NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

UPLAND WILDLIFE HABITAT MANAGEMENT

(Acre)
Code 645

DEFINITION

Provide and manage upland habitats and connectivity within the landscape for wildlife.

PURPOSE

Treating upland wildlife habitat concerns identified during the conservation planning process that enable movement or provide shelter, cover and food in proper amounts, locations and times to sustain wild animals that inhabit uplands during a portion of their life cycle.

CONDITIONS WHERE PRACTICE APPLIES

Land where the decision maker has identified an objective for conserving a wild animal species, guild, suite or ecosystem.

Land within the range of targeted wildlife species and capable of supporting the desired habitat.

CRITERIA

General Criteria Applicable to all Purposes.

Food and cover requirements for upland wildlife may be provided by habitat elements that are part of other existing or proposed management systems or land uses.

The habitat elements fulfilling the food and cover requirements for wildlife and their management must be identified in the management plan.

Development and management options will be based on either:

- Target wildlife species; including species of cultural significance, as the primary planning objective to achieve the minimum habitat criteria requirements of the select species of wildlife; or
- Habitat diversity and quality on a planning unit where wildlife is not the primary planning objective.

1. Target Wildlife Species:

- **MN Biology Technical Note #9**, species specific "Fish and Wildlife Habitat Management Guide Sheets."
- "Pollinator Habitat Assessment."
- Other species models as appropriate.

Evaluate whether the minimum habitat criteria requirements of the desired species of wildlife are met by the existing habitat and management plan.

1. Retain and manage existing habitat of value or develop new habitat for the desired species.
2. Establish or install appropriate habitat elements that are lacking through planting, construction, or other appropriate activities.
3. Preserve habitats of special value as food, cover, or water.

2. Habitat Diversity:

The Minnesota "Wildlife Habitat Evaluation System" (WHES) will be used to evaluate, in general terms, the quality of existing wildlife habitat on a farm/planning unit, when wildlife is not the primary planning objective. WHES is useful in identifying deficient landscape features for wildlife on the farm/planning unit. See **Biology Technical Note #4**.

Habitat Elements: The following habitat elements will be considered when assessing wildlife habitat. Not all may apply to every habitat type.

1. Food
2. Cover
3. Water
4. Interspersion and distance to:
   - crops
   - grasses and or legumes
   - trees/shrubs
   - water

Quality Criterion:

- The farm, field, or habitat type will be appraised using WHES; species guide sheets, or similar assessment. The evaluation will result in a quality rating or Habitat Suitability Index (HSI).
- If the HSI indicates a rating below the minimum of 0.5, alternatives will be recommended that will result in the necessary changes in habitat elements or their management to bring the HSI rating to 0.5 or greater.

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact the MN NRCS in your area, or download it from the eFOTG for MN.

- If the HSI rating is 0.5 or greater, alternatives may be recommended that will result in the necessary management to maintain or improve the existing habitat quality. The land user will be informed of the opportunities to raise the quality of the habitat towards the highest HSI rating of 1.0. Various combinations of criteria described under habitat elements, may be used to maintain or improve an area.

When the necessary measures or criteria required in above have been established, then practice standard Upland Wildlife Habitat Management (645) will be considered applied for that field or farm.

Criteria for Management of Upland Wildlife Habitat.

As indicated by the WHES or select species requirements, certain elements may be weak or missing. Management or development of habitat to provide for or strengthen the weak or missing elements may be accomplished by the following conservation practices or measures. Criteria or guidance for installation of these practices are described in the appropriate practice standards, job sheets, etc.

- The amount and kinds of habitat elements planned, their location and management shall be identified in a management plan.
- Vegetative manipulations to restore plant and/or animal diversity shall be accomplished by prescribed burning or mechanical, biological or chemical methods, or a combination of the four.
- Where feasible and when used following the criteria of a burn plan and local permit requirements, prescribed burning shall be utilized instead of mowing.
- Livestock grazing or haying shall be conducted to maintain or improve vegetation structure and composition so as to improve the desired wildlife habitat. When grazing or haying is planned consult standard Prescribed Grazing (528) for information on species potentially toxic to livestock and standard Forage Harvest Management (511) for information on proper forage harvesting.
- To protect forbs and legumes that benefit native pollinators and other wildlife and provide insect food sources for grassland nesting birds, spraying or other control of noxious weeds shall be done on a “spot” basis.
- This standard does not attempt to list all possible wildlife habitat development and management practices. Others may be recommended by an NRCS Biologist or other technical wildlife agency.

Management of Permanent Herbaceous Cover: Native plants and plant communities are encouraged since they are well-adapted to sites, less invasive, and likely to provide quality habitat without costly long term maintenance. However, due to cost, availability and landscape position, native plants may not be feasible in all situations.

Optimum size and height of herbaceous cover for nesting is dependent upon the species of concern. Refer to species specific requirements for individual species recommendations. In general, 20-40 acres is recommended minimum area; however, some wildlife species are area sensitive and may require larger blocks to provide suitable habitat conditions. Minimum size is 1.0 acre.

Encourage blocks of herbaceous cover as opposed to linear plantings. Optimum width of herbaceous cover is 300'-600', with a minimum width of 100'. Locate to increase the interspersion of cover types, locate adjacent to existing escape cover and food.

Protect seeding from mowing, burning, and grazing during the primary nesting season (May 1– August 1) except as part of a management plan.

Refer to practice standards Prescribed Burning (338) and Prescribed Grazing (528); and **Biology Job Sheets #3 – “Grassland Management for Wildlife” and, #7 – “Prescribed Burning”** for additional management criteria and specifications.

Refer to NRCS practice standard Conservation Cover (327) and **Biology Job Sheets #8 – “Establishment of Introduced Grass and Legumes for Wildlife” and, #9 –“Establishment of Native Grasses and Forbs for Wildlife”** for seeding criteria and specifications.

Food Plot: A food plot is annual or perennial planting to provide food for a variety of wildlife species.

- Recommended food plot size is between 2-5 acres. Food plots will be a minimum 0.25 acre. In the absence of adequate winter cover, large block food plots (5-10 acres) may be planted to serve as both food and shelter.
- Annual plantings should be rotated, where one half of the plot is planted each year while the unplanted half grows to annual weeds.
- Snow drifting can be lessened by establishing snow traps. Harvest 12-20 rows just inside of the outer 4-6 rows on the windward side.
- If food plots are relocated or discontinued, the site will be reseeded based on this standard.

- The food plot should be adequately fertilized and weeds controlled to avoid excessive competition. The presence of some weeds such as foxtail and ragweed benefit wildlife by providing a high protein seed source.
- Food plots will be protected from livestock grazing.
- Refer to **Biology Job Sheet #2 – "Wildlife Food Plots"** for additional criteria and specifications.

Forb and Legume Inter-Seeding: Native forb, native legume and non-native legume inter-seeding are used to increase plant diversity in native and introduced grass plantings or in old field habitats. Inter-seeding provides wildlife with a food source during the winter. It can also create excellent brood habitat for upland wildlife during the summer. This practice will be used after a disturbance such as prescribed burning, disking or herbicide spraying.

Refer to **Biology Job Sheet #13 - "Forb and Legume Inter-seeding for Wildlife"** for additional criteria and specifications.

Pollinator Habitat Management: Active management is used to develop and maintain predominantly grassland habitats established to benefit pollinator species.

Management actions shall occur outside of the primary nesting season for wildlife, generally prior to May 1 or between August 1 and September 1.

Manage no more than 1/3 of the pollinator habitat each year over a three year period.

Pollinator habitat may be managed by one or a combination of the following methods: Mechanical disturbance or Prescribed Burning.

1. Mechanical Management includes mowing or light disking.

Mowing

- Use a rotary or flail mower to evenly distribute grass clippings. Do not swath, as the windrows will smother seeding. Clippings may also be baled, removed from the field.
- Mow no shorter than 12-16 inches.
- Reduce mower speed to 8 mph or less.
- Use a flushing bar to move wildlife out of the mowing path.
- Avoid mowing at night.

Light Disking/Harrowing

Light disking or harrowing (2-4" deep) of existing stands can increase the amount of open ground and encourage pollinator nesting areas and a diverse plant community of annuals and perennials.

Recommended timing to promote pollinator habitat: Mechanical disturbance shall occur in the fall (October – early November) when flowers have died back or are dormant. Disturbance at this time will also minimize disruption to nesting bumble bees.

2. Prescribed Burning.

Low intensity prescribed burns can allow germination of seed bearing annuals, increase plant species diversity, control unwanted woody vegetation, and open up the stand for pollinator nest sites.

Recommended timing to promote pollinator habitat:

- Early or late in the day is preferred.
- Fall (October-Early November) burns tend to favor pollinator habitat.

Refer to **Biology Job Sheet #17 - "Pollinator Habitat Management"** for additional specifications.

Cropland Management: Many conservation practices provide high quality habitat components in cropland. Introduction of cover types and plant diversity add to increased habitat values.

Refer to **Biology Technical Note #4, "Minnesota Wildlife Habitat Evaluation System (WHES)"** for a listing of conservation practices and appropriate cropland recommendations beneficial to wildlife.

Monitoring: Monitoring of applied practices will be used to determine if the conservation system meets or exceeds the minimum quality criteria for the targeted wildlife. Management will be implemented based on the findings of the habitat assessment and monitoring.

Examples of monitoring include but are not limited to: photo points taken, use documentation by livestock, regeneration/breeding success, completing an annual management records log, documenting wildlife sightings, documenting location and species of invasive plants and condition of vegetative and structural treatments.

CONSIDERATIONS

All land uses provide habitat for wildlife, but there is great variability in the quality (condition) of the land to support wildlife. A land use may provide one or more of the habitat elements necessary for a particular species during specific seasons of the year.

Manipulation of habitat may impact more than the desired kinds of wildlife. These possible effects will be evaluated and taken into consideration during the planning process. This practice will be used to promote the conservation of declining species, including threatened and endangered species.

- Threatened and Endangered Species - Careful consideration should be given to endangered or threatened species and non-target wildlife species during the planning process.
- Habitat Diversity - The interspersion or the intermixing of the various upland wildlife habitat components is habitat diversity. Numerous habitat types in small units provide a maximum amount of diversity or edge important for most farmland wildlife species. However, creating edge could result in habitat fragmentation for some wildlife species and adversely affect them.
- Habitat Linkages - Linking fragmented habitats or cover types with corridors may greatly increase the use of an area by wildlife.
- Limiting Factors - Some conditions will limit population growth within the home range of a species. Remove that condition, and numbers will increase to the point where another factor becomes limiting.
- Plant Communities - Many wildlife species prosper at some stage of plant succession before climax. Others are dependent on climax communities. Knowledge of the local plant communities, plant species successional stages, and associated animals is essential for providing accurate wildlife management assistance.
- Daily and Seasonal Ranges - Each individual animal has a home range. All the requirements for its livelihood must be found within this range. Food must be present within physical reach. Cover plants must be present and in sufficient quantity and quality to be useable for the species daily and seasonal needs.
- Population Management - NRCS assistance generally involves only habitat appraisal and recommendations on habitat development and management. Assistance for direct wildlife population management should be referred to the Minnesota Department of Natural Resources.

PLANS AND SPECIFICATIONS

Plans and specifications for establishment and maintenance of this practice shall be prepared for each site. Plans and specifications shall be recorded using approved specification sheets, job sheets, technical notes, or narrative documentation in the conservation plan, or other acceptable documentation.

NRCS staff is encouraged to work closely with the NRCS Biologist or MDNR Wildlife Manager in developing site specific plans and specifications. These documents are to specify the requirements for installing the practice, such as the kind, amount or quality of materials to be used, or the timing or sequence of installation activities.

OPERATION AND MAINTENANCE

An operation and maintenance plan shall be developed that is consistent with the purposes of this practice, its intended life, and the criteria for its design.

Actions will be carried out to ensure this practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the practice (operation), and repair and upkeep of the practice (maintenance).

This practice will be inspected periodically and restored as needed, to maintain the stated purpose. Additional operation and maintenance requirements will be developed on a site specific basis to assure performance of the practice as intended.

Management measures shall be provided to control invasive species and noxious weeds.

REFERENCES

Establishing and Maintaining Nesting Cover for Wildlife, MDNR Section of Wildlife, 1987.

Landscaping for Wildlife. MDNR. 1987.

Trees and Large Shrubs: Species Native to Minnesota's Ecological Regions. MDNR. 1995.

USDA–NRCS. MN Biology Technical Notes. http://www.mn.nrcs.usda.gov/technical/ecs/TechNotes/Biology/biology.html

USDA–NRCS. MN Biology Job Sheets. EFOTG, Section IV. http://efotg.sc.egov.usda.gov/treemenuFS.aspx

#1 Brushland and Browse Management for Wildlife Habitat
#2 Wildlife Food Plots
#3 Grassland Management for Wildlife Habitat
#6 Forest Stand Improvement for Wildlife
#7 Prescribed Burning
#13 Forb and Legume Inter-seeding for Wildlife
#17 Pollinator Habitat Management

Xerces Society for Invertebrate Conservation. www.xerces.com