Draft Compatibility Determination

Title

Draft Compatibility Determination for Farming, Grazing, and Haying on Chase Lake Wetland Management District.

Refuge Use Category

Agriculture, Aquaculture, and Silviculture

Refuge Use Type(s)

Farming, Grazing, Haying or ensilage

Refuge

Chase Lake Wetland Management District

Refuge Purpose(s) and Establishing and Acquisition Authority(ies)

Migratory Bird Hunting and Conservation Stamp Act (16 USC 718[c])
Migratory Bird Conservation Act 16 USC 715d(2)
Migratory Bird Conservation Act 16 USC 715i(a)
Consolidated Farm and Rural Development Act 7 USC 2002

Arrowwood Wetland Management District

... as Waterfowl Production Areas subject to "... all of the provisions of such Act [Migratory Bird Conservation Act] ... except the inviolate sanctuary provisions ..." 16 U.S.C. 718(c) (Migratory Bird Hunting and Conservation Stamp) "... for any other management purpose, for migratory birds." 16 U.S.C. § 715d (Migratory Bird Conservation Act) "... for conservation purposes ..." 7 U.S.C. § 2002 (Consolidated Farm and Rural Development Act).

Chase Lake Prairie Project Wetland Management District

... as Waterfowl Production Areas subject to "... all of the provisions of such Act [Migratory Bird Conservation Act] ... except the inviolate sanctuary provisions ..." 16 U.S.C. 718(c) (Migratory Bird Hunting and Conservation Stamp) "... for any other management purpose, for migratory birds." 16 U.S.C. § 715d (Migratory Bird Conservation Act).

National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System, otherwise known as Refuge System, is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife,and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (Pub. L. 105-57; 111 Stat. 1252).

Description of Use

Is this an existing use?

Yes

This compatibility determination (CD) reviews and replaces the September 30, 2008 CD for Wildlife-dependent Recreational Uses, Grazing, Haying and Farming in the Comprehensive Conservation Plan for North Dakota Wetland Management Districts.

What is the use?

Farming (Cooperative) – The practice of agriculture, especially mechanically disturbing the soil and artificially introducing seeds or other plant parts periodically to produce stands of plants, for use primarily as food by wildlife, domestic animals, or humans. This includes water delivery, irrigation, and drainage and the use of glyphosate-tolerant corn and soybeans for habitat restoration and management purposes on lands owned in fee title or managed through agreement by the National Wildlife Refuge System.

Grazing (Cooperative) – prescribed grazing for habitat restoration and management purposes on lands owned in fee title or managed through agreement by the National Wildlife Refuge System.

Haying – cutting and removal of vegetation for habitat restoration and management purposes on lands owned in fee title or managed through agreement by the National Wildlife Refuge System.

Is the use a priority public use?

No

Where would the use be conducted?

The U.S. Fish and Wildlife Service recently incorporated the Arrowwood Wetland Management District in Eddy and Foster Counties, North Dakota into the Chase Lake Wetland Management District in Stutsman and Wells Counties, North Dakota. Farming, grazing, and haying would be conducted by third parties or U.S. Fish and

Wildlife Service staff primarily on grassland/wetland habitat types within the newly combined 4-county Chase Lake Wetland Management District (District). The District now protects 45,667 acres. There are approximately 26,776 grassland acres and 18,893 wetland acres within the District, however some of these acres are not suitable for farming, grazing, and haying as a management tool. We estimate that up to 25,000 acres would be grazed, 2,500 acres would be hayed, and 1,500 acres would be farmed across the District on an annual basis.

When would the use be conducted?

Farming - Activities related to agriculture (field preparation, planting, weed control, harvesting) take place from April 1 to November 30. Activities would take place 1-3 days a month during the growing season depending on size and complexity of the field and goals of the unit.

Grazing – Primarily occurs from April through October. The frequency and duration of grazing will be based on site-specific evaluations of the grassland under management and utilize the best available biological data.

Haying – Primarily occurs from August through September but may occasionally occur earlier in the year if weed control is a primary purpose. The frequency and duration of haying will be based on specific evaluations of the site under management and utilize the best available biological data. Haying activities will occur within a 30- day period per field.

How would the use be conducted?

When substantial involvement and collaboration between the Service and the agricultural cooperator is anticipated; farming, grazing, haying and seed collection will be administered under a Cooperative Agricultural Agreement (CAA). A CAA will include a Commercial Special Use Permit and a Plan of Operations that details operation requirements. When substantial involvement between the Service and the agricultural cooperator is not necessary, a Commercial Special Use Permit will be utilized to detail the operation requirements. This allows a person or entity to use agricultural practices on National Wildlife Refuge System lands in support of refuge management objectives.

Farming agreements will include the crop(s), location, and the acreage to be planted. Agreements will be short-term, typically three to five years. Cooperative Agriculture will require the use of tractors, implements (discs, cultivators, sprayers, rollers), combines, and grain trucks to plant, treat weeds and harvest crops. The cooperator is responsible for all equipment, fuel, seed, fertilizer, chemical and labor.

Grazing agreements will include location, Animal Unit Month (AUM), dates, and specific guidelines related to grazing. The AUM per unit will be dependent on unit size, animal type, and type of forage available and management goals. Grazing units will be appropriately fenced. Watering facilities may not be present and may need to be installed or have water delivered daily. The use of mineral blocks may be used to supplement and distribute animals throughout the unit. Fence maintenance and

control/rotation of livestock are the responsibility of the cooperator.

Haying agreements will include the location, dates, and number of acres to be hayed. Equipment utilized will include a tractor and various implements (mower, rakes, baler and forks) and a truck and trailer to remove bales. Grass will be mowed at the appropriate time to meet unit objectives and removed by the date set in the agreement.

Why is this use being proposed or reevaluated?

Reevaluation is due per policy 603 FW 2.11 H(2). Except for uses specifically authorized for a period longer than 10 years (such as rights-of-way), we will reevaluate compatibility determinations for all existing uses other than wildlife-dependent recreational uses when conditions under which the use is permitted change significantly, or if there is significant new information regarding the effects of the use, or at least every 10 years, whichever is earlier. A manager can reevaluate the compatibility of a use at any time.

Cooperative agricultural practices for wildlife and restoration of habitat on refuge lands include grazing, haying, and farming. These management activities are used to meet refuge goals and objectives that typically benefit grassland health and restore poor-quality habitat for migratory birds, pollinators, and other wildlife. Cooperative agriculture is an indispensable management tool to restore the ecological diversity and habitat quality of refuge lands.

Availability of Resources

Staff time is available for the development and administration of cooperative agriculture agreements (CAA) and commercial special use permits (SUP). Most of the work to prepare and plan will be done as part of routine habitat management and monitoring duties. Existing staff will monitor the CAAs and SUPs to ensure compatibility and compliance. The Cooperator is responsible for the equipment, labor, cost of installation and/or maintenance of all range improvements associated with these activities. Facilities installed primarily for refuge purposes are constructed or maintained at refuge expense.

Anticipated Impacts of the Use

Potential impacts of a proposed use on the refuge's purpose(s) and the Refuge System mission

The mission of the Refuge System provided in the Refuge Improvement Act of 1997 states that “The mission of the [National Wildlife Refuge] System is to administer a national network of lands and waters for the conservation, management and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of

Americans."

Conservation and management mean to sustain and, where appropriate, restore and enhance, healthy populations of fish, wildlife, and plants utilizing, in accordance with applicable Federal and State laws, methods and procedures associated with modern scientific resource programs. These definitions denote active management and are in keeping with the House report on the Act which states that the "Refuge System should stand as a monument to the science and practice of wildlife management." It thus follows that if an economic use of a natural resource is shown to be conservation and management as defined in the Act, it does contribute to the mission by the very definition of terms used. If a use contributes to the mission, it thus meets the standard or threshold established in 50 CFR 29.1. In accordance with 50 CFR 29.2, cooperative farming, grazing, and haying as described in this compatibility determination, significantly contributes to the mission, purposes, goals, and objectives of the District.

In grassland management, a fundamental assumption is that with management focused on vertical structure over other prairie qualities and values, native herbaceous flora would continue to decline and disappear on native and seeded grassland tracts. Over the last several decades, rest (lack of disturbance) was emphasized as a management approach to increase densities of duck nests in uplands on WPAs in the Dakotas. In the short term (2–20 years), greater vertical structure may be maintained in northern grasslands that are rested. The structure of such idle vegetation is believed to be more important than plant species composition when the management goal is waterfowl production. This is because the density and survival of nests of prairie ducks was believed to be greatest on rested grasslands (Naugle et al. 2000, Schranck 1972).

However, a management approach for upland-nesting duck habitat that emphasizes rest has long-term implications that are often overlooked in short-term management studies, because continuous idling without periodic disturbance fails to promote long-term grassland health (Naugle et al. 2000). With extended rest, introduced grasses, especially smooth brome and Kentucky bluegrass, may more rapidly displace native vegetation (Murphy and Grant 2005). Monotypic stands of smooth brome and Kentucky bluegrass are less attractive to upland-nesting ducks than other types of grass-forb cover (Nenneman 2003).

Managers in the District aim to provide diverse, heterogeneous nesting habitat that meets the habitat requirements of waterfowl and other resources of concern, including grasshopper sparrow, clay-colored sparrow, bobolink, marbled godwit, and northern harrier. Priority management activities include: providing suitable vegetation structure for waterfowl, reconstructing former seeded introduced grasslands to diverse native vegetation, and restoring native prairie. Management by cooperative grazing and haying have been used to mimic natural grassland pressures and processes for decades, and the body of research on these techniques continues to grow.

When threatened and endangered species are known or suspected to be on a site,

the proper steps will be taken to determine how management activities will affect that species and the local FWS Ecological Services office will be consulted.

Short-term impacts

Farming – In preparing a unit for restoration through cooperative agriculture, all vegetation will be removed using a combination of mechanical and chemical methods. Wildlife will be disturbed and displaced initially when the area is prepared, and wildlife will lose the poor-quality cover previously present while the unit is planted.

Field prep, planting, weed control and harvesting will generally only occur a few days per month from April through October. During the remainder of the growing period disturbance will be minimal. Once crops are in the beginning growing stages and then again after harvest, wildlife observations will increase for species such as deer, pheasants, and grouse. Geese and ducks will use harvested crop fields for food during the fall and spring migration. Some shorebird species will also use the open temporary wetlands during migration.

After harvest, steps will be taken to improve habitat and soil health. Leaving residue standing and not tilling it under or using cover crops can provide food and cover for over-wintering wildlife and promote soil health. It is Service policy that the long-term productivity of the soil will not be jeopardized to meet wildlife objectives (601 FW3, 569 FW1).

Pesticide use is a normal agriculture practice and can be beneficial when removing targeted undesired species. They also have negative impacts on non-targeted plants and wildlife species. To decrease these effects, only EPA registered pesticides approved through the Service's Pesticide Use Proposal (PUP) System will be used. All pesticide use must follow EPA guidelines and be applied following label guidelines. Application of pesticides must follow the Department of Interior's Pesticide Use policy (517 DM 1) and the Service's Integrated Pest Management Policy (569 FW 1).

Refuge managers' experience combined with published literature indicates that use of glyphosate-tolerant soybeans and corn – which allows for the application of an herbicide containing the active ingredient glyphosate during the growing season – is very effective at killing invasive cool season grasses and other noxious and invasive species. The use of glyphosate results in a cleaner seedbed with less weed competition for habitat restoration purposes. This increases the possibility of successful habitat reconstruction efforts on System-managed and System-owned lands (2011 Environmental Assessment).

Wildlife observations will decrease initially when the area is prepped for farming. Depending on the crop planted, observations and use by mammals and waterfowl may increase as the crop is used for feed or cover during the growing season. Corn is readily used as cover by pheasants and deer. Waterfowl use on post-harvested corn, soybean, or small grain fields is likely during fall and spring migrations. Insect, amphibian, and small bird species use will likely be reduced during the entire

farming agreement due to the monoculture of cropped fields. Cover cropping, when possible, will boost use by other species. Certain shorebird species may increase use of the open temporary wetlands during migration.

Lands will be more susceptible to wind and water erosion during the farming agreement. Units will receive a determination from the Natural Resource Conservation Service about whether the unit is classified as highly erodible or not highly erodible. Cropping systems and farming practices that can be used to reduce erosion will be considered, where appropriate, especially in highly erodible soils and landscapes.

Grazing – Grazing by livestock removes and tramples some or much of the standing vegetation from a tract of grassland. In general, grazing will decrease vegetative heights, litter depths, and affect plant composition. The measure of short-term impacts will depend upon the grazing timing (time of year), duration (length of graze), and utilization level (i.e., light, moderate, full, close, or severe). Depending on the utilization level, hoof action may help to break up litter thereby increasing the rate of litter decomposition, aiding in nutrient cycling, and reducing competition for native plants. Areas around watering systems, fence lines, and mineral blocks may experience heavy trampling and compaction which can result in the mortality of perennial vegetation and the establishment of early successional species.

Bird species differ in their vegetation height preferences so typically the management goal is to provide a mosaic, with heterogeneity of vegetation heights across the landscape. Pollinators are similar in their need for a heterogeneity of heights and plant species. Following a graze, depending on the remaining vegetation height, a site will be more or less attractive for use by certain wildlife species during the respective growing season. Cattle do not always graze uniformly, and there is typically heterogeneity of height within a prescribed grazed site as compared to a prescribed hayed site. Birds that prefer shorter stature grasslands, such as upland sandpiper and savannah sparrow may benefit from the reduced vegetative height resulting from grazing while others such as mallards and bobolink, which typically require taller and dense nesting structure, may be negatively impacted by grazing in the short-term. Litter reduction and reduced vegetative structure resulting from grazing may create openings within wetlands “choked” by cattails and reed-canary grass, improving wetland habitat for breeding waterfowl pairs.

In situations where grazing utilizations are close or severe, it is possible that there will be less litter available for grassland nesting birds who utilize this material for nest construction. Kruse and Bowen (1996) found that grazing alone reduced nest densities during the grazing years, but the vegetation and ducks recovered quickly after grazing ended. Several studies have reported greater nesting success in grazed grasslands than in other habitats in the Prairie Pothole Region (Barker et al. 1990, Greenwood et al. 1995). However, grazed areas may attract fewer predators because of low densities of some types of prey, such as small mammals (Grant et al. 1982, Runge 2005); less cover for concealment; or both. Higher nesting success in grazed fields may occur because predators respond negatively to low prey density (Clark and Nudds 1991, Lariviére and Messier 1998). If a site is completely devoid of litter

prior to winter, certain pollinator larvae may lack the needed cover to survive for that year. High grass utilization rates late in the year can also reduce food and winter cover for resident species in the short term. It is likely that other large herbivores, such as white-tailed deer, will reduce their use of a unit due to grazing competition from domestic livestock and the associated disturbances as ranchers repair fence or check on and move livestock.

Haying – There will be short-term disturbance and displacement to local wildlife from the process of using the heavy machinery necessary to cut, bale, and remove hay from the unit. Depending on weather, this process can take a few days to a couple of weeks.

Grass/habitat will be removed during the haying process, and it will no longer be available for wildlife to use for food or cover until the next growing season. Removing the duff layer along with the standing vegetation, will allow native vegetation to mature with less competition from non-desired species. Haying in wetlands will reduce vegetative cover, thus opening choked wetland areas which may be utilized by spring migrating waterfowl and shorebirds.

In the event that early haying (before August 1) is allowed, it may result in the destruction of waterfowl nests and nests of other grassland nesting bird species. Haying could also result in mortality of nesting hen ducks, ducklings and young grassland and upland birds such as ring-necked pheasant, bobolink, and sharp-tailed grouse.

When used as part of an integrated pest management program, haying can reduce or eliminate the need for herbicide applications which may positively impact plant species diversity. Haying can also improve the efficacy of herbicide applications aimed at noxious weeds. This potentially reduces overall herbicide use and impacts to non-target native plants.

Long-term impacts

Farming – Depending on the condition of a unit and overall goals, this practice could occur from one to four years. During this time, this area will not be available as habitat for most wildlife, especially grassland nesting birds and many pollinators. Deer, pheasants, turkeys and migrating waterfowl will take advantage of waste grain left in the field and use by some of these species may increase during agriculture practices.

Although pesticide use will be closely regulated, local wildlife may be negatively affected. Invertebrates that are a food source and important pollinators may be eliminated and communities may shift. However, with the proper use of chemicals, most weed species can be eliminated thus allowing native species an increased chance of survival when planted.

Mechanical practices will break up the soil and negatively impact the micro-organisms in the soil and important nutrient cycling will slow or cease.

Decomposition and subsequent building of organic material will be negatively affected. If the plan allows, leaving residue standing (no-till) over-winter or incorporating cover crops into the management plan will provide food and cover for migrating and wintering wildlife and soil micro-organisms.

Nearly all farming practices use either synthetic or natural fertilizers. The addition of these fertilizers can change the ratio of soil available nutrients to favor the growth of undesirable plants during prairie species planting. High nitrogen (N) availability may be particularly problematic in the restoration of native plant communities, where prolific weed growth can delay or even preclude the reestablishment of native species (NRC 1992, Packard and Mutel 1997). Controlling the availability of N and phosphorus (P) prior to reconstruction planting can reduce the likelihood of invasion (Funk and Vitousek 2007, Rowe 2008). Soil sample analysis for nutrient levels prior to native species seeding will give managers insight into the potential for weedy invasion and can help direct the planning process for seeding (Dixon 2017). There is ongoing research into mitigating high N and P levels including soil carbon addition (Blumenthal 2003) and seeding of certain native species (Levang-Brilz and Biondini 2002). Fertilizer runoff and deposition in wetlands is another possibility on farmed units. Similar to ratios in soil, the effects of high N and P in wetlands can change plant communities, favoring non-native cattails or monoculture stands of cattail over other diverse emergent plant communities. Buffers around wetland areas and appropriate application procedures can mitigate this outcome.

With cooperative agriculture for habitat restoration, there will be long-term benefits with the establishment of diverse or more desirable habitat for nesting, escape cover, perching, or non-crop feeding activities. The resulting habitat will generally improve conditions for most of the species negatively affected by the short-term agriculture activity.

Grazing – Properly prescribed, the removal of vegetation increases the vigor of the grassland by stimulating the growth of desired species of grasses and forbs and reducing the abundance of targeted species such as cool season exotic grasses, woody species, noxious weeds, invasive species, and/or cattails. During periods of normal precipitation, regrowth following grazing activities usually occurs within a single growing season. Areas with heavy livestock concentrations (e.g., watering areas, mineral block sites) may require 2-3 years to fully recover from the impacts of grazing. Over time, a strategic prescribed grazing program could effectively alter species composition and improve overall plant diversity. Disturbance of upland and wetland habitats are essential to maintain plant vigor and reduce noxious weeds. A unit may be negatively affected by grazing with improper utilization of AUM, grazing timing and/or duration. Grazing plans will promote a rotational cycle that alternates grazing and resting periods.

Haying - Haying will increase the vigor of grassland units for several years and can be an alternative to burning or grazing, the other two methods used to manage grassland habitats. Haying can reduce unwanted overstory, including woody plants, and opens the soil surface to sunlight. Such removal of vegetation allows for more vigorous regrowth of desirable species following the haying. Haying may reduce the

need for herbicide use, which could result in higher plant diversity and species richness. The rotation and periodic haying of units also helps to create a mosaic and interspersion of habitats that many species find attractive for feeding, breeding, and protection (Maxson and Riggs 1996).

Public Review and Comment

The draft compatibility determination will be available for public review and comment for 14 days. The public will be informed of this comment opportunity through postings at the Refuge headquarters, and on the Refuge website. The State of North Dakota and Tribes have been asked to review and comment on the draft compatibility determination. A hard copy of this document will be posted at the Refuge Headquarters or Visitor Center located at 7780 10th Street, SE, Pingree, ND 58476. It will be made available electronically on the refuge website *https://www.fws.gov/refuge/chase-lake-wetland-management-district*. Please contact the District Manager if you need the documents made available in an alternative format. Concerns expressed during the public comment period will be addressed in the final document.

Determination

Is the use compatible?

Yes

Stipulations Necessary to Ensure Compatibility

1. All activities will be conducted in accordance with the SUP and/or CAAs. Any SUP and/or CAA will be written consistent with 620 FW 2 Cooperative Agricultural Use Policy and Region 6 Cooperative Agricultural Program Guidance (2022).
2. The criteria for evaluating the need for habitat management, including all uses described in this CD, will be determined during annual planning activities.
3. Activities must meet specific and articulated habitat and related wildlife objectives and contribute to the achievement of the purposes for which the refuge units were established. These objectives may be outlined in a Comprehensive Conservation Plan, a Habitat Management Plan, an Annual Work Plan, or in the Special Use Permit.
4. For Grazing specific activities-
    a. No insecticides will be applied on District lands.
    b. Supplemental feeding will be limited to lick tubs and creep feeders that are

moved in rotation with livestock and placed in locations approved by the District manager.

c. Control and maintenance of the livestock will be the responsibility of the permittee.

d. Fencing, water supply, and other livestock management infrastructure needs, and costs will be outlined on a unit-by-unit basis in the SUP.

5. For Farming specific activities-

a. All activities will adhere to general conditions for cooperative agriculture programs as listed in the Cooperative Agriculture Use Policy (620 FW 2).

b. All operations are to be carried out in accordance with the BMPs and soil conservation practices.

c. Pesticide use is restricted by type and economic threshold limitation. Annually, all proposed pesticides must be submitted to and approved by the manager or the Regional or National Integrated Pest Management (IPM) coordinator.

d. The only Genetically Modified (GM) crops allowed are glyphosate- tolerant corn and soybeans.

6. For Haying specific activities-

a. Any Special Use Permits and Cooperative Agricultural Agreements will be written consistent with 620 FW 2 Cooperative Agricultural Use Policy and Region 6 Cooperative Agricultural Program Guidance (2022).

Justification

The stipulations outlined above would help ensure that the use is compatible at Chase Lake WMD. Farming, grazing, haying or ensilage, as outlined in this compatibility determination, would not conflict with the national policy to maintain the biological diversity, integrity, and environmental health of the District. Based on available science and best professional judgement, the Service has determined that the Farming, grazing, haying or ensilage, at Chase Lake WMD, in accordance with the stipulations provided here, would not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purpose of the Chase Lake WMD. Rather, appropriate and compatible farming, grazing, haying or ensilage, would be a use of the Chase Lake WMD through which the public can develop an appreciation for wildlife and wild lands.

Farming – It is well known by grassland practitioners that the best way to prepare a site for reconstruction is with a minimum of two years of cooperative agriculture, preferably with soybeans as the final crop. Using mechanical and chemical means to clear the unit and through regular agriculture practices, most unwanted plants are eliminated, and the seed bed is cleaned. This prepares the unit for native prairie plantings and makes it easier for native plants to flourish due to reduced competition.

Grazing - Prior to Euro-American settlement, grasslands and the associated wildlife in the Northern Great Plains thrived under periodic defoliation, primarily from fire and grazing. Notable grazing animals included bison, elk, small mammals, and even insects such as grasshoppers. Today, domestic livestock are used to mimic the defoliation once provided by those species.

Grasslands devoid of management over the long-term will deteriorate to where they no longer support overall ecosystem functions. Migratory bird habitat and ecological diversity will decrease as habitat suitability declines. This often can negatively affect plant composition and lead to an increase in introduced cool-season grasses (i.e., Kentucky bluegrass and smooth brome grass). Plant diversity will decrease which can negatively impact pollinators closely associated with native plants.

When grasslands do not provide a heterogeneity of thickness and plant heights, only the species of birds that prefer a thick litter and uniform plant height will be attracted. Grazing, when incorporated into an integrated grassland management program and implemented over time, can result in enhanced native plant diversity, structure, and overall improved grassland health.

Haying - Haying is an effective grassland management tool. Certain aspects of haying can have negative short-term impacts on wildlife, but long-term benefits can include improved grassland vigor, potentially reduced herbicide use, and increased structural and plant diversity of a grassland. Without occasional disturbance, it is likely grasslands will deteriorate in species richness and diversity thereby negatively impacting plant and wildlife resources.

Signature of Determination

Refuge Manager Signature and Date

Signature of Concurrence

Assistant Regional Director Signature and Date

Mandatory Reevaluation Date

2024

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Figure(s)

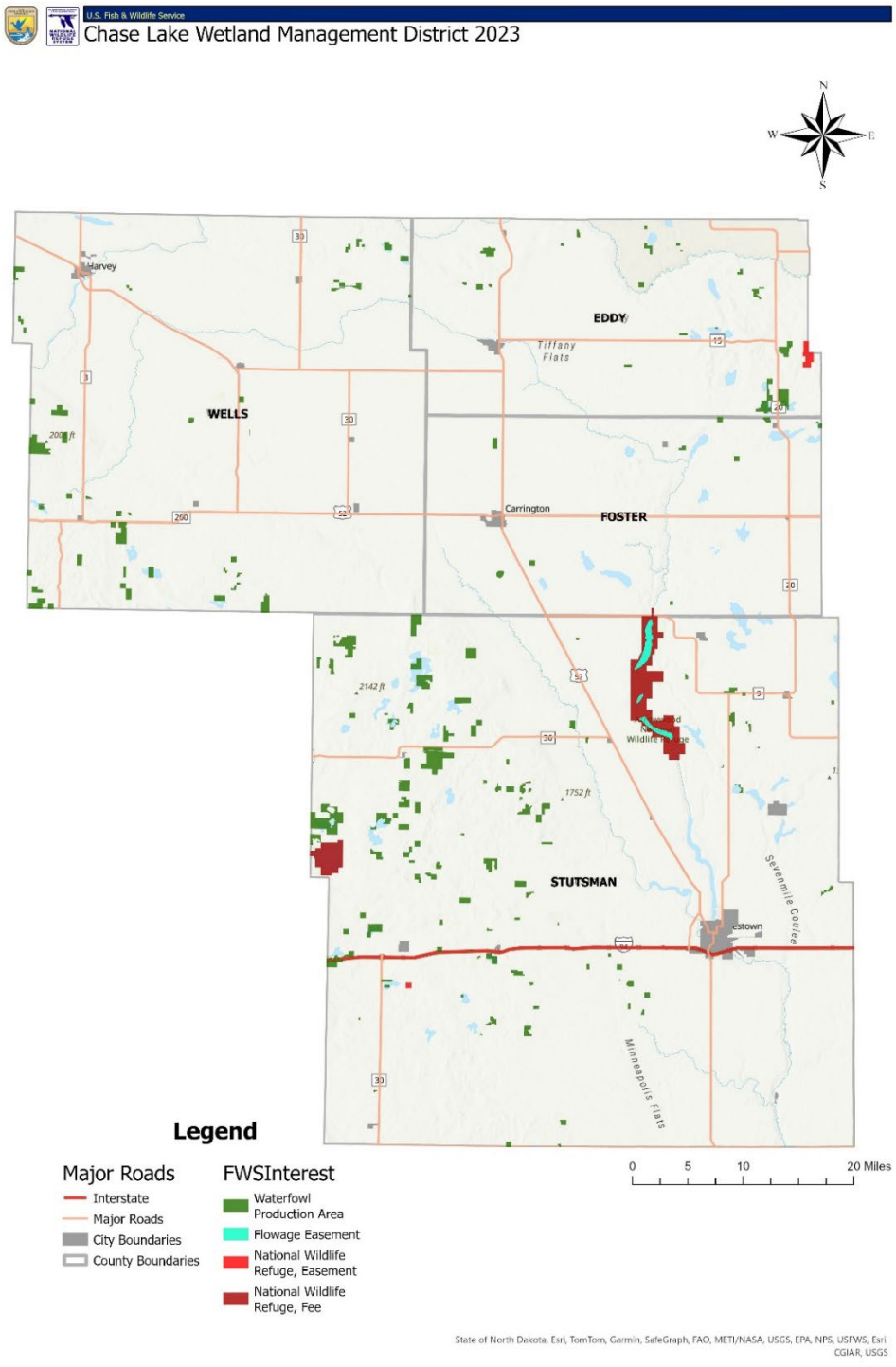

Figure 1. Map of Chase Lake Wetland Management District.