

**USDA-APHIS-WILDLIFE SERVICES  
BISMARCK, NORTH DAKOTA**

**FY 2007 MONITORING REPORT AND AMENDMENT TO THE EA  
FOR  
“MANAGEMENT OF BLACKBIRDS SPECIES TO REDUCE DAMAGE TO  
SUNFLOWER, CORN, AND OTHER SMALL GRAIN CROPS IN THE PRAIRIE  
POTHOLE REGION OF NORTH DAKOTA AND SOUTH DAKOTA”**

**Introduction**

The U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services (WS) receives requests to conduct blackbird damage management to protect sunflower, corn, and other small grains in North Dakota and South Dakota. Therefore, WS prepared an environmental assessment (EA) in 1993 entitled “*Management of Blackbird Species to Reduce Damage to Sunflower, Corn and Small Grain Crops in the Prairie Pothole Region of North Dakota and South Dakota*” to address blackbird damage to agricultural commodities. A Decision and Finding of No Significant Impact (FONSI) was issued August 6, 1993 for the aforementioned EA. The 1993 Decision and FONSI was revisited in 1998 with the monitoring<sup>1</sup> and comprehensive analysis of program activities leading to a new Decision and FONSI issued on February 20, 1998. In 2005, blackbird damage management activities were again reanalyzed in relation to issues identified since the 1998 Decision and FONSI was signed. A new Decision and FONSI was signed on April 24, 2006. The 2006 Decision concluded that a continuation of the integrated blackbird damage management program was appropriate, including use of frightening devices and roost management using a glyphosate-based herbicide to manage emergent vegetation in hybridized cattail dominated wetlands. Copies of these documents are available from Wildlife Services, 2110 Miriam Circle, Suite A, Bismarck, North Dakota.

The purpose of this document is to review and ensure current program activities are within the scope of analysis of the EA, monitoring reports and the Decisions and FONSI issued in 2006. This review and analysis uses the most current information available, adopted from current research and the WS Management Information System, which in most cases is 2007 data. All damage abatement methods in FY07 were used as deemed appropriate using the WS Decision Model (Slate et al. 1992, USDA 1997).

**Background**

Peer et al. (2003) estimated the post-breeding population of blackbirds (Red-winged Blackbird, *Agelaius phoeniceus*; Yellow-headed Blackbird, *Xanthocephalus xanthocephalus*; and Common Grackle, *Quiscalus quiscula*) that migrate through the sunflower growing regions of the Great Plains at 75 million birds. During their fall migration, blackbirds have gregarious feeding and roosting habits and are often seen in large flocks foraging in ripening sunflower and other grain fields. Sunflower fields also benefit other wildlife by providing shelter and feeding opportunities. Schaaf (2003) found 49 non-blackbird avian species using sunflower fields as stop-over sites during the fall migration.

Economic losses caused by blackbirds to sunflower production continues to be the major concern for sunflower producers in North Dakota and South Dakota and is a reason given for abandonment of

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<sup>1</sup> WS conducts and documents annual monitoring of its damage management activities however new decision documents are produced on an as needed basis.

sunflower production (L. Kleingartner, National Sunflower Association, pers. comm. 2008). The economic impact of sunflower production in North Dakota and South Dakota exceeds \$906 million annually (Bangsund and Leistriz 1995). Estimations of blackbird damage to sunflower indicate an annual loss in North Dakota at \$5.4 million with Red-winged Blackbirds causing approximately \$2.8 million damage (Peer et al. 2003). In 2001, blackbird damage to sunflower in the Southern Drift Plains of North Dakota was estimated at 5.6% with a \$2.5 million loss to sunflower producers in that region of North Dakota (Wimberly et al. 2002); the crop value is estimated to have tripled since 2001.

The primary roosting and loafing habitat used by blackbirds in the Dakotas is dense stands of hybridized cattails in shallow wetlands. An analysis of total cattail acreage for the Prairie Pothole Region (PPR) of North Dakota, where most of WS' cattail management program (CMP) is conducted, is estimated at 547,341 acres (Ralston et al. 2004, Ralston et al. 2007). Lutman (2000) observed six blackbird roosts in Stutsman County, North Dakota exceeding 10,000 birds in August and September; one roost location exceeded 50,000 blackbirds during one survey period. To reduce damage associated with blackbirds, WS initiated a CMP in 1991 to alleviate sunflower damage near roost locations by managing cattails used as roosting habitat. Under current WS guidelines, 70% of the cattails in each wetland are treated in a striping pattern with an aquatically approved glyphosate-based herbicide and associated adjuvants. Removing roosting habitat disperses blackbirds from those roost sites, thereby reducing potential blackbird damage to nearby ripening sunflowers and other small grains and can increase the use of those wetlands by waterfowl and other wildlife.

### FY07 Program Results

WS continued to provide an integrated blackbird damage management program<sup>2</sup> through loaning equipment and providing technical assistance to those requesting assistance. Technical assistance for blackbird damage was provided to 158 individuals. A total of 279 propane cannons were loaned and 16,000 pyrotechnics were distributed to individuals experiencing blackbird damage to sunflower.

WS provided CMP services to 43 cooperators at 162 sites in 16 North Dakota counties. Spraying began in July and terminated in August, 2007 and was completed using a helicopter with microfoil booms<sup>3</sup> with Accuflow nozzles to reduce drift. To further reduce drift, pilots were instructed not to spray in winds exceeding 8 mph. To ensure compliance with current CMP requirements, aerial surveys were conducted by WS' personnel in July to assess wetland areas enrolled in the 2007 CMP. In 2007, WS sprayed 4,500 acres (0.8%) of cattails in North Dakota (Table 1). The highest acreage of cattails were treated in Nelson (1,774 acres) and Ramsey (621 acres) counties (Table 2).

### 2005 EA Amendment Issues

<b>Year</b>	<b>North Dakota</b>	<b>South Dakota</b>
1991	1,407	155
1992	3,512	302
1993	2,117	435
1994	1,765	18
1995	3,076	40
1996	5,849	471
1997	4,605	280
1998	4,432	275
1999	1,436	0
2000	2,833	18
2001	3,654	481
2002	4,269	67
2003	2,633	124
2004	3,450	0
2005	3,104	264
2006	5,803	33
2007	4,500	0
<b>Total</b>	<b>58,445</b>	<b>2,963</b>
<b>Average/year</b>	<b>3,438</b>	<b>174</b>

<sup>2</sup> During FY07, ND WS conducted a demonstration project to help determine the efficacy of using elevated bait trays on decoy traps to protect sunflower and evaluate risks of DRC-1339 to nontarget species. At selected locations, bait trays were placed on decoy traps and monitored for 1 hr intervals during daylight hours by WS personnel or North Dakota State University graduate students to estimate bird numbers, species composition, gender of blackbirds, nontarget birds, and any mammals using the sites.

<sup>3</sup> Microfoil booms allow the applicator to control droplet size that limits drift potential in different wind speeds. Accuflow nozzles accurately adjust spray volumes based on the air speed of the helicopter to ensure uniform application.

The 2005 Monitoring Report/EA Amendment and subsequent Decision/FONSI (USDA 2006) analyzed issues that arose after the completion of the original EA and Decision/FONSI signed in 1998. Some of the issues and their relationship to the FY07 blackbird damage management program are evaluated below. For a more detailed analysis and discussion, please refer to the EA Amendment (USDA 2006) and the associated Decision/FONSI.

<b>County</b>	<b>Acres</b>
Barnes	78
Benson	45
Foster	52
Grand Forks	203
McHenry	54
McLean	50
Nelson	1,774
Oliver	10
Pierce	32
Ramsey	621
Ransom	17
Rolette	350
Steele	36
Stutsman	208
Walsh	763
Ward	175
Wells	49

**Issue: Fragmentation of Cattails to Blackbird Populations Sustainability**

Red-winged Blackbirds and Yellow-headed Blackbirds nest primarily in cattails while Common Grackles<sup>4</sup> prefer nesting in deciduous and coniferous trees. The fragmentation of cattails in wetlands could slightly limit the availability of cattail breeding habitat for Red-winged Blackbirds and Yellow-headed Blackbirds in localized areas. However, despite the reduction of potential breeding habitat because of WS’ CMP (about 1% annually<sup>5</sup>), the sustainability of blackbird populations will be largely unaffected given the estimated breeding population of 52 million in the PPR alone and about 540,000 acres of cattails available as breeding habitat.

WS treated 4,500 acres of cattails during the 2007 CMP which falls within the EA Amendment analysis that concluded 8,000 acres of cattails treated annually would not limit the sustainability of blackbird populations or adversely affect other wildlife species. Additionally, cattail regrowth, which is dependent on yearly and seasonal water depth fluctuations, generally occurs 2 to 4 years after treatment.

**Issue: Potential Effects of Cattail Fragmentation on Non-target Wetland Wildlife Species**

Cattails fragmented during WS’ CMP generally recover in 2 to 4 years after treatment; however recovery is variable depending on water conditions. WS’ CMP likely provides benefits to some wildlife that prefer a hemi-marsh configuration that historically were found in the PPR prior to the colonization of a hybrid cattail that dominates wetland vegetation and forms monotypic stands. The treatment of cattails in wetlands could slightly, but temporarily, affect habitat for certain species that are highly correlated to dense cattail stands. However, given the regenerative characteristic of the cattails, and the treatment of cattails through WS’ CMP being temporary, the CMP would not have long-term cumulative impacts on wildlife that use cattail habitats. Further, the available acreage of cattails not treated by WS (an estimated more than 96% of available cattails) would also provide habitat for species requiring dense stands of cattails; WS only treats about 1% of existing cattail acreage annually in North Dakota and cattail can regrow to close to their original condition 2 to 4 years post-treatment if water conditions are appropriate.

**Issue: Eutrophication and Biological Oxygen Demand in Managed Wetlands**

WS’ CMP would not contribute additional vegetative litter to wetlands that would not already be present annually and may reduce the total amount of vegetative material during the 2 to 4 years it may take for cattail regrowth in treated wetlands. Since WS’ CMP actions are not additive to already existing

<sup>4</sup> COGR are not likely to be affected by cattail removal because of their nesting habitat preference.

<sup>5</sup> WS’ cattail management treats less than 1% of the estimated total cattail acreage annually in the PPR; however cattail regeneration/regrowth generally returns cattails to their original condition in 2 to 4 years if water conditions are appropriate.

conditions, the Biological Oxygen Demand would not increase beyond levels that occur annually through natural processes.

#### **Issue: Spread of Non-native Noxious Wetland Plants Subsequent to Treating Cattails**

WS did not receive reports of colonization of treated areas with invasive species in FY07. Coordination with USDA/APHIS/Plant Protection and Quarantine and the agricultural departments in North Dakota and South Dakota indicate the locations of invasive species (*i.e.*, salt cedar and purple loosestrife) did not change. The likelihood of invasive species inhabiting areas receiving cattail treats remains minor as coordination with the appropriate Federal and State agencies to ensure invasive species are not a threat to spread to wetlands treated by WS.

#### **Issue: Potential for Polluting Wetlands with Chemicals**

Application of glyphosate during the FY07 CMP occurred at 4 pints per acre, which is less than the minimum label rate for cattails and glyphosate has a reported half-life ranging from 7.5 days to 60 days in pond water (Goldsborough and Beck 1989, EPA 1993, Goldsborough and Brown 1993). Further, aerial applicators were instructed to apply glyphosate only on areas of high cattail density to minimize the amount of glyphosate that reaches surface waters. In addition, aerial applicators are required to thoroughly clean all mixing and holding tanks, nozzles, and hoses prior to spraying for WS to ensure other chemicals do not enter wetlands. The reduced application rate, glyphosate's half-life, use of specialized spray equipment, instruction to spray only dense stand of cattails, and the infrequency of glyphosate application minimized the amount of chemicals entering surface water and the accumulation of glyphosate in wetlands.

#### **Issue: Potential Effects of WS' Blackbird Damage Management Program on Human Health and Safety**

No cases of human or livestock exposure were reported from glyphosate during WS' CMP in FY07. A formal risk assessment of WS' operational management methods found that risks to human health and safety and the environment were low (USDA 1997, Appendix P). Based on this Risk Assessment, APHIS concluded the use of glyphosate in WS' CMP, when used in accordance with label directions, was highly selective and such use has negligible effects on human health and safety and the environment (USDA 1997). In addition, U.S. Environmental Protection Agency has rigorous requirements for the registration of chemicals to ensure that the effects on human health and safety and the environment are low. Further, WS did not receive any reports or is aware of any reports of injury or harm to any member of the public from equipment loaned to cooperators for blackbird damage management activities.

#### **Issue: Potential Effects of WS' Blackbird Damage Program on Threatened and Endangered (T/E) Species**

WS did not receive and is unaware of any reports of injury or harm to any T/E Species in North Dakota or South Dakota. WS' blackbird management activities are highly selective and identification of target species prior to the initiation of damage management techniques minimizes adverse effects to T/E species.

#### **Issue: Potential Effects of Treating Cattails with Glyphosate on Non-Target Plants**

To mitigate potential effects to non-target plants, aerial applicators only sprayed dense cattail stands,

especially along wetland edges, in winds less than 8 mph, used helicopters equipped with microfoil booms and Accuflow nozzles to minimize drift. WS did not receive and is unaware of any reports of adverse effects to plants other than targeted cattails.

### **Issue: Glyphosate in the Environment Causes Genetic Damage to Amphibians and Alters Communities of Subsoil Fungal Organisms**

As discussed in depth in the EA Amendment, the glyphosate product used by WS does not cause adverse effects to amphibians or tadpoles. WS' CMP in FY07 continued to use an aquatically registered herbicide consisting of technical glyphosate only. No surfactant is formulated as part of the aquatic herbicides. WS used a 90% non-ionic surfactant that can be used in aquatic situations which has minimal risks to amphibians. Further, subsoil fungal organisms were not impacted by WS' CMP in FY07. The likelihood of glyphosate reaching sediment in wetlands is minimal and wetlands are not treated annually which minimizes the accumulation of glyphosate that could affect fungal communities.

### **Compliance and Monitoring**

Blackbird damage management has been conducted in a manner consistent with all applicable environmental regulations, including the Endangered Species Act, the Federal Insecticide, Fungicide and Rodenticide Act, the National Environmental Policy Act, the Clean Water Act, North Dakota Administrative Code Section 33-16-02.1-11, and South Dakota Administrative Rules 74:51:01:58-62. WS' personnel will continue to coordinate with local officials regarding protection of sunflowers, corn, and other small grains. Substantial changes in the scope of work or changes in relevant guidance documents or environmental regulations may trigger the need for further analysis.

### **Review of Environmental Impacts**

WS has reviewed the analyses in the EA, EA Amendments, monitoring reports, and Decision/FONSI in relation to activities conducted in FY07 by the North Dakota and South Dakota WS' program to reduce blackbird damage. As analyzed in the original EA and reaffirmed in the 2006 Decision/FONSI, the proposed action integrates blackbird damage management methodologies that adequately address requests for assistance from agricultural producers in North Dakota and South Dakota while balancing the environmental concerns of management agencies, landowners, advocacy groups, and the public. As described in FY07 program results, WS incorporates several management strategies, including technical assistance, providing dispersal equipment, and cattail management to alleviate blackbird damage in North Dakota and South Dakota.

Technical assistance was provided through site visits, personal consultations, and distribution of damage management leaflets to facilitate the proper use of dispersal techniques and the use of cultural practices available to reduce blackbird damage, such as planting locations, timing of plantings, and field accessibility. Dispersal equipment, such as propane cannons and pyrotechnics, were also provided to interested producers to use in an integrated approach to eliminate habituation to a single method. Technical assistance projects and the loaning of harassment equipment were within the scope of analysis in the original EA and the EA Amendment. Thus, as concluded in the original EA, as amended and reaffirmed in the 2006 Decision/FONSI, these techniques had no significant impact, either direct, indirect or cumulative, on the quality of the human environment. Therefore, WS' use of technical assistance and the providing of equipment in FY 07 falls within the parameters analyzed.

WS also incorporates cattail management through a CMP as part of an integrated blackbird damage

management program. Communal roosting blackbirds use dense cattail wetlands in the fall for roosting. Wetlands dominated with hybridized cattails are highly correlated with roosting blackbird populations and sunflower damage. In FY07, WS treated 4,500 acres of cattails using an aquatic glyphosate herbicide. The WS FY07 program falls within the parameters analyzed in the EA Amendment and associated Decision/FONSI which concluded treating a up to 8,000 acres of cattails annually would not significantly impact the quality of the human environment.

WS has determined that activities conducted in FY07 fall within the scope of analysis conducted in the EA and 2006 Decision/FONSI and the impacts on the quality of the human environment pursuant to the EA and its Decision/FONSI continued to be insignificant. No substantive changes have occurred in the activities conducted or methods used since implementing the EA decision during this reporting period.

## **2008 AMENDMENT TO THE 1993 EA**

### **Introduction**

WS continues to receive requests to protect sunflower, corn, and small grains from blackbird damage in North Dakota and South Dakota; however, the majority of requests are from agricultural producers to protect sunflower. Sunflower production in the Northern Great Plains is important to local economies with the economic impact of sunflower production in North Dakota and South Dakota exceeding \$906 million annually (Bangsund and Leistriz 1995)

Besides the beneficial economic impacts, sunflower production also has benefits to wildlife. Boutin et al. (1999) found agricultural fields beneficial to birds as “stop-over” sites during migration. Stop-over sites provide places for shelter and for foraging opportunities (Burton 1992). Migrating birds also tend to prefer foods high in fat content (Able 1999) and McCormick et al. (1992) found sunflower seeds, grown for their oil content, contain 20% protein and 38-50% oil.

Harvested sunflower fields are also used as stop-over sites by birds during spring migration. The limited availability of food sources in spring makes the availability of quality stop-over sites extremely important. The availability of sunflower seeds as ground forage that remains after harvest provides a needed food source during spring migration for many birds. Galle (2005) observed 32 bird species using sunflower stubble fields in spring with birds being significantly greater in sunflower stubble than other harvested grain fields.

Peer et al. (2003) estimated the fall migrating population of blackbirds through the sunflower growing regions of the Great Plains at 75 million birds. Estimates of blackbird damage to sunflower indicate an annual loss in the Northern Great Plains at \$5.4 million with Red-winged Blackbirds causing approximately \$2.8 million of the damage (Peer et al. 2003). In 2001, blackbird damage to sunflower in the Southern Drift Plains<sup>6</sup> of North Dakota was estimated at 5.6% of the crop with a \$2.5 million loss to sunflower producers (Wimberly et al. 2002); the crop value is estimated to have tripled since 2001.

### **Cattail Management**

Wetlands are a common landscape feature in North Dakota and eastern South Dakota. In North Dakota, wetlands comprise nearly 3.5 million acres with an estimated 37 wetland basins per square mile (Reynolds et al. 1997). In eastern South Dakota, wetlands encompass nearly 9.8% of the total landscape

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<sup>5</sup> The Southern Drift Plains is a physiographic subunit which encompasses approximately 50% of the southern portion of the PPR.

(Johnson et al. 1997) with many of these wetlands classified as temporary, seasonal, and semi-permanent. These types of wetlands comprise nearly 2.4 million acres in North Dakota and 1.3 million acres in eastern South Dakota<sup>7</sup> which are commonly found in all the physiographic regions of North Dakota and South Dakota (Stewart and Kantrud 1971, Johnson et al. 1997).

Cattails covered 36.6% of the wetlands occupying approximately 2.3% of the land surface area or nearly 547,341 acres in the PPR of North Dakota (Ralston 2005, Ralston et al. 2007). Ralston et al. (2007) found that in sunflower production areas of North Dakota and South Dakota wetlands averaged about 2.7 acres however wetlands with cattails averaging 5.9 acres. Given the average acreage of cattails treated under the current program (Table 1), on average WS annually treats less than 1% of the estimated 547,341 acres of cattails in North Dakota. Further, cattail management can be effective for at least 2 years and up to 4 years in treated wetlands dependent on water conditions<sup>8</sup> (Linz et al. 1992a, Linz et al. 1992b, Linz et al. 1995). If cattail regrowth to pre-treatment levels does not occur until 4 years post-treatment, WS' current CMP would reduce the total cattail acreage by less than 4% in the PPR of North Dakota<sup>9</sup> under a worse case scenario. The total cattail acreage in South Dakota is unknown. Given the total cattail acreage treated in South Dakota since 1991 (Table 1), the effect of the CMP on the total cattail acreage in South Dakota is likely much less than 1% (R. Wimberly, USDA/APHIS/ WS 2005, pers. comm.).

Emergent vegetation historically associated with these wetlands was sparse stands of bulrush (*Scirpus* spp.) and common cattail (*Typha latifolia*) (Kantrud 1992). The exotic narrow-leaved cattail (*T. angustifolia* L.) was reported in North Dakota in the early 1940s and by the 1970s had spread throughout the region hybridizing with the native cattail to form *T. x glauca* Godron (Stevens 1963). *T. x glauca* is a fast growing, robust cattail that forms dense homogenous stands that tolerate seasonal water draw-downs and inundation (Weller 1975, Davis and van der Valk 1978). Based on water depth averages<sup>10</sup>, temporary, seasonal, and semi-permanent wetlands provide ideal *T. x glauca* growing conditions (Euliss and Mushet 1996).

Sunflower damage is highly correlated with wetlands dominated by cattails that act as blackbird roosting and loafing sites (Otis and Kilburn 1988, Linz et al. 1993). A positive relationship also exists between acres of living cattail, the number of blackbirds, and sunflower damage (Linz et al. 1995). Communal roosting blackbirds prefer dense cattails stands that provide protection from predators (Weatherhead 1983) and harsh weather conditions. Removing dense cattail stands in wetlands disperses blackbirds from those wetlands by reducing optimal cattail habitat to other untreated wetlands. However, controlling cattails can be difficult because of the large rhizome root system and numerous seeds produced by plants in nearby wetlands. Both the rhizomes and seeds reestablish cattail stands even when the emergent foliage is removed. Thus, mechanical methods such as mowing, burning, and disking that remove the emerged foliage have limited success (Beule 1979) and have limited applicability when standing surface water prevents the use of these methods. Using a systemic aquatic herbicide to kill the emerged cattail foliage and the rhizome root system was effective in dispersing roosting blackbirds from wetlands near sunflower fields (Linz et al. 1992a, Linz et al. 1992b).

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<sup>7</sup> The PPR covers 50.9% of the land area in North Dakota and covers the eastern half of South Dakota (Stewart 1975, Johnson et al. 1997).

<sup>8</sup> Cattail seed and rhizomes would promote new growth in managed wetlands if water depths are adequate for regrowth.

<sup>9</sup> If WS treated 6,000 acres of the estimated 547,000 acres of cattails in the PPR of North Dakota, about 1.1% of the cattail acreage would be treated in North Dakota. If cattail regrowth did not occur for up to four years post-treatment, under a worst case scenario of cattail regrowth, about 4.4% of the total cattail acreage in the PPR of North Dakota would be affected. When combined with South Dakota, the affect on the total cattail acreage in the PPR of both states is likely much less than 1% annually.

<sup>10</sup> The water depth in the typical PPR wetland fluctuates throughout the year based on spring snow melt and annual rainfall (Stewart and Kantrud 1971, Cowardin et al. 1979, Kantrud 1983, Euliss and Mushet 1996).

## WS' Cattail Management Program

Since 1991, WS has assisted agricultural producers in North Dakota and South Dakota sustaining blackbird damage to sunflower by fragmenting optimal cattail habitat near sunflower fields<sup>11</sup> using an aquatic glyphosate<sup>12</sup> (N-(phosphonomethyl) glycine) herbicide. Under the current program, glyphosate is applied aerially in linear strips approximately 50 feet wide with an approximate 20 foot buffer of untreated cattails between spray lanes. Only 70% of the total cattail acreage in each wetland receives treatment and only areas of dense cattail stands. This application pattern is designed to disperse blackbirds from wetlands by fragmenting available cattail habitat (Linz et al. 1992a, Linz et al. 1992b, Linz et al. 1995, Linz et al. 1996). Aerial surveys are conducted of all enrolled areas prior to treatment to determine cattail acreage and the eligibility of enrolled wetlands.

## PROPOSED AMENDMENT TO THE ORIGINAL EA

The "Management of Blackbird Species to Reduce Damage to Sunflower, Corn, and other Small Grain Crops in the Prairie Pothole Region of North Dakota and South Dakota" EA is being amended to assess the effects of WS' modification<sup>13</sup> to increase the percentage of cattails treated in select wetlands in North Dakota to 100%. This Amendment is necessary because blackbirds continue to depredate ripening sunflower in North Dakota and removal of additional, targeted cattails may further provide relief to affected sunflower producers (*i.e.*, WS would treat 100% of the cattails in targeted wetlands). These CMP treatments would only occur on private lands in North Dakota on areas without conservation or any other easements. It should also be noted that agricultural producers could remove cattails, either through burning or disking wetland areas, or through the application of an approved glyphosate-based herbicide. CMP on wetlands in South Dakota and all wetlands enrolled in conservation or other easements would remain at the traditional 70% treatment, applied in a striping pattern.

From FY 91 to FY 07, WS treated an average of about 3,400 acres of cattail annually with the most acres treated in FY96 at 5,849 in North Dakota and 471 in South Dakota (Table 1). If WS treats 100% of the cattail in targeted and selected wetlands, on annual average, there would be about 4,900 acres treated in North Dakota; well below the value analyzed in the EA and subsequent amendments. Treating up to 8,000 acres of cattails annually will not cause a significant impact to any wildlife species or to the quality of the human environment (USDA 2006). In contrast, this proposed action could help further reduced the depredation of sunflower by blackbirds by targeting cattail wetlands in the near proximity to ripening sunflower where blackbirds continue to use cattails as loafing sites.

Further, under this amendment, WS would continue their integrated blackbird damage management

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<sup>11</sup> Wetlands with greater than 5 acres of continuous cattails are eligible for the program. WS treats 70% of the cattail acres in each wetland.

<sup>12</sup> Glyphosate is a broad-spectrum, post emergent herbicide registered by the EPA in 1974 and reregistered in 1993 (EPA 1986, EPA 1993). Once applied to the foliage, glyphosate is translocated throughout the plant and inhibits protein synthesis by blocking the shikimic acid pathway (Cole 1985, Alibhai and Stallings 2001), a metabolic pathway not present in mammals, birds, fish, reptiles, and insects (Franz et al. 1997, Alibhai and Stallings 2001). Plants treated with glyphosate show stunted growth, yellowing, leaf wrinkling, and wilting with tissue death occurring between 4 and 20 days (Franz et al. 1997). The half-life of glyphosate in soils ranges from 3 to 140 days. The EPA (1993) reported the toxicity of glyphosate to cold and warm freshwater fishes ranged from "slightly non-toxic to practically non-toxic." In addition, glyphosate does not bioaccumulate in fish, but applications to aquatic vegetation in water bodies where low levels of dissolved oxygen or high temperatures exist could be hazardous to fish due to eutrophication from decaying vegetation (Folmar et al. 1979). Toxicity studies with aquatic invertebrates demonstrated glyphosate was "practically non-toxic" and EPA (1993) reported the effects of glyphosate on mammals and birds are minimal and not expected to negatively impact endangered terrestrial or aquatic organisms.

<sup>13</sup> Applicators would still only spray continuous cattail acres and only when winds are less than 8 miles/hour (mph). Aerial applicators would continue to be required to thoroughly clean all mixing and holding tanks prior to spraying cattails for the CMP.

program (*i.e.*, technical assistance, loaning frightening devices, conducting research projects and conducting cattail management) to protect sunflower, corn, and other small grains. The proposed 100% treatment of select wetlands in North Dakota would allow WS to more adequately reduce blackbird damage to specific agricultural fields as needs are identified, as requested by agricultural producers, and as funding permits. Recent research estimates cattails occupy approximately 547,341 acres in the PPR of North Dakota; if WS treated 8,000 acres it would constitute about 1.5% of the available cattails in the PPR. Under this Amendment, the maximum treated cattail acreage, over a 4-year period, would continue to be 32,000 acres if cattail regrowth does not occur for 4 years or less than 6% of the total cattail acreage in the PPR of North Dakota. When combined with the total cattail acreage in the PPR of South Dakota and cattails found in other physiographic regions of both states, the affects to the environment and wildlife would be minimal. With cattail wetland densities in North Dakota and South Dakota averaging about 2.7 acres and with wetlands with cattails averaging 5.9 acres and covering 547,341 acres (Ralston et al. 2007) increasing the removal of cattail to 100% in targeted North Dakota wetlands as proposed would not adversely affect the quality of the human environment.

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**Appendix A**  
**North Dakota and South Dakota WS Blackbird Damage Management**  
**EA Quality Assurance Checklist**

**Effects on Target Species Populations**

- ✓ Management actions were directed toward localized populations or groups and/or individual offending animals.

**Effects on Non-target Species Populations**

- ✓ Management actions were directed toward localized target populations or groups and no non-target species were adversely affected.

**Protecting human safety**

- ✓ No injuries or illnesses to members of the public occurred as a result of WS activities.

**Use of Pesticides**

- ✓ All pesticides used were registered with the Environmental Protection Agency (EPA) and North Dakota Department of Agriculture South Dakota Department of Agriculture, and label directions were followed.
- ✓ Application of pesticides were in compliance with all applicable regulations, including the Federal Insecticide, Fungicide and Rodenticide Act, the Clean Water Act, North Dakota Administrative Code Section 33-16-02.1-11, and South Dakota Administrative Rules 74:51:01:58-62.
- ✓ To the best of the knowledge of the project or program manager, WS contractors followed label directions for pesticide use during the reporting period.
- ✓ No violations of pesticide laws or regulations were noted or documented during field inspections by program or project managers or by state or federal pesticide regulators. (Note: if this is not checked, further explanation of the violations that occurred and whether they resulted in any significant environmental impacts is required and should be attached to this report or included in the monitoring report.)

**Historic Preservation**

- ✓ WS determined this program's actions are not the kind of actions with potential to affect historic resources.

**Endangered/Sensitive Species**

- ✓ No take of any threatened or endangered species occurred.

**Native American Cultural Issues**

- ✓ No activities were conducted on Native American tribal lands and actions would only be conducted on tribal lands at the request of the tribe.

**Additional Measures to Minimize Impacts**

- ✓ The WS Decision Model was used to identify the most appropriate wildlife damage management strategies and their impacts.



Phil Mastrangelo  
State Director  
North Dakota WS

3-25-08

Date