement project and CCF is supporting that application. The current application -- CCF's Frost Fish Creek Restoration Project -- is focused on managing the consequences of that restored tidal flow to create a healthy ecology throughout the project area. CCF is cooperating with MassDOT and other agencies in the design and replacement of the culvert under Route 28, including modeling of the CCF project area. CCF will also collaborate with the Town of Chatham and others on associated public relations.

Site #3 is a small earthen dam across Frost Fish Creek approximately 60 meters upstream of the Route 28 culvert (labelled "Dam"). The Dam has a deteriorating culvert. The Dam restricts tidal flow from the small area marked "Pool" to the CCF project area. The Dam is primarily on CCF property and marks the beginning of CCF's project area. A first decision of the proposed project will be whether or not to remove the dam and the timing for doing so.

Between *Site #3* and *Site #4* is the current extent of Frost Fish Creek. It is a scenic area that supports a variety of wildlife, including a variety of birds. A number of private residences are perched uphill along the west side of the Creek. The further one goes upstream, the more phragmites dominate, as little saltwater reaches there.

Site #4 is the transition from the Creek to the Bog. The culvert there is a Weir with an adjustable height. For many years, the height has been set at about two feet higher than the Creek. Considerable watershed runoff from

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the surrounding residential and small-industrial neighborhood enters the Bog. Once MassDOT's modelling of the area is completed, CCF plans to undertake further H&H studies, particularly of the Bog and Marsh, as well as water-quality studies of the entire project area. These will inform a decision about what to do about the Weir. One possibility would be to encourage tidal flow up the Creek and into the Bog by eventually gradually removing the Weir restriction. This could establish a migration path into the Bog for healthy salt marsh as sea level rises in the future.

Sites #5 and #6 are two sides of an existing culvert under Crowell Road near Northgate Rd. *Site #7* is another existing culvert under Crowell Road near Meadowbrook Rd. These culverts allow small streams from the Marsh to flow into Frost Fish Creek. An issue for the project is to determine the highest use for the Marsh area, given the results of studies of potential water flow and flooding in this area over the next decades.

Site #8 is a culvert under Route 28 near Stillwater Pond that MassDOT will be replacing. This is not part of the CCF proposed project. (However, CCF owns the land on both sides of this culvert and will be cooperating with MassDOT on their effort there.) As shown in the third map, this culvert leads to Stillwater Pond, which is connected to Lovers Lake, which is connected to the CCF Marsh. Thus, there is a potential to reopen a system of fish runs that used to exist.

II. Project Background: Describe the history of the site to the best of your knowledge, including your own involvement. What about the site's current condition suggests that restoration actions are needed? Please also describe how the site currently impacts the nearby environment and/or community (such as blocking fish passage, creating a public safety hazard, flooding, etc.)

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Frost Fish Creek was home to indigenous tribes and formed a boundary of Chatham when the Town land was initially purchased from the Wampanoag. CCF's 1.1-mile walking trail meanders along the eastern edge of Frost Fish Creek offering walkers glimpses of an old cranberry operation, which has reverted into open wetlands. Along the high trail, borrow pits for sanding the bogs appear on either side of the path. With its outlooks of the wetland observed from upland Pine/Oak woodlands, this area offers the most varied views and numerous opportunities to experience seasonal bird and mammal life in Chatham. A 9-minute video on the Creek and the proposed project was publicly aired at the CCF 2020 Annual Meeting and is now available on the CCF website at: <https://www.chathamconservationfoundation.org/trailguide>. The video documents the history of the area, discusses and illustrates some of the wildlife, and briefly describes the proposed restoration project.

As Chatham's land trust, CCF has acquired parcels since the 1960s in order to preserve open space in the face of development. It has established charitable trust restrictions on the Frost Fish Creek parcels that they "be held in an open and natural condition exclusively for conservation purposes forever."

Recently, CCF has committed to taking increased action to restore parcels that are threatened by invasive species and climate change. For instance, CCF is currently using a CPA grant to restore land on Route 28 about a mile northwest of Frost Fish Creek at the homestead site of the founder of Chatham, creating a public path and native planting landscape at the historic site. Salt marshes are a particular focus of restoration due to their role in climate change and to the fact that much of CCF's land is associated with salt marshes. CCF formed a Salt Marsh Task Force in 2019 and targeted Frost Fish Creek as its first site for salt-marsh restoration. (It has recently added a large marsh complex in West Chatham as a second focus for study, but that is not part of the present application.)

See Appendix 2. 2019 Study.

In 2018, CCF contracted with APCC (Association to Preserve Cape Cod) to conduct a preliminary study of Frost Fish Creek. This study showed the extent of tidal restriction due to the culvert at Route 28. It also pointed to the Dam (Site #3) and the Weir (Site #4) as further restrictions. It recommended further detailed studies. (The data from this study has been forwarded to MassDOT for their modelling effort.)

See Appendix 3. CPC Proposal.

In 2020, CCF submitted a grant proposal to the Chatham Community Preservation Committee for CPA funds to conduct two new detailed studies recommended by the APCC study: an H&H study of the entire project area, including the Creek, Bog and Marsh, as well as a water-quality study of the bodies of water throughout the project area. This proposal was approved by the CPC, Town officials and Selectmen. It is currently pending approval at Town Meeting, which has been repeatedly delayed due to the pandemic. Approval is expected this summer.

The project area historically supported commercial cranberry bogs, resulting in changes in land use and water flow. The old herring runs have been closed. Water quality in the Creek has deteriorated due to limitations on tidal flushing.

CCF acquired parcels in the project area over several decades. CCF maintains a scenic public trail along the Creek and over some of the adjacent forested hills. CCF is currently installing identification signs on some of the trees and plants along the trail. CCF periodically conducts group hikes along the trail and produced a video of the history of the area (see <https://www.chathamconservationfoundation.org/trailguide>). CCF has begun public education efforts about the importance of salt-marsh restoration during climate change (see cover article in **Appendix 4. Bulletin Spring 2021**). Page 4 of 12

II. Project Goals: Describe what the proposed project will accomplish.

In line with CCF's mission, the project goal is to "preserve land for the benefit of the people, plants, animals and ecosystems of Chatham." This includes improving water quality and providing expanded recreational opportunities in nature. In a period of climate change, we can add the goals of restoring, extending and managing salt marshes to increase carbon sequestration, reduce flooding and protect land from coastal storms.

Accordingly, the goal of the project is to restore the project area to a natural state that will be resilient to climate change and to local development over the next 20-to-50-year timeframe. This includes primarily deciding on the design of the tidal restrictions at Route 28, at the Dam, at the Weir and along Crowell Rd. These decisions require hydrologic and water-quality studies, before goals for permitting, restoration contracting, or resources monitoring can be defined. These decisions will be made in collaboration with project partners and in consultation with Town residents, especially abutters.

Design of the culvert at Route 28. This decision will be made primarily by MassDOT, its consultants and its partners in a separate DER Priority Projects application. CCF will collaborate on this project and support it. This project will result in a hydrologic model of Frost Fish Creek corresponding to a redesign of the culvert. The redesign will have major consequences for CCF's proposed project, and the model will provide initial guidance to CCF.

Design of the Dam. It is likely that the Dam with its culvert will be removed to allow the new tidal flow from the Route 28 culvert to be restored up Frost Fish Creek. A project goal is to plan for such a removal, including coordinating its timing with the replacement of the Route 28 culvert. The consequences of removing the Dam will have to be discussed in detail with abutting residents.

Design of the Weir. A more complex decision will be whether to lower or remove the Weir. This will involve additional studies of hydrology and water quality in the Bog, such as those planned with the expected CPA grant to CCF. The Bog collects considerable water and pollution from the surrounding watershed. Assessment will be required concerning the consequences of tidal flow into the Bog area from the Creek and freshwater flow into the Creek from the Bog. Any change may have to be made over a period of years, taking into account sea-level rise and changing flood plains. A conversion into salt marsh or into a site for salt-marsh migration may be necessary.

Design of the culverts under Crowell Road. These two culverts may be sound and adequate. Planning and model projections will be needed to see if interventions are needed to the stream beds connecting the Creek to the Marsh as well as to the former herring run.

A practical overall goal of the project is to optimize ecosystem benefits of tidal restoration as defined by the design decisions for the culverts listed above. The details of the project will derive from those design decisions, including how best to foster a healthy natural state of each sub-area in accordance with its highest use.

IV. Project Scope: Describe the proposed project. What work will be involved with your project? Has any work been completed to date? (such as site visits, technical analyses, conceptual plans, permits, etc.)?

CCF has done substantial background work for the project:

- CCF has maintained parts of the project area for six decades. It has a small trail head off of Route 28 for a well-established trail it maintains along the Creek and through upland forest. In recent years, it opened another access to the other end of the trail from Meadowbrook Rd. CCF is currently adding tree and plant identifiers for public education. It maintains two vernal pools in the Marsh area for science education at the adjacent middle school. CCF is currently developing an ecology curriculum for distribution to schools and has organized school events at the project area. CCF holds periodic public education events about ecology and Frost Fish Creek.
- CCF hired APCC to do an initial study in 2018 (**Appendix 2. Report 2019**), taking account of previous studies of the area and conducting a series of new studies.
- The present proposed project is a follow-up to the recommendations of that 2019 study. An informal photographic site visit to the various relevant culverts (**Appendix 1. Site Visit**) provides visuals.
- CCF submitted a grant application (**Appendix 3. CPA Grant Proposal**) in January 2020 to the Chatham Preservation Committee for a CPA grant to fund more detailed studies of the hydrology and water-quality of Frost Fish Creek. The proposal was approved by the CPC and the Selectmen, as well as receiving letters of support from Dr. Robert Duncanson of the Town of Chatham, from the Pleasant Bay Alliance and from APCC. Final approval by Town Meeting is expected this summer. This grant will pay for studies to extend the APCC and MassDOT studies.
- Recently, CCF learned of MassDOT's project to replace the culvert under Route 28 leading into Frost Fish Creek. The CCF Salt Marsh Task Force had anticipated that such a project would be necessary at some time, given the deterioration of that culvert. However, the timing of the MassDOT project, their subcontracting of a new hydrologic modeling of the area and their willingness to collaborate with CCF on this project were fortunate and timely.

Once MassDOT has finalized the design of the culvert under Route 28, the associated modeling results are available, and the results of the CPA-funded studies are known, it will be time to plan the rest of the proposed project.

- Decisions about redesign or removal of the Dam and the Weir will come first.
- Restoration of each body of water (Creek, Pool, Bog and Marsh) will have to be planned based on the details of the tidal removals. For instance, a decision to convert the Bog to salt marsh over time will have to consider the soil composition and the possible need to remove or add soil.
- The streams through the Crowell Rd culverts and the herring run connection to Lovers Lake will need to be investigated to see if the culverts will be adequate over time and if the stream beds need work.
- Based on decisions about the various culverts, permitting will have to be arranged and construction work contracted and supervised.

Assessment of current levels of invasive plants in the bodies of water and census of varieties of fish and shellfish will be needed as a basis for ecological interventions and on-going monitoring. The project will conduct comprehensive functional assessment of the site's baseline conditions.

The Scope of the DER Priority Project will cover these stages:

- Conduct the studies funded by the CPA grant to extend the range of the MassDOT modelling. This will further assess effects of different tidal restoration scenarios to best understand potential positive and negative impacts on private landowners, natural habitat areas and infrastructure.
- Development of a project work plan. An initial work plan consists of the study and modeling currently being undertaken by MassDOT contractors, to be followed by the studies outlined in the CCF CPA grant application. Next steps will have to be planned as part of the proposed project, based on the findings of these studies.
- Development of a project budget. The budget for the replacement of the Route 28 culvert will be the responsibility of MassDOT and its partners. The costs of the CCF follow-up hydrology and water-quality studies will be covered by the CPA grant.
- Site assessment and feasibility investigations are already underway and planned. Further investigations will be driven by findings of the initial studies.
- Planning and design of the tidal restriction removals at the Dam and the Weir will depend on the studies. These plans, in turn, will require planning and design of further interventions in response to those removals.
- Permitting for the replacement of the Route 28 culvert will be the responsibility of MassDOT and its partners. Permitting for any changes at the Dam and the Weir or elsewhere will be conducted as part of this project.
- Fundraising was begun with the CPA grant application. Further fundraising will involve state and federal agencies—potentially with DER, NRCS and/or CCCD liaison. CCF could also consider doing community fundraising among Chatham residents interested in donating to specific aspects of the project.
- Public outreach has begun with public lectures, publications in local newspapers and in the CCF Bulletin, and a video on Frost Fish Creek. Public outreach will be a major component of CCF’s work on this project, to inform the community about planned changes and to solicit community input into the plans. Outreach will be especially coordinated with the Town of Chatham.
- Construction activities will need to be carefully specified with the assistance of DER, and qualified contractors hired and supervised.
- Monitoring of many aspects of this restoration project (e.g., water quality, tidal flushing and fish presence) will be central to quality control and public accountability.

CCF will continue to monitor water flow, water quality, salt-marsh extent, ecosystem health, fish presence and animal presence during and after the project period. CCF will also continue to provide public education and to develop further recreation services beyond the DER Priority Project period.

V. Has any funding been identified or spent for this project? Yes No If yes, describe:

CCF paid for the 2018 APCC study of Frost Fish Creek (Appendix 2).

CCF anticipates final approval of a \$75,000 CPA grant to conduct H&H and water-quality studies to extend the APCC and MassDOT studies.

The CCF annual operating budget includes a line item for the Salt Marsh Task Force. The CCF Board can also allocate special project funding from time to time at its discretion. CCF could also solicit donations from members and the public to support specific aspects of the restoration project.

2. ANTICIPATED BENEFITS

PLEASE USE AS MUCH SPACE AS NEEDED. THE BOXES WILL EXPAND AS YOU FILL THEM.

I. Ecological Benefits: What are the expected environmental benefits of your project? For instance, what positive changes do you expect to see in the natural areas within and near your project site? This could include improving the flow of water, reconnecting sections of waterway so fish can access them, improving water quality, etc.

The most obvious benefit will be improving the flow of water by removing tidal restrictions.

The considerable increase in flushing should dramatically improve water quality, as bodies of water have recently been confined. The 2006 MEP report states that “culverts restricting tidal flow under Route 28 have had a negative influence on water quality in Frost Fish Creek.” The expected result of tidal restoration may also offer a significant benefit to adjacent landowners in terms of mitigation of flood waters that back-up at the current flow restrictions.

Reconnecting sections of waterway will allow fish to access them and to move back and forth among them and in and out of the ocean. A historic herring run loop could be re-established through the Creek, Marsh, Lovers Lake, Stillwater Pond and back to Ryder’s Cove.

The project will include monitoring the fish, sea-life, birds and mammals, both before and after restoration. CCF already maintains an outdoor camera to capture photos of animals, such as river otter and deer. Over 150 species of birds have been identified at Frost Fish Creek. It is not known if frost fish (tomcod) are still present in the Creek. A restored Creek could improve shellfish potential and even create nursery habitat for commercial fish species.

Over time, there is potential for extensive salt marsh with healthy marsh grasses. This could sequester carbon and prevent the release of greenhouse gases.

With sea-level rise, water flow between the Creek and the Bog or Marsh could provide migration paths for the salt marsh around the Creek.

Other benefits to wetland functions and ecosystem services are hard to predict in detail at this point. They will likely include: nutrient/toxicant/sediment retention in the areas that become salt marsh; short and long-term flood storage capacity during extreme weather; surface water erosion reductions; habitat for anadromous fish runs; better habitat for birds; improved organic carbon export to the estuaries; increased nursery stock for the coastal fisheries economy; improved birding opportunities for tourists; improved local aesthetic value for residents and hikers; and educational opportunities for local students.

As part of the project, we will survey conditions as a baseline for monitoring benefits and other changes – e.g., the planned water-quality study.

II. Community Benefits: To the best of your ability, describe how your project is expected to benefit the local community and economy. This could include creating outdoor recreational space, addressing flooding or safety issues, improving climate resiliency, etc.

Climate projections indicate considerable flood potential in the project area as well as certain surrounding residential or industrial areas. Optimal tidal flushing will allow flood waters to drain out to sea. In the other direction, incoming storm surges can be mitigated by partial absorption into the Creek system, with its connections open to additional holding areas. It will be important to undertake flexible planning and on-going monitoring to minimize negative community consequences and to maximize resiliency.

Improved water quality and increased fish access will have direct benefits for community recreation, such as kayaking and fishing. It could also benefit local commercial fishing by supporting the life cycle of herring and their role in fish ecology.

III. LANDOWNER INFORMATION

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I. Who is the landowner(s) of the project site?

The Chatham Conservation Foundation, Inc., a 501(C)3 non-profit organization, is the landowner of the project site. As a land trust, CCF acquired the following parcels between 1966 and 1999:

CCF #	Date Acquired	Grantor	Acres	Registry Book/Land Court Certificate	Registry Page/Land Court Document	Plan Book/Page; Lot(s)	CR overlay or CT Deed from Compact	Address	Assemblage Name	FY 19 Town Map No.	FY 19 Town Pcl. No.
15	7/20/1966	Moye	5.40	1375	1050	no plan	27238/340	Frost Fish Hill	Frost Fish Creek	13I-8	1B
27	12/31/1967	Nanly Homes-Lynch	36.00	1387	615	93/53	27238/340	Stepping Stones Rd	Frost Fish Creek	13H-0	1
6											
101	12/23/1983	Marden	20.70	3969	253	338/4	27238/340	Crowell Rd	Frost Fish Creek	12H	17-2
116	8/13/1987	Burlin	0.36					Stony Hill Rd	Frost Fish Creek	13G-62	2
118	6/16/1988	Nickerson		6307	22	no plan	27238/340	Stepping Stones Rd	Frost Fish Creek	13H-0	1
121	5/10/1988	Nickerson	0.62	6957	55	no plan	27238/340	Crowell Rd	Frost Fish Creek	12H-19	3
127	12/29/1990	Robertson	1.50	7399	170	no plan	27238/340	Crowell Rd	Frost Fish Creek	12I-13	19
137	7/3/1992	Yasuna	10.20	8111	1	200/33	27238/340	Crowell Rd	Frost Fish Creek	12I-2	17
153	12/22/1995	Walther	0.97	9986	146	520/14: Lot 8B	27238/340	Court St	Frost Fish Creek	12H-24HB	H8B
154	8/28/1996	Gregorian	5.01	10397	74	527/76: Lot 2	27238/340	Crowell Rd	Frost Fish Creek	11I-3	6
165	6/8/1999	Frost Fish Realty Trst	5.43	12325	284	541/86: Lot 15	27238/340	Frost Fish Hill	Frost Fish Creek	13I-8	1B

See **Appendix 1. Site Visit**, first map, for location of these parcels on a map of Town parcels. These parcels appear on the DFG BioMap² as Conservation Openspace and as Critical Natural Landscape.

II. Is the current or future landowner committed to the proposed restoration work? Is a sale pending on the current restoration-minded entity? (Landowner Agreement must be attached in writing and/or copy of Purchase and Sale Agreement provided). **Yes**
 No

CCF is committed to the proposed restoration work. Through the Compact of Cape Cod Conservation Trusts, the parcels are covered by Charitable Trust restrictions that require they “be held in an open and natural condition exclusively for conservation purposes forever.”

III. Landowners are generally expected to sign permit applications and hold construction contracts, typically with assistance from DER and others. In some cases, landowners will work with project partners who will serve as the lead on permits and/or construction contract.

A. Please indicate who is anticipated to be the applicant on any necessary permit applications:

CCF will be the applicant on some permit applications. However, CCCD and/or MassDOT and its contractors will be the applicant on permits involved in the culvert replacement under Route 28. Furthermore, the Town of Chatham or other project partners may be the applicant on certain other

² <https://maps.massgis.state.ma.us/dfg/biomap2.htm>

permits related to this project.

B. Please indicate who is anticipated to be the contract holder for implementation of the restoration work:

CCF will be the contract holder for some implementation work. However, CCCD and/or MassDOT and its contractors will be the contract holder for work involved in the culvert replacement under Route 28. Furthermore, the Town of Chatham or other project partners may be the contract holder for certain other work related to this project.

IV. APPLICANT AND PARTNER INFORMATION

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I. If different from the applicant, please name the Lead Project Sponsor for this project (see definition on pages 2-3 of the RFR).

Same.

II. Please describe the qualifications/experience of the applicant to help lead a restoration project.

The Chatham Conservation Foundation (CCF) is the oldest land trust on Cape Cod. It currently owns 191 parcels in the Town of Chatham, covering 628 acres. Since 1966, it has been steward of this land. Most of this land is either forested, salt marsh or fresh-water pond. In addition, CCF manages the Conservation Restrictions on 45 parcels of Town and privately owned land totaling 214 acres. CCF has a staff Land Steward and several experienced volunteers and Trustees who maintain trails, monitor vegetation and maintain the land. CCF manages contracts with professionals and manages grants for special projects.

Several Trustees have served many years on the Chatham Conservation Commission and/or bring relevant training and experience.

CCF contracts with APCC to assist in restoration efforts, including planning, conducting studies and supervising subcontracts.

The Chair of the CCF Salt Marsh Task Force, Dr. Stahl, has experience in project management. As a professor of information science, he directed an internationally renowned research project with over \$8 million in NSF grants over a 10-year period. Earlier, he was a neighborhood planner for community revitalization and energy conservation in Philadelphia for 7 years, with about \$4 million in foundation, city and federal grants he raised. As CCF Treasurer, he developed online systems for CCF's management of land stewardship, finances (including grant management), donor tracking and record keeping.

CCF has a paid staff including Executive Director and Land Steward. It has a working Board of Trustees and a number of regular volunteers, as well as an assigned AmeriCorps Cape Cod Member.

III. Have any other restoration partners (actual or potential) been identified? Yes No

If yes, please identify them here and describe their qualifications/experience and role in relation to the project.

The proposed project will form a Working Group of project partners. The Working Group will meet at least quarterly online to review findings and decide on next steps. (At CCF's suggestion, MassDOT already convened a number of the partners to discuss the modelling and design of the culvert under Route 28.) Statements of support for the proposed project from many of the partners are attached (**Appendix 5. Letters of**

Support).

- **Department of Transportation (MassDOT)** (Timothy Dexter and David White), which has contracted with Stantec (Jennifer Ducey) and The Woods Hole Group (Matt Schulz). MassDOT will take a lead role in the redesign of the Route 28 culvert—for which they are submitting a separate Priority Project application. Once that is completed, their role in this proposed project will be diminished.
- **Cape Cod Conservation District (CCCD)** (Richard DeVergilio). DeVergilio is looking to include costs of the Route 28 culvert replacement in a CCWRRP funding request. CCCD is particularly concerned about the fish runs.
- **National Resources Conservation Service (NRCS)** (Stephen Spear). NRCS may assist in evaluation of soil and other resources in the project area, as well as liaising with potential funding sources.
- **Association for the Preservation of Cape Cod (APCC)** (April Wobst). APCC has worked with Cape Cod communities to identify more than 140 restoration projects aimed at restoring impaired salt marshes, fish runs, and shellfish beds as well as improving water quality through stormwater remediation. As APCC’s Restoration Ecologist, Wobst provides technical, planning, permitting and management support to communities interested in completing restoration projects.
- **Town of Chatham** (Robert Duncanson) Dr. Duncanson is Director, Natural Resources Department, Town of Chatham.
- **Pleasant Bay Alliance (PBA)** (Carole Ridley). Ridley is the Director of PBA, which conducts research and projects in the Pleasant Bay AECA in the following areas: watershed planning, coastal processes and structures, wetlands protection, water quality monitoring, and waterways.
- **Chatham Climate Action Network (C-CAN)** (Jane Harris). Harris has degrees in biology and resource management and 20 years of experience as Conservation Administrator in 3 MA towns. She has served on the boards of CCF, PBA, C-CAN, FCW, APCC, Mass Assoc. of Conservation Commissions, AmeriCorps of Cape Cod, Chatham Land Bank.
- **Friends of Chatham Waterways (FCW)** (Jeff Mason). Mason is Director of FCW and is a Professional Wetland Scientist (PWS) and a Certified Environmental Restoration Practitioner (CERP) with expertise in wetland/riverine/estuarine ecology; project management; regulatory support and permitting; mitigation/restoration site design, implementation, and monitoring; and remote sensing/GIS analyses of aquatic ecosystems.

IV. Describe any community support or community involvement in the project. To what degree have supporters have been involved in the project to date?

CCF is a well-established community-based organization with broad community support. CCF’s Trustees are all Chatham residents. Many Chatham residents are dues-paying members of CCF.

The Chatham Community Preservation Committee approved CCF’s application for a CPA grant to conduct further detailed studied of the hydrology and water quality of Frost Fish Creek. This application was supported by the Chatham Select Board and is expected to be approved at Town Meeting this summer.

V. ANTICIPATED ROLE FOR DER

Please use as much space as needed. The boxes will expand as you fill them.

I. Describe the role you see DER playing as part of the Project Team and what project needs you see DER supporting (be as specific as possible):

Coastal Wetland Restoration. Once tidal flow is restored through the redesigned Route 28 culvert, tidal flushing, restoration of water flow throughout the project area, increased water quality, salt marsh vegetation and fish population will need to be fostered. DER could provide guidance, technical assistance and funding to support this.

Dam Removal and River Restoration. It is likely that the restriction at the Dam and eventually the restriction at the Weir will need to be removed. DER could provide guidance in making this decision, planning the process, applying for permits, contracting for construction and raising funds to pay the associated expenses. In addition, the streams connecting the Creek to the Marsh and from there to Lovers Lake may need some restoration; DER could similarly support this.

Cranberry Bog Wetland Restoration. The restoration of the Bog will be a major undertaking. It was historically a cranberry bog and now collects watershed run-off. DER guidance and technical assistance in restoring this area would be valuable.

The proposed project covers a project area with diverse characteristics and needs. DER’s experience would be invaluable in highlighting issues and helping to coordinate decisions, plans and actions. Each of the project stages listed under Section IV, Project Scope, will benefit from DER staff technical assistance, technical services by qualified DER contractors, and/or direct DER grant funding.

ATTACHMENTS:

A. REQUIRED :

1. Letter of commitment from property owner (*if owner is not Applicant*), or if applicable a copy of Purchase and Sale Agreement and Letter of Commitment by purchaser (if not the Applicant). **Applicant is owner.**
2. Copy of the latest Assessor’s Map showing the parcel(s) on which restoration work might take place and the ownership information for the lot. **Appendix 6. Assessor Map.**
3. At least one photograph of the project site. For multi-site projects, at least one labeled photograph of each site must be submitted. **Appendix 7. Project Photo.**

B. OPTIONAL:

- Additional photographs. **Appendix 1. Site Visit.**
- Locus map. **Appendix 1. Site Visit.**
- Design plans (*if completed*). For example, completed conceptual or engineering designs.
- Letters of support from the community, e.g., letters from selectmen, abutters, local organizations. **Appendix 5. Letters of Support.**
- Project budget and timeline (*if available*). Please indicate any matching funds that have been secured.
- Permits, if obtained.
- Press and media coverage (e.g., newspaper clippings, articles, links). **Appendix 4. Bulletin Spring 2021.**

SIGNATURES

BY SIGNING BELOW, I ACKNOWLEDGE THE TERMS AND SPECIFICATIONS CONTAINED WITHIN THIS RFR.

Applicant Signature: Gerry Stahl

Date: May 10, 2001

X By checking this box, you confirm that all supporting materials such as project plans, reports and/or documents are included with this application.

**Appendices
to Application of Chatham Conservation Foundation, Inc.**

**Appendix 1. Site Visit – maps attached; photos at
https://gerrystahl.net/SMTF/ffc_site_visit.pdf**

**Appendix 2. APCC Report 2019 --
https://gerrystahl.net/SMTF/FFC_Restoration_Report_2019.pdf**

**Appendix 3. CPA Grant Proposal --
https://gerrystahl.net/SMTF/FCC_CPC_application_2020.pdf**

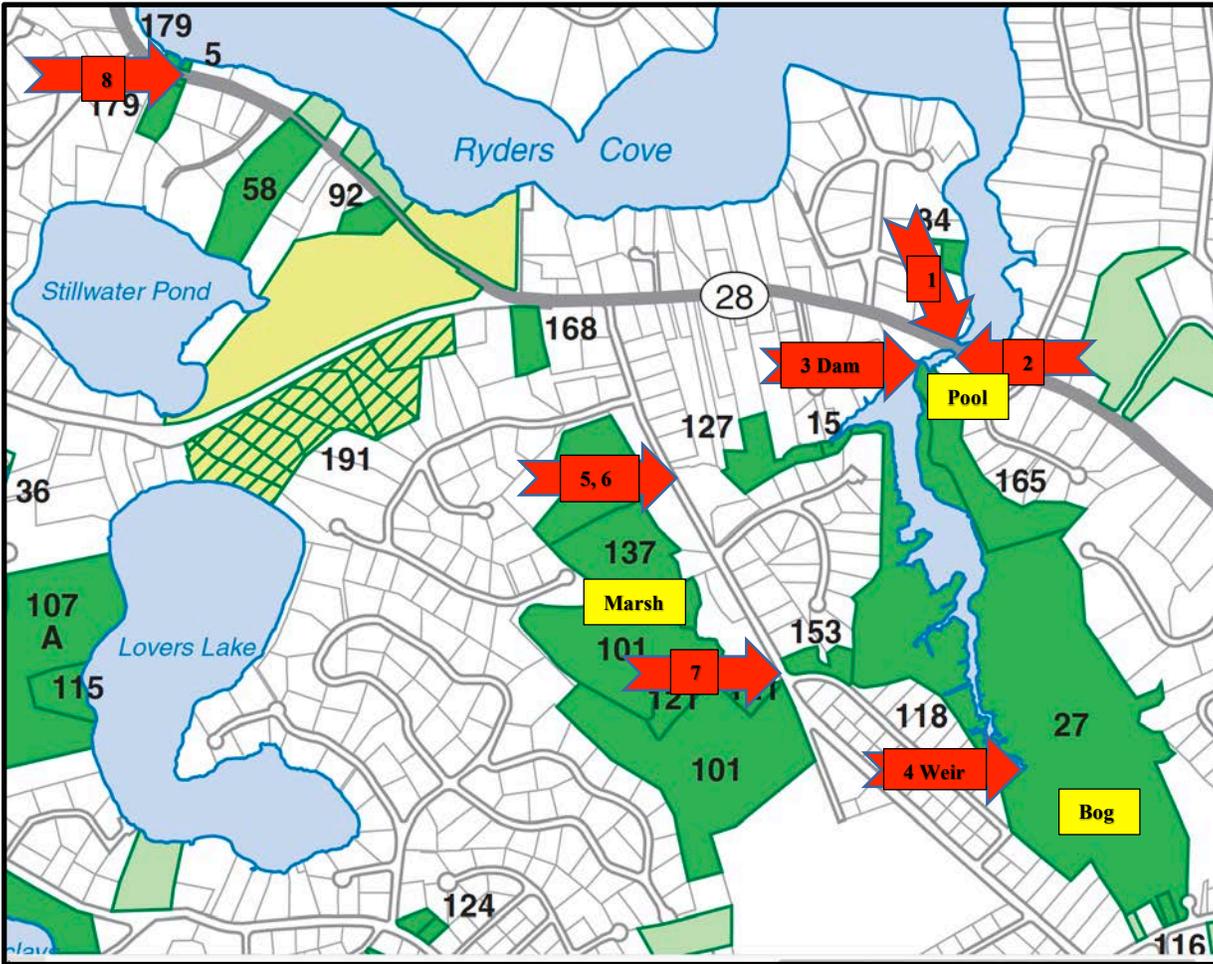
**Appendix 4. CCF Bulletin Spring 2021 --
https://gerrystahl.net/SMTF/ccf_bulletin_spring2021.pdf**

Appendix 5. Letters of Support – attached

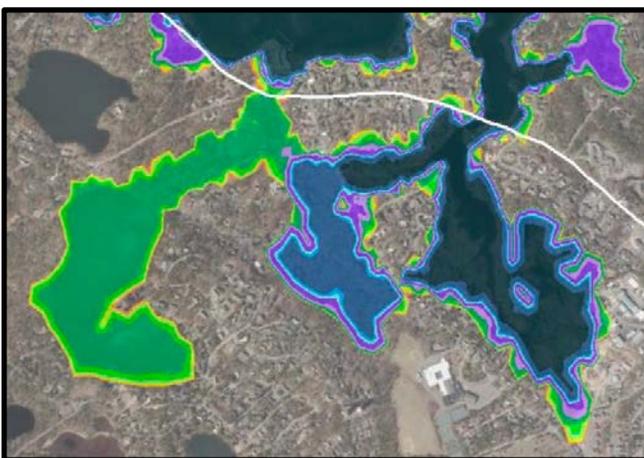
Appendix 6. Assessor Map -- attached

Appendix 7. Project Photo -- attached

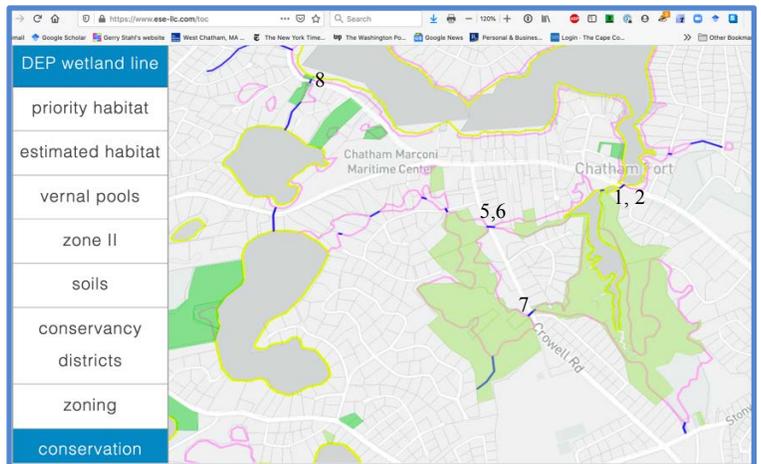
Frost Fish Creek Maps and Photos



Parcels near Frost Fish and Stillwell Pond owned by CCF (green) and the Town (yellow). Existing culverts (red arrows; numbers correspond to photo sites).



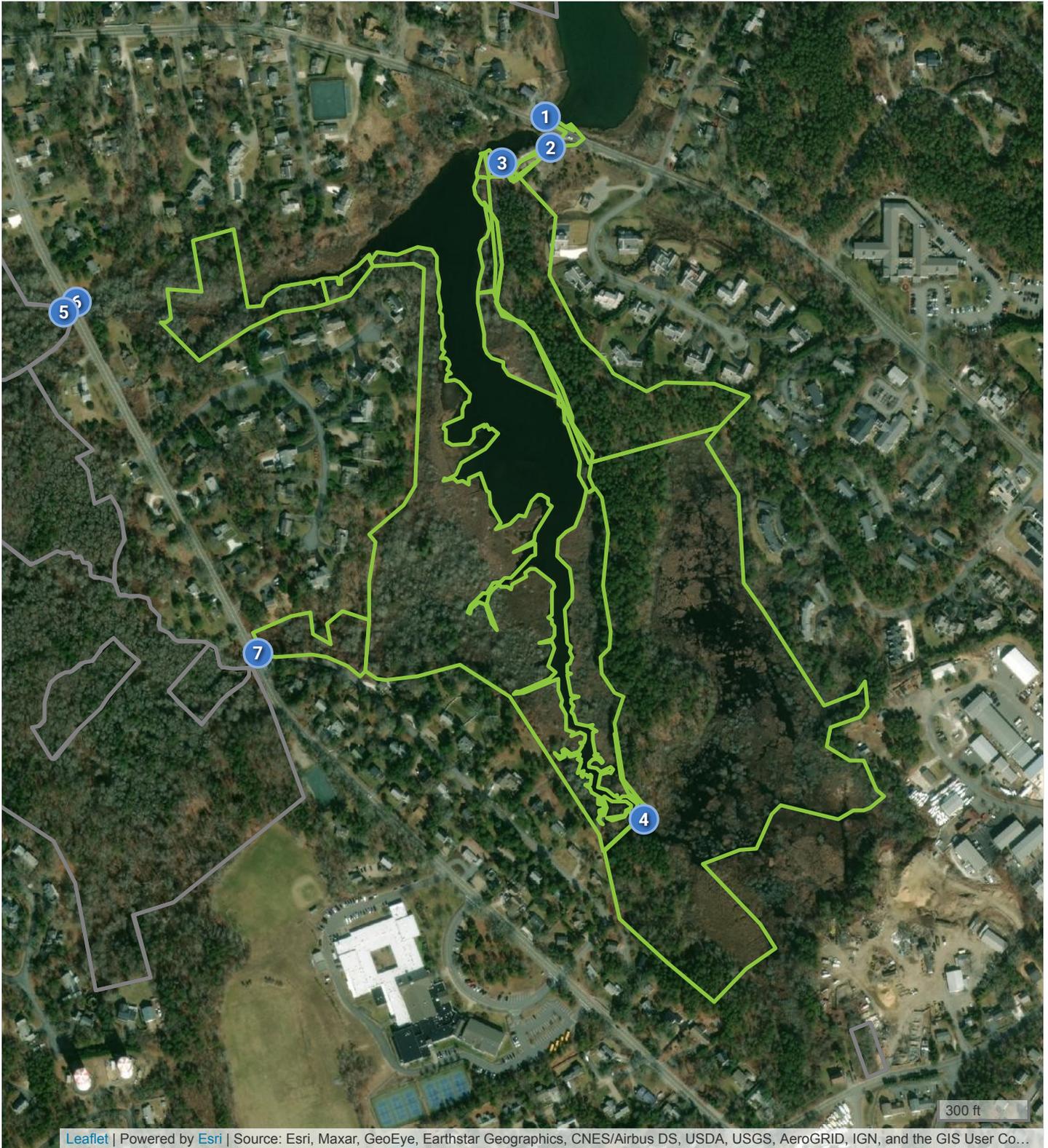
Woods Hole Group: Flood probabilities – 2070.



DEP wetlands: herring runs connecting FFC and Stillwell.

Stewardship: Frost Fish Creek

Site Visit Date: 4/4/2021



Letters of Support for the Frost Fish Creek Restoration Project

MassDOT (Timothy Dexter and David White), which has contracted with Stantec (Jennifer Ducey) and Woods Hole Group (Matt Schulz)

CCCD (Richard Devergilio)

NRCS (Stephen Spear)

APCC (April Wobst)

Town of Chatham (Robert Duncanson)

Pleasant Bay Alliance (Carole Ridley)

Chatham Climate Action Network (C-CAN) (Jane Harris)

Friends of Chatham Waterways (Jeff Mason)

Town of Chatham, Community Preservation Committee

Town of Chatham, Board of Selectmen

Chatham Conservation Foundation, Board of Trustees

Assessor's Map: Frost Fish Creek Restoration Project



The parcels in green indicate the project area owned by the Chatham Conservation Foundation. The individual parcels are listed in a chart in the Application.

Project Photo: Frost Fish Creek Restoration Project



More photographs of the project area are available in Appendix 1. Site Visit.