

## CONSERVATION PRACTICE SPECIFICATION

### Wetland Wildlife Habitat Management - 644

Wetland Wildlife Habitat Management – 644 shall be planned and applied in accordance with the NRCS Standard detailed in the Field Office Technical Guide (FOTG) – Section IV – Conservation Practices. This document provides conservation planners with the parameters, procedures, and requirements for developing site-specific wetland wildlife habitat management plans for a variety of species or wetland types. Where appropriate, specific references are noted and hot linked to provide detailed information needed for a successful design.

Wetlands and adjacent uplands provide habitat for many wildlife species. Wetlands associated with cropland, pastureland, woodland, and rangeland all produce and support wildlife by providing some or all of the basic habitat elements. Habitat value depends on the quality, quantity, and interspersions of food, water, cover, and living space. To provide complete habitat, all requirements for the wildlife species must be found within its home range.

Planning alternatives for wildlife will be based on a habitat appraisal. The ND-NRCS Wildlife Habitat Evaluation Guides will be used. These guides evaluate habitat for wetland wildlife species diversity and are found in FOTG – Section I – Reference Subjects – Biology. When a habitat appraisal for a particular wildlife species is desired, the USDI Fish and Wildlife Service Habitat Evaluation Procedure (HEP), or other NRCS approved methods may be used. Contact the State biologist for the appropriate model and training as needed.

NRCS planning assistance generally involves wetland wildlife habitat evaluation and recommendations for habitat development and management. Assistance for direct wildlife population management may be requested from local North Dakota Game and Fish Department (NDGFD) biologists; assistance for migratory birds and Threatened or Endangered Species from USDI Fish and Wildlife Service (FWS) biologists. NRCS can help landowners monitor population trends for some wildlife species. Contact the State biologist for population trend survey methods if the landowner is interested in more intensive management of these species.

NRCS wetland wildlife habitat planning assistance shall not adversely impact a Federally-listed Threatened, Endangered, or Candidate species or its habitat.

Wetland habitat manipulation for a given species may adversely affect other wildlife species. Evaluate each planning unit holistically, in the light of the larger landscape. Determine how management of the unit can benefit regional wildlife populations. It may not be beneficial to maximize habitat diversity on each planning unit. Ground-nesting birds associated with wetlands, for example, often need minimum edge with larger blocks of uniform herbaceous nesting cover to escape predation.

This document provides minimum habitat requirements for a variety of North Dakota wildlife species and for specific land uses. To satisfactorily implement this practice, the habitat requirements for the planned kind(s) of wildlife must be available or created according to a planned management system or the land use managed for general wildlife requirements.

Wetland Wildlife Habitat Management is a resource management system - not a single practice. In order to accomplish the goals of the resource management system, a variety of NRCS practices can be employed to maintain and enhance wetland wildlife habitat.

Planning assistance may apply to two levels of wildlife habitat management. The first is for situations where wildlife production is the primary goal of the land unit. The second applies to planning units where wetland wildlife is a secondary consideration, such as hay land or grazing land.

**\*NOTE: Underlined items are required for meeting the FOTG Practice Standard 644 Wetland Wildlife Habitat Management**

**Conservation Practice Specification - 644**

**June 2010**

**Page 1 of 9**

All habitats will be planned and managed according to soil capabilities.

Each species of wildlife has a daily and seasonal home range. All of an animal's habitat requests (i.e. food, shelter, water, and living space) must be found within its home range. Vegetative habitat components must be interspersed in a way to provide feeding areas near escape, nesting, and thermal cover.

## **Wetland Functions:**

Wetland functions are based on three main components; water (hydrology), vegetation, and soils. The NRCS conservationist's primary wildlife management tool is the manipulation of vegetative habitat and hydrology components. Wetland soils are not usually manipulated except to restore wetland hydrology or to remove sediments. Use conservation practice 657 - Wetland Restoration for sediment removal from wetlands. Sediment control is addressed by facilitating practices such as 329 - Residue and Tillage Management – No Till/Strip Till/Direct Seed, 393 - Filter Strip, 412 - Grassed Waterway, and 390 - Riparian Herbaceous Cover. All conservation practices are located in FOTG – Section IV – Conservation Practices.

*Information in this section provides guidance to evaluate existing wetland habitat and for planning improvements on existing cover and hydrology.*

## **Hydrology**

Shallow and deep-water areas on agricultural land provide vital habitat for wetland wildlife. A diversity of water regimes provides ideal wetland complexes for wetland wildlife. A complex of temporarily flooded, seasonally flooded, and semi-permanently flooded wetlands is common on the prairie landscape east and north of the Missouri River. These prairie wetlands maintain hydrology in one of three ways: through groundwater recharge, flow-through systems, and groundwater discharge. The water regime is determined by several factors, including climate, landscape position, configuration of the associated water table, and the type of underlying geological substrate (Euliss et al. 1999). The wetland complexes that provide a combination of small and shallow wetlands along with larger and deeper wetlands provide varying hydrology for wildlife at vital stages throughout their life cycle (Johnson et al. 1997). The water regime will ultimately determine the plant community that will be supported in a wetland complex.

Manipulation of the wetland water regime is not a part of the specification and in most cases not necessary to provide additional wetland habitat. However, restoration of drained wetlands to their pre-existing state is recommended when possible. Changes in wetland hydrology that cause a change in wetland class or subclass should only be done with a specific management goal. Conservation practice 658 - Wetland Creation, 659 - Wetland Enhancement and 657 - Wetland Restoration are used for hydrology restoration or creation.

## **Wetland Vegetation Management**

Herbaceous and woody plants adapted to moist or wet sites provide wetland obligate species cover and food sources. Wetland vegetation also provides winter food and cover for upland wildlife (refer to 645-Upland Wildlife Habitat Management).

Wetland plant communities can be manipulated for wildlife using 338 - Prescribed Burning, 528 - Prescribed Grazing, mowing, herbicides (595 - Pest Management), or water level control.

- Establishment of wetland plants often occurs naturally from seed reserves and seed transported by wind, water, wildlife and livestock. However, invasive species often dominate volunteer wetland plant communities. Seed is commercially available for some native species. Establishment using sprigs or using plugs collected near the site is usually very successful. For wetland vegetation planting plans, refer to Wetland Restoration – 657 and the NRCS Wetland Science Institute – Wetland Restoration, Enhancement, and Management Handbook found in FOTG - Section I – Reference Subjects – Wetlands subfolder.
- Any wetland manipulation for wetland wildlife must be done after careful consideration of impacts to wetland-dependent species.

**\*NOTE: Underlined items are required for meeting the FOTG Practice Standard 644 Wetland Wildlife Habitat Management**

**Conservation Practice Specification - 644**

**June 2010**

**Page 2 of 9**

- Wetlands in cropland are maintained by nutrient management, pest management, sediment control and residue/vegetation management. Facilitating practices that can be utilized in or near a wetland are 590 - Nutrient Management, 595 - Pest Management, 329 - Residue and Tillage Management – No Till/Strip Till/Direct Seed, 393 - Filter Strip, 412 - Grassed Waterway, and 390 - Riparian Herbaceous Cover.
- Excess nutrients lead to monotypic stands of reed canary grass, cattail, and/or phragmites. Annual haying may somewhat offset excessive nutrients in a wetland, but is less effective than removing the cause. Routine haying generally does not favor plant diversity.
- Emergent vegetation can be maintained through occasional management to avoid monotypic stands of cattail. Potential practices include 338 - Prescribed Burning, 528 - Prescribed Grazing, and 511 - Forage Harvest Management.
- Intermittent, light grazing helps improve/maintain plant diversity.
- White top (*Scolochloa festucacea*), a species highly valued for hay that grows in seasonal and semi-permanent wetlands, has soft roots. It is very susceptible to damage/death from hoof action and should not be grazed.
- Management of noxious weeds is required. Refer to conservation practice 595 - Pest Management.

### **Upland Vegetation in a Wetland Complex:**

Upland vegetation plays an important role in wetland function. Not only does it provide habitat for wetland wildlife that use associated uplands for part of their life requests, but upland vegetation also protects the wetland from sedimentation, nutrient loading and from encroachment of farming practices. Installation of conservation practices that protect or install a wetland buffer will benefit overall wetland function. Refer to practice 645 - Upland Wildlife Habitat Management for details.

### **Planted Woody Cover\***

Planted woody cover can provide some wetland wildlife species thermal, reproductive, and escape cover as well as food in the form of seeds, fruits, nuts, buds, catkins, twigs, and leaves. However, planting of woody habitats nearby or within wetland complexes can and does have a negative impact on grassland nesting birds including waterfowl. Planted woody cover can have a significant positive impact on winter habitat for ring-necked pheasant and year-round white-tailed deer habitat. Wetland woody shrub species such as sandbar willow and false indigo should be considered over tall trees.

Woody plantings planned for wildlife in a wetland must be approved by an NRCS biologist before installation, if the species were not indigenous to the site. Use tree and shrub species recommended for the desired wildlife species. Refer to Tree and Shrub Characteristics in FOTG Section I – Reference Subjects – Windbreaks and Woodland subfolder for recommended wildlife trees and shrubs. For adaptation of woody plants to specific soils and climate, refer to FOTG - Section II – Windbreaks and Forest – Expected 20-Year Tree Height and Windbreak Suitability Group Descriptions. Planting indigenous woody species in a wetland is addressed by practice 657 - Wetland Restoration.

### **Aquatic Invertebrates**

Aquatic invertebrates are especially important to wildlife because of the dietary nutrients they supply. Breeding female waterfowl especially rely on the rich sources of aquatic invertebrates in temporary and seasonal wetlands for nutrition (protein and calcium) to produce eggs (Johnson, *et. al*, 1997). In addition, shorebirds and wading birds rely on aquatic invertebrate resources for much of their diet. Also, reptiles and amphibians prey on aquatic invertebrates as a major food source.

Because of the dynamic and harsh environment of North Dakota, aquatic invertebrates tend to be ecological generalists, meaning the diversity in each wetland is low (Euliss, *et. al*, 1999). Because the species are limited, it is imperative that natural conditions are maintained to encourage the propagation of the aquatic invertebrates.

\*NOTE: Underlined items are required for meeting the FOTG Practice Standard 644 Wetland Wildlife Habitat Management

Cultivation, drainage, chemical applications, nutrient run-in, and sediment deposition must be limited to maximize aquatic invertebrate production in wetlands.

Implementation of facilitating conservation practices can improve habitat for aquatic invertebrates: 329 - Residue and Tillage Management – No Till/Strip Till/Direct Seed, 393 - Filter Strip, 412 – Grassed Waterway, 590 - Nutrient Management, 595 - Pest Management, 528 - Prescribed Grazing, 645 - Upland Wildlife Habitat Management, and 390 - Riparian Herbaceous Cover.

## Individual Wildlife Habitat Considerations:

### Waterfowl

#### General Habitat Requirements

A combination of all wetland types provides optimum habitat for waterfowl. Temporary wetlands may pond 6 - 12 inches for about a month in the spring, and provide feeding and breeding territories for dabbling ducks. Seasonal wetlands typically pond 6 - 18 inches from spring to mid-summer, allowing for dabbling duck feeding and breeding territories, and limited brood rearing. Diving ducks may also utilize seasonal wetlands for feeding. Semi-permanent wetlands pond 12 - 36 inches throughout most years, and provide excellent waterfowl habitat especially when the vegetative composition is one-third emergent vegetation. Dabbling and diving ducks feed, breed, nest (mainly diving ducks), rear broods, and rest during migration on semi-permanent wetlands. On permanent wetlands (36 inches and deeper throughout the year) open water is used during resting and feeding, and especially by diving ducks during migration.

In addition, upland nesting cover is required by many dabbling duck species including mallards, pintails, teal, widgeon, shovelers, gadwalls, and others. Tall, very dense vegetation is necessary to optimize nest cover for these species, especially where the acreage of cover is limited (pintails and teal tend to nest in somewhat shorter, more open cover). Fallen-over vegetation and abundant litter are prerequisites for quality dense nesting cover. The stand should be dense enough to make walking difficult. Nesting hens should be so concealed by the vegetation and litter as to not be visible at distances of two to three feet. Blocks of cover at least 40 acres in size are recommended to reduce excessive nest predation. Nests in cover patches smaller than this will probably suffer heavy losses by red fox, raccoons, skunks, and other predators. An exception to this may occur in large blocks of rangeland where human-adapted predator populations are relatively low. Here, native nest cover may be sparse compared to that described above, but patch size is large enough and predator populations low enough to allow high nest success. Studies also show that ducks will use winter wheat, especially in areas containing high densities of wetlands but limited nesting cover. (Duebbert).

#### Dabbling Ducks (Teal, Mallard, Pintail, Shoveler, Gadwall, etc.)

- Management for dabbling ducks requires both upland and wetland habitats.
- Shallow water areas provided by temporary and seasonal wetlands are needed to attract dabbling ducks for breeding pair habitat in the spring and provide an early food source.
- Waterfowl pair and brood habitat will be located within one mile of nest cover.

#### Nest Cover

- Nesting cover consists of residual herbaceous material that will provide new growth and/or standing residue at least eight inches tall from mid-April through July 15.
- Recommended seed mixtures for introduced dense nesting cover and native nesting covers are included in conservation practice 645 – Upland Wildlife Habitat Management.
- Implement grassland management on adjacent wetland areas after the nesting season to allow for adequate cover (delay mowing, tilling, and cutting until after July 15).

#### Brood Cover

\*NOTE: Underlined items are required for meeting the FOTG Practice Standard 644 Wetland Wildlife Habitat Management

**Conservation Practice Specification - 644**

**June 2010**

**Page 4 of 9**

- Deep-water areas that normally retain water throughout the summer are provided by deeper seasonal wetlands and semi-permanent wetlands or by shallow dugouts with emergent vegetation, including bulrushes, cattails, rivergrass, smartweeds, prairie cordgrass, and slough sedge.
- If water control structures are installed, water levels will be manipulated to achieve a long-term vegetation cover to open water ratio of 50:50.

#### **Food Supply**

- Preferred foods are seeds, tubers, or stems of water milfoils, smartweeds, wild millets, pondweeds, bulrushes, sedges, spike sedge, and coontail; waste grains, snails, insects and various other invertebrates.
- Upland field feeding occurs on agricultural crops by some dabbling duck species.
- Improve water quality through nutrient, pesticide, and sediment management to maintain invertebrate and aquatic plant populations.

#### **Diving Ducks (Canvasback, Redhead, Ruddy Duck, Lesser Scaup)**

- Waterfowl pair and brood habitat will provide at least 1 wetland basin that is either seasonal or semi-permanent, with 30 to 50 percent emergent vegetation. Wetlands with cattail margins and open water centers are preferred.

#### **Nest Cover**

- Provide dense emergent vegetation (i.e. bulrushes, cattails, whitetop, slough sedge other emergent vegetation associated with cattails) on seasonal and semi-permanent wetlands. Redheads will parasitize other over-water waterfowl nests and occasionally upland waterfowl nests. Redheads will occasionally nest in upland associated with seasonal and semi-permanent wetlands.

#### **Brood Cover**

- Preferred brood cover consists of open water areas interspersed with some emergent vegetation (cattails, bulrushes, etc).

#### **Food Supply**

- Preferred foods are water milfoils, wild celery, widgeongrass, muskgrasses, pondweeds, coontail, duck potato, smartweeds, bulrushes; snails; and aquatic larvae and insects. Temporary and seasonal wetlands are important for feeding and loafing areas.
- Improve water quality through nutrient, pesticide, and sediment management to maintain invertebrate and aquatic plant populations.

#### **Cavity-Nesting Ducks (Wood Ducks, Mergansers, etc.)**

- Cavity-nesting ducks nest in woodland along lakes, rivers, and vegetated wetlands.
- At least 10 acres of wetland or other aquatic habitat should be available in a contiguous unit or in an isolated parcel separated by no more than 100 feet of upland in close proximity to nesting habitat.

#### **Nest Cover**

- Provide woody cover within 20 feet of the wetland or water edge with cavity trees or nesting structure.
- Artificial nesting structures can be installed. Plans for structures can be found at [ftp://ftp-fc.sc.egov.usda.gov/WHMI/WEB/pdf/woodduck\(1\).pdf](ftp://ftp-fc.sc.egov.usda.gov/WHMI/WEB/pdf/woodduck(1).pdf)

#### **Brood Cover**

- Provide seasonal and semi-permanent wetlands, streams, ponds, and/or lakes. Adequate cover for broods consists of dense, emergent, herbaceous vegetation, emergent shrubs with crowns about 3 - 4 feet above the water surface, or fallen woody debris that covers up to 60 percent of the water surface.
- A ratio of 50 - 75 percent emergent cover to 25 - 50 percent open water is preferred.

**\*NOTE: Underlined items are required for meeting the FOTG Practice Standard 644 Wetland Wildlife Habitat Management**

**Conservation Practice Specification - 644**

**June 2010**

**Page 5 of 9**

- Reliance on permanent, deeper water bodies should be avoided to minimize duckling mortality from aquatic predators such as snapping turtles and large fish.

#### Food Supply

- Preferred foods include seeds from trees, aquatic insects, aquatic plants, and small fish.
- Improve water quality through nutrient, pesticide, and sediment management to maintain invertebrate and aquatic plant populations.

#### Habitat Management

- Practice 666 - Forest Stand Improvement should have long-term benefit to cavity-nesting species, but might reduce nest cavity sites in the short term. If this practice is planned, evaluate the impact on nest cavity sites in both the short-term and long term. Consider installing artificial nest structures to mitigate any reduction in nest cavities.
- Restoring area of trees adjacent to wetlands can improve habitat for cavity-nesting ducks. Practice 391 - Riparian Forest Buffer can be incorporated.

#### Canada Goose

- Provide semi-permanent and permanent wetlands that are at least 10 acres or more in size, with 5 - 20 percent tall emergent vegetation.
- Geese will utilize upland areas that contain succulent greens and waste grains.

#### Nest Cover

- Provide dense emergent vegetation or shrubby vegetation on seasonal and semi-permanent wetlands. Such vegetation may include bulrushes, cattails, whitetop, slough sedge, or cordgrass.
- Artificial nest structures may be installed within a seasonal or semi-permanent wetland to decrease predation. Plans for artificial structure can be found at <http://www.npwrc.usgs.gov/resource/wildlife/ndblinds/woodduck.htm>

#### Brood Cover

- Open water areas.

#### Food Supply

- Preferred foods are water milfoils, wild celery, widgeongrass, muskgrasses, pondweeds, coontail, duck potato, smartweeds, bulrushes; snails; and aquatic larvae and insects.
- Grazing on grassland vegetation such as Kentucky bluegrass is a desired food source.
- Grain crops and stubble on uplands are another viable food source.

### Shorebirds or Wading Birds

#### General Habitat Requirements

- For many breeding shorebirds, landscape context of varying wetland complexes and habitats is important. Management of adjacent grasslands can create essential upland habitat for breeding shorebirds through practices such as prescribed grazing, mowing, or prescribed burning at appropriate times of the year.
- A key to managing habitat for migrating shorebirds is to encourage invertebrate production and then make invertebrates available to birds throughout the spring and summer/fall migratory periods.
- Nesting occurs between April and early July.
- Feeding and nesting sites should be in close proximity.

\*NOTE: Underlined items are required for meeting the FOTG Practice Standard 644 Wetland Wildlife Habitat Management

Conservation Practice Specification - 644

June 2010

Page 6 of 9

### Nesting Cover

- Preference is typically open, sparsely vegetated nesting cover near shallow water, including wetland edges.

### Food Supply

- Shorebirds feed predominantly on insects, aquatic invertebrates, mollusks, and small fish found in very shallow water areas (4 inches deep or less). Managed shallow water areas can be a very important source of food for shorebirds during their spring migration.
- Food diversity can be enhanced through creation of different habitat types within a wetland complex through drawdown and flooding management.

### Habitat Management

- In artificial wetland settings, water control structures can be used to regulate water levels (reflooding and drawing down) to provide productive shorebird foraging habitat.
- On sites that do not have native vegetation, maintenance of favorable shorebird habitat can be achieved by shallow disking the moist soil areas every 2 - 3 years, removing thick, emergent vegetation. Disking removes this vegetation and mixes the organic plant material into the soil, which attracts invertebrates. Do not remove native vegetation for this purpose.
- Natural wetland areas without water control structures should function in natural hydrologic cycles, and periodically provide shorebird habitat.
- Avoid pesticide and herbicide use around shorebird habitat to reduce degradation of food and cover.

For more information on management of habitat for grassland nesting birds see Fish and Wildlife Habitat Management Leaflet Number 17 Shorebirds at <ftp://ftp-fc.sc.egov.usda.gov/WHMI/WEB/pdf/SHOREbirds1.pdf>.

## Amphibians and Reptiles

### General Habitat Requirements

- Amphibians and reptiles have small home ranges, thus appropriate terrestrial habitat and diversity of wetland habitats of differing hydro-periods must be available in relatively close proximity.
- A wetland with a diverse topography that supports a variety of mud flat, emergent, and submergent vegetation zones can support abundant populations.
- A maximum of 20 percent of the surface water area will have water depths from 3 - 5 feet deep, and at least 50 percent of the area will be less than 1.5 feet deep at the design level.
- Basking structures such as semi-submerged logs, stumps and log piles at a rate of 5 per surface acre will be installed if needed.
- Establishment of corridors connecting natural areas within agricultural environments provides safe movement patterns for reproductive activities and food foraging.
- Amphibians and reptiles are very sensitive to pesticides; therefore, utilize 393 - Grass Filter Strips and 390 - Riparian Herbaceous Cover to provide a buffer between the wetland and area where pesticides will be applied.
- Mowing in and around wetlands and drainage ditches must be avoided mid-spring through mid-fall.
- Livestock activity in wetlands should be minimized during the breeding-tadpole stages, approximately May 10 to August 1. An appropriate grazing plan should be in place on upland areas. Refer to practice 528 - Prescribed Grazing.

For more information on reptile and amphibian habitat management, refer to 'Habitat Management Guidelines for Amphibians and Reptiles of the Midwest' at <http://herpcenter.ipfw.edu/Downloadables/MWHabitatGuide/Index.htm>.

**\*NOTE: Underlined items are required for meeting the FOTG Practice Standard 644 Wetland Wildlife Habitat Management**

**Conservation Practice Specification - 644**

**June 2010**

**Page 7 of 9**

## Aquatic Furbearers

### General Habitat Requirements

- Aquatic furbearers inhabit seasonal, semi-permanent wetlands, permanent wetlands, and stream areas that provide year-round cover and food.

### Cover

- Provide semi-permanent wetlands or intermittent streams with abundant emergent vegetation, or permanent wetlands or perennial streams with dense, emergent vegetation along the shore.
- Winter cover can vary from dens to lodges constructed of matted aquatic vegetation, as long as access to water is available (i.e. under ice, running streams).

### Food Supply

- At least 50 percent of the water area should have dense emergent vegetation consisting of cattails and/or bulrush species.
- Invertebrates and other small mammals that share the same habitat are a source of food for aquatic furbearers.

### Other Wildlife

- Wetland habitat is often important for white-tailed deer, raccoon, wrens, ring-necked pheasant, prairie chicken, gray partridge, and fox, depending on vegetation height, density, and management.
- Emergent wetland vegetation is a significant winter cover for several species including the ring-necked pheasant, gray partridge, sharp-tailed grouse and deer.

## OPERATION AND MAINTENANCE

- Manage vegetation in accordance with applicable criteria listed in this document. As appropriate, follow additional wildlife criteria for facilitating conservation practices:
  - 314 - Brush Management
  - 647 - Early Successional Habitat Management
  - 511 - Forage Harvest Management
  - 595 - Pest Management
  - 338 - Prescribed Burning
  - 528 - Prescribed Grazing
- Control noxious weeds in accordance with State and local laws.
- Inspect artificial nest structures in late winter. Clean and repair, or replace as needed.

## CHECK OUT AND DOCUMENTATION

- Identify the facilitating conservation practices needed/planned for the success of this practice.
- Include an aerial photo, G.I.S. map, or scaled sketch of the planned and applied area.
- Include a soils map of the site and legend.
- Use the ND-NRCS Wildlife Habitat Evaluation Guide to assess both the pre-plan condition and the predicted post-plan condition of each wildlife habitat type planned.
- Use the applicable worksheets in Form ND-CPA-644 to document this practice.

\*NOTE: Underlined items are required for meeting the FOTG Practice Standard 644 Wetland Wildlife Habitat Management

**Conservation Practice Specification - 644**

**June 2010**

**Page 8 of 9**

**USDA-NRCS - North Dakota  
FOTG - Section IV - Conservation Practices**

- Use Form ND-CPA-9 to document herbaceous planting planning and installation data. Use Form ND-CPA-9a to document herbaceous planting establishment.
- Use form ND-CPA-4 to document woody stock plantings. Consult with the ND-NRCS State biologist on seed planting documentation requirements. Forms can be found in [FOTG – Section IV – Forms](#).
- To document application of facilitating conservation practices such as 595 - Pest Management or 338 - Prescribed Burning, etc., use the form(s) and procedure designated for each.
- Check out perennial vegetation establishment components using the procedure specified for a corresponding practice, i.e., 550 - Range Planting, 512 - Pasture and Hayland Planting, 380 - Windbreak/Shelterbelt Establishment.
- Confirm management of vegetation by a field check in the fall. In the remarks section of applicable ND-CPA-644 worksheet(s), record any disturbance to vegetation such as weed clipping, grazing, or haying. Record residual cover height. Record extent/density of noxious weeds, if any, and whether or not control efforts are satisfactory.
- In assistance notes, record site-specific conditions, discussions with decision-maker, and any off-site factors relevant to the plan.

**References:**

Duebbert, H. F. and Kantrud, H. A. Use of no-till winter wheat by nesting ducks in North Dakota. *J. Soil Water Conserv.* 42(1):50-53

- Euliss, Ned H., Jr., David M. Mushet, and Ddale A. Wrubleski. 1999. Wetlands of the Prairie Pothole Region: Invertebrate Species Composition, Ecology, and Management. Pages 471-514 in D. P. Batzer, R. B. Rader and S. A. Wissinger, eds. *Invertebrates in Freshwater Wetlands of North America: Ecology and Management*, Chapter 21. John Wiley and Sons, New York.
- Johnson, R.R., K.F. Higgins, M.L. Kjellsen, and C.R. Elliott. 1997. *Eastern South Dakota Wetlands*. Brookings: South Dakota State University.
- Melvin, Norman C., III, PhD January 2003. *Wetland Restoration, Enhancement, and Management*

---

**\*NOTE: Underlined items are required for meeting the FOTG Practice Standard 644 Wetland Wildlife Habitat Management**

**Conservation Practice Specification - 644**

**June 2010**

**Page 9 of 9**