United States Department of Agriculture

CONSERVATION ENHANCEMENT ACTIVITY

E511B

CONSERVATION STEWARDSHIP PROGRAM

Forage harvest management that helps maintain wildlife habitat cover, shelter or continuity

Conservation Practice 511: FORAGE HARVEST MANAGEMENT

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Pasture

RESOURCE CONCERN ADDRESSED: Animals

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description

The timely cutting and removal of forages from the field as hay, green chop, or ensilage in such a way, and in time frames, to optimize both forage yield/quality and wildlife cover and shelter and/or continuity between otherwise disconnected habitats.

Criteria

- Specify the wildlife species of concern on the state-approved NRCS Wildlife Habitat Evaluation Guide (WHEG). The species of concern must be one that is present for at least part of their life cycle in the geographical/physiographic region.
- The state's WHEG will be completed by a NRCS biologist or partner wildlife biologist. Cover and shelter or continuity habitat requirements for the wildlife species of concern must be specified on the WHEG. The total WHEG score after installation of this practice must be 0.60 or greater.
- Provide suitable habitat for desired wildlife species. This may require changes to harvest schedules, cover patterns, and minimal plant heights while managing the desired forage stand, plant community, and stand life.

- Time harvest to benefit the desired wildlife species by following state guidelines. Whenever possible, avoid harvest during the primary nesting season, harvest during daylight hours, and harvest in patterns (e.g. - beginning on one end of the field and working back and forth across the field or beginning in the center of the field and working outward).

- Cut forage at a height that will promote the vigor while leaving minimal stubble heights required by the desired wildlife species and the Cooperative Extension Service recommendations to avoid winterkill in cold climates.

- Harvest forage without compromising plant vigor and stand longevity and at the stage of maturity that provides the desired quality and quantity to the degree possible while still providing suitable habitat for the desired wildlife species.

- Harvest silage/haylage within the optimum moisture range for the type of storage utilized. Follow Cooperative Extension Service recommendations for moisture content. For optimal dry hay quality, rake at 30% to 40% moisture and ted or invert swaths when moisture is above 40%. Bale field cured hay at 15% to 20% moisture.

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Documentation and Implementation Requirements

Participant will:

- □ Prior to implementation, ensure forage harvesting tool/machinery is capable of cutting the forage at the height required to provide suitable habitat for the desired wildlife species without compromising plant vigor and stand longevity.

- □ Prior to implementation, review the map delineating the fields selected for improving wildlife cover and shelter and enrolled in the enhancement.

- □ Prior to implementation, develop a plan to harvest forage in a manner that protects stand longevity and also maintains or improves wildlife habitat. Plan must include specifications detailing the wildlife protection measures, such as selecting time periods to avoid forage harvest to protect wildlife and ensuring that suitable wildlife habitat exists during critical nesting periods. Refer to NRCS Conservation Practice Standard Forage Harvest Management (Code 511).

- □ Prior to implementation, provide the forage harvest plan to NRCS for review to confirm it meets the criteria of the enhancement.

- □ During implementation, take photographs of forage cutting heights with fields and date of harvest identified.

- □ During implementation, notify NRCS of any planned changes to verify they meet the enhancement criteria.

- □ During implementation, keep the following documentation for each field:

Field	Forage species selected for harvest	Harvest height (inches)	Harvest Date

□ After implementation, make documentation and photographs of forage cutting heights available for review to NRCS to verify implementation of the enhancement.

NRCS will:

□ As needed, provide technical assistance to meet the criteria of the enhancement.

□ Prior to implementation, provide and explain NRCS Conservation Practice Standard Forage and Biomass Planting (Code 512) as it relates to implementing this enhancement.

□ Prior to implementation, an NRCS biologist or partner wildlife biologist will complete the state-approved NRCS WHEG. Specific species targeted will be notated on the WHEG, and total score after implementation must equal 0.60 or greater.

Wildlife Species of Concern	
Cover & Shelter Requirements	
Planned WHEG Score after implementation	

□ Prior to implementation, verify a map has been developed delineating the hayfields that will have the enhancement implemented.

□ Prior to implementation, NRCS will provide technical assistance, as needed to:

- Develop a plan to harvest forage in a manner that protects stand longevity, while also maintaining or improving wildlife habitat. Plan must meet requirements of NRCS Conservation Practice Standard Forage Harvest Management (Code 511).

- Develop specifications detailing the wildlife protection measures, such as selecting time periods to avoid forage harvest to protect wildlife and ensuring that suitable wildlife habitat exists during critical nesting periods.

□ During implementation, evaluate any planned changes to verify they meet the enhancement criteria.

□ After implementation, verify the planned forage harvest was completed to specifications developed for the fields delineated.

□ After implementation, review documentation and photographs of forage cutting heights to verify implementation of the enhancement.

□ If changes were made after implementation, complete the state's approved NRCS Wildlife Habitat Evaluation Guide (WHEG).

Wildlife Species of Concern	
Cover & Shelter Requirements	
WHEG Score after Implementation	

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NRCS Documentation Review:

I have reviewed all required participant documentation and 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

WASHINGTON SUPPLEMENT TO

CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

References for Forage Harvest Management (511) Enhancements

Critical nesting and fawning period in WA State is **spring through July 15th** each year.

Forage Harvest Management References:

Forage Harvest Management (511) Practice Standard and Specification Sheet can be found in the NRCS Field Office Technical Guide (FOTG) Section 4 – Practice Standards and Supporting Documentation/Forage Harvest Management (511) folder. https://efotg.sc.egov.usda.gov/#/state/WA

Idaho Forage Handbook BUL 547 Third Edition
University of Idaho Extension, Moscow, Idaho. Information on hay and pasture management. Idaho Forage Handbook BUL0547.pdf - Google Drive

Pasture and Hayland Renovation for Western Washington and Oregon EB1870, Washington State University Extension.
https://pubs.extension.wsu.edu/pasture-and-hayland-renovation-for-western-washington-and-oregon

Pasture and Grazing Management in the Northwest PNW 614, A PNW Extension Publication. Information on hay and pasture management. Pasture and Grazing Management in the Northwest PNW0614.pdf - Google Drive

Pasture Technical Note No. 105. **The Western Oregon and Washington Pasture Calendar,** A Pacific Northwest Extension Publication PNW 699. Oregon State University, University of Idaho, Washington State University.
https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/pnw699.p df

Wildlife References and WHEG's

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For a **state species list** see WDFW **State Wildlife Action Plan** https://wdfw.wa.gov/species-habitats/at-risk/swap

Washington State's Wildlife Habitat Evaluation Guide (WHEG) is **Biology Technical Note 14 Wildlife Habitat Evaluation Guide (WHEG)**. It can be found in the NRCS Field Office Technical Guide (FOTG) Section 1/References Lists/Technical Notes by Discipline/Biology folder. https://efotg.sc.egov.usda.gov/#/state/WA/documents

Use the Washington Department of Fish & Wildlife (WDFW) **Priority Habitats and Species (PHS) database** to identify priority wildlife and habitat in your area.
http://wdfw.wa.gov/mapping/phs/

For Washington State's **Sage Grouse Habitat Evaluation Guide (WHEG), and other species WHEG's** – contact NRCS State Biologist for the current evaluation guide.

Harvest Recommendations to Produce Excellent Hay Quality

(Taken from Idaho Forage Handbook, Third Edition, BUL 547. University of Idaho. Glenn E. Shewmaker, Editor)

- Quality decreases as plants mature. Schedule harvests to cut at the desired level of plant maturity.
- Consider the daily cycling of forage quality when testing forage and scheduling daily harvest.
- Hay cut in the afternoon has higher quality than morning-cut hay
- Take advantage of good weather to speed drying and harvest when you can.
- Monitor the moisture content of the forage and perform each harvest operation at the optimal time based on moisture content.
- A higher stubble height will allow faster drying from better aeration but will also significantly reduce yield.
- Increasing windrow width in heavy hay from 48 to 60 inches allows for faster dry-down, however, in light hay an increased windrow width is not necessary.
- Swathers need to be in good repair and their settings adjusted for proper conditioning of forage.
- Condition the crop during swathing (scars plant epidermis for moisture escape).
- The "super conditioner" may provide faster dry-down of alfalfa hay in some conditions.
- Rake, roll, or ted the windrowed forage (increases air movement in windrow) as necessary.
- Raking or merging swaths into larger windrows has advantages when large harvest equipment is used, such as 1-ton balers. Larger windrows allow more efficient balling because (1) hay entering the full width of the baler pickup forms a more rectangular bale, (2) fewer passes are required by the baler on the field, and (3) balers can operate at slower ground speeds.