

Chapter 4: Management Direction and Implementation

This chapter presents the goals, objectives, and strategies that will guide management of the Iowa Wetland Management District (WMD, district) over the next 15 years. It also includes rationale for why these objectives are preferred and scientifically sound. This management direction represents the plan for the district and mirrors Alternative D in the EA/Draft CCP that was prepared as part of the planning process.

Objectives and Strategies

Goal 1: Wildlife

In partnership with the Iowa Department of Natural Resources (DNR) and others, restore a natural diversity and abundance of waterfowl, migratory birds, and other native fauna within the Iowa WMD.

Issue 1-1: Focal species group and life cycle

Objective 1-1-1	Over the 15-year life of the comprehensive conservation plan (CCP), increase the breeding population of Mallard by 450 pairs and Blue-winged Teal by 450 pairs on protected wetlands (permanent state and federal ownership) in the Prairie Pothole Region (PPR) of Iowa, and develop strategies, as part of the district's Inventory and Monitoring Plan, to set recruitment goals for these species in the PPR of Iowa.
Measures	<ul style="list-style-type: none"> • Mallard breeding population increased by 900 individuals on protected wetlands (permanent state and federal ownership) in the Prairie Pothole Region of Iowa. • Blue-winged Teal breeding population increased by 900 individuals on protected wetlands (permanent state and federal ownership) in the Prairie Pothole Region of Iowa. • Recruitment goals established in the district's Inventory and Monitoring Plan for Mallard and Blue-winged Teal within the PPR of Iowa.
Rationale	<p>Many species of wildlife use Waterfowl Production Areas (WPAs) in the district; however, its main purpose is for waterfowl production and to provide habitat for migratory birds, especially those that are grassland-/wetland-dependent. With limited staff and budgets it would be difficult to manage for all these species individually. Therefore, it is more practical to focus on a few species that represent a guild or group of other species. Mallard and Blue-winged Teal were chosen as focal species for the district, because their habitat and life cycle requirements are representative of a wide scale of other wetland and grassland-dependent migratory birds.</p> <p>A measure that is often used to determine nesting site suitability for ground nesting birds is a visual obscurity</p>

rating (VOR) (Robel et al., 1970). After looking at VOR readings for various species of both waterfowl and other grassland-dependent birds, it was clear that both Mallard and Blue-Winged Teal encompass most of the other ground nesting birds using the PPR (Laubhan et al., 2006). These focal species also require the various wetland types represented in the PPR of Iowa, such as temporary and seasonal wetlands for pair bonding and semi-permanent to permanent wetlands for brood rearing and molting. Thus, managing the district to provide the habitat requirements of these focal species will in turn provide for the needs of many other migratory birds and resident wildlife.

According to conversations with retired Iowa DNR waterfowl biologist Guy Zenner in 2012 and 2013 and other supporting literature, Mallard, Blue-winged Teal, and Wood Ducks are the most common nesting waterfowl species in the district (Bishop et al., 1979; Fleskes, 1986; Ohde et al., 1983; Weller, 1979). Mallard pairs represented 36 percent and Blue-winged Teal pairs represented 35 percent of the breeding ducks surveyed during the four-square mile pair counts across nine counties of the district from 2006 through 2011. Wetlands surveyed during the pair count are 69 percent privately owned and 31 percent publicly owned and therefore, protected or managed by the state or federal agency (U.S. Fish and wildlife Service [FWS, Service], 2012a). Although breeding pair density varies from newly restored to existing wetlands, Iowa has an average of 0.9 pairs per wetland acre (FWS, 2012a). Since the district has an acquisition goal of 3,000–4,500 acres over the next 15 years, with generally a 3:1 ratio of uplands to wetlands, new habitat could be provided for approximately 900 new duck pairs. Based on the land acquisition and wetland restoration objectives in this CCP, increasing the populations from the current average from 2006 through 2011 breeding pair population of 6,406 Mallard pairs and 6,221 Blue-winged Teal pairs (state and federally protected wetland) by 450 pairs each, seems to be most realistic and achievable. This equates to an increase in the cumulative breeding population of Mallards and Blue-winged Teal by 1800. It is important to note that the wetlands restored in the district will be representative of the historic PPR of Iowa—that is, representing the area prior to Euro-American settlement.

Currently, recruitment rates are available for both Mallard and Blue-winged Teal nesting in the PPR of Iowa; however, many managers and biologists question the validity of these estimates due to the great variability in factors effecting recruitment. Studies such as nest dragging tend to be somewhat localized and difficult to extrapolate for the entire district. Brood count data is highly variable as well due to many factors such as vegetation cover on wetlands and survey methods. For these reasons, recruitment goals will not be used in this management plan but will be developed with partners in the Inventory and Monitoring Plan.

Even though the district will be adding protected and restored wetlands to the landscape, agricultural drainage on private land will likely continue to remove them. However, this objective only addresses the land that the Service and its partners control under permanent protection. The FWS Partners Program will continue working with private landowners using various Farm Service Agency (FSA) programs such as the U.S. Department of

	<p>Agriculture's Conservation Reserve Program (CRP), the Wetlands Reserves Program (WRP), and conservation agreements and easements to reduce the loss of wetlands on private land.</p>
<p>Strategies</p>	<ul style="list-style-type: none"> • Restore a minimum of 500 acres of existing cropland to native grassland annually as budget, staff, and weather allow. • Continue to acquire land (approximately 350–400 acres per year) per the FWS Region 3 Strategic Growth of the Small Wetland Acquisition Program's <i>Guidelines for Fee and Easement Purchase</i> and the Memorandum of Understanding (MOU) with Iowa DNR. • Convert newly acquired cropland in the uplands to native grassland ideally within two years of acquisition. (Exceptions to the two year goal will be outlined in the individual unit plan.) • Restore the wetland portion(s) of newly acquired property as soon after acquisition as funding and resources allow. • Assess the status of Objective 1-1-1 annually per Iowa DNR four-square mile survey results. • Work with Cooperative Fish and Wildlife Research Unit (Iowa State University), Iowa DNR Waterfowl Biologist and the Service's Habitat and Population Evaluation Team (HAPET) and secure funding to establish research to determine scientifically sound recruitment rates for Mallard and Blue-winged Teal populations in the PPR of Iowa as part of the development of the district's Inventory and Monitoring Plan.

Goal 2: Habitat

In partnership with the Iowa DNR and others, conserve, restore, and expand grassland and wetland habitat managing for a natural diversity of native flora within the Iowa WMD.

Issue 2-1: Prolonged decline of grassland-dependent bird populations due to the decline of grassland habitat

Objective 2-1-1	Over the 15-year life of the CCP, increase native grassland habitat by 7,500 acres with a plant diversity of 100 or more species, and provide more suitable habitat (in terms of vegetative structure as will be defined in the district's Habitat Management Plan) in existing grassland for a wide variety of grassland-dependent birds within the Iowa WMD.
Measures	<ul style="list-style-type: none"> • The district contains 23,687 acres of grassland habitat after the 15-year life of the plan. • Twenty-five percent of existing grassland bird habitat is managed annually (e.g., hay, graze, burn, mow, tree removal) assuring that all lands are treated at least once every four years to improve vegetative structure and diversity.
Rationale	<p>As Iowa was settled, the rich soils of the state were steadily converted from an almost endless sea of diverse prairie to a very orderly succession of row crop fields. Today, more than 99.9 percent of Iowa's prairies have disappeared (Smith, 1992). The huge loss of habitat produced a corresponding reduction in grassland-dependent birds. Maintaining prairie remnants and reconstructing prairie on crop fields is a critical first step to providing essential habitat for grassland-dependent migratory birds in a landscape that has lost almost all of the historic grasslands.</p> <p>As a group, grassland birds have a wide range of habitat requirements that can be categorized based on their vegetation height and density preferences (Ribic et al., 2009). For example, Vesper Sparrows (<i>Pooecetes gramineus</i>) prefer short, sparse habitats maintained by disturbances such as grazing, while Sedge Wrens (<i>Cistothorus platensis</i>) prefer tall, rank cover on moist sites (Ryan, 1986). In addition, there is great variability in preference for factors other than vegetation height, including litter depth, woody vegetation tolerance, and tract size. Historically, the sheer size of the unbroken prairie provided numerous opportunities for the expression of many different habitat conditions. This allowed many different bird species to find their preferred habitat within the larger matrix of the tallgrass prairie. The fragmented nature of current grasslands is much less likely to provide that kind of habitat diversity. This is especially true if grasslands are not subjected to some kind of periodic disturbance. Annually treating a portion of fragmented grasslands with some form of disturbance like haying, grazing, mowing, or burning will increase the structural diversity across the district. A combination of all these disturbance tools applied strategically throughout the district will create a continuum from bare ground to tall, dense standing vegetation. Burning generally removes all standing vegetation and litter from the ground.</p>

	<p>Mowing or haying generally remove most of the standing vegetation but frequently leave some amount of litter on the ground. Depending on stocking rates, timing and/or duration, grazing can remove virtually all standing vegetation and most of the litter, or it can be used to reach some predetermined vegetation condition that can vary across a wide spectrum of structural diversity.</p> <p>Prairie vegetative productivity declines and extensive invasion of woody and other invasive plant species occur in the absence of disturbances such as prescribed fire, grazing, haying, or mowing (Herkert, 1994). In addition, there is evidence that there is a positive relationship between plant species diversity and ecological stability in response to climatic stressors like drought, flooding, and climate change (Tillman and Downing, 1994). Various management tools must be used to manipulate grasslands to achieve the mosaic of habitat conditions needed to attract a diversity of grassland bird species. Management actions such as haying, mowing, burning, grazing, tree removal, and rest will all have positive influences for some bird species while simultaneously having negative influences for other bird species. The careful application of these management actions across the lands in the Iowa WMD will help to ensure that a wide variety of grassland-dependent bird species can find appropriate habitat throughout the Iowa prairie pothole landscape.</p>
<p>Strategies</p>	<ul style="list-style-type: none"> • Restore a minimum of 500 acres of existing cropland to native grassland annually as budget, staff, and weather allow. • Convert newly acquired cropland to native grassland ideally within two years of acquisition. Exceptions to the two year goal will be outlined in the individual unit plan. • Annually treat a minimum of 25 percent of district grasslands with a combination of the following types of treatment: haying, prescribed grazing, prescribed fire, mowing, or tree removal. This strategy will be employed in such a way as to have all district grassland acres receiving a treatment at least once every four years. • Develop an appropriate research and monitoring protocol to evaluate grassland bird use of WMD lands. Work with the Iowa DNR's Multiple Species Inventory and Monitoring Program if possible. • Complete the district's Habitat Management Plan that details the desired varying vegetative structure for the district's grasslands.

Issue 2-2: Upland habitat quality

Objective 2-2-1	At the end of the 15-year life of the CCP, perennial grassland, preferably native, is present on at least 97 percent of the uplands of the Iowa WMD.
Measure	<ul style="list-style-type: none"> Perennial grassland covers at least 97 percent of the district uplands.
Rationale	<p>Grasslands can support greater abundance and diversity of birds than row crop fields (Rodenhouse and Best, 1983). Grasslands also provide far superior nest cover for the vast majority of ground nesting waterfowl as compared to annually tilled fields (Higgins, 1977). The main purpose of the district is to benefit waterfowl and other grassland-dependent migratory birds. Currently, about 15 percent of district land is in row crop fields. Therefore, it is a top priority to convert the vast majority of these fields to grassland as quickly as is financially and logistically possible. Planting these areas to diverse native seed mixes will help to ensure the long-term maintenance and restoration of healthy populations of native fish, wildlife, and plants and their habitats as is required by the Service’s Biological Integrity, Diversity, and Environmental Health policy (FWS, 2001).</p> <p>The majority of new land acquisitions in the district are row crop fields. These row crop fields will be seeded to diverse prairie plantings ideally within two years of acquisition. After the crop ground in the district has been seeded to grassland, degraded remnant prairie and old, low diversity plantings, both native and non-native, will be evaluated to determine if conversion to diverse native plantings is warranted. The advantages of planting diverse native mixes include increased structural diversity with an appeal to a wide array of grassland-dependent wildlife, increased ability to deal with climatic stressors, increased ability to compete with invasive plants, and increased acreage of critically endangered tallgrass prairie habitat (see rationale for Objective 2-1-1).</p> <p>The district includes both food plots and fields of rotational cover that have been planted to non-native vegetation such as smooth brome and alfalfa. Food plots are discussed in Objective 2-5-1. The rotational cover exists for a variety of reasons. In some cases, these fields were enrolled in CRP and planted to non-native vegetation such as smooth brome. When the Service acquired the land, the non-native cover was already established. In other cases, smooth brome and alfalfa were planted after purchase by the Service to provide attractive cover for nesting waterfowl. Since district resources will be focused on planting the existing crop ground as well as all newly purchased crop ground to diverse native plantings, the status quo of these existing rotational cover plantings will be maintained until at least the backlog of crop ground has been planted. This will allow the district to evaluate and compare bird use and nest success in brome/alfalfa plantings versus diverse native plantings. The information gathered during the comparison will help determine the ultimate fate of the existing brome alfalfa plantings. Proposals for new rotational cover plantings will be evaluated for appropriateness and compliance with Service policies.</p>

Woody encroachment into grasslands can happen rapidly without proper management (Herkert, 1994). Historically, the district was dominated by tallgrass prairie. Soil surveys and historic vegetation maps based on Iowa's original land surveys from the mid-1800s indicate trees were generally restricted to the major rivers throughout most of the district. Large portions of the area were almost treeless. Today, native grasslands are extremely rare across the district. In fact, grasslands of any type are rare across the district. To provide the open grassland habitat needed by many bird and other wildlife species, district uplands will be managed to prevent the establishment and/or spread of woody vegetation. Management tools such as grazing, mowing, haying, prescribed fire, and tree removal will all be used to promote and maintain open grasslands.

District lands occur in a highly altered agricultural landscape. This has contributed to the introduction and spread of aggressive, invasive plants across the district (Solecki, 1997). Grasslands are subject to invasion by some of these plants. If left unchecked, invasive plants can form monotypic stands that suppress the native plants and associated diversity (Solecki, 1997). As a result, a great deal of effort goes into managing these invasive species. Control efforts use the least destructive method possible to control and discourage invasive species, including hand pulling, mowing, grazing, haying, and chemical treatment.

Multiple strategies and techniques are used to seed native grassland across the district. Purchasing seed mixes allows for the creation of an exact mix with desired percentages of cool and warm season grasses, sedges, and forbs. However, much of the time, there are variable yearly limitations in species, quantities, and budgets. Therefore, a combination of techniques to acquire seed mixes for the district must be utilized. Existing native grassland is harvested in bulk with a combine. This provides a base seed mix with some known species based on what is growing in the field but unknown amounts of those species. A seed test is usually completed to determine what species are in the mix, the relative proportion of each species, and the viability of each species. However, the sample sent in for testing is very small compared to the total seed lot harvested. Generally, the most abundant species present in the seed (usually big bluestem and/or Indiangrass) is fairly accurate, but there is much less certainty about the many other species present in the mix.

As a result, a combination of purchased seed and hand harvested seed are added to the mix for more diversity. The purchased mix is usually more of what is available and affordable and not so much about what is desirable. Generally, the species most lacking in the seed harvested with the combine includes early growing plants (cool season), low growing plants (mostly cool season), and plants that grow in wet areas (sedges and others). Most cool season species have dropped their seeds by September when the harvest occurs and it is too difficult to combine in wet areas to get sedges and other wet-tolerant plants. These species can be hand collected, but getting large quantities is difficult without a large volunteer group. Furthermore, it is very difficult to find large quantities of local ecotype cool season species (grasses, forbs, sedges) to purchase. There is often reluctance by seed dealers to grow such species that are not generally in high demand especially when Service budgets

	<p>are unstable from year to year. In the end, the most diverse seed mix that is affordable and available is planted, but percentages of certain species or groups (cool season grasses, forbs, sedges, etc.) remain unknown.</p>
<p>Strategies</p>	<ul style="list-style-type: none"> • Restore a minimum of 500 acres of existing cropland to native grassland annually as budget, staff, and weather allow. • Convert newly acquired cropland to native grassland ideally within two years of acquisition. Exceptions to the two year goal will be outlined in the individual unit plan. • Remove encroaching woody vegetation. • Only after existing cropland is planted to native grassland, replace low diversity grasslands, both native and non-native, with higher diversity native species seed mixes including warm season grasses, cool season grasses and sedges, and forbs to increase species and structural diversity on district grasslands. • Treat/remove aggressive, invasive species to minimize loss of species and structural diversity. • Develop an appropriate research/monitoring project to compare use and nest success rates of waterfowl and other grassland-dependent birds in diverse native seedings versus brome/alfalfa seedings. • Evaluate, before planting, any new rotational cover of brome/alfalfa on district land by considering factors such as budget, seed availability, purpose, location, and ecological integrity.

Issue 2-3: Focal wetland type

Objective 2-3-1	At the end of the 15-year life of the CCP a variety of wetland types (75 percent temporary and seasonal, 15 percent semi-permanent, and 10 percent permanent) exist across the Iowa WMD as representative of the pre-Euro-American settlement landscape.
Measure	<ul style="list-style-type: none"> District wetlands are 75 percent temporary and seasonal, 15 percent semi-permanent, and 10 percent permanent.
Rationale	<p><u>Wetland Complexes and Cycling:</u> The Des Moines Lobe contains wetlands varying in size and water regime including temporary, seasonal, semi-permanent, and permanent (Stewart and Kantrud, 1971). The dynamic wet-dry precipitation cycles of the prairie region create corresponding water, nutrient, and vegetative cycles that maintain the productivity and ecological health of these wetlands (Euliss et al., 1999). These cycles historically maintained wetlands in a clear water state, which supports healthy wetland vegetation providing seeds, tubers, aquatic insects, and other foods used by waterfowl and other migratory birds. A cluster or “complex” of these varying wetland types is required for waterfowl to complete their life cycle including nesting, brood rearing, molting and migration (Swanson and Duebber, 1989). This wetland variety increases the likelihood that productive and suitable habitat will be available at any given time as the water conditions vary both seasonally and from year to year. The quantity and quality of wetland habitat within Iowa not only affects the production of locally nesting birds but also affects the productivity of birds nesting farther north. These wetlands are critical in providing proper food resources to improve breeding condition of the birds when they arrive at their breeding grounds (Devries et al., 2008; Anteau and Afton, 2011).</p> <p><u>Altered Wetland Systems:</u> The intensive agricultural development currently dominating the Des Moines Lobe has had a dramatic effect on the quantity and quality of wetland habitat within the district. Due to extensive wetland drainage only three to four percent of the historic wetland acreage currently exists within the lobe (Miller et al., 2012). These drainage systems have lowered regional water tables creating dryer water regimes within the few remaining wetlands across broad landscapes. In many cases, these systems drain hundreds or even thousands of acres containing smaller basins into a larger basin lower on the landscape. This process is commonly called “consolidation drainage.” Consolidation drainage creates a more unchanging, permanent water regime in the receiving basin, which interrupts the wet-dry cycles critical to the productivity of the receiving wetlands (Weller and Fredrickson, 1974; Anteau, 2012). Because these drainage systems are interconnected, invasive and non-native fish are given a conduit to invade historically isolated wetlands leading to turbid conditions with low productivity and providing direct competition for aquatic food resources. Unchanging high water levels from consolidation drainage often prevent the fish from “freezing out” in winter as had occurred during historic wet-dry cycles (Anteau et al., 2011). Similarly, the more permanent water regime may interrupt natural predator cycles and, consequently, reduce duckling survival (Krapu et al., 2004). Surface and tile runoff from upstream cropland frequently carries excess nutrients, contaminants, and sediment into wetlands</p>

	<p>exacerbating the turbid state of the wetlands. As a result of these impacts, the existing wetland base within the lobe is skewed toward deeper water regimes, many of which are in poor ecological condition (Miller et al., 2012; Anteau and Afton, 2011; Anteau, 2012).</p> <p><u>Temporary and Seasonal Wetlands:</u> Smaller temporary and seasonal wetlands are preferred by nesting Mallards during pre-nesting and egg production (Krapu et al., 1997). As a result, these basins support more pairs of breeding waterfowl than larger, more permanent basins (Kantrud and Stewart, 1977; Cowardin et al., 1995). Krapu et al., (2000) found that the survival rate of Mallard broods was substantially higher when seasonal wetlands contained water, underscoring the importance of seasonal wetlands as a major component of wetland complexes for breeding waterfowl. LaGrange and Dinsmore (1989) found that Mallards migrating through Iowa used “sheetwater” wetlands almost exclusively for feeding while using larger, more permanent basins for roosting at night. More recently, the restoration of temporary and seasonal wetlands upstream from larger basins and shallow lakes has been recognized as highly beneficial to restoring the hydrologic cycle needed to return the productive clear water state to these deeper basins (Anteau, 2012).</p> <p><u>Semi-permanent Wetlands and Shallow Lakes:</u> In most years seasonal wetlands are dry by mid-summer. Consequently, semi-permanent wetlands and shallow lakes are typically needed for brood rearing later in the growing season (Swanson, 1986). In mid- to late-summer, larger more permanent wetlands also provide important molting habitat for post-breeding waterfowl (Swanson and Duebbert, 1989). Naturally, semi-permanent basins and shallow lakes also provide the only migratory habitat for fall migrating wetland-dependent species.</p> <p><u>Priority Wetland Complexes:</u> The identification and restoration of landscapes with high densities of temporary and seasonal basins in proximity to brood habitat is critical to meet the population objectives for the district. Beginning in the 1980s, the Iowa DNR collaborated with the Service and other partners to identify priority wetland complexes for restoration within the Des Moines Lobe as part of the Prairie Pothole Joint Venture (PPJV) of the North American Waterfowl Management Plan (Zohrer and Garner, 2002). Since that time, the Service has been working side by side with the Iowa DNR and a variety of other partners to restore large blocks of habitat that reestablish wetland complexes as well as the underlying water tables. Many of these complexes have targeted the watersheds upstream from existing larger wetlands and shallow lakes within these identified complexes. Because these existing larger basins are at the elevation of the water table, the true hydrology of the upstream wetlands can be established more effectively. Once restored, these complexes provide productive and ecologically healthy wetland habitats critical to meeting the life cycle needs of waterfowl. Due in large part to the PPJV initiative, the wetland acreage in the lobe has increased from an estimated 29,652 acres in the 1970s to an estimated 124,367 acres in 2011 (Miller et al., 2012).</p>
Strategies	<ul style="list-style-type: none"> Engage HAPET and/or other partners to inventory, categorize, and map wetlands on WPAs within

the district.

- Ensure restoration plans for new acquisitions *address* all restorable wetland basins within the acquired property.
- In acquisition planning, prioritize areas with high temporary and seasonal wetland densities, ideally within one-half mile of existing or restorable brood habitat (semi- to permanent wetlands).
- Review existing WPAs for small temporary or seasonal wetland basins that may have been overlooked during initial restoration.
- Remove, non-perforate and/or reroute drainage tile within WPAs to maximize water table restoration where financially, legally, and physically feasible.
- Remove sediment from basins prior to restoration where soil samples document the sedimentation.

Issue 2-4: Wetland quality

Objective 2-4-1	Over the 15-year life of the CCP, wetlands within the Iowa WMD are restored and managed to provide breeding waterfowl pair densities of at least 0.9 pairs per wetland acre.
Measure	<ul style="list-style-type: none"> Breeding waterfowl densities surveyed during the April and May four-square mile pair count in Iowa are at least 0.9 pairs per wetland acre.
Rationale	<p><u>Restoration and Management Challenges:</u> Lowered regional water tables, consolidation drainage, invasive fish, and agricultural runoff present challenges to wetland managers within the Des Moines Lobe. In addition, invasive plants, primarily reed canarygrass and hybrid cattail, commonly form dense monotypic stands in and around wetlands (Aronson and Galatowitsch, 2008), which limit the productivity and suitability of the habitat for waterfowl. Although native to the Des Moines Lobe, cottonwood and willow trees form dense monotypic stands in and around wetlands in areas where they were historically uncommon to non-existent based on records from the original land surveys and soil surveys. These dense stands of woody vegetation often shade out the desired marsh vegetation (Fredrickson and Reid, 1988) and interrupt the open landscape needed by many birds using the adjacent grasslands as discussed in the rationale for Objective 2-2-1. A wetland that contains a 50:50 mix of emergent vegetation in relation to open water (or “hemi-marsh”) provides the ideal habitat interspersed to maximize waterfowl pair densities and invertebrate food resources needed during breeding (Kaminski and Prince, 1981; Murkin et al., 1982). Nelson and Kadlec (1984) found that increased habitat interspersed among wetlands within a complex increases the suitability of the complex as a whole for breeding waterfowl. Left unmanaged, the current forces within the lobe tend to lock more permanent basins into a “lake phase” dominated by open water with little interspersed emergent vegetation while shallower wetlands become choked by reed canarygrass, hybrid cattail, and woody vegetation with little interspersed open water. In the end, the ultimate challenge is to restore and manage individual wetlands as well as wetland complexes to provide the interspersed needed to provide suitable habitat for nesting waterfowl.</p> <p><u>Wetland Restoration:</u> The vast majority of wetland restoration within the Des Moines Lobe has occurred within the past 30 years (Miller et al., 2012). Over that time a variety of guidelines and recommendations have been developed to improve the interspersed and overall ecological health of restored wetlands. Aronson and Galatowitsch (2008) tracked the floristic characteristics of 37 wetlands restored in the southern PPR over a 19-year period. They recommended five guidelines to improve native vegetative colonization in wetland restorations, which serve as the basis for many of the strategies below. Furthermore, Galatowitsch and van der Valk (1994) stressed that restored basins need to be surrounded by a vegetative buffer to filter sediments from entering the wetland. They also recommended that all semi-permanent and permanent basins have water control structures to allow for water level manipulation.</p> <p><u>Water Management on Deeper Basins:</u> Wet/dry cycles can be artificially simulated on deeper wetlands that</p>

	<p>have water control structures installed on them. Because wetlands are dynamic systems that require cycling to maintain their productivity, it is unrealistic to maintain constant hemi-marsh conditions. Weller and Spatcher (1965) recommend targeting 30 to 70 percent interspersion on manipulated wetlands while recognizing that they will invariably fall outside this range in years of extreme drought or deluge. Deeper basins on WPAs commonly have water control structures that allow for water level manipulation. However, in many cases the large wetlands and shallow lakes within a complex are under the jurisdiction of another conservation entity, most often the Iowa DNR. In recent years, the Iowa DNR and other conservation organizations have been actively developing water control systems and fish barriers on these larger basins and shallow lakes to mimic wet-dry water regimes, control rough fish, and ultimately restore the basins' ecological health (Brown et al., 2008). Many of these endeavors require infrastructure on WPAs and/or other cooperation from the Service. The Iowa DNR and Ducks Unlimited have acquired PPJV grant funding from the Service to evaluate these projects and establish thresholds for management actions on shallow lakes (Harland and Meyers, 2012).</p> <p><u>Vegetation Management in Wetlands:</u> Temporary and seasonal wetlands are highly susceptible to invasion by reed canarygrass and hybrid cattail (Aronson and Galatowitsch, 2008) as well as cottonwood and willow. According to a conversation with Susan Galatowitsch in 2012, once these invasive species (particularly reed canarygrass) become dominant in these basins, the investment (labor and otherwise) required to establish a native plant community is impractical. However, management actions that create interspersion within dense vegetative stands have been successful including mowing, crushing, grazing, burning, disking, and chemical treatment (Solberg and Higgins, 1993; Sojda and Solberg, 1993; Murkin et al., 1982). Since these wetlands are essentially imbedded within the uplands, treatments will most often occur as part of an upland treatment regime (see Objective 2-1-1).</p>
Strategies	<ul style="list-style-type: none"> • Prioritize restoration sites near remnant natural wetlands as source populations for recolonizing native species. • Restore semi-permanent basins, which are more floristically stable in addition to seasonal and temporary basins. • Promote natural hydrology by restoring temporary and seasonal basins, avoiding excavation of pits and the concentration of water. • As resources permit, plant vegetative stock and seeds to establish sedge meadow and wet prairie species. • Control invasive reed canarygrass, cattail, and woody vegetation early in the restoration process, if possible. • Manage for an emergent vegetation to open water ratio between 30:70 and 70:30 on basins with water control structures.

	<ul style="list-style-type: none">• Periodically open dense areas of cattails and reed canarygrass within existing wetlands through a variety of tools including mowing, crushing, grazing, burning, disking, and chemical treatment.• Control dense stands of woody vegetation in existing wetlands through a variety of tools including mowing, cutting, grazing, burning, disking, dozing, and chemical treatment.• Control invasive fish in wetland complexes using a variety of techniques including installing fish barriers, eliminating transport mechanisms (tile, ditches, etc.), water level management, chemical treatment, etc.• Install water control structures on semi-permanent and permanent basins if feasible.• Continue to partner with the Iowa DNR and other conservation entities to improve the ecological health of deeper wetlands and shallow lakes not under federal jurisdiction.
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Issue 2-5: Food plot use

Objective 2-5-1	During the 15-year life of the CCP, food plots are present on no greater than three percent of the upland acres within the Iowa WMD.
Measure	<ul style="list-style-type: none"> • Food plots cover three percent or less of the upland acres in the district.
Rationale	<p>Through the Service's partnership with the Iowa DNR, food plots have been established as an acceptable practice to provide winter food resources and provide wildlife viewing and hunting opportunities. The MOU between the Service and the Iowa DNR states that permanent food plots are permitted at levels identified in this CCP, the Iowa WMD Habitat Management Plan (to be written), and the WPA unit plans. Collaborative goals in the <i>North American Waterfowl Management Plan</i> (2012) include the following:</p> <ul style="list-style-type: none"> • Goal #2: Wetlands and related habitats sufficient to sustain waterfowl populations at desired levels, while providing places to recreate and ecological services that benefit society • Goal #3: Growing numbers of waterfowl hunters, other conservationists, and citizens who enjoy and actively support waterfowl and wetlands conservation <p>The goals in this plan focus on engaging people with nature and growing the number of hunters. Food plots in Iowa are thought of as a positive practice providing excellent viewing and hunting opportunities. Allowing food plots on WPAs within the district, albeit limited, will assist the Iowa DNR (a key Service partner) in providing hunting opportunities that will in turn gain public support for waterfowl and wetland protection.</p> <p>Food plots will not be necessary on all WPAs within the district. Service managers and Iowa DNR wildlife biologists will determine areas that are appropriate for food plot placement. Given the waterfowl production/migratory bird purposes of the district, creation of edge, size of habitat patch (Warner et al., 2012), timing of disturbance related to farming practices (Korschgen and Dahlgren, 1992), and herbicide treatments of crops will be considered in the determination. Although some species of both migratory and resident birds have been documented nesting in corn and soybean row crop this may create an ecological trap (Best, 1986). For this reason managers need to be cautious with locations of food plots within the district.</p> <p>It is not reasonable to have food plots on every WPA within the district and still maintain its waterfowl and migratory bird purpose. Preparing a data layer within the first year of this plan will facilitate discussions and strategic positioning of food plots on district properties. New management plans for individual units will involve evaluating the need for food plots on the tract and potential locations to lessen the impacts of disturbance, edge, chemical use, and soil erosion. Individual unit plans will also ensure that food plots are not located in wetland basins or remnant prairie sites. Many times food plots may be better situated on adjacent state WMAs, county</p>

	<p>conservation areas or private land. Currently, approximately 15 percent of the district WPA properties are in row crop agriculture, mostly in reconstruction to prairie. It is reasonable to believe that Iowa DNR food plot objectives can be met with three percent of the district's uplands in food plots without materially detracting from the waterfowl production purpose for the district. Three percent of the district uplands equates to approximately 500 acres of the WPAs in food plots. This rate of food plot use in the district will be evaluated through the early stages of this CCP to determine the minimum acceptable level for food plots, especially given the partnership with the Iowa DNR and the district's waterfowl production purpose.</p> <p>Wildlife food plots generally consist of plantings of corn, soybeans, sunflowers, wheat, barley, oats, rye, buckwheat, millet, milo, and sorghum. Cultivation of these crops is usually accomplished by cooperative farmers through an agreement with Iowa DNR. Food plots will not be manipulated in any way to constitute baiting of migratory game birds and waterfowl as defined in the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703–712 P.L. 105–312) and 50 CFR 20.11–21. Standard agricultural practices will be used in farming operations with the exception that insecticide use will not be permitted. Crops will be left standing in the field, and may be harvested in the early spring each year.</p> <p>Some food plots that are designed, in particular, for winter survival of Ring-necked Pheasant include planting shelterbelts of conifer trees and shrubs. WPAs will not be locations considered for shelterbelt placement in conjunction with food plots. Grassland bird research suggests that some birds experience reductions in nest success and higher predation rates in grasslands that have been fragmented by trees (Johnson and Temple, 1990). Wetland vegetation can provide excellent winter cover for resident wildlife, therefore negating the need for shelterbelt plantings on WPAs.</p>
<p>Strategies</p>	<ul style="list-style-type: none"> • Within one year of CCP approval, create a database with a spatial component, for all existing food plots across the district. • Determine criteria for proper location of food plots considering amount of edge created, size, timing of disturbance to plant, effects from pesticide application, etc. • Maintain and update the food plot database at least annually.

Strategic Land Protection

Issues 2-6 and 2-7: Decreasing purchasing power of existing funds and priority areas for acquisition

Objective 2-6-1	Over the 15-year life of the CCP, continue to pursue perpetual protection of wetland and grassland of up to 112,000 acres in the Prairie Pothole Region of Iowa in collaboration with county, state, and other federal governments, conservation organizations, private businesses, and concerned citizens. Landscape level planning tools (i.e., four-square mile survey, restorable wetlands layer, etc.) utilized by Iowa DNR and the Service's HAPET office will guide partners as to where strategic land acquisition should occur.
Measures	<ul style="list-style-type: none"> • All partner accomplishments of wetland and grassland perpetual protection will be tracked through the Prairie Pothole Joint Venture. • Wetland and grassland perpetual protection by the Service within the PPR of Iowa is at least 200–300 acres annually.
Rationale	<p>It is estimated that the PPR of Iowa has lost at least 96 percent of the once 3.4 million wetland acres in the area. (Miller et al., 2012). Recent increases in grain prices coupled with inexpensive drainage tile has led to the rapid conversion of once avoided and untilled wetland areas to row crops. The district currently manages just over 25,000 acres of both fee title and both wetland and habitat easements. With the extensive agricultural drainage the district is experiencing on private lands it is imperative that the Service continue to acquire properties in fee title, easements, and work with partners to secure wetland habitat protection on private lands.</p> <p>Since 2006, the PPJV target for Iowa has been to increase breeding ducks by 25,000 pairs (extrapolated by Rex Johnson [FWS, HAPET] from U.S. Government Accountability Office, 2007). These 25,000 new pairs will need approximately 28,000 wetland acres of habitat. However, a 3:1 ratio of upland to wetland habitat is desired. Therefore, the wetland/grassland habitat target for Iowa is 112,000 acres in perpetual protection.</p> <p>The two million dollars requested annually by the FWS to acquire WPAs currently does not buy as much land as it once did due to ever increasing land values. However, the district still manages to grow by 200–300 acres annually, through purchase in fee title and supporting the WRP. One method the district has utilized to acquire WPA properties is to purchase the residual of WRP easement properties in the PPJV priority areas. Iowa DNR biologists negotiate with willing landowners to enroll in the WRP with the final outcome of either a permanent WPA easement through the Service or the purchase in fee title of the property as a WPA, using the Small Wetlands Program and Migratory Bird Conservation Funds (federal Duck Stamp). Using this process aids in wetland/upland restoration and reduces the final closing costs for the property. It is also essential that the district continue to provide support for the use of other FSA programs in the state that provide wetland and grassland protection, such as the CRP program.</p>

	<p>Since 1978 the Iowa DNR and the Service have worked under a partnership for WPA acquisition and management. Through this partnership the Iowa DNR has cooperated in identifying and delineating land of high waterfowl production capabilities. The strategy has been to acquire properties in complexes connecting state and county land with federal WPAs. Several models have been developed narrowing the focus within the district based on production potential, wetland densities, and existing conservation land. The current Iowa PPJV priority complexes were developed as a result of these modeling efforts. These priority complexes have allowed for strategic acquisition to create large areas of habitat with more completely restored hydrology.</p> <p>Since so much effort has been focused in these priority complexes, the Service and Iowa DNR do not want to abandon these sites. However, it is important to use the best available science and data to make sure the district is growing into areas that have the highest waterfowl production potential if cost effective. Newer and more accurate data and some potential models are becoming available through the Iowa DNR and HAPET that should be utilized to refine the existing areas of priority for acquisition. Currently, acquisition objectives focus on fee title and easement WPAs with natural or restorable wetlands possessing brood rearing cover and associated upland nesting cover in close proximity to existing public wetlands. Other areas of priority include uplands in the vicinity of wetlands where nesting cover is lacking. The ideal waterfowl production habitat to be acquired is a 3:1 ratio of uplands to wetlands. Acquisition will continue to be focused on areas identified as Iowa PPJV priority complexes; however, these will be altered if better scientific information suggests such a change.</p>
<p>Strategies</p>	<ul style="list-style-type: none"> • Work with Iowa DNR, the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), county conservation boards, Non-Government Organizations, and others to achieve this objective. • Continue to utilize fee title and conservation easement options for acquisition of at least 200–300 acres annually. • Utilize the Service’s Partners for Fish and Wildlife Program to promote conservation programs. • Support WRP proposals and other USDA conservation programs that perpetually protect wetland and grassland habitats within the Iowa WMD. • Within two years of CCP approval, work with Iowa DNR and HAPET to utilize any new models developed to select the areas of greatest waterfowl production within the district. • As priority areas are identified, develop a new Geographic Information System (GIS) layer or map book to guide acquisitions. • Apply for and secure grant funds for wetland and grassland acquisition and restoration (North American Wetlands Conservation Act, etc.).

Goal 3: People

In partnership with the Iowa DNR and others, promote understanding, appreciation, and support for the Iowa WMD as well as stewardship and understanding of the southern PPR and its native ecosystems to visitors and local residents.

Issue 3-1: District awareness and understanding

Objective 3-1-1	Within 15 years of CCP approval, provide the infrastructure on three WPAs (such as trails, kiosks, pull-offs, etc.) and information (brochure, website, Facebook page, etc.) necessary for visitors to appreciate resources in the Iowa WMD, as defined in the Visitor Services Plan.
Measure	<ul style="list-style-type: none"> A minimum of 500 “hits” annually on the district website.
Rationale	<p>District users have expressed some confusion over WPA locations, ownership and management, and permitted uses. Since the district’s inception, most of the properties have been managed by the Iowa DNR through an MOU. Many WPAs in the district are in complexes with Iowa DNR WMAs, and county conservation areas. WPAs that are managed through the MOU are signed with both a “Waterfowl Production Area” (FWS) sign and a “Public Hunting, Wildlife Management Area” (Iowa DNR) sign. This signing procedure can confuse users as many are not likely aware of the district’s partnership, and not all state and federal public use regulations are the same.</p> <p>Informing visitors about this partnership and the differences in ownership is essential. The public should be able to easily find the locations of all fee title WPA properties and know what special regulations are enforced on the properties. Utilizing 21st century social media will likely prove to be essential to reach the public with such information. Large and frequently used WPAs may be excellent locations to place informational kiosks to inform the public about the importance of wetlands, WPAs, and the unique partnership of the Iowa DNR and Service. Visitors to the district deserve consistency in signage, messaging, and regulations. It may be possible to tie the district website containing regulations to a Quick Response code for mobile phones at a site such as a parking area.</p> <p>Newly acquired WPAs will also need the proper infrastructure to allow safe access to the property for users. Included in this access will be the development of gravel parking areas. Most parking areas will be 30 feet by 50 feet up to 80 feet by 100 feet. Users should be able to easily locate the parking areas and be able to turn vehicles around prior to exiting onto the roadway.</p>
Strategies	<ul style="list-style-type: none"> Within two years of CCP approval, update and coordinate information (regulations, planned events, hunter atlas, etc.) on the Iowa DNR and district website.

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| | <ul style="list-style-type: none">• Within five years of CCP approval, develop an informational and regulatory brochure for the district in cooperation with Iowa DNR.• Within five years of CCP approval, identify three key locations and cost estimates to place informational kiosks interpreting the wildlife resources and partnership efforts of the district.• Over the 15-year life of the CCP, strive for consistent signage on WPAs across the district.• Continue annual coordination meetings with local Iowa DNR Wildlife Bureau staff and include Service zone law enforcement as well as Iowa DNR conservation officers.• Within four years of CCP approval, complete a Visitor Services Plan for the Iowa WMD.• Promote public use facilities on WPAs to Service partners, in particular the three enhanced WPAs referenced in Objective 3-1-1. |
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Issue 3-2: Appropriate recreational opportunities

Objective 3-2-1	<p>Upon implementation of the CCP, allow uses required by regulation (hunting, recreational fishing, and recreational trapping—all in accordance with state regulations) as well as other public uses deemed appropriate and compatible across the Iowa WMD. Within four years of CCP approval, appropriate and compatible uses will be clearly articulated to the public through uniform signage, brochures, and Iowa DNR and Iowa WMD websites as identified in the Visitor Services Plan.</p>
Measures	<ul style="list-style-type: none"> • Appropriate and compatible uses of the district are up-to-date and accurate on signs, brochures, and websites. • Violations on WPAs are reduced by 25–30 percent over the 15 year life of the plan.
Rationale	<p><u>Hunting:</u> Hunting is one of the most popular public uses of WPAs in the Iowa WMD. Waterfowl, Ring-necked Pheasant, deer, and other migratory game birds are the most hunted species on WPAs. Hunting seasons generally occur from September through mid-January each year. Some hunting use also occurs for light geese with a conservation season open from mid-January through mid-April.</p> <p>WPAs are open to hunting as authorized by the Code of Federal Regulations. This regulation states, "Lands acquired as 'waterfowl production areas' shall annually be open to the hunting of migratory game birds, upland game, and big game subject to the provisions of state law and regulations . . ." (50 CFR Ch. 1 (10-1-12 Edition) Part 32, Subpart A, Section 32.1. However, according to state regulations, (Iowa Code 52.1(3) <i>Waterfowl refuges</i>) "The following areas under the jurisdiction of the department of natural resources are established as waterfowl refuges where posted. It shall be unlawful to hunt ducks and geese on the following areas, where posted, at any time during the year. It shall be unlawful to trespass in any manner on the following areas, where posted, during the dates posted, both dates inclusive . . . :</p> <ul style="list-style-type: none"> • Jemmerson Slough (Dickinson County); • Elk Creek Marsh (Worth County); and • Rice Lake (Winnebago and Worth Counties) within the Iowa WMD." <p>These areas will continue to be waterfowl refuges during the implementation of the CCP.</p> <p>As hunting opportunities dwindle on private land due to CRP loss, hunting leases, and intensified farming practices that eliminate cover, public hunting lands have experienced an increase in use. As of 2004, public conservation lands in Iowa only accounted for 1.7 percent of the state, which is one of the lowest in the country (Zohrer, 2005). Therefore, WPAs provide an important opportunity for hunting in Iowa.</p>

Recreational (Sport) Fishing: Sport fishing is another use allowed on WPAs per the Code of Federal Regulations. This regulation states, “Lands acquired as ‘waterfowl production areas’ are open to sport fishing subject to the provision of state laws and regulations . . .” (50 CFR Ch. 1 (10-1-12 Edition) Part 32, Subpart A, Section 32.4. Few areas in the Iowa WMD provide fishing opportunities; however, anglers may find perch, northern pike, largemouth bass, blue-gill, and bullhead on some WPAs. Sport fishing use can occur during any month of the year; however, winter ice fishing and early spring tend to be the most popular. Sport fishing is permitted in accordance with State of Iowa law.

Recreational Trapping: Trapping of furbearers is an additional consumptive public use of WPAs in the Iowa WMD. Furbearer trapping in the State of Iowa continues to be a popular public use but tends to fluctuate with the fur prices. WPAs are open to trapping as authorized by the Code of Federal Regulations which states, “Lands acquired as ‘waterfowl production areas’ shall be open to public trapping without federal permit . . .” (50 CFR Ch. 1 (10-1-12 Edition) Part 31, Subpart B, Section 31.16. Trappers are required to comply with Iowa state trapping laws and regulations.

Furbearer trapping for most species occurs from early November through the end of January with the exception of spring beaver trapping, which is open through mid-April. According to the Iowa DNR’s 2012 *Furbearers Report*, the most numerous mammal species trapped in Iowa is the raccoon with 236,943 harvested during the 2010–2011 season. The second most popular furbearer trapped in Iowa is the muskrat with a total 2010–2011 season harvest of 98,079 (Iowa DNR, 2012). Both of these species occur on most WPAs within the district.

Other Wildlife-Dependent Public Uses: There are six priority public uses identified in the National Wildlife Refuge System Improvement Act of 1997 that are considered to be wildlife-dependent. Each unit of the National Wildlife Refuge System (NWRS, Refuge System) is encouraged to find these uses compatible. In the past, the Iowa WMD only considered hunting, fishing, and trapping as approved public uses based on statutory requirements. However, compatibility determinations can be used to allow the other priority public uses if deemed compatible with the purpose of the district. These other uses include wildlife observation, photography, environmental education, and interpretation.

Wildlife Observation and Photography: Wildlife observation and photography are growing activities in the United States drawing enthusiasts to natural areas such as national wildlife refuges (NWRs, refuges) and WMDs. WPAs can provide visitors with tremendous opportunities to both view and photograph wildlife species representative of the PPR. During the spring visitors can view and photograph numerous birds using the wetlands as they migrate. During the summer and fall, tallgrass prairie and wetlands can display inspiring vistas of color that change during the growing season with various wildflower blooms. Many of the WPAs in the district

are excellent places to both observe and photograph resident wildlife such as white-tailed deer and Ring-necked Pheasant. Currently, however, there is very little infrastructure in place to support this use with the exception of parking areas, the Visitor's Center at Union Slough NWR and some pull-offs along roads. The district will evaluate potential areas for interpretive signage and observational areas to be developed. A compatibility determination has been developed for wildlife observation and photography (appendix F).

Environmental Education: Currently WPAs are spread across eighteen counties in the state, providing excellent areas for local schools, clubs, and county programs to utilize for teaching the public about Iowa's rich wetland and prairie heritage. The Iowa WMD does not have the staff or budget to produce large environmental education programs; however, this can be mitigated by developing partnerships with County Conservation Board (CCB) naturalists. The district's WPAs provide great settings for programs about migratory birds, tallgrass prairie, and wetlands. Public understanding of how productive Iowa soils were developed from tallgrass prairie and wetlands will foster an appreciation for future wetland and prairie conservation efforts. A compatibility determination has been developed for environmental education (appendix F).

Interpretation: Similar to environmental education, the Iowa WMD has little staff and budget to develop interpretive programs. Several events are held each year at Union Slough NWR in partnership with the Friends of Union Slough NWR including International Migratory Bird Day, National Wildlife Refuge Week, and Wood Duck banding. These events could also include or be held in the district. Currently, interpretive displays about wildlife and habitats found in the district are housed at Union Slough NWR. Areas with excellent wildlife viewing opportunities or exceptional features near higher populated areas within the district could be potential target areas for interpretive displays in the future. Partnerships with CCB naturalists in the district could be explored to provide programs/media interpreting the importance of tallgrass prairie and wetland habitat. A compatibility determination has been developed for interpretation (appendix F).

Another growing interest is in the use of technology to interpret various natural things. One of the ways this may be accomplished in the district is through the use of virtual geocaching. This activity leads the user to a location such as a parking area on a WPA or a road pull-off, and then the user receives information about the site such as geologic features, wildlife, or the importance of wetlands and tallgrass prairie habitat. Local instructors have requested this use as a way for them to interpret the natural process of Iowa. Virtual geocaching differs from typical geocaching in that the user does not take or leave any items at the site. The end prize is to learn about the area or be directed to the refuge/district office. A compatibility determination has been developed for virtual geocaching (appendix F).

Economic Uses for Management Purposes: Some economic uses of the district have proven to be the most efficient and cost effective tools for management. These include:

	<ul style="list-style-type: none"> • Wood cutting to remove woody vegetation and restore tallgrass prairie/wetland habitat. • Hay harvest to increase primary productivity in grasslands. • Livestock grazing to reduce standing litter, fertilize, mimic natural disturbance of bison and other large ungulate grazing, and increase primary productivity. <p>With limited staff and funding, these uses are essential tools that make meeting the purpose of the district easier. Compatibility determinations have been developed for all of these uses (appendix F).</p> <p><u>Other Uses:</u> A number of other uses for the Iowa WMD have been requested and considered. For various reasons, including wildlife disturbance, legality, availability on adjacent properties, damage to wildlife resources, and conflict with the district's purpose (waterfowl production and migratory birds), these uses have been deemed not appropriate. Future requests for other uses will be considered in a similar manner.</p>
<p>Strategies</p>	<p>Upon approval of the CCP,</p> <ul style="list-style-type: none"> • The following uses are allowed by Regulation and are Compatible: hunting in accordance with state regulations, recreational fishing in accordance with state regulations, and recreational trapping in accordance with state regulations. • The following uses are Appropriate and Compatible (some require a special use permit or have other limitations described in the compatibility determination for that use): bicycle riding on roads and trails open to vehicular traffic, wood cutting (including firewood), hay harvest, environmental education, food plot cultivation for wildlife, virtual or waypoint geocaching, interpretation, prescribed livestock grazing, photography, and wildlife observation. • The following uses are Not Appropriate: dog training, horseback riding, off road vehicle use (including ATV, UTV, dirt bike, motor vehicle), overnight camping, private Ring-necked Pheasant stocking, snowmobiling, and target shooting. • Upon approval of the CCP complete an annual inspection of WMD/DNR websites to update allowable uses. • Upon approval of the CCP annually evaluate the Uniform Crime Report and any reports submitted by Iowa DNR Conservation Officers, of non-appropriate uses. • Evaluate appropriateness and compatibility (if found appropriate) of other uses upon request per the Service's appropriate use and compatibility determination policy.

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| | <ul style="list-style-type: none">• Within four years of CCP approval, complete a Visitor Services Plan that includes the baseline violation numbers for the district.• Within four years of CCP approval complete a review of regulatory signage in the district and ensure signs in the district are consistent with the Refuge Sign Manual.• Ensure all district regulations are listed in the refuge-specific 50 CFR (Code of Federal Regulations). |
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