

AMP P3: DIRECT SEEDING

The feasibility of implementing AMP P3 primarily relates to the prevalence of management opportunity category(s): FDCV14&16; FRAG30; SCSP40

Note: The adaptive management of small openings resulting from cutting (AMP C1 to C3) will frequently include planting in which case refer to AMPs P1 through P3 for suggestions.

Primary Objectives: To establish trees, shrubs and vines in locations that will increase the amount and diversity of readily available food for *N. magister*.

Portability makes direct seeding an attractive option for enhancing food resources on hard-to-get-at habitat sites. Direct seeding within a management compartment may have another advantage compared to better sites with few or no rocks. Seeds can be mixed in with the natural mulch that accumulates in rock crevices. In effect rocks under some circumstances can act as seed and seedling protectors. Still, some seed will be predated by mice and rockrats. This isn't all bad. Birds and mammals provide important seed dispersal benefits by failing to consume all of their hoards, by dropping seeds after consuming the surrounding fleshy fruit, or by passing viable seeds through their digestive tracts.

Figure1 Pokeberries and American mountain ash; try a combination of indirect seeding and feeding. Pokeberries, mountain ash and elderberries ripen at the time rockrats are adding to their food caches. Cut and haul a bag of pokeweed to the vicinity of an activity center. This will provide some immediate food and resident NEMA may cache the leaves. Pokeberry seeds are planted by birds and rodents. This native plant is aggressive; once established it's likely to spread. Likewise, bag and deliver clusters of mountain ash and elderberry seeds. Scatter the berries in rockrat accessible shelters in MZ2. Avoid creating food piles (attractants) in MZ1; let the rockrat do that.



Direct seeding in rockrat management compartments should be considered experimental. This is why record keeping and monitoring are important. There are numerous how-to articles concerning the site preparation and direct seeding of flatlands. Less attention is devoted to the direct seeding of wild and remote sites where extensive site preparation is either not possible or must be done in conjunction with a tree harvest. The suggestions and guidelines in this leaflet were gleaned from the web sites listed (see over) under "More Information."

Advantages of direct seeding of native plants: Supplemental irrigation is NOT required; plants develop a strong natural root system; seeds can be obtained for a fraction of the cost of nursery grown seedlings; seeds do not require the special handling required for shipping and storing containerized or bare root seedlings; planting time is determined by the planter, not nursery availability; and seeds are easier to transport to the planting site. These advantages were listed by a company selling Blue X Direct Seed shelters.

Neotoma magister Management Workshop: Adaptive Management Practices that Stress Planting

As with the planting of seedlings, more attention should be devoted to quality rather than scattering pounds of seeds per acre. There are numerous seed suppliers or you can collect your own. The book "Trees, Shrubs, and Vines for Attracting Birds, A Manual for the Northeast," contains propagation information for numerous species. Because the PA Bureau of Forestry already has a history of collecting acorns, and because we're slowly losing oak trees, the following section is devoted to planting acorns in rockrat management compartments.

Planting time might be "determined by the planter," but the planter needs to keep weather uppermost in mind. Planting on dry sites given droughty weather is not recommended. Given a recent, substantial rainfall, plant only the best of the best chestnut and red oak acorns. Choose the largest of the sound acorns. Because stored acorns deteriorate, plant acorns soon after they are collected in the fall; they'll have better growth and survival than those planted later. Perhaps choosing the best planting micro-sites will be your greatest challenge. There needs to be adequate sunlight and the adjacent rocks (mulch) need to be atop the soil. Good sites might be where a tree has recently died or been removed. *"Prepare the planting site by turning over the soil with a shovel to a depth of at least 10 inches. Break up any large clods to prepare a good seedbed. Select sound acorns for planting as discussed above. At each site, plant 3 to 4 acorns spaced about 6 to 8 inches apart. This will increase the chances of at least one successful seedling being present at the site, and will keep the seedlings from being overly crowded if more than one emerges. Plant acorns on their sides at a depth of about 2 inches. Deeper planting can decrease seedling emergence rates (especially in heavy soils), and shallower planting can increase the chances that the acorns may dry out or be eaten by mice or ground squirrels."* Consider mulching and experiment with the use of seed shelters. Even plant some acorns under the edge of a rock.

A year or two prior to a timber sale is a good time to plant acorns in MZ3 at sites targeted for patch cuts. In this instance, larger numbers of acorns are planted without a lot of attention to specific micro-sites. But seed and seedling predation will be more of a challenge than plantings in MZ2. Post harvest fencing is desirable.

Figure 2. Given the chestnut oak seedling is not already present, this is the kind of planting micro-site to look for. Pull out the birch seedling and replace it with 3 to 4 acorns.

Even if you're not planting acorns, weeding and fertilizing existing seedlings, like the illustrated chestnut oak seedling, is worth the experiment. Where deer are a problem, protection is also indicated.



MORE INFORMATION

Planting acorns, chestnuts or walnuts <http://www.plantra.com/go/godirectseeding.php>

Direct Seeding Rates http://marionswcd.org/pdf%20files/tree_shrub_establishment.pdf

Plant and Acorn http://forestry.about.com/od/treeplanting/p/oak_acorn.htm

How to Collect & Plant Acorns <http://treenotes.blogspot.com/2007/09/how-to-collect-and-plant-acorns.html>

Pennsylvania's Native Plant Nurseries http://www.plantnative.org/nd_patova.htm

Advantages of Direct Seeding and Direct Seed Shelters <http://www.growtube.com/acorn/>