

Vermont Invasive Plant Phenology Status Monitoring Protocol

March 2022

Project Coordinators: Elizabeth Spinney, FPR; Lina Swislocki, FPR

Project Phase 2 of 2 – Status Monitoring (Observing & Recording)

Overview:

There are study areas across Vermont, each with 3 monitoring sites (1 site per species) that were established during Phase 1 of the project. Study areas are representative of the environmental conditions for the area, and sites within those areas are clusters of individual invasive plants of a given species. The work to be completed is regular observing and recording of the seasonal phenophases for the target species.

Project webpage: <https://vtinvasives.org/vermont-invasive-plant-phenology-project>

Who's involved:

- Study area observers:** You are solely responsible for making and recording regular observations
 - SA1 – Lesley Porter (FPR), Heather & Lyra Horton (Volunteers), Park Staff (FPR)
 - SA3 – Jon Cherico (FPR), Nick Warner (WVDP), Lauren Chicote (WVDP), TBD (interns)
 - SA4 – Elizabeth Spinney (FPR), TBD (BOVM staff, and BOVM & GMAC volunteers, interns)
 - SA5 – Kathy Decker (FPR), Emily Meacham (FPR), TBD District 4 Protection Forester (FPR)
- Study area leads:** For Phase 2, you are responsible for making and recording regular observations
 - SA1 – Lisa Thornton (FPR)
 - SA3 – Lina Swislocki (FPR)
 - SA4 – Elizabeth Spinney (FPR)
 - SA5 – Kathy Decker (FPR)
- Project Coordinators:** If you have questions or concerns, please reach out to project coordinators (listed above)

*FPR = VT Dept. Forests, Parks & Recreation; WVDP = Winooski Valley Park District; BOVM = Birds of Vermont Museum; GMAC = Green Mountain Audubon Center

Study Areas:

- **SA1 – Lake Bomoseen State Park, Castleton** (22 Cedar Mountain Rd. Castleton, VT 05743)
- **SA3 – Ethan Allen Homestead, Burlington** (1 Ethan Allen Homestead Burlington, Vermont 05408)
- **SA4 – Audubon IBA, Huntington** (900 Sherman Hollow Rd, Huntington, VT 05462)
- **SA5 – St. J. Academy Field Campus, Danville** (252 Library Rd, Danville, VT 05828)

Target species* we will be observing are:

Honeysuckle [Lonicera morrowii](#)

Buckthorn [Rhamnus cathartica](#)

Bittersweet [Celastrus orbiculatus](#)

*Each species listed above is hyperlinked to a species profile page. For more information about identifying these specific species, refer to the training resources on the project webpage: <https://vtinvasives.org/vermont-invasive-plant-phenology-project>

Workload:

In Phase 2, as either a study area observer or study area lead, you will be observing and recording the phenophases for *Lonicera*, *Rhamnus*, and *Celastrus*. You are responsible for monitoring all tagged plants at each site in your study area, which could include up to 9 individual plants (**Fig. 1**). Once practiced, observations should take you 4-6 minutes to complete per plant. Expect travel time between individual plants and sites in your study area. For a given study area, the sites need to be visited at least once weekly. Most study areas have 3 or more observers, so you may only need to visit your assigned study area 1-3 times per month.

How to Observe:

1. Complete the training, found here: <https://vtinvasives.org/vermont-invasive-plant-phenology-project>
 2. You will be assigned a study area, and will work with your **study area lead** as well as **project coordinators** to identify when you will be observing (**Table 1**).
 3. As an observer for VIPPP, you'll monitor tagged plants within your study area. This will be 1-3 individual plants per site (**Fig. 1**).
 - a. Each Study Area will have 2-3 observers covering the workload for that area
 - b. When it's your week, it's 1-2 visits to your sites/assigned week
 - i. Only increased to 2 visits per week at peak times (ex: leaf out, flowers/fruit - all come in rapid succession) to capture rapid changes
 - ii. Which day of the week can be based on your schedule and availability, but needs to be communicated to project coordinators who will keep the observation schedules up to date and available for everyone to see on the project webpage.
 - c. For any given study area, site 1 will always be *Lonicera*, site 2 will always be *Rhamnus*, and site 3 will always be *Celastrus*.
 - d. You'll record observations using the Nature's Notebook mobile app.
 - i. If no cell data – you can take points and data offline and then have to sync once connected to data or wifi
 - e. Special considerations for *Lonicera*:
 - i. You will observe *Lonicera* phenology even if you are unsure what species it is. Learn more here: https://www.usanpn.org/nn/faq#species_unknown
 - ii. If you misidentify a plant:
 1. That's OK!
 2. If you need to change the identification of a plant mid-season, please communicate this to us so we can respond by correcting the data. This is not a correction that we can make without help from Nature's Notebook staff.
 - iii. To collect data without confirmed ID:
 1. Download and print paper datasheets, link available on project webpage.
 2. It's important to record phenology data, even without confirmation of which *Lonicera* is being observed. One cannot go back in time to record phenology data that were not captured. In contrast, plant identification can come quickly, as the plant traits become more visible as the season progresses.
 - a. Nature's Notebook provides guidelines on this topic here: https://www.usanpn.org/nn/faq#species_unknown
 - iv. Once you have confirmed ID and it is *Lonicera morrowii*
 1. Enter your observations from your paper datasheets
 2. Here is how to transcribe data from paper to the website: <https://youtu.be/yq5aM-VYbyo>
- OR
- v. Once you have confirmed ID and it **isn't** *Lonicera morrowii*
 1. That's totally OK! This is the first year of the project, and are expecting to make adjustments along the way.
 2. See if there are any *Lonicera morrowii* nearby, if so, grab their location data, notify project coordinators, and we'll get you set up to observe those new plants.
4. Check the project webpage often for updated observer schedules and information. Project coordinators will also send out regular check-in emails with updates. Please communicate your availability, especially if it changes, even if last minute, so that we can ensure coverage for observations at a given site.

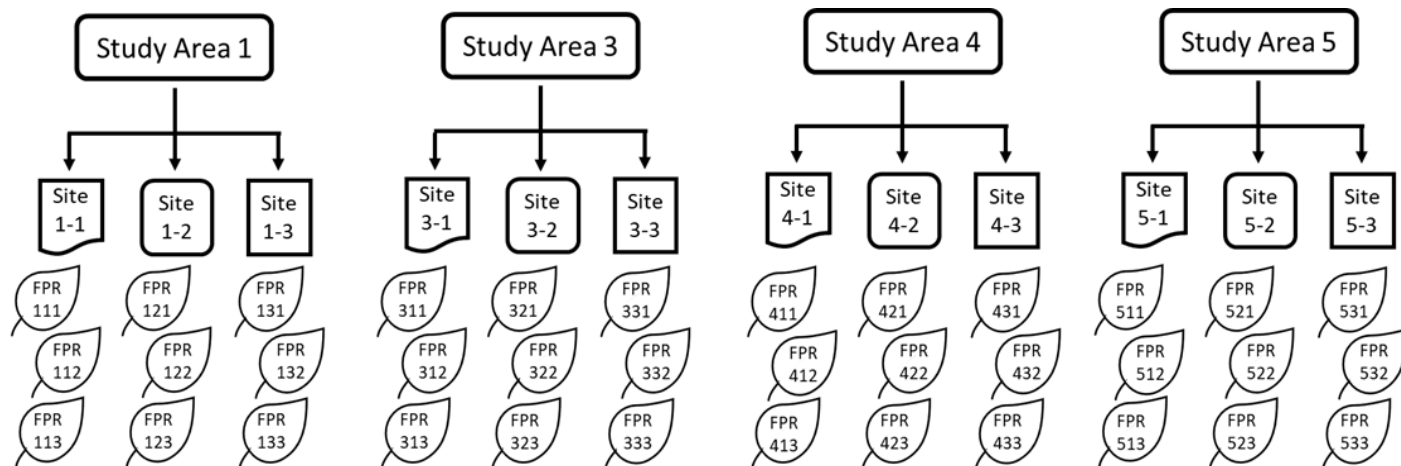


Figure 1. Plant nicknames are determined by their location. The study areas are numbered 1-5, each study area has 3 monitoring sites (ex: study area 1 has sites 1-1, 1-2, and 1-3), and each site has 2-3 individual plants of a given target species (ex: study area 1, site 1-1, has 3 individual plants, 111, 112, and 113). This allows us to look at the data and quickly know which study area, site, or specific plant it corresponds to.

Table 1. An example observation schedule, showing assigned observers, their assigned weeks, and anticipated days they'll be observing. Exact start/end times of the project will be based on conditions on the ground, and so will be dynamic.

Observers: Lina, Jon, Park staff (Nick, Lauren, interns)

Program Name:	Vermont Invasive Plant Phenology Project				
	Ethan Allen Homestead – Study Area 3				
2022	Week 1	Week 2	Week 3	Week 4	Week 5
January	Not yet established				
February					
March	---	---	Lina (Tues)	Jon (Tues)	Lina (Tues)
April	Lina (Tues)	Jon (Tues)	Park staff (Tues, Wed)	Lina (Tues, Wed)	---
May	Jon (Tues, Wed)	Park Staff (Tues, Wed)	Lina (Tues, Wed)	Jon (Tues)	Park staff (Tues)
June	Lina (Mon)	Jon (Tues)	Park staff (Mon)	Lina (Tues)	---
July	Jon (Mon)	Park staff (Tues)	Lina (Mon)	Jon (Tues)	---
August	Park staff (Tues, Wed)	Lina (Tues, Wed)	Jon (Tues, Wed)	Park staff (Tues, Wed)	Lina (Tues, Wed)
September	Jon (Tues, Wed)	Park staff (Tues)	Lina (Mon)	Jon (Tues)	---
October	Park staff (Mon)	Lina (Tues)	Jon (Mon)	Lina (Tues)	---
November	Jon (Tues)	---	Lina (Tues)	---	Jon (Tues)
December	Lina (Tues)	---	Jon (Tues)	---	---