

After the Fire: Sustainable & Ethical Seed Harvesting

Querencia in Action: Landowner Guide



Reseeding after a wildfire is one of the most direct restoration actions landowners can take. The successful restoration of plant communities involves observation, timing, organization, and a bit of elbow grease. Ethical collection is key to maintaining existing plant communities. This document describes how to locate, sustainably collect, process, and store wild seeds to rehabilitate a burned landscape.

Harvesting with Heart

Ethical harvesting, whether from medicinal herbs, wild seeds, or cuttings, is practiced by many cultures around the world. When a seed harvester collects wisely, the original and newly seeded plant populations will both have enough seed to successfully produce the next generation of plants.

Ethical Harvesting General Rules

- Prior to any collection, ensure you have permission to collect. Small-scale, non-commercial seed collection is allowed on most federal public lands, but regulations may be different in certain areas.
- Try and collect from sites that look similar to the future planting area.
- Look for plant populations with 50+ plants within a single view; do not collect if there are 10 or fewer plants with viable seed.
- Walk among the population and count which plants have seed per species.
- Take no more than 25% of ripe, mature seed from across the population (not one clump) to encourage a robust gene pool for future adaptation.
- Allow plant populations to rest 2-3 years between seed collection efforts.
- Familiarize yourself with rare and endangered plants as well as noxious weeds; do not harvest from these populations.

Identifying Viable, Ripe Seeds

Collecting seeds is as much of an art as it is a science, and timing is everything. Although the window for collection is highly variable among species, there are some general timelines per plant category. For example, native grasses and wildflowers are ready for collection two to five weeks after peak bloom. Tree and shrub seeds can sometimes take two months or longer to mature. Hot and dry weather can accelerate while cool and damp conditions can slow maturity. In addition, seeds mature at variable times, so implementing the ethical framework above is advised.

Mature seeds are dry and firm, typically brown, tan, black, red, or gray. They have a hard seed coat that will resist being cut by your thumbnail. In contrast, immature seeds are moist or pliable and are often green, yellow, or white. Ripe seeds easily break off from the

plant with a slight tug, but those that twist, bend, or appear firmly connected to the plant are likely unripe and not viable. These should be passed over. The Rancho Santa Ana Botanic Garden's Seed Image List is a great website for familiarizing yourself with seed appearance: <http://www.hazmac.biz/rsabghome.html>.

Harvesting, Processing, and Storing Seeds

Seed collection methods vary depending on the species. Typically, grass seed is harvested by stripping or shaking, using a fine-toothed metal comb, or by clipping the stem with scissors just below the seed head. Shrub seed is picked, lightly beaten, or shaken over a tarp or in a bag. For species that dehisce (or split open) explosively, the entire inflorescence (seed head) may be cut prior to maturity and allowed to dry in mesh or paper bags, or under netting.

Once collected, you can either spread the seed in the new planting location or process and store the seeds for future plantings. Cleaning involves separating seeds from other parts of the seed head. Although time consuming, this step reduces the storage volume, eliminates many insects that feed on seeds, and improves planting and germination success. Overall, seed must be stored correctly to ensure its viability. Excessive heat and temperature fluctuations should be avoided as well as high humidity that causes mold and degradation.

Processing Tools

- Paper grocery bags or tarps
- Nitrile gloves
- Pruning shears
- Metal fine-toothed comb (for grasses)
- Razor blade to cut seed open for inspection of maturity
- Loupe or magnifying glass
- Permanent marker
- Tarp or kids' plastic pool
- Bins with lids
- Dull food processor (optional)
- Rubber soled shoes
- Window screen, hardware cloth of various gauges, or kitchen sieves
- 2 or more buckets
- Fan
- Dust mask
- Jars, paper bags, or envelopes
- Silica packets

Harvesting

1. Begin collecting mature seeds by hand (or with snips or comb) from plants. Count out loud to keep track of how many you collect towards your goal.
2. Place seeds into paper grocery bags.
3. Label each collection bag:
 - Plant name/species
 - Date of collection
 - Location of collection

4. Leave the harvested seeds in an open paper bag or an open bin with good air circulation at the processing site to dry. Tarps and kids' plastic pools also work for large quantities. Be careful as strong winds can wipe out your collections in a single gust, so choose a drying site with some wind protection. Also keep plant labels close by if drying seeds outside the bag.
5. Place drying seeds in a protected area safe from rain and animals for a few weeks in ambient temperature. Do not dry in hot locations or in direct sunlight.

Processing

1. Clean seeds by threshing. Use one of the following methods (test a small batch first):
 - Pull dry seed heads apart with gloved hands.
 - Place tougher seeds in a dull food processor and pulse a couple of times.
 - Spread larger volumes of seeds out on tarp or large plastic bin and step on them with rubber soles to break apart seed pods or detach the seed from structures (such as awns and fluff).
2. Separate the seed from chaff using a screen and/or a fan. Place plant material on hardware cloth, window screen, or kitchen sieves of different mesh sizes over a bucket or a tub.
3. Pour material over the largest gauge screen or hardware cloth.
4. Shake large gauge screen so seeds fall through the mesh (do not force seeds through).
5. Empty the first bucket materials over a smaller gauge mesh placed on a second bucket. Shake and repeat with smaller and smaller gauge mesh.
6. If needed, further separate chaff by winnowing. Outside, pour plant materials from bucket held several feet above ground into a bin or tarp positioned in front of a low-speed fan. Heavier seed falls into the bin while lightweight chaff will blow away.
7. Repeat if necessary. Don't worry if you have a little plant material mixed with the seeds.

Storing

1. Store and label seed in jars, paper bags, or envelopes within a container with silica packets. Do not store in air-tight containers.
2. Place in a protected site, away from heat, light, moisture/humidity, and insects. Do not store in freezer. Seeds are best used within a year from collection.

Although collecting and processing seed can be a timely process, the rewards are large when reseeding a burned site with local, native plants. To learn more about reseeding, see "Reseeding and Revegetating Degraded Sites".

References

Eckberg, J., Hopwood, J., and Lee-Mader, E. (2016). Collecting and using your own wildflower seed to expand pollinator habitat on farms. Xerces Society for Invertebrate Conservation.

Weber, C. (2022). Wild seed collection: Guide to ethical and viable wildcrafting.



Figure 1. (a) Showy milkweed seed, (b) ripe Mexican hat seed that is gray and pulls from plant easily, and (c) a collection of aster, Mexican hat, and other seeds (Photos by Adrienne Rosenberg).

Credits

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