

## Tree/Shrub Site Preparation (Acre) 490

### DEFINITION

Treatment of areas to improve site conditions for establishing trees and/or shrubs.

### PURPOSES

- Encourage natural regeneration of *desirable woody plants*.
- Permit artificial establishment of woody plants.

### CONDITIONS WHERE PRACTICE APPLIES

On all lands *needing treatment to establish trees and/or shrubs*.

### CRITERIA

#### General Criteria Applicable To All Purposes

- Choose the method, intensity, and timing of site preparation to match the limitations of the site, equipment, and the requirements of the desired woody species.
- Choose an *appropriate site preparation method to achieve the intended purpose and to protect desirable vegetation, site and soil conditions*.
- Remove, treat or eliminate slash and debris as appropriate.
- Remaining slash and debris shall not create habitat for or harbor harmful levels of pests.
- Remaining slash and debris shall not hinder needed equipment operations or create an undue fire hazard. Refer to the Michigan NRCS Practice Standard Prescribed Burning (338) for slash and debris that will be burned.

- *Use other complementary practices to control erosion, runoff, compaction and displacement to acceptable levels. Refer to the following Michigan NRCS Standards for additional information:*

- Filter Strip (393)
- Diversion (362)
- Streambank Protection (580)
- Critical Area Planting (342)
- Forest Harvest Trails and Landings (655)
- Grade Stabilization Structure (410)
- Riparian Forest Buffer (391)
- Tree/Shrub Establishment (612)

- *If prescribed burning is used, comply with Michigan and National NRCS policies on prescribed burning and Michigan NRCS Practice Standard Prescribed Burning (338).*

- Control or protect against invasive and noxious species that may arise from site preparation activities. Refer to the Michigan NRCS Practice Standard Pest Management (595).

- Apply all chemicals in accordance with label guidelines. Refer to Michigan NRCS Practice Standard Pest Management (595). Dispose of chemical containers in a safe, approved manner.

- Comply with applicable laws and regulations (see Michigan NRCS Field Office Technical Guide, Section I, Subsection Laws) and Michigan Best Management Practices (BMPs) outlined in the handbook entitled: *Sustainable Soil and Water Quality Practices on Forest Land*, published by the Michigan Department of Natural Resources, Forest Management Division.

#### Criteria Applicable To Natural Regeneration of Woody Plants

- *Select sites for natural regeneration based on the soil type, soil site index, existing tree species, markets, and benefits to wildlife.*
- *Use Michigan NRCS Practice Standard Forest Stand Improvement (666) to remove, manage, or alter the existing tree and shrub cover to create suitable conditions for regeneration.*
- *When regenerating white pine and light seeded hardwood species (e.g., birch and elm), wherever practical, dispose of heavy slash and prepare a seedbed by mixing humus and mineral soil over at least 60 percent of the area.*

**Criteria Applicable To Establishment of Woody Plants by Seedling Planting or Direct Seeding**

- Remove undesirable woody plants using Michigan NRCS Practice Standard Brush Management (314) or Pest Management (595) if needed.
- Remove or kill existing herbaceous or grassy vegetation in the entire field, in rows, or in spots using chemical and/or mechanical means as detailed in the "Site Preparation" section of the Michigan NRCS Conservation Design Sheet Tree/Shrub Site Preparation and Establishment (490/612).

**CONSIDERATIONS**

- The chosen method should protect cultural resources, wildlife habitat, springs, seeps, wetlands, water bodies, and other unique areas.
- The climate, soil type and properties, topography, existing vegetation, planting methods, and the species selected for planting govern the type of site preparation needed.
- Promote the planting and regeneration of native species wherever possible.
- Cultivation of open fields (disking, plowing, dragging, etc.) prior to planting seedlings or transplants may increase the potential for erosion and cause increased mortality of the planting stock due to a lowering of the available moisture content in the soil, increased exposure of plants to wind and the elements, and an unfavorable change in the microclimate.
- *The need for a summer or fall follow-up herbicide treatment the first three growing seasons after planting should be evaluated at least annually. (See Michigan NRCS Practice Standard Tree/Shrub Establishment (612) and Conservation Design Sheet Tree/Shrub Site Preparation and Establishment (490/612) for details and alternative weed control methods.)*
- *The use of fabric weed barriers or natural or synthetic mulches may be an effective alternative to scalping and/or the use of chemical herbicides. However, on sites with aggressive, difficult-to-control weeds, site preparation may still be required prior to installation of weed barriers or mulches.*

- *Prescribed burning and/or roller chopping in Aspen clear cuts may damage parent roots and slow sucker growth.*
- *The use of prescribed burning for site preparation should be evaluated carefully. The uncertainty of and infrequency of seed years, potential landowner liability, and risk of wildfire are factors that should be evaluated before considering a prescribed burn.*
- *Refer to Extension Bulletins E-2592 (1995) Pesticides for Use in Forest and Seed Orchards in the North Central Region; E-2594 (1995) Pesticides for Use in Christmas Tree Production in the North Central Region; and North Central Regional Extension Publication 251 (1997), Effective Herbicide Use in Christmas Tree Plantations for information on herbicide selection and use. For additional information on pesticides, consult with Michigan State University Extension.*
- *Use the safest available effective herbicide. Consult the Michigan NRCS Field Office Technical Guide, Section II, Soil Pesticide Interaction Ratings for Water Quality to choose herbicides, review leaching and runoff potential, persistence, and toxicity ratings of chemical formulations. Use the safest available herbicide. Pesticides used improperly can be injurious to man, animals, and plants.*

**PLANS AND SPECIFICATIONS**

Specifications for applying this practice will be prepared for each site and recorded using approved specification sheets, job sheets (see Michigan NRCS Conservation Design Sheet Tree/Shrub Site Preparation and Establishment (490/612)), and narrative statements in the conservation plan, or other acceptable documentation.

*Specifications will include, but are not limited to, the following items:*

- *Method(s), including equipment used and timing of site preparation*
- *Tree and shrub species and regeneration method to be used*
- *Identification of any erosion control measures needed*
- *Map indicating location of treatment*

## **OPERATION AND MAINTENANCE**

Operation and maintenance are not applicable to this practice.

## **REFERENCES**

Arend, John and Harold Sholz. 1969. Oak Forests of the Lake States and Their Management USDA Forest Service Research Paper NC-31. North Central Forest Experiment Station, St. Paul, MN.

Bonner, Franklin T. and Robert P. Karrfalt (eds.). 2008. The Woody Plant Seed Manual. Ag. Handbook No. 727. USDA Forest Service. Washington, D.C.

Burns, Russell M. and Barbara H. Honkala. 1990. Silvics of North America, Vols. 1 and 2, Silvicultural Handbook 654. USDA Forest Service. Washington, D.C.

Lantagne, Douglas O. and Melvin R. Koelling. 1997. Tree Planting in Michigan. Extension Bulletin E-771. Michigan State University Department of Forestry. East Lansing, MI.

North Central Forest Experiment Station. 1977. Manager's Handbook for Aspen in the North Central United States. General Technical Report NC-36. USDA Forest Service. St. Paul, MN.

North Central Forest Experiment Station. 1977. Manager's Handbook for Northern Hardwoods in the North Central United States. General Technical Report NC-39. USDA Forest Service. St. Paul, MN.