

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

TREE/SHRUB ESTABLISHMENT

(Acre)
CODE 612

DEFINITION

To establish woody plants by planting or seeding.

Adequate seed or advanced reproduction needs to be present or provided for when using natural regeneration to establish a stand.

PURPOSES

- * To establish woody plants for forest products.
- * Provide erosion control for landscaping and energy conservation.
- * To reduce air pollution for uptake of soil and water borne chemicals and nutrients.
- * Beautify an area.
- * Protect a watershed.
- * Provide wildlife habitat.

Timing and use of equipment will be appropriate for the site and soil conditions.

The acceptability and timing of coppice regeneration shall be based on species, age, and diameter.

The planting will be protected from adverse impacts such as livestock damage or fire.

CONSIDERATIONS

When underplanting, trees should be planted sufficiently in advance of overstory removal to ensure full establishment.

Prescribed burning may be required for natural regeneration of serotinous cone species and for site preparation for other species.

All planting stock and seed should be purchased from nurseries that are known to be using locally adapted seed, seedlings or cuttings. Priority will be given to plant materials that have been selected and tested in tree improvement programs. All plant materials should comply with the minimum standards established by the American Nurseryman Standards Institute.

Plans for landscape and beautification plantings should consider foliage color, color and season of flowering, and mature plant height.

Where multiple species are available to accomplish the establishment objective, consideration should be given to selecting the species which best meets wildlife needs.

Tree arrangement and spacing should allow for access lanes.

Residual chemical carryover should be considered prior to planting.

CONDITIONS WHERE PRACTICE APPLIES

On any areas where woody plants are suited.

CRITERIA

Species will be adapted to soil-site conditions.

Species will be suitable for the planned purpose.

Planting or seeding rates will be adequate to accomplish the planned purpose.

Planting dates, and care in handling and planting of the seed or seedlings will ensure that planted materials have an acceptable rate of survival.

Only viable, high quality and adapted planting stock or seed will be used.

Site preparation shall be sufficient for establishment and growth of selected species.

Planning

Use adapted species as indicated by the soil-woodland site correlation, if available. If a correlation is not available, use species that are native on the same soil series. Use trees grown from seed from same tree seed zone in which the planting is to be done.

Planting can be done either by machine or by hand. Machine planting will be limited by small area, steep topography, windfalls, rock outcrops and heavy brush and slash accumulation. Hand planting is adaptable to all areas. Any equipment that can create a suitable planting cavity can be used. e.g., shovel, auger, planting bar, tree planting machine.

In forestland, the location for each planted seedling should take advantage of every moisture conserving and heat-protecting factor available, such as: shade from stumps, logs, surface rocks, clods, hummock, etc.

In species selection, consideration should be given to esthetic value in recreation areas and borders along highways.

Tree stock can generally be 1-0, if it is over 8" and vigorous. However, the harsher the site the more important for 2-0, 2-1, 1-2 stock.

Irrigation may be necessary on some areas and for some species.

If irrigation is planned, have the systems in place prior to planting. To increase seedling survival, irrigate after planting to aid in packing the soil around the roots and assure enough water to begin growth.

FOREST LAND:

Planting Dates:

Sierra Nevada: Planting should be made as early in the spring as possible. On the west side, planting can start the last of February or the first of March. On the east side, it will be later; and at high elevations, after the snow melts.

Coast Range: December through March

South of the Tehachapi Range: March to late April

Siskiyou: February to April

Trees per Acre:

Coast Redwood Region: 300 trees per acre-

Remainder of California: 436 to 681 trees per acre.

Pole plantings/cuttings:

If these methods are utilized in highly erodible areas some method of protection should be placed in front of the pole plantings. The toe can be very susceptible to erosive flows and scour. If rock is used to stabilize careful application is required. Improperly placed rock can result in erosion problems on the opposite bank and downstream.

Give careful attention to both the upstream and downstream ends of the treatment area ensuring flows do not get behind the treatment. Try to divert flows away from the endpoints by tying into existing features such as trees, rocks, etc. or consider utilizing brush revetments.

ALL:

Rooting hormones and fertilizers have not significantly improved success compared to the cost of the materials.

All sites and all plant species may be subject to unacceptable damage due to browsing or grazing. Protection may be required to hold damages to an acceptable level. Planning will include preparing estimates of the occurrence of animal populations, which have the potential of causing damage. Use of sightings of gopher mounds, animal trails, beaver activity, frequency of scat, and evidence of browsing on native plants will yield data that can help determine the need for plant protection.

Water Quantity

The purpose of this practice is to establish or reinforce a stand of trees to conserve soil and moisture, beautify an area, protect a watershed, or produce wood crops. On a short-term basis, 2 to 24 months, this practice will have a negligible effect on the quantity of surface or ground water. As the stand becomes established and the trees have rerooted, they will take up more and more soil water during their growth cycle.

The long-term effect will be a reduced runoff from the area, a greater amount of surface storage in the forest duff and more infiltration, without a great increase in the amount of water that percolates below the root

zone. The actual conditions which may result from the application of this practice must be on the species planted, the spacing of the planting, the soil and topographic conditions that exist on the specific site.

Water Quality

As the stand becomes established, there should be a decrease in the surface runoff, with an accompanying decrease in the erosion. This will reduce the sediment yield from the site, as well as reducing the sediment attached materials which may enter the receiving waters. Reduced quantities of water percolating below the root zone will reduce the potential for the transport of dissolved materials into the ground water.

Endangered Species Considerations

Determine if installation of this practice with any others proposed will have any effect on any federal or state listed Rare, Threatened or Endangered species or their habitat. NRCS's objective is to benefit these species and others of concern or at least not have any adverse effect on a listed species.

If the Environmental Evaluation indicates the action may adversely affect a listed species or result in adverse modification of habitat of listed species which has been determined to be critical habitat, NRCS will advise the land user of the requirements of the Endangered Species Act and recommend alternative conservation treatments that avoid the adverse effects. Further assistance will be provided only if the landowner selects one of the alternative conservation treatments for installation; or at the request of the landowners, NRCS may initiate consultation with the Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Game. If the Environmental Evaluation indicates the action will not affect a listed species or result in adverse modification of critical habitat, consultation generally will not apply and usually would not be initiated. Document any special considerations for endangered species in the Practice Requirements Worksheet.

Some species are year-round residents in some streams, such as, freshwater shrimp. Other species, such as steelhead and salmon, utilize streams during various seasons. Be aware that critical periods, such as spawning, eggs in gravels, and rearing of young may preclude activities in the stream that may directly affect the stream habitat during those periods. For example there should be no disturbance of stream gravel beds that may have eggs in them. That could include any

equipment in the stream or even walking in the stream or work upstream that may result in sediment depositing in the gravel beds. Document any special considerations for endangered species in the Practice Requirements Worksheet.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, job sheets, and narrative statements in the conservation plan, or other acceptable documentation.

Adapted tree species for the purposes outlined, spacing, planting methods, cultural practices and maintenance requirements that are applicable; and variations in methods and species between interplanting, underplanting, and planting in open areas. Separate specifications can be prepared for each of these planting methods.

Specification Guide

Species and spacing shall be in conformance with the respective MLRA Vegetative Guide in the Field Office Technical Guide.

Based on limited observations, the following species normally require protection to control damage due to browsing or grazing to an acceptable level:

| | |
|-------------------|-------------|
| fourwing saltbush | lilac |
| golden willow | native plum |
| skunkbush sumac | green ash |
| Douglas-fir | mulberry |
| ponderosa pine | aspen |
| Afghanistan pine | dogwood |
| poplar spp. | birch spp. |
| Arizona cypress | white fir |
| willow spp. | redwood |

OPERATION AND MAINTENANCE

At least annually, the area will be inspected, and determination made of 'spots' where additional treatment is necessary. And if so, the work will be conducted during the same year, unless the time has passed for proper treatment.

Competing vegetation will be controlled until the woody plants are established.

Replanting will be required when survival is inadequate.

Trees and shrubs will be protected from fire, insects, disease, and animals until established.

Supplemental watering may be desirable to ensure adequate survival.

Damaging pests will be monitored and controlled.

Periodic applications of nutrients may be needed to maintain plant vigor.