

Town of Franklin



Conservation Commission

September 8, 2022

Franklin Conservation Commission
355 East Central Street
Franklin, MA 02038

Re: DelCarte Conservation Area Biodiversity Restoration Project - Request for Determination of Applicability
DelCarte Conservation Area (Parcel ID 262-093)
459 Pleasant Street, Franklin, Massachusetts 02038

Dear Members of the Franklin Conservation Commission:

On behalf of the Town of Franklin, I respectfully submit this Biodiversity Restoration Project and Request for Determination of Applicability (RDA) for a proposed Biodiversity Restoration Project within the Buffer Zone at the DelCarte Conservation Area (DelCarte), Parcel ID 262-093, located at 459 Pleasant Street in Franklin, Massachusetts. The purpose of this Restoration Project is to increase the biodiversity of the native pollinator-plant and aquatic-terrestrial systems within DelCarte via the revegetation of flowering plants and the installation of freshwater Turtle Nesting Habitat to maintain the function and diversity of DelCarte's natural ecosystem. In doing so, this Project aims to ensure future protection and success of Massachusetts native flora and fauna species and their ecological interactions.

An RDA is being filed because the proposed restoration work will occur within the 100-foot Buffer Zone to inland Bank, Bordering Vegetated Wetland (BVW), and a Pond ("North pond"). The 100-foot Buffer Zone is regulated under the Massachusetts Wetlands Protection Act (WPA, M.G.L. c. 131 § 40) and the Town of Franklin Wetlands Protection Bylaw (Chapter 181) and its corresponding Regulations. A small portion of the work will also occur within the locally regulated 25-foot No Touch Zone. A Variance to conduct work within this Zone can be found in Attachment A. All of the proposed work will be within previously disturbed Buffer Zone with no anticipated impacts to nearby Wetland Resource Areas.

A portion of the proposed restoration work is considered to be exempt from the WPA in accordance with 310 CMR 10.02(2)(b)(2)(d), as the work consists of the *"plantings of native species of trees, shrubs, or groundcover, but excluding turf lawns."*

I respectfully request that the Conservation Commission issue a Negative Determination confirming that the remainder of the proposed restoration work does not require the filing of a Notice of Intent.

This RDA application includes the following items:

- Attachment A - WPA form, Variance Request
- Attachment B - Figures
- Attachment C – Site Photographs
- Attachment D – Tables and Cost
- Attachment E – Guidance Documents
- Attachment F – Best Development Practices
- Attachment G – Seed Mixes
- Attachment H – Example Signage

The following text discusses the Wetland Resource Areas, proposed restoration activities, and proposed protective measures.

Pollinators

Pollinators play a principal role in maintaining the function and biodiversity of natural ecosystems through their unique relationship with flowering vegetation (Gegeer et al., 2021). Conserving these natural relationships provide many ecosystem services such as pest population reduction and protection of soil and water quality (Wratten et al., 2012). Any disruption of the pollinator-plant relationship can create a trophic cascade within the ecosystem, which is a disruption of the “food chain”, ultimately leading to the extinction of necessary ecosystem services and processes (Kearns and Inouye, 1997). That is why it is imperative these services are maintained now and in the future.

Due to a myriad of potential stressors (i.e. habitat loss, development, etc.), plant-pollinator systems have degraded significantly over the past several decades. For example, in Massachusetts alone, comparisons of current and historical data show that native bumblebee pollinators and bumblebee-pollinated native plants have significantly declined in abundance, species richness, and geographic distribution (Gegeer et al., 2021).

If approved, this Restoration Project would allow for the restoration of two “pollinator patches”, Biodiversity Area 1 and 2 respectfully, for three listed Massachusetts native “At Risk” bumblebees, yellow-banded (*Bombus terricola*), golden northern (*B. fervidus*), and half-black (*B. vagans*), to help maintain and restore these vital ecosystem functions the plant-pollinator relationship provides.

Turtles

Turtles also play an important role in maintaining the function and biodiversity of natural ecosystems, namely by acting as significant bioturbators of soils, infaunal miners of [aquatic] floors, dispersers and germination enhancers of seeds, nutrient re/cyclers, and [primary] consumers (Lovich et al., 2018). For example, turtles and their eggs are significant biomass producers for their native ecosystems, both via consumption and decomposition, as the eggs are almost entirely protein and lipids (Booth, 2003). When these shells are consumed or broken down, nutrient transfer occurs and organisms flourish. On a broader scale, turtles maintain the function and biodiversity of ecosystems through mineral and nutrient cycling from aquatic to terrestrial ecosystems and vice versa. Turtles have even shown to have profound

importance in the cleanup of polluted waterbodies due to this cycling (Sinha, 1995), which could play a part in the overall health and trophic status of the wetlands and ponds at DelCorte.

Of the 356 species of turtles worldwide, approximately 61% are threatened or endangered due to habitat destruction, climate change, and more (Lovich, et al., 2018). DelCorte is not known to be home to any federally or state listed threatened or endangered turtle species, however this Restoration Project still proposes to designate Turtle Nesting Habitat for the native turtle populations to ensure continued success of the populations and the services they freely provide.

Wetland Resource Areas

Site reconnaissance and Wetland Resource Area investigations of the Restoration Area were conducted by Breeka Li Goodlander, Certified Wetland Scientist and Conservation Agent, on August 29, 2022 with collaboration from Derek Adams, Certified Arborist and Environmental Affairs Superintendent, and Kate Hinckley-Sjoberg, GIS Coordinator, from Franklin Department of Public Works, in no specific order.

The reconnaissance was conducted in accordance with Delineating Bordering Vegetated Wetlands (BVW) under the Massachusetts Wetlands Protection Act (WPA, March 1995), the Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1 (January 1987), and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region Version 2.0 (January 2012). The Resource Area boundaries and proposed Restoration Areas were surveyed using a Trimble® Global Positioning System (GPS) unit with sub-meter accuracy. Please refer to Figure 1 in Attachment B for the locations of the Wetland Resource Areas.

Inland Bank

Inland Bank (Bank), coinciding with the Mean High Water Line, confines North Pond to the west-southwest of the Restoration Area. Areas up gradient of the Bank were comprised of maintained lawn and gravel pathways. The Bank is moderately sloped and vegetated in most areas, but predominantly shallow and unvegetated adjacent the Restoration Area.

This Bank is regulated as inland Bank and is afforded a jurisdictional 100-foot Buffer Zone under the WPA. This inland Bank is also provided a locally regulated 25-foot No Touch Zone and a 100-foot Buffer Zone under the Franklin Wetlands Protection Bylaw.

Bordering Vegetated Wetland

A Bordering Vegetated Wetland (BVW) is located northeast of the Restoration Area and is best described as a Freshwater Forested/Shrub Wetland (PFO1C) bordering on the North Pond.

This Wetland is regulated as BVW and is afforded a jurisdictional 100-foot Buffer Zone under the WPA. This BVW is also provided a locally regulated 25-foot No Touch Zone and a 100-foot Buffer Zone under the Franklin Wetlands Protection Bylaw.

Wetland Type PFO1C

The NWI Cowardin wetland classification system identified the PFO1C label for a wetland that consists of a palustrine basin dominated by a broad-leaved deciduous forest that is seasonally flooded. Surface water

is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding usually ceases, but is variable, extending from saturated to the surface to a water table well below the ground surface. The NWI map indicated one PFO1C wetland confined to the property to the northeast.

North pond

North pond is located west-southwest of the Restoration Area and is best described as a Freshwater Pond (PUBHh, PABHh). The landward boundary of North Pond coincides with the edge of Bank.

Wetland Type PUBHh

The NWI Cowardin wetland classification system identified the PUBHh label for a wetland that consists of a palustrine basin, with an unconsolidated bottom that is permanently flooded. This means that surface water covers the substrate throughout the year in all years. The modifier (h) is used to identify wetland basins that have been created or modified by man-made barriers or dams that obstruct the inflow or outflow of water. The NWI map for North pond indicated one PUBHh wetland contained within the North pond Bank boundaries.

Wetland Type PABHh

The NWI Cowardin wetland classification system identified the PABHh label for a wetland that consists of a palustrine basin, with an aquatic bed that is permanently flooded. This means that surface water covers the substrate throughout the year in all years. The modifier (h) is used to identify wetland basins that have been created or modified by man-made barriers or dams that obstruct the inflow or outflow of water. The NWI map for North pond indicated two PUBHh wetlands contained within the North pond Bank boundaries.

Buffer Zone

Buffer Zone in this Area consists of the 25-foot No Touch Zone and the 100-foot Buffer Zone to BVW and inland Bank. Temporary impacts to the 100-foot Buffer Zone totals approximately 2,726.5 square feet (sf) with temporary impacts to the 25-foot No Touch Zone totaling approximately 198.5 sf. Currently the Buffer Zone is moderately vegetated and dominated by maintained lawn and crushed gravel. Vegetation in this area includes, but is not limited to, common mugwort (*Artemisia vulgaris*) (INVASIVE), strawcolored flatsedge (*Cyperus strigosus*), Virginia creeper (*Parthenocissus quinquefolia*), Canada goldenrod (*Solidago canadensis*), pigweed (*Polygonum aviculare*), common blackberry (*Rubus allegheniensis*), giant foxtail (*Setaria faberi*) (INVASIVE), Eastern black nightshade (*Solanum ptychanthum*), broad-leaved dock (*Rumex obtusifolius*), curly dock (*Rumex crispus*), and pale smartweed (*Persicaria lapathifolia*).

25-Foot No Touch Zone

A locally regulated 25-foot No Touch Zone is present within Biodiversity Area 2 and the Turtle Nesting Habitat. Temporary impacts to the 25-foot No Touch Zone totals approximately 198.5 sf. Currently this Zone is moderately vegetated and transected by crushed gravel and concrete pathways. Vegetation in this area includes, but is not limited to, common mugwort (INVASIVE), strawcolored flatsedge, Virginia creeper, Canada goldenrod (*Solidago canadensis*), pigweed, common blackberry, giant foxtail (INVASIVE),

Eastern black nightshade, broad-leaved dock, curly dock, and pale smartweed. Proposed work within this Zone consists of the removal of invasive and existing vegetation and the revegetation with native species and installation of Turtle Nesting Habitat. All of the proposed work will be within previously disturbed Buffer Zone with no anticipated impacts to nearby Wetland Resource Areas.

Rare Species

The Restoration Area does not fall within mapped Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife based on a review of the Massachusetts Natural Heritage and Endangered Species Program (NHESP) Atlas (15th edition; August 1, 2021) and NHESP data available on MassGIS online (August 2021).

Soil Survey

The Natural Resource Conservation Service (NRCS) Web Soil Survey map, which is included in Attachment B, was reviewed for information pertaining to soils within the Restoration Area. The Soil Survey indicated that the Restoration Area consists of Sudbury fine sandy loam, 2 to 9 percent slopes (260B) and Canton fine sandy loam, 15 to 35 percent slopes (420D). Of the identified soil types, only Sudbury fine sandy loam is considered partially hydric. Please refer to Figure 2 in Attachment B for the mapped soils and their hydric rating.

Proposed Activities

The proposed Restoration Project involves the revegetation with of an existing “pollinator patch” (Biodiversity Area 1) and native turf lawn (Tree Area); the restoration of a new “pollinator patch” (Biodiversity Area 2); and the installation of new Turtle Nesting Habitat with native perennial species and minor area improvements such as, signs, lined pathways, etc..

Information regarding each component of the Project are described below. Please refer to Figure 3 in Attachment B for more details.

Biodiversity Area 1

The proposed Biodiversity Area 1 (BA1), totaling 3,416 sf, is located southeast of the existing playground partially within the 100-foot Buffer Zone. Temporary impacts to the 50 to the 100-foot Buffer Zone for BA1 include approximately 600.5 sf. This area is moderately sloped and currently dominated by upland vegetation, such as but not limited to, evening primrose (*Oenothera biennis*), black-eyed Susan (*Rudbeckia hirta*), common milkweed (*Asclepias syriaca*), bur cucumber (*Sicyos angulatus*), and pokeweed (*Phytolacca americana*). This area is currently seasonally mowed by the Department of Public Works. Please refer to Attachment C for site photos.

If approved, this Permit proposes to restore BA1 by hand pulling bur cucumber, evening primrose, and pokeweed, and replanting with purple-flowering raspberry (*Rubus odoratus*), as necessary, to promote and support biodiversity for the listed Massachusetts native “At Risk” bumblebee species. Black-eyed Susan, purple coneflower, oxeye sunflower, common milkweed, and Norway spruce are proposed to stay.

Please refer to the Master Pollinator and Buffer Zone Restoration Table in Attachment D for species specific interactions and information.

To protect BA1, the Area boundary will be demarcated with educational signage demonstrating the importance of pollinators and native pollinator habitat. Long term maintenance includes ongoing removal of aggressive species and potential reseeding and/or revegetation, as necessary. Example educational signage is included in Attachment H.

Biodiversity Area 2

The proposed Biodiversity Area 2 (BA2), totaling 1,508 sf, is located northwest of North Pond within the 100-foot Buffer Zone and partially within the 25-foot No Touch Zone. Temporary impacts to the 0 to 25-foot Buffer Zone include approximately 165 sf, the 25 to 50-foot Buffer Zone approximately 1,094 sf, and the 50 to 100-foot Buffer Zone approximately 467 sf for a grand total of 1,726 sf. This Area is currently dominated by crushed gravel and upland vegetation such as, but not limited to, common mugwort (INVASIVE), strawcolored flatsedge, Virginia creeper, Canada goldenrod, pigweed, common blackberry, giant foxtail (INVASIVE), Eastern black nightshade, broad-leaved dock, curly dock, and pale smartweed. Please refer to Attachment C for site photos.

Work proposed to restore BA2 includes removing the existing vegetation via handpulling or “grubbing” species and revegetating with native vegetation to promote and support biodiversity for listed Massachusetts native “At Risk” bumblebee species. Proposed vegetation includes steeplebush (*Spiraea tomentosa*), white meadowsweet (*Spiraea alba*), greater St. John’s wort (*Hypericum majus*), spotted St. John’s Wort (*Hypericum punctatum*), pussy willow (*Salix discolor*), sweet fern (*Comptonia peregrina*), highbush blueberry (*Vaccinium corymbosum*) and the Conservation/Wildlife Seed Mix which includes Virginia wild rye (*Elymus virginicus*), little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), red fescue (*Festuca rubra*), indiangrass (*Sorghastrum nutans*), switchgrass (*Panicum virgatum*), partridge pea (*Chamaecrista fasciculata*), showy ticktrefoil (*Desmodium canadense*), butterfly milkweed (*Asclepias tuberosa*), beggar ticks (*Bidens frondosa*), spotted (purple) Joe-pye weed (*Eupatorium purpureum*), black-eyed Susan (*Rudbeckia hirta*), heath/hairy aster (*Aster pilosus*), and early goldenrod (*Solidago juncea*).

To protect BA2, the Area boundary will be demarcated with educational signage demonstrating the importance of pollinators and native habitat. Long term maintenance includes ongoing removal of aggressive species and potential reseeding and/or revegetation, as necessary. Example educational signage is included in Attachment H.

Turtle Nesting Habitat

The proposed Turtle Nesting Habitat (TNH), totaling 400 sf, is located northwest of North Pond and abutting BA2 to the northeast within the 100-foot Buffer Zone and partially within the 25-foot No Touch Zone. An additional 750.5 sf of revegetation is proposed surrounding the Habitat. Temporary impacts to the 0 to 25-foot Buffer Zone includes approximately 33.5 sf, the 25 to 50-foot Buffer Zone approximately 799 sf, and the 50 to 100-foot Buffer Zone approximately 318 sf for a grand total of 1,150.5 sf. This Habitat is proposed to be designed to suit the needs of freshwater/estuary species, such as painted turtle (*Crysemys picta*) and common snapping turtle (*Chelydra serpentina*), both species found within DelCorte. This area is currently dominated by crushed gravel and upland vegetation such as, but not limited to,

common mugwort (INVASIVE), strawcolored flatsedge, Virginia creeper, Canada goldenrod, pigweed, common blackberry, giant foxtail, Eastern black nightshade, broad-leaved dock, curly dock, and pale smartweed. Please refer to Attachment C for site photos.

Per Massachusetts's Natural Heritage and Endangered Species Program (NHESP, 2009), nesting habitat for both these turtle species should be within 1,000 feet of the wetland edge, with a barrier free (e.g. roadless) corridor between the Wetland and Nesting Habitats. It is typically best to have the TNH within 300 feet of the wetland edge, in this case the Bank of North pond. Original designs for the TNH placed the Habitat within the Tree Area, however the Habitat has been relocated to the boundary of the 25-foot No Touch Zone to minimize barriers for the nesting turtles. Installing the TNH at its mapped location minimizes the existing gravel trails that turtles would need to traverse to nest.

For successful nesting, substrate should consist of well-drained soil, sand or gravel. Ground vegetation should be sparse and include native sedge, grasses, and a few low growing shrubs (less than 2 to 5 percent cover for the site). Shrubs will provide cover for the gravid females and hatchlings once they emerge from the nest.

Work proposed to restore the TNH includes removing the existing vegetation via handpulling or "grubbing" and revegetating with native vegetation suitable for nesting turtles along the boundary of the Habitat. Proposed vegetation for the TNH includes little bluestem, partridge pea, sweet fern, and highbush blueberry, per NHESP guidance. Please refer to the Master Pollinator and Buffer Zone Restoration Table in Attachment D for species specific interactions and information.

To protect the TNH, the Habitat boundary will be demarcated with a permanent 20-foot by 20-foot wooden fence with ground clearance pondward and wooden logs along the trails landward, and educational signage will be installed demonstrating the importance of turtles, their nesting habitat, and why this area is "off limits".

Per NHESP, maintenance should not be conducted frequently. It is recommended that the Habitat is inspected every two years for maintenance issues. Example educational signage and a Turtle Nesting Habitat Guidance Document is included in Attachment H and E, respectively.

Any nesting that occurs within this Habitat will be provided to the Massachusetts Natural Heritage and Endangered Species Program to provide support for the state-wide installation of designated Turtle Nesting Habitat. A live feed game camera is proposed to help monitor Habitat usage. An estimated cost for the fence and game camera can be found within the Cost Table in Attachment D.

Tree Area

The proposed Tree Area, totaling approximately 2,900 sf, is located northwest of the North Pond and northeast of BA1 partially within the 100-foot Buffer Zone. Restoration work is required in this Area due to unapproved removal of four hazardous white pine trees (*Pinus strobus*). Please refer to Attachment C for site photos.

Work proposed to restore this Area includes the planting of one sweetgum tree (*Liquidambar styraciflua*), one fringe tree (*Chionanthus virginicus*), one flowering dogwood (*Cornus florida*), two tulip trees (*Liriodendron tulipifera*), and two serviceberries (*Amelanchier canadensis*). Additional herbaceous planting is proposed with the Conservation/Wildlife Seed Mix or Native Warm Season Grass Mix,

whichever the Commission prefers. The Conservation/Wildlife Seed Mix is recommended based on species specific benefits. Please refer to the Master Pollinator and Buffer Zone Restoration Table in Attachment D for species specific interactions and Attachment G for the proposed seed mix spec sheets.

Additional work in this Area includes potential stump painting (i.e. turtles, tic-tac toe) and lining the trails with cut logs.

Work Methodology

In general, the planting of vegetation will require temporary minor excavation within the 100-foot Buffer Zone and 25-foot No Touch Zone. The proposed trees will require the excavation of a 3 sf hole via skid-steer and auger. All herbaceous plugs will be hand dug to size, approximately less than 1 sf, via foot access. Proposed seed mixes will be hydroseeded following the Department of Public Works protocol. Hydroseeding will be conducted by conventional equipment mobilized on existing pathways and lawn. Plywood will be utilized for temporary access to the proposed tree and hydroseeding locations, if required, to minimize native soil disturbance. All removal of existing vegetation will occur via mowing or handpulling. Scarification of native sandy soil will also be required in the Turtle Nesting Habitat to attract gravid turtles. Scarification will occur by hand.

Protective Measures

For the duration of the Project, erosion control measures, such as biodegradable compost socks, will be installed between the proposed areas of disturbance and Wetland Resource Areas per the Town of Franklin's Best Development Practices Guidebook and/or as deemed necessary by the Conservation Agent. If utilized, biodegradable compost socks will be removed once soils are successfully stabilized.

Costs


In general, Project cost amounts to approximately \$7,500.00 without consideration for grant or volunteer opportunities. Please refer to the Cost Table in Attachment D for more details.

Summary

I look forward to having the opportunity to discuss this Restoration Project with the Town of Franklin Conservation Commission during the public hearing on September 15, 2022. I anticipate these materials are sufficient for the Commission to issue a Negative Determination, confirming that a Notice of Intent (NOI) will not be required for the proposed work to proceed.

Should you have any questions regarding this application or require additional information, please do not hesitate to contact Breeka Lí Goodlander at (508) 520-4847 or via email at bgoodlander@franklinma.gov.

Very Truly Yours,

A handwritten signature in blue ink, reading "Breeka L. Goodlander", is centered on the page. The signature is written in a cursive, flowing style.

Breeka Lí Goodlander, CWS
Conservation Agent/Natural Resource Protection Manager