**alliance practice worksheet**

MINNESOTA

Tree and shrub establishment (612)

*The conditions and specifications below are adapted from the Natural Resources Conservation Service. Producers who are installing these practices under the Alliance will use the conditions and implementation guides below but are exempt from NRCS verification and certification. Completing the Purposes and Practice Specifications on this document is sufficient to self-verify practice installation and completion.*

# Farm Info

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| --- | --- |
| Name | Click or tap here to enter text. |
| County | Click or tap here to enter text. |
| Alliance Contract Number | Click or tap here to enter text. |
| Field Number(s) | Click or tap here to enter text. |
| Tract Number(s) | Click or tap here to enter text. |
| Practice Area | Click or tap here to enter text. |

# PRACTICE: TREE AND SHRUB establishment (612)

**DEFINITION:**. Establishing woody plants by planting seedlings or cuttings, by direct seeding, and/or through natural regeneration.

**CONDITIONS WHERE PRACTICE APPLIES:** Tree/shrub establishment can be applied on any site capable of growing woody plants.

See [*https://efotg.sc.egov.usda.gov/api/CPSFile/835/\_\_\_*](https://efotg.sc.egov.usda.gov/api/CPSFile/835/___)to access the NRCS Conservation Practice Standard.

**Note:** Tree/Shrub Establishment (612) has a practice lifespan of 15 years, according to NRCS. Therefore, enrollment is only possible for year one (establishment/planting year) of this practice.

**At a minimum, producers will provide a record of the following:**

* + Objective(s) for establishment.
	+ Sketches, drawings, and detail drawings.
	+ Map showing the location of plantings and/or natural regeneration areas.
	+ Soils map, and description of soils and Ecological Sites (if available).
	+ Establishment method by species or vegetation type.
	+ Number of trees/shrubs per acre to be planted, by species.
	+ Timing of planting and/or natural regeneration relative to considerations for seasonal factors, plant physiology, disease, insects, and wildlife impacts.
	+ Mitigation measures, if needed, to reduce wildfire hazard or the potential for disease and insect pests.
	+ CPA-52 Environmental Evaluation Worksheet
	+ Please contact your State Implementer for assistance completing the CPA-52.

# GENERAL CRITERIA APPLICABLE TO ALL PURPOSES

Reference MN Biology Technical Note 17 – “Recommendations for Tree and Forest Establishment and Management in Minnesota’s Prairie Region”, for site level recommendations on where tree planting is ecologically appropriate in prairie landscapes.

Select one or more species that are suited to soil and site conditions, and appropriate for the planned purpose(s).

Determine desired stocking levels for trees and/or shrubs based on ecological characteristics of the site and species, and landowner objectives. Plant, seed, and/or naturally regenerate at densities/rates that reflect anticipated seedling mortality, to achieve desired stocking levels in the established stand. Use NRCS Conservation Practice Standard (CPS) Tree/Shrub Site Preparation (Code 490) to prepare sites for planting, seeding, or natural regeneration, if conditions are not suitable for establishing the desired plants.

Use NRCS Conservation Practice Standard (CPS) Tree/Shrub Site Preparation (Code 490) to prepare sites for planting, seeding, or natural regeneration, if conditions are not suitable for establishing the desired plants.

Use tree/shrub planting to accomplish or supplement forest stand regeneration in locations where natural regeneration of desired species is not possible, or will not meet objectives.

Select only viable, high-quality, and adapted plant materials. Select planting stock that conforms to established seed transfer protocols within the State, and complies with minimum standards accepted by the American National Standards Institute (ANSI). Do not plant any species on the Federal or State invasive species or noxious weed lists.

Choose appropriate planting dates and handling methods to increase rates of survival. Select planting techniques and timing appropriate for soil and site conditions.

Alter species selection and/or timing of planting/seeding to minimize potential effects of residual chemical carryover, as needed.

Evaluate the site to determine if mulching, supplemental water or other cultural treatments (e.g., tree protection devices, shade cards, brush mats, etc.) are needed to assure adequate survival and establishment. Minimize the need for supplemental water and/or nutrients by choosing site-adapted plant materials, planting methods, and planting seasons. Where supplemental moisture is needed to achieve tree/shrub establishment use NRCS CPS Irrigation System, Microirrigation (Code 441).

Protect tree and shrub plantings, seeded areas, and naturally regenerated areas, from unacceptable adverse impacts of pests, wildlife, livestock, and/or fire. Protect from pests, as necessary, by applying integrated pest management techniques for pest prevention, avoidance, monitoring, and suppression.

Removal of products (e.g., trees, biomass, medicinal herbs, nuts, fruits, etc.) is allowed, provided that conservation purpose(s) are not compromised by the loss of vegetation or by harvesting disturbance.

Use diverse tree and shrub specie combinations which best meet the needs of desired wildlife and pollinator species. The wildlife species to be managed will be identified.

**NATURAL REGENERATION**

When utilizing natural regeneration to establish trees and/or shrubs, ensure that a source of seed and/or vegetative propagules is or will be present, or that advanced reproduction exists sufficient to achieve objectives.

Where natural regeneration relies on seed sources, apply any needed stand treatments and/or site preparation using CPS Forest Stand Improvement (Code 666) and/or Tree/Shrub Site Preparation (Code 490) at appropriate times to facilitate germination and establishment of seeds from desired species.

Modify forest stand conditions as needed, using CPS Forest Stand Improvement (Code 666) to create favorable stand structure for initiating natural regeneration.

Use NRCS CPSs Prescribed Burning (Code 338), Brush Management (Code 314), and/or Herbaceous Weed Control (Code 315), as needed, to obtain the desired species composition, density, and arrangement of trees/shrubs in naturally regenerated areas.

Implement coppice regeneration (originating from root shoots or stump sprouts) based on suitability of tree species, age, diameter, and site conditions. Determine the correct timing for coppice regeneration based on species characteristics.

# Current conditions

Summarize the current conditions that are negatively impacting the priority resource concern(s), include biosolids, if appropriate. Attach any maps, models, calculations, and other supporting information, as appropriate, to support the summary:

Click or tap here to enter text.

# Future desired conditions

Summarize the future desired conditions that the recommended practices will create:

Click or tap here to enter text.

# Soil information (soil map units (smu), conservation tree/shrub group (ctsg)

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# Species, stock type and planting rates

**Planting Rates**

Tree and shrub spacing and densities vary depending on the purpose of the planting and the type of stock being planted. Typical ranges are listed below.

Seedlings (bare root or plugs and cuttings):

* Timber production:
* Hardwoods – 545-900/ac
* Conifers – 600-1000/ac
* Wildlife Plantings: 302-1200/ac. Certain Wildlife plantings may require densities outside this range. Contact the NRCS State Forester or Biologist for guidance.
* Christmas trees: 726 – 1200/ac
* Supplemental underplanting: 200-300/ac, evenly distributed over the area needing treatment.
* Erosion Control: 1000-1200/ac
* For other applications or approval of planting densities outside these listed ranges, contact the NRCS State Forester or Biologist. Larger Stock, including air-root pruned, containerized, and balled and burlap stock:
* 20+ per acre if natural regeneration is expected.
* 50+ per acre if natural regeneration is not expected

**Planting Stock**

Bare-root Stock

* Conifers: Minimum height 9 inches with a minimum root length of 8 inches OR minimum caliper 3/16 inch.
* Hardwoods: Minimum height of 12 inches with a minimum root length of 8 inches OR minimum caliper\* of ¼ inch. Exceptions: hickory species may have a minimum height of 6 inches and root length of 8 inches OR ¼ inch caliper\*.
* Containerized Stock: One year old plug container seedlings must have root volumes of at least 7 cubic inches.
* Potted Stock: Minimums for potted stock, including air-root pruned: height 3 feet, container size 1 gallon, caliper\* 3/8 inches.
* Cuttings: (Hybrid Aspen, Willow, Cottonwood, etc.) Minimum 10 in. in length with 3/8 in. caliper\*.



**Species**

Document the origin of the seed/seedling source from the tag attached to the plant or seed bag \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Used:

[ ]  MN-ECS-002 (attach if used), or

[ ]  CTSG/WS Click or tap here to enter text.

Selected the desired Conservation Tree/Shrub Group and Windbreak Suitability (CTSG/WS) type.

For a more detailed selection, see the CTSG spreadsheet for the subzones at eFOTG section II >> "Soils - Statewide Official Data & County Reports" >> "Conservation Tree and Shrub Groups.”

Species/cultivar by row number: Size: caliper & height and/or nursery age Kind of stock1 Distance between plants within row (ft): Distance between adjacent rows: (ft)2 Total

# Planting stock information

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| --- | --- | --- | --- | --- | --- |
| **Species/cultivar by row number** | **Size: caliper & height and/or nursery age** | **Kind of stock** | **Distance between plants within row (ft)** | **Distance between adjacent rows (ft)** | **Total number of plants** |
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# Seeds for direct seeding and aerial seeding

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| [ ]  Direct Seeding (use lbs/ac or bu/ac) [ ]  Aerial Seeding (use oz/ac) |
| **Species** | **Lbs/ac, bu/ac or oz/ac** |
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# Seeds for direct seeding and aerial seeding

**LIST SEED BEARING TREES**

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| Riparian Areas (w/in 200’ upwind of site) | Non-floodplain Areas (w/in 300 feet on at least 2 sides) |
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# Natural regeneration - reforestation

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| **BY SUCKERING** [ ]  | **BY STUMP SPROUTING** [ ]  | **BY PRESCRIBED FIRE** [ ]  |
| Species: Click or tap here to enter text. | Species: Click or tap here to enter text. | Species: Click or tap here to enter text. |
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# Additional Specifications

Document additional specifications as necessary including: Temporary storage, site preparation, temporary/permanent conservation cover, adjustments from the spacing guidelines, and supplemental moisture. Attach additional pages or maps as needed.

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| Notes:Click or tap here to enter text. |

# Operation and maintenance

Prepare an operation and maintenance plan for this site. As a minimum, include the following activities:

* Burn or mow the area periodically, if needed to maintain the health of the plant community. Do not conduct maintenance practices and activities during the primary reproductive period of wildlife. Exceptions can be considered to maintain the health of the vegetative community if such exceptions do not conflict with agency requirements.
* Control access by vehicles and/or equipment during or after tree/shrub establishment to protect new plants and minimize erosion, compaction and other site impacts.
* Inspect the site at an appropriate time following planting, seeding, and/or natural regeneration to determine whether the survival rate for tree and shrubs meets practice and client objectives. Replant or provide supplemental planting when survival is not adequate.
* Inspect the trees and shrubs periodically, and protect them from adverse impacts of insects, diseases, competing vegetation, fire, livestock, wildlife, non-functioning tree shelters and/or weed barriers, etc.
	+ If needed, control competing vegetation until the desired trees/shrubs are established. Control plant species on the Federal or State invasive species and noxious weed lists.
	+ If needed, apply nutrients to maintain vigor of desirable trees/shrubs.
* The tree/shrub planting will be protected from livestock and wildlife damage by use of fencing, repellents, bud caps, shelters/tubes and/or other protective devices.
* Weed control fabric, if used, will be properly installed and maintained, including the removal of the fabric if it starts to girdle the tree/shrub stems. This could be several years, up to 20 years after planting.
* Prune the windbreak/shelterbelt plantings as necessary to maintain density/porosity functionality. Use the conservation practice Windbreak/Shelterbelt Renovation, Code 650 or Tree/Shrub Pruning, Code 660 as appropriate.
* As the tree/shrub seedlings grow into saplings, poles and older sizes, maintain health of the planting using the conservation practice standard Forest Stand Improvement, Code 666 as necessary over the life of the practice.

# PRODUCER SELF-CERTIFICATION

By signing below, I certify that I have reviewed all required documentation and have implemented the practice and met all criteria and requirements as defined in the Natural Resources Conservation Service **TREE AND SHRUB ESTABLISHMENT (612)** standard and specifications for the identified acres or animal units.

Further, I agree that:

[ ]  I am not currently receiving a payment for this conservation practice on these fields and acres from another USDA Conservation Program, another USDA Partnership for Climate-Smart Commodities grant partner, or a state cost-share program.

[ ]  I will retain all practice documentation to support this certification for up to 12 months following practice adoption and will provide this documentation to the Alliance if selected for a spot check. *(Up to 10% of enrolled Alliance participants will be randomly selected for spot checks).*

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| --- | --- |
| ***Participant Name:*** | Click or tap here to enter text. |

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| ***Participant Signature:*** | Click or tap here to enter text. |

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| ***Date:*** | Click or tap to enter a date. |