Draft Compatibility Determination

Title

Draft Compatibility Determination for Cooperative Farming, Iowa Wetland Management District

Refuge Use Category

Agriculture, Aquaculture, and Silviculture

Refuge Use Type(s)

Cooperative farming

Refuge

Iowa Wetland Management District

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

"…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 purposes, 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 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 would review and replace the 2011 cooperative farming compatibility determination for the Iowa Wetland Management District (USFWS, 2011).

This use is consistent with the 2014 comprehensive conservation plan and the 2020 habitat management plan (USFWS, 2014a; 2020a).

What is the use?

Cooperative farming is defined as 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.

Cooperative farming is considered a refuge management economic activity.

Is the use a priority public use?

No, this is not a legislated priority wildlife-dependent public use of the National Wildlife Refuge System (i.e., hunting, fishing, wildlife observation and photography or environmental education and interpretation).

Where would the use be conducted?

The Iowa Wetland Management District consists of 25,947 acres on 75 Waterfowl Production Areas within a 35-county boundary in north-central Iowa (Figure 1).

The areas open to cooperative farming have been specified in the habitat management plan (USFWS, 2020a). Cooperative farming would occur on less than 5% of total district acreage. Farming would occur in previously disturbed areas, such as historically farmed land or areas identified for diverse prairie restoration that have unacceptable levels of chemical residue, noxious weeds or non-native plant species or ecotypes (USFWS, 2014a, 2020a). Newly acquired properties for the Iowa Wetland Management District have often been land that was recently farmed or had been extensively farmed for a long period of time (USFWS, 2014a).

Farmed fields on the district would range from 5 to 160 acres with an average field size of 16.7 acres (USFWS, 2014a; 2020a). On average 700 acres would be enrolled in cooperative farming annually consisting of both newly acquired crop ground and low diversity grasslands that would be converted to high diversity prairie (USFWS, 2020a).

When would the use be conducted?

Farming activities, such as planting and field preparation, would generally begin in late April. Some crops such as winter wheat could be planted in late summer or early fall (USFWS, 2014a). Most crops would grow continuously after planting until they could be harvested in the fall.

Harvest would begin in the fall from approximately late September through early November. Crops cultivated for winter food resources would be left standing through the winter and harvested after March 1.

Activities related to cooperative farming would generally occur during daylight hours (i.e., sunrise to sunset).

How would the use be conducted?

Farming, to accomplish habitat restoration objectives, would primarily be implemented to prepare a quality seed bed for the establishment of native prairie grass species (USFWS, 2014a). Farming activities would include tilling, herbicide application, planting and harvesting. These activities would be carried out using conventional farming equipment such as tractors, plows, tillage implements, planters, sprayers and combines. Each site would be tilled prior to spring

planting once ground conditions permitted the use of heavy equipment without damaging the soil (i.e., rutting). Tilling would generally require 1-2 days per site. Some sites could also require herbicide application and treatment and would be completed in less than one day per site. Planting across all sites could be begin as early as mid-April and would typically be completed by early June depending on soil conditions and type of crop planted. Planting would usually be completed in one day or less per site (USFWS, 2014a).

All herbicides would be approved by the U.S. Fish and Wildlife Service and would be listed on a pesticide use proposal. Herbicides could include but would not be limited to Select Max, 2,4-D Amine 4, Roundup Power Max, Accent Q and Callisto. All herbicides would be applied according to their pesticide label, which has previously received National Environmental Policy Act evaluation by the U. S. Environmental Protection Agency. Herbicide application would typically be done using a pull behind boom sprayer. Aerial application of herbicide would not be allowed for cooperative farming. No insecticides or neonicotinoid seed treatments would be allowed under this use (USFWS, 2014a).

The use of genetically modified crops, specifically Glyphosate-tolerant corn and soybeans would be authorized on Iowa Wetland Management District lands consistent with current regional and agency policy (USFWS, 2011; 2020b). The use of genetically modified, Glyphosate-tolerant corn and soybeans would be used only for the purpose of habitat restoration. This use would generally occur on a short-term basis (e.g., one to three years).

A U.S. Fish and Wildlife Service Memorandum of Understanding with the Iowa Department of Natural Resources guides the partnership within the Iowa Wetland Management District. This agreement states that food plots are an acceptable practice to provide winter food resources for wildlife as well as wildlife viewing and hunting opportunities for the public (USFWS, 2012; 2014a). The 2012 memorandum of understanding can be found in Appendix I: Memorandum of Understanding with the Iowa Department of Natural Resources in the district's comprehensive conservation plan (https://ecos.fws.gov/ServCat/DownloadFile/44249).

The percentage of the district allowed in food plots was established in the comprehensive conservation plan and habitat management plan (USFWS, 2014a; 2020a). Based on these plans no more than 3% of the district's upland acres would be in food plots (USFWS, 2014a; 2020a). In 2021 less than 150 acres or 0.7% of food plots occurred within the Iowa Wetland Management District. Crops used for food plots, grain and forage would include non-genetically modified corn and soybeans, sunflowers, sorghum, millet, wheat, barley, oats and alfalfa (USFWS, 2014a; 2020a).

Harvest techniques would be the same for both no-till and traditional farming practices. A self-propelled harvesting implement such as a combine would be used to harvest crops and would typically occur over 1-2 days per site.

All farmers would be required to follow permit requirements and best management practices to ensure equipment was clean and free of plant material and soil before starting work to prevent the spread of invasive species.

Cooperative farming would be overseen by the district manager and their designee, usually the

district biologist or assistant district manager. This use would occur under the terms and conditions of a special use permit. The specific details and restrictions governing cooperative farming would be outlined in each permit to ensure the activity is consistent with the goals and objectives of the comprehensive conservation and habitat management plans, appropriate and compatible with the district's mission and purpose and compliant with all applicable policies and regulations. Permittee selection and associated cost estimates would follow the agency's Cooperative Agriculture Use policy (USFWS, 2017; 620 FW 2) and Region 3 specific guidance for farming (USFWS, 2014b; 2022b). Refuge managers would have the discretion to deny or reevaluate the appropriateness and compatibility of haying and grazing at any time (USFWS, 2000; 603 FW 2.11 H(2)).

Special use permit applications would be open during the winter every one to three years based on the unit. The number of special use permits would vary based on need, but typically no more than 35 permits would be allocated annually.

Special use permits for cooperative farming could be extended to keep the land free of weeds until funds become available for habitat restoration (USFWS, 2014a). The last year of farming would typically require the cooperative farmer to plant soybeans, because soybean stubble provides a more favorable substrate in which to plant native grasses and forbs (Phillips-Mao, 2017).

Why is this use being proposed or reevaluated?

This use is being reevaluated because the 10-year renewal period for the 2011 cooperative farming compatibility determination ended in 2021, as described in agency policy (USFWS, 2000; 603 FW2.11 H). This document renews the 2011 cooperative farming compatibility determination. No changes would occur regarding how this use has previously been conducted on the district.

Cooperative farming would occur on the district to meet habitat management and comprehensive conservation plan objectives and goals established in partnership with the Iowa Department of Natural Resources (USFWS, 2012; 2014a; 2020a).

The purposes of cooperative farming on the district as outlined in the comprehensive conservation plan are to:

- Restore and manage habitat;
- Reduce noxious weeds or non-native plants;
- Provide supplemental food for wildlife; and
- Attract wildlife for viewing, photography and hunting (USFWS, 2014a).

Cooperative farming would be administered in accordance with wildlife and ecosystem management principles, on-going research and land management demonstrations. This activity would only occur where the agency has determined that a management need exists to use agricultural practices to restore native vegetation and habitats and provide wildlife-dependent recreation opportunities to the public (USFWS, 2014a).

Availability of Resources

Annual administration costs: Administration of cooperative farming would typically require developing approximately 30 special use permits each year costing an estimated $100 per permit for a total annual administrative cost of $3,000. These costs would include all staff time and office resources needed to develop, review and approve permits. The estimated minimum open market cost to prepare land for prairie seeding (e.g., one treatment of discing and herbicide application) is $24 per acre (not including the cost of the herbicide). The estimated open market cost of cooperative farming is $145 per acre for corn and $129 per acre for soybeans (Platina et al., 2023). The costs to administer cooperative farming would be considered minor relative to the value of the services gained.

Maintenance, special equipment, facilities and infrastructure: Cooperative farming would be supported by existing district facilities and infrastructure (e.g., roads, levees, parking areas) and no costs would be incurred for facilities, equipment, improvements or maintenance. All repairs, maintenance and other costs of facilities used by cooperators would be identified in the special use permit, and cooperators would be solely responsible for any maintenance or repairs required during or because of the use.

Offsetting revenue: Cooperative farming on the Iowa Wetland Management District would generate revenue for the U.S. Fish and Wildlife Service. Revenue generated by each permittee would be determined via bids and the funds would be managed by the agency. In accordance with federal law (16 U.S.C. § 715s), all income would be deposited into the refuge revenue sharing fund. The district would have a percentage of the revenue placed in a contributed fund account to help offset the costs of administering the program. Total revenue generated from 2020-2023 has averaged $47,825 annually.

Anticipated Impacts of the Use

The effects and impacts of the proposed use on district resources, whether adverse or beneficial, would be those that are reasonably foreseeable and have a close causal relationship to the proposed use. This compatibility determination includes the written analyses of the environmental consequences on a resource only when the impacts to that resource could be more than negligible and would therefore be considered an "affected resource." Wilderness areas do not occur within district boundaries and have been dismissed from further analyses.

Cooperative farming would assist in restoring native habitat on the landscape, and the impacts from management activities would be beneficial or mitigated through careful planning and implementation. Cooperative farming would be conducted in a manner that avoids or mitigates short- and long-term impacts that adversely affect the purpose, mission or resources of the district and the National Wildlife Refuge System. Restrictions imposed by the district manager and special use permits would reduce any anticipated negative impacts to district resources.

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

Cooperative farming provides an important tool for habitat restoration and conservation, which benefits wildlife and furthers the mission of the National Wildlife Refuge System and the U.S. Fish and Wildlife Service. Cooperative farming was evaluated in the 2013 comprehensive conservation plan environmental assessment and is consistent with the comprehensive conservation and habitat management plans (USFWS, 2013b; 2014a; 2020a). The 2013 environmental assessment determined cooperative farming would not significantly impact the human environment and a finding of no significant impact was issued (USFWS, 2013b; 2014a). The analyses below are supplemental to the environmental effects described in those documents and where applicable, are incorporated by summary and reference. This compatibility determination was developed using the most recent district biological information and data, scientific literature and habitat restoration principles. Cooperatively farmed units on the district would be managed, enhanced and restored for native fish, wildlife and plants.

The Iowa Wetland Management District protects a modern remnant of the Prairie Pothole Region and consists primarily of prairies interspersed with wetlands, also referred to as potholes or sloughs. This area provides essential summer habitat and breeding grounds to millions of waterfowl as well as shorebirds, songbirds and gamebirds (USFWS, 2014a). Despite its historical propensity for abundant wetland habitat, this area has undergone considerable change. More than 96% of the original pothole wetlands have been eliminated from the landscape (USFWS, 2020a), and it is estimated that by the end of the 19th century, more than 90% of Iowa's prairies and savannas had been converted to agriculture (Smith 1990; 1998).

Impacts: Potential positive impacts of cooperative farming would include restoration, maintenance and enhancement of prairie habitats and increased habitat diversity. Cooperative farming would improve recreational opportunities, mainly waterfowl hunting and bird watching conditions. This use would have an overall positive outcome in working towards the goal of restoring the district back to its original state by encouraging the growth and establishment of native species post farming activities.

Mitigation: Restrictions and conditions identified in special use permits and the habitat management plan would be implemented to minimize and mitigate negative impacts to district resources (USFWS, 2020a). The district would follow guidance and best management practices established by the comprehensive conservation plan and environmental assessment (USFWS, 2013b; 2014a), the habitat management plan (USFWS, 2020a), agency policy on cooperative agriculture use (USFWS, 2017; 620 FW 2), the Region 3 farm program guidance (USFWS, 2014b), agency guidance and policies regarding pesticide use, integrated pest management and genetically modified crops (USFWS, 2013a; 2018; 2020b; 242 FW 7; 569 FW 1) and the agency's Midwest Region Environmental Assessment for row crop farming and the use of genetically modified, glyphosate-tolerant corn and soybeans on refuge/district lands (USFWS, 2011).

All pesticide applications would follow the instructions per the Environmental Protection Agency label. Cooperators would be encouraged to first assess pest problems and consider mechanical and cultural techniques before applying chemicals for pest control. Genetically modified crops would only be used for the purpose of habitat restoration and limited to Glyphosate-tolerant corn

and soybeans for no more than 5 years on any given tract. Neonicotinoid treated crop seeds would not be permitted.

Short-term impacts

Wildlife Species

Terrestrial Species

District lands provide habitat for a variety of wildlife including 270 bird species, 50 mammal species, 66 amphibian and reptile species and a variety of insects and pollinators (USFWS, 2014a; 2020a).

The prairie pothole region is considered the largest breeding ground for waterfowl in the continental United States, and waterfowl are the most abundant group of birds that use the district (USFWS, 2014a). Grasslands provide breeding, nesting and foraging habitat for grassland-dependent waterfowl, such as mallard and blue-winged teal, as well as other grassland bird species (USFWS, 2020a). Migratory grassland bird species such dickcissel, grasshopper sparrow, sedge wren and upland sandpiper can be found in restored high diversity prairies throughout the district and have been identified as priority resources of concern in the habitat management plan (USFWS, 2020a).

Diverse grasslands provide the full life cycle requirements, feeding, reproduction and larval development of native invertebrate pollinators, which serve as an important food source, especially for birds. Almost all beneficial insects require food in the form of nectar and/or pollen from flowers for optimal survival and high levels of reproduction (Klein et al., 2006; Pywell et al., 2005). On the district, moths, butterflies, bees and wasps are attracted to prairie flowers, and the grasses, leaves and stems provide an abundance of habitat and forage for larval stages, grasshoppers and other insects (USFWS, 2020a).

Impacts: The response of wildlife to cooperative farming would be variable and activities associated with this use could have a positive impact on some species and a negative effect on others. Most of the effects of farming on wildlife would be short-term and temporary, lasting approximately the amount of time it would take to treat a site. Habitat conditions would improve once vegetation regrowth begins.

Depending on the nature of the use, cooperative farming could disturb wildlife, which would include both direct and indirect effects (Cline et al., 2007; Knight and Cole, 1991; Miller et al., 1998; Gill et al., 1996; Gill et al., 2001). Human induced disturbance is defined as any encounter in which human activities lead animals to behave differently than they would in the absence of these activities (Smit and Visser, 1993). Disturbance varies in magnitude, frequency, predictability, distribution and duration (Cayford, 1993). Wildlife responses to disturbance would be relatively unpredictable and could vary between species, between individuals of the same species and between different periods of time for a single individual (Haysmith and Hunt, 1995; Knight and Temple, 1995). How land use changes affect wildlife would depend on a variety of variables including spatial and temporal factors (e.g., seasonality, location), habitat availability or life cycle

stages.

Direct impacts to wildlife would be those that cause direct physiological effects (e.g., energetic costs, altered fitness), behavioral modifications (e.g., avoidance of otherwise suitable habitat, nest abandonment) or death (Cline et al., 2007). Cooperative farming could temporarily disturb or displace wildlife due to an increase in motion (e.g., people, equipment, vehicles, etc.), noise and ground disturbing activities (e.g., tilling). The operation of tractors, machinery and other farming implements could potentially crush vegetation, destroy habitat or nests and result in injury or mortality to individual animals (Deak et al., 2021; Erb and Jones, 2011; Tewes et al., 2013).

Grassland bird research suggests that birds may nest in crop fields, however, the disturbance common with farming practices could be detrimental to nest success (Best, 1986; Warner, 1994). Due to nest predation, brood parasitism and farming activities, bird reproduction in row-crop fields could be below levels needed to sustain populations without immigration from source habitats (Best, 1986; Rodenhouse and Best, 1983). Although numerous bird species could frequent row-crop fields, impacts would be minimal, because abundance and diversity of nesting species would likely be low (Best et al., 1990).

Insects and animals inhabiting old fields or abandoned croplands could experience temporary short-term habitat loss from tilling and vegetation changes. For example, the ephemeral nature of crop fields due to anthropogenic disturbances such as tillage, pesticide application and harvesting could require arthropods to frequently recolonize these areas (e.g., crop fields; Wissinger, 1997). Spring disking could alter wildlife use patterns by temporarily displacing small fauna until vegetative cover regenerates. These impacts would be remediated by the establishment of supplemental natural habitats and food sources once crops germinate, mature and provide new cover to disturbed soil.

The use of agricultural crops to benefit waterfowl has been well documented in the scientific literature (Bellrose, 1980; Baldassarre and Bolen, 1984; Delnicki and Reinecke, 1986; Ringelman, 1990; Combs and Fredrickson, 1996; Heitmeyer, 2006) especially in areas where it could be difficult to restore native vegetation. Supplementary, planted foods could be valuable not only to waterfowl but to game and nongame species as well if preferred forage is limited (Donalty et al., 2003). Agricultural practices, including crop production, would provide an efficient and practical way to meet waterfowl objectives within a habitat-limited landscape (USFWS, 2020a), control invasive species and set back succession to benefit waterfowl and other wildlife (Gray et al., 2013).

The wildlife-dependent recreation associated with food plots could temporarily increase wildlife disturbance, but the impacts would generally occur outside of the breeding season.

Mitigation: To limit effects to wildlife, cooperative farming would follow all applicable agency guidance and policies. Mitigation measures to reduce and minimize negative impacts to wildlife and cooperative farming related disturbance would be outlined in a special use permit. Restrictions could include limiting the duration and timing of harvest, equipment type and number of individuals participating in an activity at one time or annually.

Cooperative farming would occur on relatively small sections (e.g., 5 to 160 acres) of the district, and sufficient refugia (e.g., 95% of the district) would be available adjacent to farmed areas to provide habitat for dispersed wildlife (USFWS, 2014a; 2020a). Agricultural practices would only occur on previously altered tracts, which would protect endemic plants and associated insects. All motor vehicle and equipment use would be restricted to designated roads, trails and parking areas. Cooperators would be required to consider all farming conservation practices (e.g., rotating crops, cover crops, no-till, organic) as practical.

District staff and the Iowa Department of Natural Resources wildlife biologists would analyze and determine areas appropriate for food plot placement to lessen the impacts of disturbance, edge, habitat fragmentation, chemical use and soil erosion on wildlife (USFWS, 2014a). The strategic placement of food plots could be used as a tool to concentrate public use to areas where disturbance to wildlife would be less disruptive (Korschgen and Dahlgren, 1992).

Threatened and Endangered Species and Critical Habitat

Federally threatened, endangered, candidate and proposed species occur on the district, but this use would not conflict with the recovery or protection of these species. The response of these species to cooperative farming would be variable and activities associated with this use could have a positive impact on some species and a negative effect on others. Most of the effects would be short-term and temporary, lasting approximately the amount of time it would take to treat a site. Habitat conditions would improve once vegetation regrowth begins. Mitigation measures would reduce the potential for long-term, adverse impacts.

Listed species:

- Indiana bat (endangered)
- Northern long-eared bat (endangered)
- Tricolored bat (candidate)
- Poweshiek skipperling (endangered)
- Rusty patched bumble bee (endangered)
- Monarch (candidate)
- Topeka shiner (endangered)
- Eastern prairie fringed orchid (threatened)
- Northern wild monkshood (threatened)
- Prairie bush clover (threatened)
- Western prairie fringed orchid (threatened)

Critical habitat:

- Poweshiek skipperling
- Topeka shiner

Northern long-eared and Indiana bats roost under the peeling bark of dead and dying trees during the summer months and overwinter in large colonies in caves (USFWS, 2006). Indiana bats eat a variety of flying insects and typically forage along rivers or lakes and in uplands, while northern long-eared bats primarily forage in the understory of forested areas (USFWS, 2006; 2015). The

majority of district lands could be considered treeless with a scattering of invasive tree species. No known hibernacula or maternity roost trees occur on or near district lands. District lands contain little suitable habitat for these species and any use is likely limited to incidental foraging in the uplands.

Tricolored bats roost in dead leaves suspended in the canopies of deciduous trees, dead pine needles suspended in branches, in boles of large pine trees and within lichens suspended in tree canopies. Roosts may be found in man-made structures in summer months such as abandoned mines, old houses, sheds, barns, wells, road culverts and dams as well as caves (Taylor et al., 2020). Tricolored bats feed in open areas adjacent to forested roost habitats with abundant water. They forage along roads, lakes and ponds, transitional edges, forested corridors and buffer strips (Taylor et al., 2020). The district contains little suitable habitat for these species and any use is likely limited to incidental foraging in upland areas.

Impacts: Foraging bats could be temporarily disturbed by farming activities. However, disturbance would be minimal, because most cooperative farming would occur during daylight hours and bats feed mostly at night.

Mitigation: The mitigation to all species section describes how impacts to bat species would be minimized. Additional measures would be included as needs arise.

Poweshiek skipperlings rely on remaining remnant or unplowed, native prairies (USFWS, n.d.c). The district contains remnant native prairie habitat, but the species is thought to be extirpated from Iowa.

Rusty patched bumble bees have been observed in a variety of habitats including prairies, woodlands, marshes, agricultural landscapes and residential parks and gardens (Colla and Packer, 2008; Colla and Dumesh, 2010; USFWS, n.d.d). The rusty patched bumble bee requires areas that support sufficient food, including nectar and pollen, from diverse and abundant flowers, as well as undisturbed nesting sites that are in proximity to floral resources. They also require overwintering sites for hibernating queens (Goulson et al., 2015; Potts et al., 2010; USFWS, n.d.d). Harrier Marsh Waterfowl Production Area in Boone County is within an identified low potential zone on the U.S. Fish and Wildlife Service Midwest Region's Rusty Patched Bumble Bee Map. No other district lands occur in or near low or high potential zones.

Monarchs can be found in a variety of habitats including rangelands, farms, riparian areas, deserts, prairies, meadows, open forests, woodlands, cities, gardens and roadsides (Jepsen et al., 2015). Larvae feed exclusively on milkweed, and previous studies have identified the importance of nectar plants as adult monarch habitat (Kinkead et al., 2019; Stenoien et al., 2016; Thogmartin et al., 2017a; b). Conservation grasslands represent an important source of existing and potential monarch habitat (Thogmartin et al., 2017a) because they provide an abundance of milkweed (Lukens, et al., 2020). Monarchs originating in the Upper Midwest have been documented using milkweed found in agricultural habitats (Oberhauser et al., 2001; Pleasants, 2017). The remnant and restored prairie habitat predominant on district uplands provide ideal habitat for monarchs and they are a common species throughout the district.

Impacts: Pollinator food sources and habitat could be removed from agricultural fields during site preparation, planting, crop growth and harvest. Impacts of vegetation removal could temporarily disturb and displace pollinators, disrupt feeding or mating behaviors and cause injury or death to immobile life stages (e.g., eggs, larvae).

Farming would only occur on lands that have been previously disturbed. All remnant prairies would remain intact and any Poweshiek skipperling populations would be unaffected. Most farming would occur as a tool to convert existing cropland and low diversity or exotic grasslands to high diversity prairie species. The resulting high diversity prairie would contain a vast array of nectar plants and milkweeds, which would be beneficial to listed pollinators. The limited use of food plots would have a negligible effect on listed and candidate species.

Mitigation: The use of insecticides and neonicotinoids would not be allowed on district lands. The mitigation to all species section describes how impacts to pollinator species would be minimized. Additional measures would be included as needs arise.

Topeka shiners inhabit slow-moving small to midsize prairie streams with sand, gravel or rubble bottoms (Hatch and Besaw, 2001). They have not been found on station or adjacent lands although they have been found in tributaries downstream.

Impacts: Since they have not been documented on the district, direct impacts to Topeka shiners would be unlikely. Large-scale restoration of high-diversity prairie on station lands would benefit Topeka shiners by improving the water quality of downstream habitats.

Mitigation: Mitigation measures would not be necessary, because no adverse impacts would occur.

The eastern prairie fringed orchid occurs in a wide variety of habitats, from mesic prairie to wetlands such as sedge meadows, marsh edges and bogs. It requires full sun for optimum growth and flowering, and a grassy habitat with little or no woody encroachment. In some cases, the species may also occur along ditches or roadways (USFWS, n.d.a). The range of the eastern prairie fringed orchid has recently been expanded to include the eastern portion of Polk County in the southern portion of the Iowa Wetland Management District. The Errington Marsh Waterfowl Production Area is located west of this new range. However, the eastern prairie fringed orchid has not been documented on the waterfowl production area in over 30 years of ownership.

Northern monkshood is typically found on shaded to partially shaded cliffs and algific talus slopes (USFWS, n.d.b), which does not occur within the district boundary.

Prairie bush clover is found only in the tallgrass prairie region of Iowa, Minnesota, Illinois and Wisconsin. Populations can be found in remnant prairies on steep slopes or in other isolated prairie habitats where agriculture is not feasible (Anderson and Smith, 2020). The only known population of prairie bush clover has been documented on Santee Prairie Waterfowl Production Area in Dickinson County.

The western prairie fringed orchid occurs in moist tallgrass prairies and sedge meadows (USFWS, n.d.e). Western prairie fringed orchid has not been observed on district lands.

Impacts: Due to their limited occurrence, farming would not likely impact listed plant species. Prairie bush clover is the only species known to occur within the district and to date, no other species have been documented on the district.

Mitigation: Mitigation measures would not be necessary, because no adverse impacts would occur.

Impacts to all species: Direct and indirect impacts to listed species would be site-specific and short-term and would vary depending on the scope and intensity of the management actions. Farming equipment could temporarily disturb or displace individual animals or crush vegetation or habitat. Foraging behavior could be disrupted during site preparation, planting and harvest but would be limited to the time it takes to operate equipment. Normal behavior (i.e., in the absence of disturbance) would resume and vegetation would recover once activities had stopped.

Due to the low occurrence of listed species on the district and because cooperative farming would only occur in previously disturbed areas, negative impacts would be unlikely or minimal.

Mitigation for all species: To limit effects to wildlife, cooperative farming would follow all applicable agency guidance and policies. Mitigation measures to reduce and minimize negative impacts to listed species and cooperative farming related disturbance would be outlined in a special use permit. Restrictions could include limiting the duration and timing of harvest, equipment type and number of individuals participating in an activity at one time or annually.

Cooperative farming would occur on relatively small sections (e.g., 5 to 160 acres) of the district, and sufficient refugia (e.g., 95% of the district) would be available adjacent to farmed areas to provide habitat for dispersed wildlife (USFWS, 2014a; 2020a). Agricultural practices would only occur on previously altered tracts, which would protect endemic plants and associated insects. All motor vehicle and equipment use would be restricted to designated roads, trails and parking areas. Cooperators would be required to consider all farming conservation practices (e.g., rotating crops, cover crops, no-till, organic) as practical. Placing buffer zones around sensitive areas and using or improving existing infrastructure would be used to reduce impacts.

Special use permit stipulations (e.g., timing) would be used to reduce potential effects to listed species. All lifecycle and habitat requirements of listed species would be considered when planning and permitting cooperative farming. Cooperative farming would not be approved if it would jeopardize or disproportionately affect threatened and endangered species. Consultation with the Ecological Services Field Office would be re-initiated if there could be additional impacts to listed species that were not fully considered during the original consultation.

Other Special Status Species

Although no longer threatened or endangered, bald eagles are referenced here due to their protection under the Bald and Golden Eagle Protection Act.

Impacts: Farming on district lands would not be expected to affect bald and golden eagles or other special status species.

Habitat and Vegetation

The midwestern landscape is one of the most highly altered and intensively managed ecosystems in the country (Moore et al., 2019). Prior to European settlement, the dominant vegetation was tall grass prairie, which transitioned to hardwood deciduous forests to the east and mixed and short grass prairie to the west (Weaver, 1954). Nearly all native vegetation has been replaced by cultivated crops, and only small remnants of tall grass prairie exist today (Gallant, et al., 2011; Smith, 1981). In Iowa, almost 75% of native grasslands were converted to cropland by the mid 1800s, and nearly all of that land area is devoted to the production of corn and soybean crops. The land within the district is dominated by agricultural production, which has significantly changed native ecosystems.

Cooperative farming could alter habitat and vegetation on the district to achieve management objectives as outlined in the Iowa Wetland Management District Habitat Management Plan (USFWS, 2020a). The following habitat management objectives describe how habitats would be manipulated and expected to change over the next 15 years.

Habitat management objective 4.4.5. prairie and grassland: Annually protect and manage approximately 20-30% of existing prairie/grassland (3,800 – 5,700 out of a total of approximately 19,700 acres) while adding at least 1,500 new acres throughout the district over 15 years. Ninety-seven percent of the acres would be in perennial vegetation consisting of remnant prairie, restored prairie and smooth brome/alfalfa. The remaining 3% would be in crops for annual food plots per an agreement with Iowa Department of Natural Resources (USFWS, 2020a).

Habitat management objective 4.4.7. restore high diversity grasslands: Restore approximately 100 acres of high diversity grasslands over 15 years. Grasslands on new acquisitions would be restored within 5 years of acquisition (USFWS, 2020a).

Habitat management objective 4.4.8 renovate low diversity grasslands: Convert 2,100 acres of low diversity prairie and 2,418 acres of smooth brome-alfalfa to high diversity prairie over 15 years. Renovations would generally occur within 2-4 years of selection for renovation. Grasslands awaiting conversion would be managed to maximize their value for priority resources of concern (USFWS, 2020a).

Impacts: Farming, to accomplish habitat restoration objectives, would be implemented primarily to prepare a quality seed bed for the establishment of native tallgrass prairie species (USFWS, 2014a). Farming would prepare the seed bed by diminishing the abundance of competing plants and seeds in the soil, and, in the case of acquired farmland, eliminating the effects of residual herbicide on seedling germination (Kilde, 2000; Rowe 2010).

The operation of tractors and other farming implements could crush vegetation near the area being farmed. This disturbance would be limited in scope by only occurring during active farming and trampled vegetation would likely recover once the disturbance had ended. There would be no impact on native sod as farming would only occur on lands with a history of cropping or other disturbance.

The use of herbicides during farming operations would be used to reduce the abundance of competing plants and seeds in the soil. However, this herbicide could damage desirable vegetation near crop fields.

Mitigation: The limited scope of cooperative farming in terms of overall acreage, small size of individual fields and the scattered nature of fields throughout the district would largely mitigate the use's potential negative effects to habitat and vegetation. The locations chosen to be farmed and conditions identified in special use permits would minimize and mitigate impacts as well. Incorporating buffer zones around sensitive areas and using or improving existing infrastructure would be used to reduce impacts. Activities would be spread across the district so as not to overstress or overuse any one resource.

Chemical application would be used to promote a more favorable soil condition for native plant establishment and growth. To mitigate risks and limit impacts on vegetation adjacent to agricultural fields, herbicide selection and best management practices would be outlined in the pesticide use proposal. Aerial application of herbicide would not be permitted.

The district would protect habitat health by preventing, where possible, the introduction of invasive species and disease. Equipment used for cooperative farming would be required to be cleaned and free of vegetation from previous work sites before entering the district. Permittees would be restricted to specific areas (i.e., established transportation routes) when using farming equipment.

Aquatic Species and Water Quality

Remnant prairies and their associated wetlands are scattered and rare across their historic range, especially in Iowa. These areas often form the core of larger habitat complexes and provide essential fish and wildlife habitat, permit ground water recharge and act as filters of sediment and pollutants. A variety of other water resources occur within the district including lakes, rivers and streams. The western most portion (about one-third) of the district drains to the Missouri River, while the rest of the district drains to the Mississippi River. Many rivers within the district have been dammed, deepened, straightened and rerouted to better regulate flood control and allow for development (USFWS, 2014a).

Fish, mussels and other aquatic species are found in wetland habitats throughout the district. Aquatic invertebrates provide food for reproducing waterfowl and marsh birds throughout the spring and summer (USFWS, 2014a; 2020a). Reptiles and amphibians are important food sources for many mammals, birds and fish. Their numbers and diversity are often indicators of the health of an ecosystem. Aquatic species populations and resources are dependent on maintaining or enhancing the integrity of the watershed.

Impacts: Cooperative farming could impact water quantity and quality. Aquatic ecosystems potentially impacted by agricultural activities could include water bodies adjacent to or downstream from agriculture fields such as ponds, lakes, streams, rivers, moist soil units, marshes and ephemeral wetlands. Changes to vegetation by cooperative farming could increase surface

runoff. Deposition of eroded soil into nearby aquatic resources could increase localized turbidity or sedimentation (Moore et al., 2019). These eroded sediments could also transfer soil bound chemical contaminants, such as phosphorus and certain agricultural chemicals, to receiving water bodies (Moore et al., 2019). The use of herbicides could impact water quality in shallow aquifers.

Run-off from crop fields carrying pesticides, excess soil nutrients and sediments could adversely affect aquatic wildlife such as freshwater fish, invertebrates and amphibians. The effect of agriculture on aquatic species would depend on the type of tillage, pesticide use and habitat availability and structure. Intensive tillage practices could reduce wildlife habitat and contribute to increased sedimentation and transport of pollutants, which could negatively affect water quality.

Any adverse impacts to water resources would be localized and temporary. Particulates from erosion or sedimentation would settle out of the water column after farming activities had stopped allowing for improved water quality and habitat conditions. Cooperative farming would be managed as to not negatively decrease water quality more than existing runoff conditions.

Mitigation: The limited scope of cooperative farming within the district, both in overall acreage and the acreage of individual fields, would largely mitigate potential negative effects to aquatic species, their habitats and water quality. In addition, farmed locations would be carefully selected and conditions of the special use permits would include minimization and mitigation measures. Cooperators would be required to implement best management practices such as no-till, conservation tillage, crop rotation and pesticide buffers where feasible to reduce soil erosion and disturbance as well as increase crop residue, which would benefit aquatic species. The agency's pesticide use proposal process would be used to regulate pesticide types, application methods and application rates to minimize potential effects on non-target plant and animal resources as well as ground and surface water resources. Only pesticides approved by the U.S. Fish and Wildlife Service would be used on the district. The district would require 25 to 150-foot spray buffers from surface water along with vegetated filter borders around crop fields to mitigate and reduce non-target effects of pesticide use.

Geology and Soils

Mollisols, having a thick, dark-colored surface horizon, high organic matter content, and fertility, were formed under prairie vegetation and are the predominant soil order across Iowa and the district. Although very fertile, poor internal drainage is common, and many of these areas required artificial drainage before they could be used for row crop production.

Soil has important functions related to storing, regulating and cycling water and chemical elements. As water passes through the soil profile, it filters and cleans the water and detoxifies potentially toxic compounds including heavy metals and xenobiotics. Soil also serves as the primary terrestrial carbon pool, storing about three times more carbon than exists in the atmosphere or terrestrial vegetation (Karlen et al., 2010). Thus, soil plays a key role in regulating greenhouse gas emissions and subsequent climate change effects (Moore et al., 2019).

Impacts: Impacts to soils could include compaction, rutting and erosion. Whether induced by

water, wind, tillage or irrigation, soil erosion could result in loss of effective rooting depth, pollution of water resources and release of greenhouse gases from soils (Lal et al., 2004). Bare soil would be particularly susceptible to wind or water erosion, which could cause negative impacts on water quality and soil quality (Porter et al., 2015).

The types of crops planted could alter soil processes directly via traits related to litter production and chemistry, and indirectly via traits that influence microclimate (e.g., water usage, above ground biomass production; Mahaney, 2009). Most environmental problems associated with corn and soybean production have resulted from how the crops were grown and not the crops themselves (Moore et al., 2019).

Most of the impacts to soil resources would be short-term and limited to the time it takes to complete farming activities. Farmed areas of the district would be seeded back to diverse prairie after approximately one to three years, which would improve soil health and structure long-term.

Mitigation: The district would apply reduced till best management practices to protect and improve soil conditions (Karlen et al., 2010) and limit the exposure of bare soil. Tilled soils would be bare for a short period around spring planting, and no fall tillage would occur, allowing for residual vegetation cover over the winter. Prairie restorations following cooperative farming would typically be planted into untilled soybean stubble which would also substantially reduce the risk of erosion. Any soil management practice that would reduce soil disturbance and leave more vegetative surface residue would reduce the risk of soil erosion and transport and would offer an opportunity for improved soil and water quality (Dinnes, 2004).

Air Quality

Exhaust emissions from tractors and other farm equipment could temporarily decrease air quality. Due to the infrequency, limited duration and localized area of cooperative farming on the district, negative effects to air quality through slight increases in atmospheric pollution would be minimal and temporary. Air quality would improve once the emission-emitting equipment stopped operating. These effects would be minimal given the intensive agriculture surrounding district lands.

Visitor Use and Experience

The Iowa Wetland Management District conducts a broad array of wildlife and habitat management activities while providing for a variety of visitor services. Waterfowl Production Areas are open to hunting, fishing and trapping by regulation. In addition, the Iowa Wetland Management District is open to other wildlife-dependent uses such as wildlife observation and photography and environmental education and interpretation. Fall hunting represents the majority of visitor use within the district. Other uses such as wildlife observation and environmental education occur primarily in the spring during peak bird migration. Because the district occurs across a 35-county area, visitation to those lands is typically scattered across the landscape rather than in concentrated areas.

Impacts: Cooperative farming could interrupt some visitor uses in or near agricultural areas. Farming activities could temporarily disrupt visitor experiences but would be limited to the time it

takes for farming and spraying to occur. Interruptions would be infrequent and minimal but could include temporary closures to areas generally open to the public, increased vehicle traffic, increased noise from machinery or equipment and disruption to wildlife dependent recreation (e.g., displacing wildlife for observation and photography). This disturbance would temporarily displace visitors to other parts of the district until operations were completed. Farming could temporarily detract from the aesthetics of an area but would improve once revegetation begins. Roads and trails would be shared by the public.

Farming could temporarily provide improved opportunities to view or hunt wildlife on the district. Wildlife would likely be absent early in the growing season but could become more abundant as growing crops provide additional food resources. Row crops could provide feeding areas for deer, turkey and waterfowl. Due to the limited area and seasonality of food plots, these improvements to wildlife dependent recreation would be short-term and supplemental to improved opportunities resulting from habitat restoration.*Mitigation:* This use would take place in a controlled area of the district as cooperative farming would occur on no more than 5% of the district at any one time. Enough locations would remain open to visitors to minimize the impact to recreational opportunities. The limited acreage and scattered nature of the cooperative farming program would mitigate most natural resources and visitor conflicts.

Cultural Resources

The district has a rich human and cultural history spanning thousands of years. A review of the National Register of Historic Places showed that as of August 1, 1996, the 35 counties included in the Iowa Wetland Management District contained 397 properties listed on the national register. However, most of these buildings are in towns or cities. Properties found in rural areas such as farmsteads, farm buildings, bridges, segments of the Red River Oxcart trail, mill sites, battle sites and prehistoric archeological sites (e.g., mounds camps, rock art) could be indicative of the types of historic properties that could be found in the district (USFWS, 2013b).

Impacts: Farming would only occur on lands that have previously been disturbed and the potential to encounter cultural resources would be minimal.

Mitigation: The National Historic Preservation Act and other regulations require the Iowa Wetland Management District to consider potential affects to cultural resources when undertaking a management action. Planning for cooperative farming and issuance of special use permits would include coordination and clearance from the Regional Historic Preservation Officer. Once an agriculture site has been identified, a request for review would be provided to the officer to ensure compliance with the National Historic Preservation Act.

All management actions would stop immediately if unknown or unanticipated cultural resources were discovered. The Regional Historic Preservation Officer would be contacted as soon as possible to ensure compliance with the National Historic Preservation Act.

Refuge Management, Operations and Administration

Cooperative farming would not interrupt district management activities. The staff time needed to develop and administer a farming program would already be committed and available. The work would be completed as part of the routine management duties of district personnel. No special equipment, facilities or improvements would be necessary to support the use.

Socioeconomics

According to the 2020 U.S. Census, the population of all 35 counties in the district was estimated to be 1.2 million (a 9% increase from 2010; U.S. Census Bureau, 2021). Land use in the district is roughly 80% row crop agriculture with the remaining land use consisting of pasture, municipalities, animal production, alternative energy production and conservation lands. Agriculture-related jobs represent nearly 50% of employment in some counties.

Each year the district attracts thousands of visitors. In 2017 an economic analysis of visitation to the Iowa Wetland Management District was completed. The district was estimated to have about 145,000 visitors per year. Hunting accounted for 87% of the visitation and 97% of total expenditures. Total expenditures from visitors in 2017 were over $2.5 million with non-residents accounting for 29% percent. The annual contribution of recreational spending in local communities was associated with 35 jobs, $1.7 million in employment income, $228,000 in total tax revenue and $4.3 million in economic output (USFWS, 2019).

Impacts: Cooperative farming would result in an economic benefit to the cooperator through revenue generated by crop sales. Farming would have a modest economic return on local communities from the purchase of seed, herbicide and other farming-related costs.

Although limited, food plots across the district could attract visitors to hunt and view wildlife. These visitors bring socioeconomic activity to the surrounding communities as people purchase fuel, outdoor gear and visit local establishments.

Environmental Justice

Cooperative farming would not disproportionately place any adverse environmental, economic, social or health affects onto minority and low-income populations. Cooperators would be selected using a competitive bid process (620 FW 2), which would provide equal access to farming opportunities across all demographics.

Flood Plains

Cooperative farming would occur in a floodplain, but associated activities would not contribute to flood damage or negative impacts. Mitigation and avoidance measures would be outlined in this document and the comprehensive conservation and habitat management plans (USFWS, 2014a; 2020a).

Long-term impacts

This compatibility determination includes written analyses of environmental consequences on a resource only when long-term impacts on that resource could be more than negligible and therefore considered an “affected resource.” Special status species, cultural resources, refuge management, operations and administration and environmental justice would not be more than negligibly impacted by the action and have been dismissed from further analyses. Mitigation measures would limit potential negative long-term impacts.

The use of cooperative farming to reconstruct diverse native prairie and plant food plots would provide long-term benefits across the Iowa Wetland Management District such as:

1. Conserving habitat for waterfowl and other migratory birds, resident wildlife and pollinating insects in support of the National Wildlife Refuge System Improvement Act, National Wildlife Refuge System mission and the Iowa Wetland Management District purposes;
2. Promoting ecological integrity as directed by the National Wildlife Refuge System Improvement Act;
3. Ensuring effective coordination, interaction and cooperation with neighboring landowners and the Iowa Department of Natural Resources; and
4. Providing opportunities for compatible wildlife-dependent recreational uses (USFWS, 2014a; 2020a).

Wildlife

Terrestrial Species

Managing habitats for priority resources of concern would yield the greatest benefit to trust resources and maintain and enhance the biological integrity, diversity and environmental health of the district (USFWS, 2020a). Carefully managed cooperative farming would provide a long-term benefit to wildlife by facilitating the restoration of historic prairie vegetation across the district. After a few years of farming, agricultural fields not in food plots would be converted to native prairie, which would provide diverse nesting cover, food resources and long-term habitat improvement for migratory birds (Koford and Best, 1996), resident wildlife and pollinating insects. By restoring large, contiguous blocks of prairie habitat, many grassland-nesting birds and upland nesting waterfowl species would have better nesting success (Winter and Faaborg, 1999; Winter et al., 2000). These complexes of grasslands and wetlands would provide some of the last refugia for nesting and migratory waterfowl and other bird species within a highly developed landscape.

Rebuilding landscape diversity within agricultural systems would support a diverse suite of arthropods (Isaacs et al., 2009), and the reestablishment of flowering plants would provide critical foraging resources, shelter and overwintering sites year-round (Isaacs et al, 2009; Landis et al, 2000; Vaughn et al., 2018). Increasing the abundance of beneficial invertebrates on the landscape could lead to improved ecosystem services, including those provided to agriculture.

Threatened and Endangered Species

In a landscape drastically transformed by agriculture and development, restoring native habitat would be critical for supporting listed species. Foraging bats could incidentally benefit from increased insect prey following restoration of high diversity prairies. The large-scale restoration of prairie pothole habitats on the district would likely improve water quality downstream, which would benefit Topeka shiner.

Nectar resources are an important component of monarch habitat. More than 99% of native northern tallgrass prairie has been lost since European settlement, and with it, many of the nectar resources that previously existed in these habitats (Lark et al., 2015; Samson and Knopf, 1994). Habitat management objective 4.4.6.1 would provide a minimum of 250 milkweed stems per acre for monarchs in restored grassland habitats (Thogmartin et al., 2017a; USFWS, 2020a) and would

provide an essential food source for larvae, which only feed on milkweed.

Habitat and Vegetation

Long-term, farming would help meet the purpose and mission of the National Wildlife Refuge System by facilitating the restoration of historic, diverse prairie vegetation for the benefit of waterfowl as well as endemic wildlife and insects. Prairie restoration following cooperative farming would provide a resilient, long-term deterrent to noxious weeds without the use of herbicides and/or mowing, which would reduce chemical residue and non-native plant communities.

Past prairie restoration efforts, without the assistance of farming, has resulted in reduced seedling establishment and unacceptable levels of invasive vegetation competition, which has limited native plant development (USFWS, 2014a). Many of the tracts acquired by the Iowa Wetland Management District have been extensively farmed for a long period of time, which has reduced the possibility that the land would return to a native state without intensive management or manipulation (Smith, 1998). Native grassland vegetation would be restored using Iowa Prairie Resource Center guidelines to ensure optimal success (USFWS, 2020a).

Agricultural conser-vation programs could contribute to ecosystem restoration through the re-establishment of otherwise declining native plant communities. Once established, many species would persist or re-seed themselves for decades, in contrast to annuals or biennials, which would require regular re-seeding (Isaacs et al., 2009). Plants native to a region have adapted to the local climate and often have lower water, nutrient and pest-control requirements than non-native species making them more cost effective to manage.

The restoration of tallgrass prairie could improve a variety of ecosystem services including soil health, clean water, climate regulation, reduced erosion and pests, flood control and wildlife habitat. Farmers, policy makers and society at large have increasingly recognized that agroecosystems benefit from conservation practices that restore these services (Moore et al., 2019).

As a noteworthy update to restoration objectives, important milestones have been achieved to-date under the comprehensive conservation plan and the habitat management plan. Since the implementation of the comprehensive conservation plan in 2015, cooperatively farmed acres, acquired cropland, low diversity grassland conversions and food plots have been reduced from 1,086 acres combined (5.50% of upland habitat) to 706 acres (3.44% of upland habitat). A total of 2,688 cooperatively farmed acres (approximately 13% of the district's upland habitat) has been restored to high diversity grassland (a rate of 336 acres per year). Since the implementation of the habitat management plan in 2020, a total of 1,108 cooperatively farmed acres have been restored to high diversity grassland (339 acres per year). At that rate, the district would be on pace to restore over 5,000 upland acres to high diversity grassland over the 15-year period of the habitat management plan, which is 10% more than what was been outlined in plan objectives. With this projection, using cooperative farming as a tool to restore the prairie landscape within the Iowa Wetland Management District would provide more benefits to prairie-dependent species than originally anticipated.

Geology and Soils

Soil quality would improve in agricultural fields once native prairies have been reestablished. Native grasslands dominated by perennial species provide continuous cover to the land surface and extensive root systems, which help build soil organic matter levels (Moore et al., 2019).

Air Quality, Water Quality and Aquatic Species and Flood Plains

Long-term, farming on the Iowa Wetland Management District would have a modest positive impact on flood plains resulting from the restoration of diverse native prairie on previously disturbed soils.

Native prairie systems are relatively closed systems, with little movement of nutrients from prairie soils into surface or ground water. The extensive root systems of perennial plants in native plant communities efficiently capture these nutrients and recycle those resources into plant biomass, which can indirectly improve water quality (Masarik et al., 2014).

Visitor Use and Experience

A long-term benefit of farming would be the improvement of district habitat in support of a wide array of fauna and flora to be enjoyed by the visiting public.

Socioeconomics

Prairie restoration post cooperative farming could have positive, long-term effects on agriculture. Modern agricultural landscapes have been shaped by pro-duction systems aimed at maximizing crop yield and prof-itability, but there are compelling reasons for agriculture to broaden the range of ecosystem services it provides to society (Swinton et al., 2006; Fiedler et al., 2008). If biological pest control and pollination services can be increased through conservation programs, benefits will include increased farmer profit and reduced dependence on chemical pesticides (Isaacs et al., 2009).

Public Review and Comment

The draft compatibility determination will be available for public review and comment for 15 days from 1/22/24 to 2/6/24. The public will be made aware of this comment opportunity through the following regional newspapers: Algona, Spencer, Spirit Lake, Mason City and Des Moines. A hard copy of this document will be posted at the Refuge Headquarters or Visitor Center at 1710 360th Street, Titonka, Iowa 50480 and will be made available electronically on the refuge website (https://www.fws.gov/refuge/iowa-wetland-management-district). Please contact the refuge at (515)928-2523 if you need the documents in an alternative format. Concerns expressed during the public comment period will be addressed in the final determination.

Determination

Is the use compatible?

Yes

Stipulations Necessary to Ensure Compatibility

To ensure compatibility with the National Wildlife Refuge System Improvement Act and refuge establishing purposes, goals and objectives, cooperative farming could only occur under the following stipulations:

1. Farming activities will only take place on previously altered tracts of land within the district, must meet specific habitat and wildlife objectives and contribute to the purposes of the Iowa Wetland Management District.
2. Cooperative farming agreements administered through special use permits will be limited to five years or less.
3. Cooperative farmers will follow the best management practices and conditions of the special use permit as established by the district.
4. Special use permits will address unique local conditions and restrictions as applicable.
5. Genetically modified crops will be used only for the purpose of habitat restoration, limited to Glyphosate-tolerant corn and soybeans and used for no more than 5 years on any given tract.
6. Cooperative farmers will be subject to U.S. Fish and Wildlife Service policy and regulations regarding chemical use. Herbicide and pesticide use will be restricted by type and the approved application rate.
7. An approved pesticide use proposal will be required before pesticide application, and cooperating farmers will be required to follow the associated best management practices and restrictions as outlined.
8. All cooperators and special use permits will adhere to the Region 3 Farming Program Guidelines, including the prohibited use of neonicotinoid treated crop seeds (USFWS, 2014b).
9. Cooperative farmers will be required to report all pesticide use by December 1 of the crop year.
10. Planting and harvest activities will be restricted to minimize wildlife disturbance.

Justification

The stipulations outlined above would help ensure that the use is compatible at the Iowa Wetland Management District. Cooperative farming, as outlined in this compatibility determination, National Environmental Policy Act documentation and other associated documents would not conflict with national policy to maintain the biological diversity, integrity, and environmental health of the refuge. Based on the best available science and professional judgement, the U.S. Fish and Wildlife Service has determined that cooperative farming at the Iowa Wetland Management District, in accordance with the stipulations provided above, would not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purpose of the district. Rather, appropriate and compatible cooperative farming would allow the district to meet district purposes and habitat management objectives through which the public can develop

an apprciation for wildlife and wild lands.

Signature of Determination

Refuge Manager Signature and Date

Signature of Concurrence

Assistant Regional Director Signature and Date

Mandatory Reevaluation Date

2034

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Figure(s)

Figure 1. Properties managed within the Iowa Wetland Management District

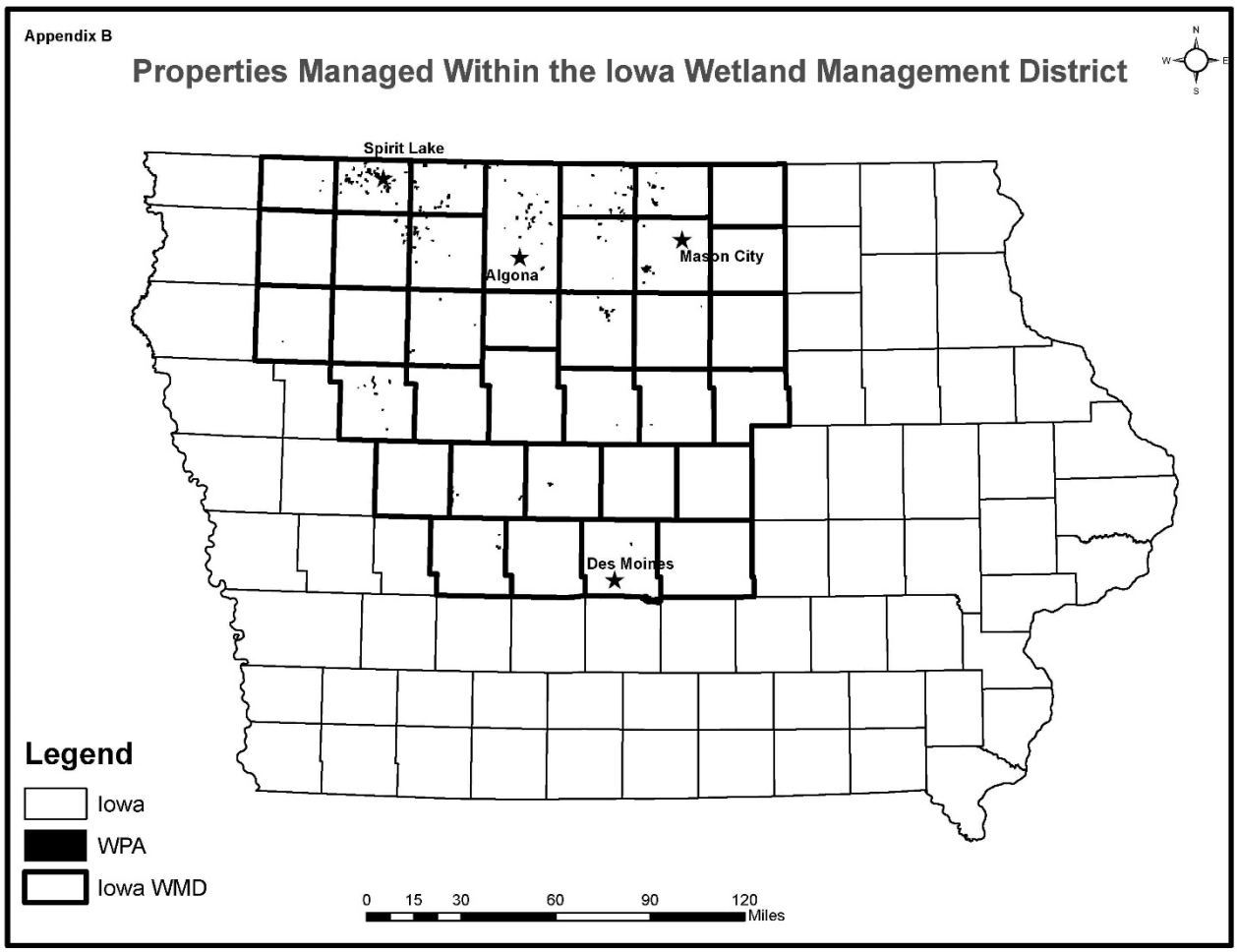

Figure 1. Map indicates locations of existing Iowa Wetland Management District units, which are represented by black dots. The district has an approved acquisition boundary encompassing 35 counties in Iowa as outlined by the thick black line. However, the district has only acquired properties in 18 of these counties including: Boone, Buena Vista, Cerro Gordo, Clay, Dickinson, Emmet, Greene, Guthrie, Hancock, Kossuth, Osceola, Palo Alto, Pocahontas, Polk, Sac, Winnebago, Worth and Wright. Please contact the refuge at (515)928-2523 if you need additional assistance with the map.