Native Plant Reproduction Guidelines: Seeds, Fruits and Propagation

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Proper identification of native species is the first step in gathering seeds. The core factor affecting quality of collection is timing. When seeds are ripe, they will be easily dispersed by the plant. If you shake a seed head and seeds fall out, or seeds come off easily when gently pulled or rubbed, the seed is probably ripe. Removing only a small percentage of seeds on site protects the resiliency of a species in the habitat. Collect no more than 20% of the ripe seed from any individual plant and no more than 20% from the population overall. Seed should be collected in paper bags or envelopes to allow for air circulation. Seeds can be planted, refrigerated, or *cold stratified* (*page 5*).

Image by Gordon Peabody, Provincetown, MA. Narrow Leaf Goldenrod from our seeds.

Safe Harbor workers Bree Lewis and Jenn Maher collecting and processing Narrowleaf Goldenrod seed

1. **SEASIDE GOLDENROD, *SOLIDAGO SEMPERVIRENS***

Collect seeds in October, when they develop a grayish cast, so are the correct ripeness. Do not collect white seeds, as they are immature. Shake the seeds into a bag, then either plant them right away, or refrigerate them until spring. Seeds may be planted in spring or fall. Sow the seeds thickly, as many goldenrod seeds have a low vitality. Same protocol for Narrow Leaf Goldenrod, which matures 2 months earlier.

2. LITTLE BLUESTEM, *SCHIZACHYRIUM SCOPARIUM*

Little bluestem seed is available for purchase, but it may be collected from wild plants during September and October when it no longer has a soft, creamy center. Seed may be sown outdoors in the fall. Little bluestem may also be multiplied by root division.

3. COASTAL, or WAVY HAIRGRASS, *DESCHAMPSIA FLEXUOSA*

Hairgrass seedheads should be allowed to dry on the plant, and may be collected as early as mid-July. Direct-sow seed in autumn, barely covered with soil. Germination should take place in two to three weeks. It may also be started in a cold frame in early spring, pricked out after it emerges, and grown in pots to be planted out in early summer.

4. BUTTERFLY WEED, *ASCLEPIAS TUBEROSA*

Collect mature seed, which will be brown in color, from late September into October, having allowed the seed to mature on the plant. The large seedpod will split

open when it is dry and the seeds are mature. Because the seeds are designed to fly away on long silky threads, attention must be paid to the maturing pods, to catch the seeds before they disperse. A string may be tied around the pod to prevent dispersal, or, if the pod looks very dry, it may be broken open to remove the seeds. Seed should be cleaned of its silky threads, air-dried for a few days, then planted out in the field at a shallow depth, barely covered with soil. Butterfly weed is notoriously difficult to grow from seed but more success may occur from growing seed in pots. Seed should be cold-stratified (see below) for one to two months, then planted in containers, bottomless if possible since cause for failure may be sodden soil at the bottom of the pot. Use a well-aerated potting mix, and keep the seedlings moist (not drowning).

Butterfly weed may also be ***propagated*** by stem cuttings and by root cuttings. Stem cuttings, 3-4 inches of the terminal shoot, should be taken before the plant flowers. Remove the lower half of the leaves from the cutting, and plant it in a deep pot of pure sand or half sand/half peat moss. Keep it moist and under a clear plastic tent, well away from the top of the shoot. It should root within a month and a half. Root cuttings of the taproot should be taken in the fall. Two-inch-long pieces of the root should be planted vertically outdoors in a sandy medium and kept moist. When you make the cutting, cut the part of the root nearest the plant straight across, and the bottom end at a diagonal so you can remember which end is "up."

The long and brittle taproot in established butterfly weed, makes it extremely difficult to transplant. If a plant *must* be dug up, it should be done when the plant is dormant in the winter or early spring, or later in spring when the leaves are just emerging.

5. SWEETFERN, *COMPTONIA PEREGRINA*

Propagate from root cuttings ¼ inch in diameter taken from healthy plants in early spring and planted in 8 x 10 inch plastic containers. Plants can be set out in late summer, fall, or the following spring. Ideal thickness of root is the diameter of a pencil. Cut enough length to get a few cuttings, of 3 and 6 inches, from each one, using a clean and sharp knife or clipper. However, if you take more than 1/3 of the mother plant's roots, the plant will likely suffer.

6. BAYBERRY, *MYRICA PENSYLVANICA*

Collect seeds in the fall, remove the waxy seed coat, and broadcast them, or space them 4 feet apart and cover them with mulch. Greater success is likely by sowing the seeds right away in a cold frame, barely covered with soil and kept moist. Seeds need 3 months of cold-stratification (see explanation under page 5). Seedlings should be put into pots as soon as they are large enough to handle, and it is best to over-winter them in a cold frame for their first winter.

Bayberry may be propagated by layering (see below) in the spring, or by division of suckers in the dormant season. If suckers are divided, they should be planted out directly into their permanent places.

Layering: Bend an outlying, low-growing, flexible branch down to the soil, stake down with a ground staple, or weigh down with a rock. The terminal 6 – 12 inches of the branch must be above ground, and may have to be bent up somewhat. Scratching or wounding the bark on the lower side of this bent branch where it contacts the soil is likely to stimulate the formation of roots. It will take one or more seasons before the layer may be cut from the mother plant and planted elsewhere.

7. LOWBUSH BLUEBERRY, *VACCINIUM ANGUSTIFOLIUM*

To collect seeds, gather fruits when ripe (July), the fruits should fall off with a gentle pull. Chill them at 50 degrees for several days. To separate the seed from the pulp, grind them in a blender partially filled with water for about 30 seconds. Sow the seeds in a mixture of sand and peat and wait at least one month for germination to occur. Transplant 6-to-7-week-old seedlings to another bed to permit uncrowded growth. Soils should be light and well-drained. For plants with fleshy fruits, feel a bit soft when squeezed or should.

8. BEACH PLUM, *PRUNUS MARITIMA*

Collect the fruit when it is ripe, in September. The fruits should feel a bit soft when squeezed or should fall off with a gentle pull.Separate it from the pulp (seeds that float are dead and should be discarded), and let air dry for a few days. At all stages, the seed must be protected from mice. Seed may be stored in airtight jars in the refrigerator. Before planting, it will need 2 – 3 months of cold stratification (pg 5), and is best started in a cold frame. Seed is slow to germinate, so may take 18 months to show signs of life. Small seedlings should be carefully pricked out of the soil and moved to individual pots, being careful to plant them at the same depth in the pots as they were in the soil. The seedlings should be grown in a cold frame or greenhouse in their first winter, then should be put outside in late spring or early summer.

Beach plum may also be propagated by root cuttings taken in the late fall, 3 – 4 inches long, ¼ inch in diameter taken from healthy plants in early spring and planted in 8 x 10 inch plastic containers. Plants can be set out in late summer, fall, or the following spring. Beach plum root cuttings should be laid horizontally in a slightly dug earthen propagation bed, mulched with straw as winter comes on and the ground freezes.

9. SHADBLOW, *AMELANCHIER CANADENSIS (Shadbush)*

Seeds should be extracted from ripe fruits (probably in August) that have been left to dry. Sow seeds immediately ¼ inch deep in nursery soil in half shade, and mulched lightly to prevent drying in the summer and freezing in the winter. Germination should occur the following spring, at which time the mulch should be removed. Seedlings may be transplanted when they are between one and three years old.

10. PITCH PINE, *PINUS RIGIDA*

Seeds should be collected from ripe cones -- cones on which the scales have popped open. Cones should be sun-dried, then shaken to obtain the seed. Seeds may be sown in fall or spring by broadcasting or by burying to an ideal depth of ¼ inch.

11. SCRUB, OR BEAR OAK, *QUERCUS BERBERIDIFOLIA*

When acorns are dropped, they can be directly planted ¼" on site, or collected and placed in sectioned planting trays, covered with 1/4-1/2" native soil and kept damp but not moist or wet. After germination, they can be transplanted into individual pots.

NOTE: *We have limited this publication to the reproduction strategies and techniques of Native vegetation species we are comfortable and familiar with. This publication is not intended to be comprehensive. Safe Harbor offers free site consultations to answer your questions. Call 508-237-3724 Gordon Peabody.*

ADDITIONAL STRATEGIES WHICH MAY BE USEFUL

Cold-stratification technique: this is a moist chilling period that many seeds require to germinate. The seeds should be mixed into a damp combination of peat moss or sphagnum moss and/or sand. The medium should be the dampness of a wrung-out sponge, not soggy. The chilling should take place in a refrigerator at above freezing, usually 40 degrees or so for most plants. The period of time varies between species. Stratifying seed should be checked often, so if it is beginning to sprout, it can be planted.

Layering: Bend an outlying, low-growing, flexible branch down to the soil, stake down with a ground staple, or weigh down with a rock. The terminal 6 – 12 inches of the branch must be above ground, and may have to be bent up somewhat. Scratching or wounding the bark on the lower side of this bent branch where it contacts the soil is likely to stimulate the formation of roots. It will take one or more seasons before the layer may be cut from the mother plant and planted elsewhere.

Propagating: Stem cuttings, 3-4 inches of the terminal shoot, should be taken before the plant flowers. Remove the lower half of the leaves from the cutting, and plant it in a deep pot of pure sand or half sand/half peat moss. Keep it moist and under a clear plastic tent, well away from the top of the shoot. It should root within six weeks.

Propagating: Root cuttings of a taproot should be taken in the fall. Two-inch-long pieces of the root should be planted vertically outdoors in a sandy medium and kept moist. When you make the cutting, cut the part of the root nearest the plant straight across, and the bottom end at a diagonal so you can remember which end is "up." Tie the roots into a bundle to store them underground, in well-drained soil and below frost level, until spring. When the weather warms, plant the cuttings in garden soil, vertically so that the tops (the part of the root cut straight across) are two inches below the soil surface. Make sure the cuttings stay moist, and after a couple of months, when new shoots are appearing, apply water- soluble fertilizer when watering.

Propagating: Root cuttings from shrubs: Take them when the plant is dormant, between November and February. Ideal thickness of root is the diameter of a pencil. Cut enough length to get a few cuttings, of 3 and 6 inches, from each one, using a clean and sharp knife or clipper. However, if you take more than 1/3 of the mother plant's roots, the plant will likely suffer. The cuts in each cutting should be straight across the part of the root that was nearest to the plant, and at a diagonal across the part of the root that was the furthest away, so that you know the correct orientation. Tie the roots into a bundle to store them underground, in well-drained soil and below frost level, until spring. When the weather warms, plant the cuttings in garden soil, vertically so that the tops (the part of the root cut straight across) are two inches below the soil surface. Make sure the cuttings stay moist, and after a couple of months, when new shoots are appearing, apply water- soluble fertilizer when watering.

Image by Safe Harbor: Narrow Leaf Goldenrod with mature seeds in the fall.

Director's notes: We need to be thoughtful in planting seeds. Our goal is not to obverhelm an area with single species but to restore "Linkage to Scale" where our efforts will dovetail with diversity of adjacent habitat. In totally bare areas, we use a diverse blend of seed and let Mother Nature have the power of selection. True native plants can endure a lot of stress which eliminates outliers.

On raw Earth, more is not better when providing ammendmemts. Modeling native overburden in similar habitat, we mix seeds with two inches of loam, with a bit of straw, some Biotone and broken Oyster shells. This may be spread with or without jute netting, dependiong on slope. Oyster shells interact with acid rail by sacrificing Calcium ione, which lift the surface water pH just enough to carry more nutrients. Though a few instances in this booklet consider fertilizer, we never use it ourselves.