



United States Department of the Interior

NATIONAL PARK SERVICE
Minute Man National Historical Park
174 Liberty Street
Concord, MA 01742

IN REPLY REFER TO:
LOI-2022-1

Request for Letters of Research Interest (LOI)

Title: Assess Condition of Faunal Communities at Newly Acquired Barrett's Farm Unit, Minute Man National Historical Park

Minute Man National Historical Park needs to assess the condition of faunal communities within the newly acquired 64-acre Barrett's Farm Unit to support a Development Concept Plan and broader natural resource assessment for the site. Understanding of faunal community condition and habitat use within the Barrett's Farm Unit will help identify the most sensitive species and habitats where new infrastructure and visitor impacts should be minimized.

Although some faunal communities are well-documented (e.g. birds), others remain relatively unknown but potentially vulnerable (e.g. amphibians, reptiles). Given the current lack of information regarding amphibians and reptiles at the Barrett's Farm Unit, the park proposes to conduct surveys to assess their abundance and distribution and to allow an adequate assessment of the local amphibian and reptile communities as part of a broader faunal assessment. The project will also compile existing landbird and fish data and document the status of these taxa using existing assessment approaches.

The setting of the Barrett's Farm Unit makes it valuable habitat for amphibians, reptiles, and other wildlife, as the parcel abuts a National Wild and Scenic River corridor, is located upriver from a National Wildlife Refuge, and serves as a corridor between the Assabet River and adjacent oak-pine forest areas. Notable wetland habitats include the river, a brook, a small shrub swamp, and three red maple swamps. Edge habitats include many fruit-producing species. Much of the remaining habitat is cultivated. Collectively, these varied habitats have the potential to support diverse faunal communities. For example, at least eight state-listed bird species have already been documented at the site, particularly during the fall migration period.

Assessment of these communities, including mapping of occurrence and habitat suitability for sensitive species, will ensure that the park protects vulnerable resources as the planning process proceeds and the park opens the site to the public. Opening will require the addition of parking lots and other infrastructure. The park intends to open the Barrett's Farm Unit to the public in advance of the 250th anniversary of the American Revolution in 2025, as the historic Barrett Farm was a key site during the opening conflict of the Revolution. A portion of the site is already open to visitors, as the Town of Concord owns and maintains a small trail system encompassing part of the parcel, and a segment of the Bay Circuit Trail runs along the roadside.

Goals and Objectives

This project will evaluate the current conditions of faunal communities (specifically breeding landbird, amphibian, reptile, and fish communities) at the newly acquired Barrett's Farm Unit. Reference criteria will be the same as those used in the parkwide Natural Resource Condition

Assessment conducted in 2009, prior to acquisition of the Barrett's Farm Unit ([NPS 2009](#)). As in the 2009 Natural Resource Condition Assessment, reference criteria will be used to rank the condition of individual faunal communities as "good," "caution," or "significant concern."

Specific objectives are:

- 1) Survey amphibians using anuran calling surveys, egg mass counts, time-constrained searches, coverboards, turtle trap surveys, and minnow trap surveys, mirroring the methodology used to assess wetlands in other portions of the park ([Cook et al. 2011](#))
- 2) Concurrently survey reptiles using time-constrained searches, coverboards, and turtle trap surveys ([Cook et al. 2011](#))
- 3) Document additional amphibian and bird occurrences using iNaturalist and other existing data sources
- 4) Document bird occurrences using eBird, iNaturalist, and other existing data sources
- 5) Document fish occurrences using data from the Massachusetts Division of Fisheries and Wildlife, and other existing data sources
- 6) Assess condition of amphibian, reptile, bird, and fish on the Barrett's Farm Unit

General Description of Work and Methodology

- 1) Following the methods in [Cook et al. \(2011\)](#), survey reptiles and amphibians at the Barrett's Farm Unit in spring and summer 2023. NPS staff may be available to assist with the field effort.
- 2) NPS may be able to provide a report of species occurrences for the area reported in eBird, iNaturalist, GBIF, and similar data sources, but the cooperator will need to be prepared to acquire this information if needed.
- 3) Compile and summarize new and existing data, including maps of species detections. Assess the taxonomic groups using the following methods:
 - a. Amphibians: Assess using an Amphibian Index of Biotic Integrity ([Stepanian et al. 2015](#))
 - b. Birds: Assess using proportional species richness of functional, compositional, and structural guilds. The Northeast Temperate Network has developed ecological integrity thresholds for forest and grassland guilds ([Faccio et al. 2015](#)).
 - c. Fish: Assess using an Index of Biotic Integrity ([Karr 1991](#)).
 - d. Reptiles: Assess using species richness compared to species richness reported in [Cook et al. \(2011\)](#), or propose an alternate assessment method.
- 4) Produce a final report suitable for the [NPS Natural Resource Report](#) series, and provide data, GIS products, and metadata related to the project to the NPS in a mutually agreed-upon format.

Project Timeframe

Deadline for responding to this request for LOI is May 27, 2022.

Funds will be obligated in winter 2023, with work starting by March 2023. The anticipated completion date for the project is February 2024.

Funds Available

Project funds available are approximately \$30,000; this includes the CESU overhead rate of 17.5%. The project will be funded by the National Park Service. Only non-federal partners within the North Atlantic Coast CESU network are eligible to apply.

Materials Requested for Letters of Interest

Letters of interest must include:

1. Name, Organization and Contact Information

2. Pre-Proposal: Description of the proposed approach for conducting the project, including additional data that can be used and any alternative assessment methods that could be considered for this project. Describe in brief the proposed approach to collect new field data in a manner that will provide a characterization amphibians and reptiles on the Barrett's Farm Unit, and how you will use the new and existing data to assess the focal taxa for this project.
3. Brief Statement of Qualifications (including):
 - a. Biographical Sketch(s) for key personnel (faculty, staff), including a description of discipline(s) of expertise. Curriculum vitas can be submitted as an attachment.
 - b. Relevant past research projects.

Note: A proposed budget is NOT requested at this time.

Evaluation Letters of Interest

Based on a review of the Letters of Interest received, an investigator will be invited to prepare a full study proposal, schedule, and detailed budget. Letters will be evaluated based on the following criteria and scoring:

1. Soundness and validity of the proposed approach for meeting project objectives (15 points maximum)
2. Demonstrated experience surveying amphibians and reptiles (10 points maximum)
3. Demonstrated experience assessing amphibian, bird, fish, or reptile populations (5 points maximum)
4. Demonstrated ability to produce technical reports within schedule and budget and demonstrated record of professional publications (5 points maximum)

Contact

Direct questions and responses to Kiah Walker, kiah_walker@nps.gov, 978-505-8298. The deadline for responding to this request for LOI is May 27, 2022.