



CONSERVATION ENHANCEMENT ACTIVITY

E612D

CONSERVATION STEWARDSHIP PROGRAM

Adding food-producing trees/shrubs to an agroforestry system

CONSERVATION PRACTICE: 612 - Tree/Shrub Establishment

APPLICABLE LAND USE: Crop (Annual & Mixed), Crop (Perennial), Pasture, Range, Forest, Associated Ag Land, Farmstead

RESOURCE CONCERN: Animals, Plants

ENHANCEMENT LIFE SPAN: 15 years

Enhancement Description

Plant food producing trees/shrubs for wildlife or human consumption within an agroforestry system (windbreaks/shelterbelts, alley cropping, forest farming, silvopasture, and/or riparian forest buffer).

Criteria

- States will apply criteria from the NRCS National Conservation Practice Standard Tree/Shrub Establishment (Code 612), and any additional criteria as required by the NRCS State Office.
- Species selected will be able to produce food and/or culinary items to create an edible landscape. See States list for suitable woody plants.
- Apply at least one of the following activities to improve edible food production:
 - Add at least one edible, food producing row to existing linear plantings.
 - Add clusters of food-producing plants to existing plantings, so that food plants occupy at least 10% of the total area established in an agroforestry practice.
 - Add food-producing plants to occupy idle areas of the operation, such as field corners adjacent to existing plantings.
- Plant a variety of tree, shrub, and-or bramble species (3 or more, using native species whenever possible) with varying flowering times to favor pollinator species and to provide an extended time frame for available food.



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- Further considerations are visual appeal, proximity to farmsteads, proximity to areas of wildlife use or viewing, or other locations depending on landowner objectives.
- Minimize herbicide use. Use spot weed treatments and avoid spraying when flowers are present.
- Selection of species should also be chosen according to the site’s natural disturbance regime. Species should be selected based on traits, successional status, structure, and composition.
- Build forest resilience by favoring existing species that are better adapted to projected future climate conditions, and by enhancing relative compositional and structural diversity.
- Do not plant species on the Federal or State invasive species or noxious weed lists.
- Only viable, high-quality and site-adapted planting stock or seed will be used.
- A precondition for tree/shrub establishment is appropriately prepared sites. Refer to criteria in NRCS CPS Tree/Shrub Site Preparation (Code 490).
- Implementation and timing of planting will be appropriate for the site and ensure successful establishment.
- Plantings must be protected from unacceptable adverse impacts from insects, disease, wildlife, livestock, and/or fire. Apply supporting practices and treatments as necessary to protect establishing trees and shrubs.
- Each site will be evaluated to determine if mulching, supplemental water, or other treatments (e.g., tree protection devices, shade cards, weed mats) will be needed to assure adequate survival and growth.
- The enhancement will comply with all applicable federal, state, and local laws and regulations, and with States’ Forestry Best Management Practices for Water Quality.



Documentation and Implementation Requirements

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Participant will:

- Prior to implementation:
 - provide an updated Forest Management Plan that documents intended objectives for adding food-producing trees/shrubs for wildlife or human consumption.
 - prepare the planned acres for trees and shrub establishment. Refer to NRCS Conservation Practice Standard Tree-Shrub Site Preparation (490).
 - select the required number and diversity of tree and shrub species (preference for native edible food plants) that will increase food and forage production for wildlife and humans.
 - select planting technique, arrangement and spacing design, and timing appropriate for the site conditions.

Species	Note selected species characteristic(s)

During implementation:

- install and maintain erosion control measures as needed for the site.
- protect the planting(s) from plant and animal pests and fire.
- notify NRCS in writing of any planned changes to verify changes meet NRCS enhancement criteria.

TASK	Species	Species	Species
Planting Date			
Planting Technique			
Arrangement/Spacing			

NRCS will:

- Prior to implementation:
 - provide and explain NRCS Conservation Practice Standard Tree/Shrub Establishment (Code 612) as it relates to implementing this enhancement.



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- verify the enhancement is planned for the appropriate land use.
- verify no plants on the Federal or state noxious weeds list are included.
- NRCs will provide Technical Assistance, as needed, in the following:
 - Selecting a combination of species to meet enhancement criteria.
 - Selecting planting techniques, arrangement and spacing design, and timing appropriate for the site and soil conditions.
 - Planning the use of additional erosion control for the site, as needed.
 - Preparing specifications for applying this enhancement for each site using approved state implementation requirements, national technical notes, appropriate state technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
 - During implementation, evaluate any planned changes to verify they meet the enhancement criteria and were established to specifications developed for the site.
 - After implementation, verify the plantings were protected from plant and animal pests and fire.
 - After implementation, verify all erosion control needed for the site is functioning and is maintained to specifications developed for the site.
- During implementation:
 - evaluate any planned changes to verify they meet the enhancement criteria and were established to specifications developed for the site.
- After implementation:
 - verify the plantings were protected from plant and animal pests and fire.
 - verify all erosion control needed for the site is functioning and is maintained to specifications developed for the site.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____

Contract Number _____

Total Amount Applied _____

Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date

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WASHINGTON SUPPLEMENT TO CONSERVATION

ENHANCEMENT ACTIVITY

E612D

Additional Criteria for Washington

- In addition to the criteria specified in the National job sheet E612D the following additional criteria apply in Washington:
 - List of Mast producing or otherwise edible woody plant species available in WA for use in plantings for wildlife or human consumption:

Common Names, Plant Groups	Compatible MLRA	Common Names, Plant Groups	Compatible MLRA
Apple (Crab or introduced)	1,2,3,4,6,7,8,9,43,44,	Oak (Oregon White)	2,3,6,8
Blackberry- native & introduced	1,2,3,4,6,8,9,43,44	Pear (native & Introduced)	1,2,3,4,6,8,9,43,44
Chinquapin (Giant)	1,2,3,6	Plum (American & European)	6,7,8,9,43,44
Cherries (native & introduced)	1,2,3,6,8,9,43,44	Raspberry (native & introduced)	1,2,3,4,6,8,9,43,44
Cranberrybush (American)	1,2,3,4,6,43,44	Rose (Native)	1,2,3,4,6,8,9,43,44
Current and gooseberry	1,2,3,4,6,8,9,43,44	Russet buffaloberry	1,2,6,,8,9,43
Elderberry	1,2,6,8,9,43,44	Salal	1,2,3,4
Hackberry (netleaf)	8	Salmonberry	1,2,3,4,6,8,9,43,44
Hawthorn (black)	1,2,8,9,43,44	Serviceberry (Saskatoon & Utah)	6,7,8,9,43,44
Hazelnut (California & Beaked)	1,2,3,6,8,9,43,44	Silverberry	1,2,3,6,8,9,43,44
Huckleberry/ blueberry / whortleberry	1,2,3,4,6,8,9,43,44	Thimbleberry	6,7,8,9,43,44
Labrador tea (Bog & Western)	1,2,3,4	Walnut (English or black)	6,7,8,9,
Maple (Big leaf, Vine, Douglas)- wildlife only	1,2,3,4,6,7,8,9,43,44		

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- The above list of plants have native or well adapted introduced species found in Washington State. This list of woody plants, that provide edible products (for either humans and wildlife), is dynamic and not all inclusive. There are many more cultivated species and varieties that would work well in agroforestry situations here in Washington, particularly if irrigation is available. See Plant Materials Technical Notes for selecting conservation trees and shrubs and National Agroforestry Center publication for more information on forest farming. Notify NRCS if there is a selection of species not found on the above list.
- For a list of pollinator species see WA Biological Technical note 24, which includes list of pollinator species appropriate for Eastern WA by precipitation zone and their bloom period.
- For seedling stock types, planting methods, care, handling, temporary storage and protection options see 612 Specification Guide and Implementation Requirements standard instructions.

Additional Documentation Requirements for Washington

- In addition to the documentation requirements specified in the National job sheet E612D the following additional documentation requirements apply in Washington:
 - Document species composition and abundance (stocking and/or cover) before and after treatment for the planting area.
 - The following actions may be needed to ensure this enhancement functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the enhancement (operation), and repair and upkeep of the enhancement (maintenance):
 - Replacement of dead trees or shrubs will be continued until the agroforestry is considered functional.
 - Thin or prune the agroforestry practice to maintain its function. See Conservation Practice Standard for 666 Forest Stand Improvement and Extension publications for guidance in managing cover and density of trees/shrubs for producing food for humans and wildlife.

- Periodic applications of nutrients may be needed to maintain plant vigor.
- As Needed Implementation Requirements for supporting practices such as:
 - 384 Woody Residue Treatment when there is an unusual amount of woody slash inhibiting planting.
 - 315 Herbaceous Weed Treatment or 314 Brush Management if there is a need for post-planting vegetation control due to pervasive competing vegetation.
 - 484 Mulch or 441 Irrigation system micro-irrigation when moisture management issues are inhibiting establishment of new plantings.
- For long term success of planting, stocking (Survival) surveys should be done and documented for the first 3 years or until the planted and seeded stock are determined to be established and free to grow. If there is enough mortality to compromise the functionality of the planting, then it is recommended that the dead trees or shrubs are replaced. Volunteer trees and shrubs are acceptable replacements if their location maintains the functionality of the planting.

