

**RODENT CACHE
SEEDLINGS OF SHRUB
SPECIES IN THE
SOUTHWEST**

Seeds of several shrub species are collected and cached by rodents in the sagebrush, pinyonjuniper, and conifer types of Nevada. Seedlings from these caches are a potential source of planting stock for use on revegetation projects. Plummer et al, (4) used wildlings (native seedlings) in revegetation work and found that they performed well. The usefulness of wildlings has been restricted by the lengthy collection time required for gathering scattered plants; rodent caches localize plants, making collections faster and easier.

Rodent cache seedlings are most easily identified by their mushroom shape, numerous cotyledons, diminutive leaves, and the sometimes persistent seed coats. Numbers of seedlings per cache vary with species, but 25 to 50 seedlings are common.

The quality of rodent cache seedlings is comparable to plants raised in a nursery flat if harvested before soil moisture is depleted. Within the cache, plant top growth is slightly reduced and root growth is forced downward in response to competition for water. The ratio of shoot-to-root growth appears to be somewhat reduced in cached seedlings, but this is of benefit in transplanting.

Collection and Care

Locating sites where rodent caches are abundant is the most

Rodent caches provide a source of planting stock that could be utilized more fully in revegetation work

difficult task in utilizing this source of materials. Good beds for rodent caches are found in nonskeletal soils on north slopes, drainage bottoms, recent fires, or disturbed sites. The prime requirement of any site, however, is the right combination of seed sources and rodent populations.

Although 1974 was a poor seed year for most of Nevada, rodent caches were plentiful in several areas in 1975. Over 2,000 desert bitterbrush (*Purshia glandulosa* Curran) plants were gathered in less than an hour on a pinyonjuniper burn in eastern Nevada in June. About 1,500 seedlings of antelope bitterbrush (*Purshia tridentata* [Pursh] DC.) were collected in a sagebrush community in central Nevada the next day.

Snowberry (*Symphoricarpos albus* Blake) and currant (*Ribes cereum* Dougl.), which are more difficult to propagate than *Purshia* species, were also found. Several hundred currant plants and over 3,000 snowberry seedlings were collected in an 8hour period in western Nevada.

Collections were made by personnel who happened upon the caches while performing other required duties. By capitalizing on this source of planting material, we were able to gather plants for revegetating a burn that occurred after nursery production estimations were made.

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Seedlings are easily unearthed with a shovel or trowel, but the tops should be held during digging to keep the seedlings together. After each seedling cache is lifted, it should be rolled in moist paper towels with leaves exposed. Plants can be kept for a few days if the root end of the towel is kept in water and the tops are lightly covered. If plants must be held for longer periods, they should be heeled into a container of soil and watered frequently, but lightly. Plants should not be held under saturated conditions as in a mist bench or plastic sack as damping off causes many transplanting failures.

As cache seedlings are usually small when collected, they work well in containerized plantings. Seedlings are grown in containers for a short period of time and then outplanted (Monsen 1975, personal communication). Seedlings can also be heeled in at a protected site and later planted as bareroot stock. Transplanting directly from the field to the planting site is possible in the fall following above-normal precipitation during the growing season.

A major problem in using wildlings is tardiness in harvesting the caches. Soil moisture depletion, rodents, and insects take a heavy toll of the succulent seedlings (Hubbard (2), Sanderson (5))

Discussion

As a source of planting stock, rodent cache seedlings are not as reliable nor as economical as nursery stock in most instances. Cache seedlings may be plentiful at a site one year and scarce the next. The cost of an established program of locating, removing, and reestablishing wildlings is also more than if plant materials were obtained from a nursery (Nord 1975, personal communication). However, when cache seedlings are found in large numbers, they can be used locally to great advantage. Seedlings gathered by management personnel during the performance of other duties would be obtained at a reduced cost. Collected seedlings would be on hand and could be planted during optimum conditions.

Shrub establishment is enhanced when plants are adapted to the planting site. Cache seedlings from the area are adapted and have undergone early development under site conditions. Although more plants may be available from distant nurseries, it is not the number planted but the number surviving that makes the project a success.

Rodent cache seedlings provide a source of desirable species that may not be available by other means. Several shrub species are difficult to propagate within a

nursery because of low or erratic germination. Large scale nursery production of shrubs has just recently begun and several shrub species are available only in limited quantities at this time.

The collection period for obtaining a desired ecotype or species is prolonged when wildlings are collected. Short seed-dissemination periods may preclude the collection of seed from specific species, but rodent cache seedlings are usually present for several weeks.

Harm done to the parent plant community by removing caches is unknown but thought to be small. Sanderson (5) reported that only 4 percent of bitterbrush rodent caches survived in the undisturbed understory of a sagebrush community. Repeated removal of caches would, however, reduce reproduction of the selected species within the community (1), (3).

Conclusions

Rodent caches provide a source of planting stock that could be utilized more fully in revegetation work. Cache seedlings are not as reliable nor as economical as nursery grown stock in most instances. However, when cache seedlings occur in large numbers they can increase the land manager's capability of revegetating disturbed sites. Large numbers of adapted plants that are hard to germinate or are

otherwise unavailable are present and easily harvested as rodent cache seedlings. Such seedlings can be effectively utilized as containerized or bareroot stock for local revegetation projects.

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