NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

FOREST STAND IMPROVEMENT

(Ac.)
CODE 666

DEFINITION

The manipulation of species composition, stand structure and stocking by cutting or killing selected trees and understory vegetation.

PURPOSE

- Increase the quantity and quality of forest products by manipulating stand density and structure.
- Release desirable tree species from woody or herbaceous competition.
- Selective harvest of forest products
- Initiate forest stand regeneration.
- Reduce wildfire hazard.
- Improve forest health reducing the potential of damage from pests and moisture stress.
- Restore natural plant communities.
- Achieve or maintain a desired plant community for grazing, browsing and/or special forest products.
- Improve aesthetics and recreational opportunities.
- Improve wildlife habitat.
- Alter water yield.
- Increase carbon storage in selected trees.

CONDITIONS WHERE PRACTICE APPLIES

All land where undesirable woody vegetation needs to be managed or controlled.

This standard is not applicable for Alley Cropping (311), Multi-story Cropping (379), Windbreak/Shelterbelt Establishment (operation and maintenance) (380) and Windbreak/Shelterbelt Renovation (650).

CRITERIA

General Criteria Applicable to All Purposes

The harvest-regeneration strategy will be identified for all planned forest improvement harvesting:

Uneven-aged management systems (e.g., single-tree selection, group selection, coppice selection)

Even-aged management (e.g., clear-cut, seed-tree, shelterwood, coppice)

The extent or size and orientation of treatment area(s) shall be identified as part of practice design.

Preferred tree and understory species are identified and retained to achieve all planned purposes.

Spacing, density, size class, number and amounts of trees and understory species to be retained will follow established guidelines for the intended purposes.

Stocking guidelines shall contain stocking in terms of basal area or trees per acre by species and size class distribution.

The method, felling direction and timing of tree cutting for harvesting shall protect site resources, e.g., residual trees, wetlands, cultural resources, improvements and utilities.

Tree cutting should be timed to avoid buildup of insect or disease populations. Forest stand improvement activities shall be performed to minimize soil erosion, compaction, rutting, and damage to remaining vegetation and maintain hydrologic conditions.

Slash and debris will be treated such that they do not present an unacceptable fire, safety, environmental, or pest hazard. Such remaining material will not interfere with the intended purpose or other management activities. Burning of slash and other debris on-site shall follow the standard Prescribed Burning (338).

Additional Criteria to Reduce Wildfire Hazard

Reduce stocking rates of trees to minimize crown-to-crown spread of fire.

Remove “ladder” fuels to minimize the occurrence of crown fires.

Further treat or eliminate slash accumulations next to roads and trails.

Reduce or eliminate species with high volatility but not to a level that would compromise other intended purposes.

For additional wildfire risk and damage reduction, refer to the standards Fuel Break (383) and Firebreak (394).

Additional Criteria to Improve Wildlife Habitat

Manage for a variety of native tree species and stocking rates that meet desired wildlife and pollinator species food and cover requirements.

Create, recruit and maintain sufficient snags and down woody material to meet requirements of desired species and secondary cavity nesting species in balance with conditions needed to achieve other intended purposes.

Minimize improvement actions that disturb seasonal wildlife activities.

Refer to Early Successional Habitat Development/Management (647), Upland Wildlife Habitat Management (645), and Wetland Wildlife Habitat Management (644) to further develop and manage wildlife-related activities.

Additional Criteria to Increase Carbon Storage in Selected Trees

Manage for tree species and stocking rates that have higher rates of growth and potential for carbon sequestration.

CONSIDERATIONS

Silvicultural objectives and harvest-regeneration strategies may change over time and may be limited by prior management.

Successful regeneration of desirable species is usually dependent upon timely application of forest stand improvement and other practices, e.g., prescribed burning, site preparation, tree and shrub establishment, prescribed grazing and access control.

For purposes other than improving wildlife habitat, the practice should be timed to minimize disturbance of seasonal wildlife activities.

Consideration should be given to the improvement of wildlife habitat. Creek bottoms, steep slopes, wet areas, areas with significant food sources should be given priority to remain in food and shelter

trees for wildlife. SMZ's should be used to limit the extent of habitat affected and to provide some diversity in tree structure.

Leave some mast producing trees for wildlife. Hard mast trees include species like oaks, beech and hickories. Soft mast trees include species like dogwoods, hackberry, persimmons, mulberries, etc. The principles of forest stand improvement can be used to improve the mast bearing trees.

Consider the retention of selected dead or dying trees including down woody material to enhance wildlife habitat.

Landowners should secure a written contract with any service provider that specifically describes the extent of activity, duration of activity, liability and responsibilities of each party and amount and timing of payments for services provided

Slash, debris and other vegetation (biomass) removed during stand improvement may be used to produce energy.

lnvasive or noxious woody vegetation should be controlled.

Clients should be advised of responsibilities of wildfire control and consider the development of a wildfire control plan including "defensible" space, access routes, fire-season water source, and location of wildfire control facilities.

When forest stand improvement is being used to improve aesthetics or aesthetics are a part of the overall plan, consider leaving trees such as dogwoods, redbuds, white fringetree, and rusty blackhaw especially around structures, roads and home sites.

When herbicides are being used to release desirable tree species, control invasive species or to adjust species composition and basal area, use only approved products for forestry applications. For recommendations regarding herbicides check with the Texas A&M Forest Service or the county extension personnel.

When herbicides are being used to manage rangeland to improve grazing or wildlife habitat, use only approved herbicide products labeled for this use.

PLANS AND SPECIFICATIONS

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

OPERATION AND MAINTENANCE

Periodic inspections during and after the implementation of forest stand improvement activities are necessary to ensure that appropriate trees and understory vegetation is being removed, resource damage is minimized, residual trees are not damaged and the desired conditions are being achieved. Monitor the stand for insects or disease as further action may be needed to minimize the impacts from these pests. The results of the inspections shall determine the need for additional treatment under this practice.