Northeast Seed Network
Wild Seed Collecting Protocols

MAY, 2026

NORTHEAST SEED NETWORK
EST 2023

Adaptable Draft Language for Organizations

For those who would like access to the raw draft text of our Wild Seed Collecting Protocols, you can find it here:

Wild Seed Collecting Raw Draft Text.

This draft is intended to serve as a flexible starting point for organizations that would like to tailor the language for their own use. You are welcome to adapt, customize, or modify the text so that it best reflects your organization's context, priorities, tone, and audience.

The goal is to provide language that is easy to build from while allowing each organization to make adjustments that feel appropriate, accurate, and aligned with its own communications style.

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INTRODUCTION

Wild collecting native plant seeds is critically important for establishing cultivated seed and plant sources to support landscape restoration. Protecting the integrity of native plant communities begins with how we source their seeds.

In this document, we offer a general framework for land managers and seed collectors that encourages wild seed collection through ethical, well-informed decisions that safeguard population health, maintain genetic diversity, and sustain future seed production. The focus will be on single source collections. Mixing populations and other seed sourcing topics will be addressed separately. It's intended to guide discussions and facilitate collaborative relationships that prioritize the health and resilience of plant communities over seed yield. From Indigenous perspectives, native plants, trees, and their seeds are not seen as objects but as relatives, and they are afforded the same level of respect and protection as other humans. Adopting this mindset will ensure wild native plant populations are supported into the future.

These resources are offered as suggested best practices for Northeast Seed Network Partners and others looking to develop seed collecting protocols. It is understood that each partner organization may adapt them to some degree to suit its own purpose. These generalized guidelines are based on the collective experience of practitioners throughout the Northeast and the review of current literature. Ideally, these guidelines will serve as a starting point for decision makers. As the effects of seed collection on plant populations may vary across systems, species, populations, and climates; managers should consider taking an adaptive approach to managing collection sites that includes monitoring for impacts and adjusting collection limits based on observations. In the sections below, managers will find a decision tree for seed collectors, a template for requesting permission to collect, recommended standards for accession coding, a collection data sheet template, and guidelines for managing collection sites and collection activity. These recommendations apply to common plant species, as management considerations for threatened and endangered species are highly specialized.

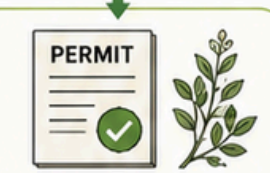
Seed Collection Decision Process

1. 

Have you planned your collection and confirmed that wild collection is necessary and ethical?

NO- Stop. Plan your collection. Check whether the species is available from other sources and whether it is protected or endangered. STOP

YES- Continue.

2. 

Do you have permission to collect?

NO- STOP. Obtain permission. STOP

Link to permission template

YES- Continue.

3. 

Do you have approved target species lists and collection amounts?

NO- STOP. Revise species list and quantities. STOP

Link to collection guidelines

YES- Continue.

4. 

Have you researched, scouted, and mapped populations?

NO- STOP. Scout and map populations first. STOP

Link to data collection

YES- Continue.

5. 

Have you avoided restricted or protected areas?

NO- STOP. Do not collect. STOP

Link to data collection guidelines

YES- Continue.

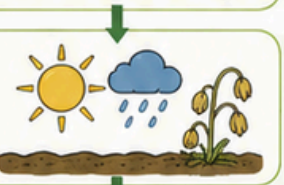
6. 

Is the population large enough? (More than 50 individuals preferred)

NO- STOP. Do not collect from small populations. STOP

Link to collection limits

YES- Continue.

7. 

Are environmental conditions acceptable? (No drought, plant stress, or low seed set)

NO- STOP or reduce collection limits. STOP

Link to monitoring plant populations

YES- Continue.

8. 

Are you within the safe seed collection fraction?

NO- Adjust collection amount or STOP. STOP

Link to collection limits

YES- Continue.

9. 

Are you prepared to collect by hand and avoid unripe seed?

NO- STOP. Follow collection guidelines. STOP

YES- Continue.

10. 

Are you following invasive-species hygiene practices? (Clean clothes and gear)

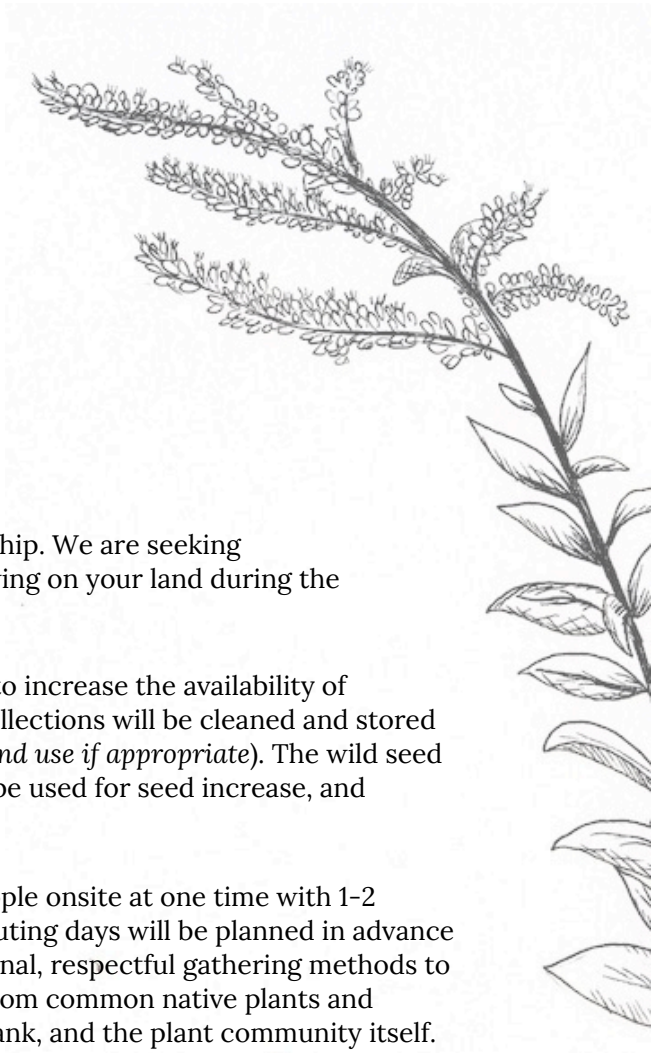
NO- Clean gear before entry. STOP

Link to minimizing ecological impact

YES- Continue.

COLLECT SEED RESPONSIBLY

1. Landowner Permission Template



Landowner name
Date
Landowner address

Collector or Institution name
Collector or Institution contact info

Dear Landowner Name,

This letter is an invitation to partner in environmental stewardship. We are seeking permission to respectfully gather seeds from native plants growing on your land during the (*insert year*) season (April-November).

Insert description of Institution or group or seed collector wants to increase the availability of source-identified plants and seed for sale in the region. Seed collections will be cleaned and stored for production use in farm plots and a nursery setting (*change end use if appropriate*). The wild seed collected on your land will not be sold. However, the seed may be used for seed increase, and subsequent generations of seed may be sold commercially.

Seed collection will be done by hand with no more than 2-3 people onsite at one time with 1-2 vehicles parked in designated parking areas. Collection and scouting days will be planned in advance with your permission to enter the property. We will use traditional, respectful gathering methods to ensure the health of the plant population. We will only gather from common native plants and ensure enough seed remains for the wildlife, the natural seed bank, and the plant community itself. No rare plant species will be collected under this permit. To further protect these populations from overcollection, we respectfully ask that for the duration of this agreement, minimal persons or organizations will be granted permission to collect seeds on your property.

Plant surveys will be conducted in the spring season to create a target species list for the season. Any additions to the list will be approved in advance. If any collections are made onsite during the (*insert year*) season, a collection report will be generated and delivered for your own records. In exchange for permission to collect seed on your property, we would include a list of the dominant plant species surveyed and any unique habitat or species that are found.

Seed collectors in receipt of this permit are self-insured, and the landholder is void of any responsibility for all and any personal injury, claims, or losses that may occur while onsite.

Please indicate your consent to this request by signing below.

_____ Date: _____
Requestor Signature

_____ Date: _____
Landowner Signature

2. Accessioning Seed Collections

Recommendations for Network-Wide Accessioning System

Accession numbers help us honor the journey of each seed, linking it to the story of its origin and the care it received—from its home on the land to its preparation for future generations. They link seeds to records documenting the collection time, location, environment, and may include cleaning, storage, and other handling information. Collecting information facilitates seed sharing by maintaining transparency about the origin and collection protocols. By using a consistent system for our accession numbers, we can ensure that the story and identity of each seed are preserved, fostering transparency and trust as we share these plants with others.

What gets accessioned?

Wild seed from a single population, collected in a single season, receives an accession. If a collector returns to the same population multiple times a season, the same accession number is applied to all the collections. Collectors wishing to differentiate seed collected on different days may use decimals added onto the sequential collection number to denote different collection days.

How are accession numbers generated?

The Northeast Seed Network uses a three-part accession numbering system that includes an institutional identifier, the year, and a sequential collection number. Ex. HSF-2025-0001.1

Institutional Identifier

Every institution (or unaffiliated individual) receives a unique three to five-letter code[1] to identify who collected the seeds. Organizations with multiple collectors will receive one code for the organization. Institutions wanting to record the name of the field collector(s) can use the Data Collection Form to track the information.

The Northeast Seed Network will maintain a list of institutional codes. If duplicate codes arise (for example, two individuals with the same initials), then a number can be added to the end of the letter code to differentiate the two.

[1] SOS and Herbaria use a model where each institution is assigned a code. Index Herbariorum - The William & Lynda Steere Herbarium (Airports use a similar system- LAX, JFK etc.) Institutions that were already assigned a five-letter code through SOS would retain the same code.

Examples:

Highstead Foundation- HSF
Native Plant Trust- NPT
John A. Deer- JAD
Jane A. Doe- JAD1

Collection Year

The second part of the NSN accession standard will be the full four-digit year the seeds were collected. If seed collected in a single collection season happens to span two calendar years (Ex. seed collected in December and a second collection in January), the year of the first collection date is used.

Sequential Collection Number

The last part of the accession number will be a set of sequential numbers that each institution maintains. There is flexibility in how this number is generated and used. Some groups may choose to start at one each year, while others may prefer to maintain a running list that starts where it left off the previous year. To assist in data sorting, it is important to include leading zeros in the number up to four digits.

Examples:

Highstead makes one collection of New England Aster from one population in a single year, but on three different days (Oct 5, 9, 13)-

HSF-2025-0001 (all three are one accession)

Or if the seed from different collection dates needs to be differentiated

HSF-2025-0001.1 (Oct. 5)
HSF-2025-0001.2 (Oct. 9)
HSF-2025-0001.3 (Oct. 13)

If seed was collected from the same population the next year (Oct. 8, 2026) then a new accession number is generated.

HSF-2026-0002[2]

[2] 0002 could be a different number depending on what Sequential Collection Number method is used and where the particular collection falls in the collection year.

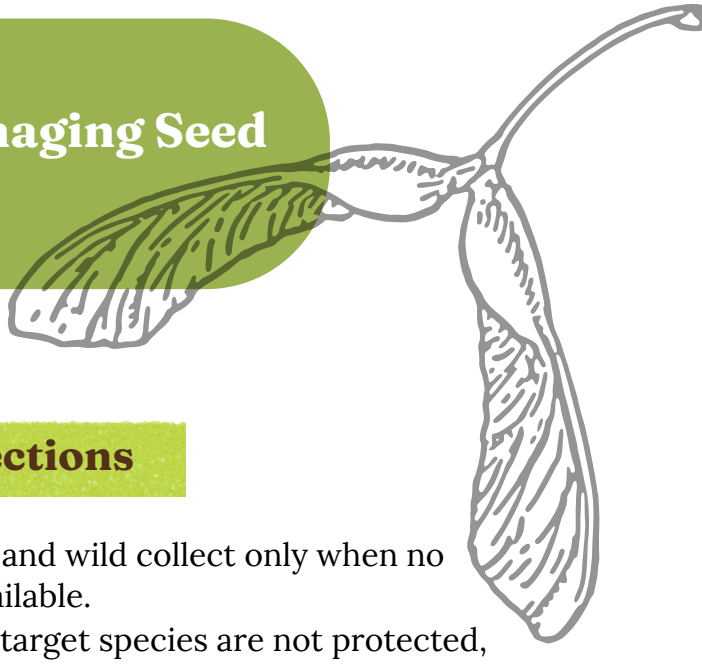
3. Suggested Data Collection Fields

General Collection Information	
Collections Accession Number	
Date(s) Collected (MM/DD/YY)	
Collector(s)	
Ecoregion (Level III)	
State	
County	
Location Details	
GPS Used (Yes/No)	
GPS Datum (NAD83, NAD27, WGS84, Other)	
Latitude (dg/min/sec)	
Longitude (dg/min/sec)	
Elevation (feet)	
Landowner	
Permission Obtained From	
Habitat Data	
Habitat Description	
Soil	
Aspect	
Associated Species	
Collection Data	
Genus	
Species	
Subspecies/Variety	

No. of Plants Sampled (min. 50)
No. of Plants Found (approx.)
Area Sampled (acres)
Seeds Collected From (Plants, Ground, Both)
Photograph Checklist (Habitat, Plant, Seed)
Herbarium Vouchers (Yes/No. See Below)
Pre-Collection Checklist
Approximate total number of individual plants present and accessible (0–50, 50–500, 500–5000, >5000)
Evidence of disturbance or damage (Resown, Burnt, Sprayed, Predation, No damage)
Readiness of population for collecting (Vegetative, In flower, Immature seeds, Around natural dispersal, Post-dispersal)
Seed Quality & Availability
Seed cut test results (Healthy, Insect-damaged, Empty, Moldy, Malformed/other damage)
Herbarium Vouchers
Number of Pressed Specimens (2, 3, 4 or more)
Date Voucher Was Taken (MM/DD/YY)
Repository
Collection number
Specialist Identification
Material Identified (In Field, From Pressed Specimen on Day of Collection, From Pressed Specimen on Another Date, From Photograph)
Date Identified (MM/DD/YY)
Identified by
Organization

Other	
Was the seed collected from a naturally occurring population? (Yes, No,	
Unsure) Explain	

4. Guidelines for Collecting and Managing Seed Collection Sites



Planning and Justifying Wild Collections

- Collectors should research species availability and wild collect only when no other sources of source identified seed are available.
- Check federal and state sources to ensure the target species are not protected, listed, rare, threatened or endangered.
- Ensure all collections are done with a plan and a clear purpose.
- Research the target population to confirm it is wild or naturally occurring.

Managing Permissions

- Ideally, permit one collection team at a time or ensure priority lists do not overlap for multiple teams. This will reduce the potential for overcorrection.
- Prioritize requests from collectors that have experience, expertise, and a clear end use for the seed they will collect (nursery production, seed increase, conservation seed banking, etc.). Collection teams should have at least one member with experience identifying plant species in the field and at least one member with experience following established collection and data management protocols.
- Require collectors to submit a list of target species. Managers are encouraged to inquire about the amount of seed collectors seek to harvest (e.g., number of seeds, ounces, lbs.). Consider each target species on a case-by-case basis.
- Require collectors to scout target populations in advance and map the populations they plan to collect from.
- Require collectors to seek approval for any opportunistic collection of non-target species they might wish to collect.
- Request a list of collection protocols that will be followed. Compare them against the Collection Guidelines section below and revise as needed.
- Identify species with recalcitrant seeds (those that do not retain viability well in storage) and confirm that they will be used in the near term.
- Restricting collections from rare or threatened species unless part of a formal conservation program.

Collection Guidelines

- Only collect pre-approved taxa in pre-approved amounts, unless permission is granted for opportunistic collections.
- Focus collections on large populations with many individuals.
- Collect fewer seeds from more individuals rather than many seeds from fewer individuals.
- Collect no more than the agreed upon "safe seed fraction" (see "Setting Collection Limits").
- Do not collect seed from any restricted areas (if applicable). Restricted areas may include known restoration sites, recently burned areas, highly eroded areas, sensitive habitats, or areas where listed species are known to occur.
- Seed shall be collected by hand by experienced seed collectors. No mechanical equipment will be used to harvest seeds.
- Minimize the incidental collection of unripe seed.
- Collect seed from plants whenever possible. Only collect from the ground when absolutely necessary and note it with collection (e.g. tree nut species).

Seed Handling Guidelines

- Employ seed handling best practices to preserve viability
- Protect seed from excessive heat, freezing, and humidity
- Keep seed in containers that allow airflow (paper, cloth)
- Quickly move to a facility where seed can be properly dried, cleaned, and stored.
- Keep identifier labels affixed to collections

Setting Collection Limits

Over harvesting can significantly impact a plant population's ability to persist over time. To prevent this, managers will often set collection limits that define how much ripe seed collectors can harvest during each collection event (i.e: safe seed fraction) and how much rest time should be given to plant populations between repeat visits (i.e: collection intervals).

Historically, the Seeds of Success protocol has suggested a safe seed fraction of up to 20% with a three-year collection interval. However, this standard is not universally recognized, and growing evidence suggests it may not be appropriate for all situations, given variation across species, populations, and environments.

The sections below include a set of general guidelines and considerations for setting collection limits. Given the positive correlation between safe seed fraction and collection interval, one or both of the values may need to be adjusted to protect populations from over harvesting. For example, if collections are scheduled more frequently (collection interval decreases) managers may wish to lower the safe seed fraction (reduce the percentage of seed that is allowed to be collected). Certain species may be restricted from collection altogether if they are locally rare or uncommon, or if environmental stressors are present that may limit seed production (i.e: drought).

Safe Seed Fraction

In the United States, collectors are commonly advised to collect no more than 10-20% of the available seed from each plant or stand of plants. While there is a benefit to simple, consistent guidelines, conservationists are increasingly concerned that these fractions may be too low for some species, and too high for others. In other countries, the ranges are specific to life cycle type and are generally more conservative. For example, Germany has set the limit at 2% for annual species. Considering this, managers may choose to adjust the permissible amount (i.e., safe seed fraction) for certain species (or types of species) during certain years. Some general guidelines for setting these fractions are included below:

- Collection sensitivity decreases with population size. Small populations (<50 individuals) are most sensitive to overcollection, followed by medium size populations (50-500 individuals), and large populations (> 500 populations).
- Short lived, sensitive species that rely heavily on seed for persistence (i.e.: annuals and biennials) are more sensitive to overcollection than perennial species. Perennial trees and shrubs may be more resistant to overcollection than perennial forbs and grasses.
- Seed production can vary with several factors including resource availability and environment. Managers may wish to lower seed collection limits during or following drought, or if seed production is observed to be lower than usual.

Collection Intervals

Historically, collection intervals have ranged from 3-5 years, with the higher end applied to more sensitive species. Growing evidence suggests that it may be more appropriate to customize intervals for different species and contexts. The section below includes some general guidance for managers who choose to set their own collection intervals:

- Low-intensity, frequent harvests (i.e., low safe seed fraction and low collection interval) are generally safer than infrequent, high-intensity harvests (high collection interval and high safe seed fraction)

- Whenever possible, avoid collecting from the same population year after year. Encourage collectors to locate multiple populations of the target species within your management area so collection activity can be distributed among them over time. This will allow for "rest years" where no seed is being collected from a particular population(s).

- The appropriate number of rest years will vary by species, population, and year. Annual and biennial populations may require the longest rest period between collections as compared to perennials.

- Longer lived perennial species (trees and shrubs) may require a shorter rest period between collections and may be dependent on the cyclical nature of masting (heavy seed production years), as compared to shorter lived perennial forbs and graminoids.

- Making multiple visits to collect from the same population in a single year is often recommended for the purpose of capturing more genetic diversity. If repeat collections are planned, managers may wish to reduce the safe seed fraction for each visit.

5. Data Collection and Plant Stand Management

Data on seed collection activities and plant stand, and/or broader plant population dynamics can be highly useful for managers seeking to make informed decisions about seed collection limits. By comparing changes over time to collection records, managers can more easily pinpoint stands and populations that may be overharvested or compromised by modifying factors, and adjust collection limits accordingly. The sections below offer some general guidance on tracking collections and monitoring changes:

[3] Plant Stand is used to describe a portion of a larger plant population that exists on a particular site or parcel of land. Ideally, collectors can sample an entire plant population, however, it is recognized that this is not always possible due to lack of access to private property or lack of technical knowledge about the full geography or breeding extent of a population. Whe full access to the population is not possible, use plant stands as a proxy for the population.

Tracking Collections

- Consider maintaining a geo-spatial database (ArcGis Pro or similar). Data layers can be established for known plant occurrences, collection activity, restricted areas, etc.
- Require collectors to map each stand that they collect seed from. A center point from the middle of the stand is usually sufficient.
- Require collectors to record the following data for each collection:
    + Collection location (mapped at center point of plant stand/population)
    + Estimated total number of individuals in the stand/population
    + Number or percent of individuals sampled

Ask collectors to scout species prior to harvesting. If maps of proposed locations are submitted to managers in advance, they can review the collection history for each target species and approve or deny on a case-by-case basis.

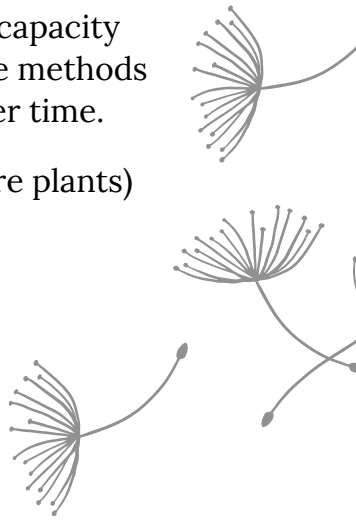
Monitoring Plant Stands and Populations

- Consider selecting a subset of the population, representing different plant types, to monitor annually. This can help reduce the time and labor required to obtain useful information.

- Collecting quantitative data on population size and density is ideal. If capacity doesn't allow it, consider photo documentation or other qualitative methods for which population size and density changes would be visible over time.

- Track changes in the age structure of populations (seedlings vs. mature plants) to confirm whether regeneration is stable or declining.

- Note signs of stress, disease, herbivory that may indicate a weakened population.

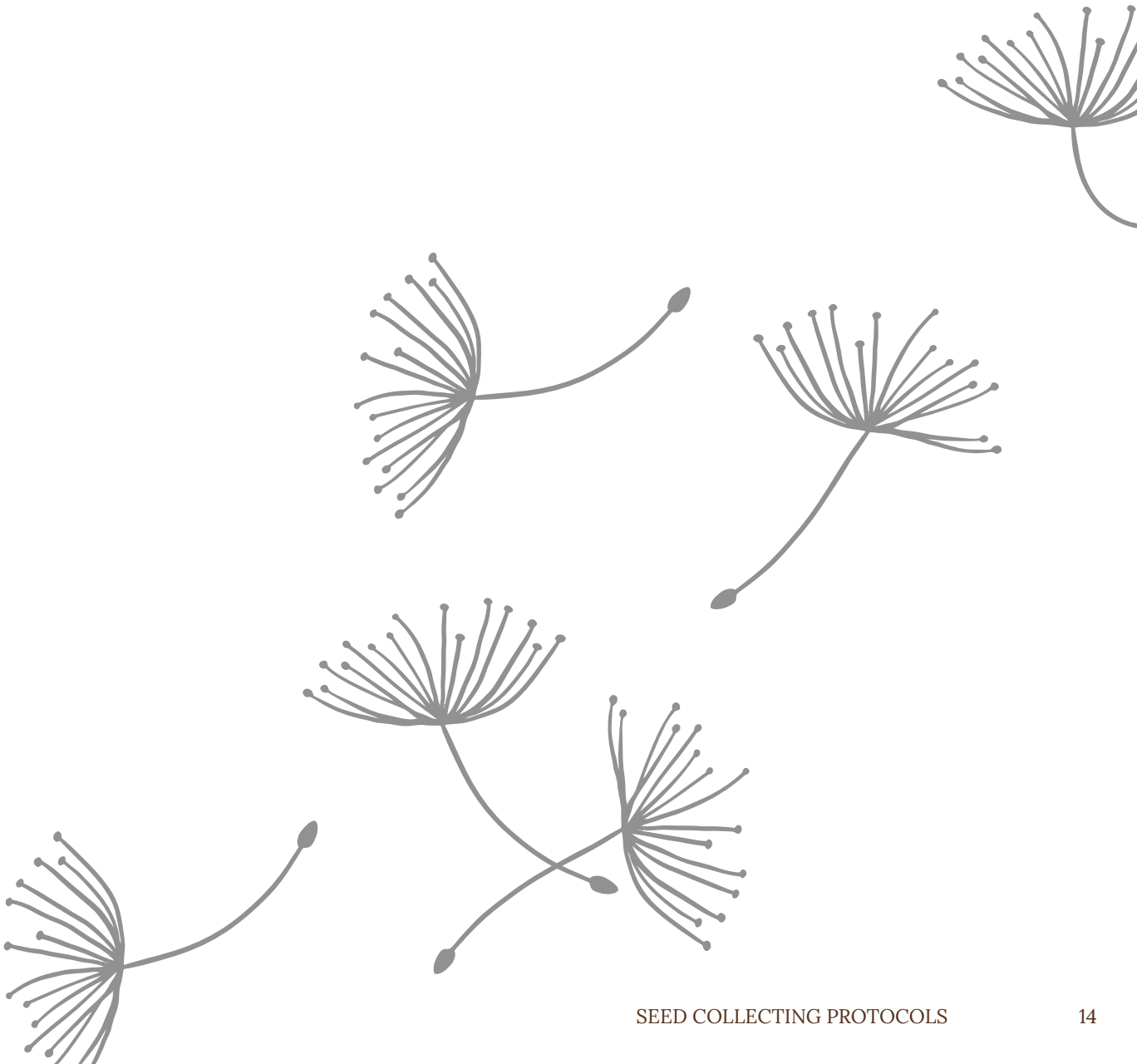


Minimizing Ecological Impacts

While overcollecting is likely the most significant threat to plant population persistence over the long term, managers should also be aware of potential impacts from collector activity on the landscape. Adhering to the guidelines below can help to minimize these impacts:

- Avoid trampling native vegetation and creating unauthorized trails.

- Minimize the impact of collection activities on the plants being harvested from. Collection of vegetative material is only permissible if necessary for collecting seed, or for plant identification or preparing a voucher specimen.
- Avoid disturbance of nesting birds and sensitive species.
- To reduce the potential for spread of invasive species, collectors should inspect their clothing and remove all plant material prior to moving to new collection areas.



6. Glossary

Accession Number: A unique identifying code given to a seed collected from of one species, at one location, in a single year. The number is used to link seeds back to its original collection
data.

Adaptive Management: A flexible approach to land or seed collection management that adjusts decisions based on monitoring, new data, and observed outcomes.

Annual: A plant that completes its life cycle in one year and relies entirely on seed for regeneration.

Approved Species List: A predetermined list of species that collectors are permitted to harvest, including allowed amounts.

Biennial: A plant that completes its life cycle in two years.

Collection Interval: The minimum number of years that must pass before collecting seed again from the same population to allow recovery.

Collection Protocols: Standardized methods collectors follow to ensure ethical seed harvesting and consistent data collection.

Conservation Seed Banking: Long-term storage of seeds for biodiversity preservation, research, and future restoration.

Ecological Impact: Any change—positive or negative—to a natural ecosystem as a result of human activities such as seed collection.

Ecoregion: A broad landscape area defined by shared climate, geology, hydrology, and ecological processes. Ecoregions help identify where plant populations have evolved together
and where seeds will perform best if used locally.

Ecoregional Seed Sourcing: Using seed collected within the same ecoregion as your restoration site to maintain genetic adaptation and ecosystem resilience.

Ecotype: A genetically distinct, locally adapted population of a species shaped by the specific environmental conditions of its home region.

> Example: Red maple from Florida is adapted to a different environment compared to red maple from New England — they are different ecotypes.

Genetic Diversity: The amount of genetic variation within a population. Higher diversity increases resilience to pests, disease, and climate shifts.

Geospatial Database: A digital mapping system (e.g., ArcGIS) that stores spatial information on plant populations, collection locations, and restricted zones.

GPSPoint / StandPoint: A mapped location representing the center or extent of a seed collection population.

Incidental Harvest (Incidental Collection): Accidentally collecting unripe, damaged, or unwanted seeds during harvest; should be minimized.

Invasive Species Spread: Movement of seeds or propagules into new areas due to clothing,
gear, tires, or tools; requires hygiene protocols.

Large population: more than 500 individuals

Local Adaptation: When a plant population evolves traits suited to the specific conditions of its local environment.

Medium population: 50–500 individuals

Monitoring: Tracking plant population changes over time through counts, photos, data sheets, or mapping to detect impacts of collection.

Perennial: A long-lived plant that persists for multiple years, often with deeper or more resilient root systems.

Plant Population: A breeding subset of a species occupying a shared geographic area.

Plant Stand: A subset of a Plant Population that land managers oversee and have access to.

Population Density: The number of individuals per unit area — used to assess population health and stability.

Provenance: The geographical origin of a seed or plant population.

Recalcitrant Seeds: Seeds that do not tolerate drying or long-term storage (e.g., many tree species); must be used fresh.

Restricted Areas: Sites where seed collection is prohibited—such as restoration sites, sensitive habitats, erosion zones, or locations with rare species.

Rest Years: Planned years without collection to allow population recovery.

Safe Seed Fraction: The percentage of mature seed allowed to be collected from any population in a season (often 10–20%, but may be lower).

Seed Increase: Growing a small quantity of wild-collected seed under cultivation to produce larger volumes for restoration.

Seedling Recruitment: The process by which new plants establish from seed in a population — important for assessing population health.

Small population: fewer than 50 individuals

Source-Identified Seed: Seed whose location and ecological origin are documented (e.g., county, watershed, ecoregion, GPS point).

Trail Creation: Unintentional formation of paths due to repeated foot traffic — can damage habitat and invite invasion.

Trampling: Accidental damage to vegetation caused by walking or impact; should be minimized during collection.

Voucher Specimen: A pressed plant sample collected (sparingly!) to verify species identity and document occurrence.

References

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Lead Authors:
Geordie Elkins
Matthew Garrambone
Heather Liljengren

Layout & Design:
Sefra Alexandra

Contributors:

Eve Allen, John Price, Dina Brewster, Lauren Shew, Lindsey Feinberg, Emily Baisden, Patrick Over, Brooke Fleischman, Erin Camire, Brigitte Wierzbicki, Kate Rakosky, Jay Richardson Grebe, Ashley Senegal, Jessica Raspitha, Dan Brubaker, Mary Ellen Lemay, Lizzie Hunt, Alliy Gundlach-Massimino, Sue Theriault, Melissa Cullina, Catherine Webb, Seth August, Linda Rohleder

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