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USDA-APHIS-WILDLIFE SERVICES

SUPPLEMENTAL ENVIRONMENTAL REVIEW AND ANALYSIS BIRD DAMAGE MANAGEMENT IN THE WYOMING WILDLIFE SERVICES PROGRAM

Fiscal Year 2006 through Fiscal Year 2009

INTRODUCTION

The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Wildlife Services (WS), U.S. Fish and Wildlife Service (USFWS), Federal Aviation Administration (FAA), Wyoming Game and Fish Department (WGFD), Wyoming Department of Agriculture (WDA) and Wyoming Department of Health (WDH) completed a "*Bird Damage Management in Wyoming"* Environmental Assessment (EA) in March 2008. The EA analyzed potential environmental impacts from resolving bird damage or potential damage and reducing human/bird conflicts in Wyoming in the following categories: 1) the protection of agricultural and natural resources; 2) property; 3) the protection of public health and safety; and 4) bird-caused nuisances. The WS program receives and responds to a variety of requests for assistance from individuals, organizations, and agencies experiencing damage and other problems related to wildlife. Wildlife damage management (*i.e.*, reducing human/wildlife conflicts) is the alleviation of damage or other problems caused by or related to the presence of wildlife, and is recognized as an integral part of wildlife management (The Wildlife Society 2004). Individual WS damage management actions could be categorically excluded and do not require an EA (7 CFR 372.5(c), 60 Fed. Reg. 6000-6003, 1995). However, the EA documents the need to reduce human/bird conflicts in Wyoming, assesses potential impacts of various alternatives to respond to bird damage and describes related pertinent information.

The Multi-Agency Team (*i.e.*, WS, USFWS, FAA, WGFD, WDA and WDH), meeting NEPA's interdisciplinary team requirement, cooperatively conducted the assessment for reducing human/bird conflicts. The USFWS, FAA, WGFD, WDA and WDH also cooperated with WS to determine whether the proposed action is in compliance with relevant laws, regulations, policies, orders and procedures. All bird damage management is conducted consistent with: 1) the Endangered Species Act of 1973 (ESA), including consultations with the USFWS, 2) the Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§ 703-712, as amended), the Migratory Bird Reform Act of 2004, and the Fish and Wildlife Improvement Act of 1978 (16 U.S.C. Sec. 712), 3) Executive Order (EO) 13186[1], EO 13112[2] and Memoranda of Understanding (MOUs) between USFWS, FAA, WGFD, WDA and WS, and 4) federal, State and local laws, regulations and policies.

[1] Executive Order 13186 directs federal agencies to protect migratory birds and strengthen migratory bird conservation by identifying and implementing strategies that promote conservation and minimize the take of migratory birds through enhanced collaboration between WS and the USFWS, in coordination with state, tribal, and local governments. A National-level MOU between the USFWS and WS is being developed to facilitate the implementation of Executive Order 13186.

[2] Executive Order 13112 - Invasive Species was authorized by President Clinton; this executive order establishes guidance to federal agencies to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts from invasive species.

The Wyoming Bird Damage Management EA (USDA 2008) public involvement process was completed in March 2008 and a Finding of No Significant Impact (FONSI) resulted from the analysis and a Decision for the EA was signed March 24, 2008. The Decision selected Alternative 1, *Continue the Current WS Adaptive Integrated Bird Damage Management Program* (No Action/Proposed Action) and applied the associated minimization measures, standard operating procedures and monitoring discussed in the EA.

PROGRAM PROCEDURES and AUTHORITIES

WS uses an Integrated Wildlife Damage Management (IWDM) approach, commonly known as Integrated Pest Management (WS Directive 2.105[3]) in which a combination of methods may be used or recommended to reduce damage[4]. IWDM is the application of safe and practical methods for the prevention and reduction of damage caused by wildlife based on local problem analyses and the informed judgment of trained personnel (Slate et al. 1992).

WS activities are conducted at the request of and in cooperation with other federal, state, and local agencies, private organizations, and individuals when needs arise. WS is a cooperatively funded, service-oriented program directed by law and authorized by Congress to reduce damage to agricultural and natural resources, property and to resolve public health or safety concerns cause by wildlife (Act of March 2, 1931 (46 Stat. 168; 7 U.S.C. §426-426b) as amended, and the Act of December 22, 1987 (101 Stat. 1329-1331, 7 U.S.C. §426c)). Under the Act of March 2, 1931 and 7 U.S.C. §426c, APHIS may carry out wildlife damage management programs or enter into cooperative agreements with states, local jurisdictions, individuals, and public and private agencies whereby they fund and may assist in carrying out such programs. Before any action is taken by WS, a request must be received and an Agreement for Control must be signed by the landowner/administrator or other comparable documents must be in place. As requested, WS cooperates with land and wildlife management agencies to effectively and efficiently reduce human/wildlife conflicts. WS' authorities support its mission of providing federal leadership and expertise to reduce problems caused by injurious or nuisance wildlife. Upon receiving a request for assistance, bird damage management could be conducted on private, federal, state, tribal, county, and municipal lands in Wyoming[5].

WS cooperates with the USFWS, FAA, WGFD[6], WDA, WDH, American Indian Tribes, and county and private entities to reduce bird damage. MOUs signed between WS and the USFWS, USDA Forest Service, Bureau of Land Management, and American Indian Tribes clearly outline the responsibility, technical expertise and coordination between agencies.

PURPOSE OF THIS REVIEW and SUPPLEMENT

This review and Supplement evaluate WS' activities to resolve and prevent human/bird conflicts in Wyoming under the current program and assess standard operating procedures designed to minimize or avoid adverse environmental effects (Appendix A). If WS' activities, as identified, are outside the scope of the analyses in USDA (2008) or if new issues are identified, further analysis would occur to the degree identified pursuant to the NEPA.

This Supplement: 1) reports, updates and summarizes the results of Wyoming WS' bird damage

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[3] The WS Policy Manual provides WS personnel guidance in the form of program directives. Information contained in the WS Policy Manual and its associated directives (http://www.aphis.usda.gov/wildlife_damage/WS_directives.shtml) have been used in preparation of this report, but have not been included in the Literature Cited.

[4] WS wildlife damage management is not based on punishing offending animals but as one means of reducing damage and is used as part of the WS Decision Model (Slate et al. 1992).

[5] Before any WS action is taken, a request must be received and an "*Agreement for Control*" must be signed by the landowner/administrator or other comparable documents must be in place.

[6] The WDFG is the state agency responsible for managing and protecting resident wildlife populations within Wyoming.

management activities for federal fiscal years (FY[7]) 06 to FY09, and 2) takes appropriate action if the affected environment or impacts have significantly changed from the analyses in USDA (2008). This review uses the most currently available information which in most cases is FY06 to FY09 data. WS continues to coordinate activities with the USFWS to alleviate or prevent adverse bird population impacts, and WS reports take of migratory birds to the USFWS annually under USFWS Depredation Permit (DP) MB#715711-0 to ensure WS' activities are considered as part of USFWS's management objectives.

PUBLIC INVOLVEMENT

As part of the WS NEPA process, and as required by the CEQ and APHIS NEPA implementing regulations, USDA (2008) and the FONSI were made available through "Notices of Availability" (NOA) published in local media with circulation throughout Wyoming, letters were sent to interested parties and an NOA was posted on the APHIS website; twenty (20) letters were mailed to organizations, individuals, and public agencies announcing that the EA was available. Three responses were received from review of the EA with comments from the public fully considered to determine whether the EA analysis should be revisited and, if appropriate, revised before reaching a Decision. A similar process is being followed for this Supplement. The analysis and supporting documentation are available for review at the USDA-APHIS-WS State Office, P.O. Box 59, Casper, WY 82602.

AFFECTED ENVIRONMENTS

Airports - Birds as a group represent the largest hazard to aircraft, and therefore are considered a serious threat to human safety on or near airports (FAA National Wildlife Strike Database, wildlife.pr.erau.edu/public/index1.html). WS activities could occur on airports throughout Wyoming.
Urban and Suburban Areas - Public and private properties in urban/suburban areas may also be affected when birds cause damage to natural resources, and property, or affect human health and safety. WS activities could occur in urban and suburban areas throughout Wyoming.
Agricultural, Rural and Forested Areas - Other areas of proposed action include livestock facilities, forested areas or nurseries, and rural areas where birds are causing or potentially cause damage, or pose a disease threat. WS activities could occur in these areas throughout Wyoming.

ALTERNATIVES FULLY EVALUATED

The following Alternatives were developed to respond to the issues in USDA (2008). Four additional alternatives were considered but not analyzed in detail. A detailed analysis of the effects of the Alternatives on the issues is found in USDA (2008); below is a summary of the Alternatives.

Alternative 1 – Continue the Current WS Adaptive Integrated Bird Damage Management Program (No Action/Proposed Action). The No Action alternative is a procedural NEPA requirement (40 CFR 1502), is a viable and reasonable alternative that could be selected, and serves as a baseline for comparison with the other alternatives. The current program is for the protection of agricultural and natural resources, property, and public health and safety. To protect resources, WS would continue to respond to requests for assistance with, at a minimum, technical assistance, or where appropriate and when permitted by the USFWS, and when cooperative funding is available, operational damage management would by conducted by WS personnel.

Alternative 2 – Technical Assistance Only Program. This alternative would not allow for WS operational bird damage management in Wyoming. WS would only provide technical assistance and make recommendations when requested. Producers, property owners, agency personnel, or others could

[7] The federal fiscal year begins on October 1 and ends on September 30 the following year.

conduct bird damage management using traps**,** shooting, Avitrol[8], or any non-lethal method that is legal. Currently, DRC-1339 (technical grade) and alpha chloralose (AC) are only available for WS personnel use. Therefore, use of these products/chemicals by private individuals would be illegal.

Alternative 3 - No WS Bird Damage Management Program. This alternative would terminate the WS program for bird damage management (operational and technical assistance) on all land classes in Wyoming. However, other federal, State and county agencies and private individuals could conduct bird damage management, but requesters of WS services would not have WS input.

ALTERNATIVES CONSIDERED but not ANALYZED in DETAIL, with RATIONALE

Several alternatives were considered but not analyzed in detail. These are:

- Compensation for Bird Damage Losses
- Bounties
- Short Term Eradication and Long Term Population Suppression
- Bird Damage Management Should Be Conducted Using Only Non-lethal Methods.

REVIEW of BIRD DAMAGE PRIMARY ISSUES ANALYZED in USDA (2008)

Primary issues analyzed in the 2008 EA and reevaluated here include:

1. Cumulative Effects of WS Bird Damage Management on Target Species Populations
2. Effects of WS Bird Damage Management on Non-target Species Populations, Including T/E Species
3. Risks Posed by WS Bird Damage Management Methods to the Public and Domestic Animals
4. Efficacy of WS Bird Damage Management Methods

Data and discussion of these issues are presented below.

1. Cumulative Effects of WS Bird Damage Management on Target Species

A common concern among members of the public and wildlife professionals, including WS personnel, is the effect of bird damage management on the target species population. Cumulative effects are the additive impacts on a species population from all causes, including the mortality caused by Wyoming WS activities. Take of target species by WS is small in comparison to the overall population of these species (http://rmbo.org/pif_db/laped/PED3.aspx) and many species WS works with are considered *anthropogenically abundant*, (*i.e.*, extremely common, with current populations exceeding historical levels due to human-caused environmental changes) (Conover 2002). Generally, WS only conducts damage management only after a bird or local bird species population has caused damage and a request for assistance has been received from the property or resource owner/manager.

DPs are necessary under the MBTA for activities related to migratory bird damage management. WS has the responsibility for responding to and attempting to reduce damage caused by migratory birds when funding allows. Guidelines for issuance of USFWS permits have been developed and implemented by the USFWS. WS utilizes DP to resolve bird damage management problems in the state of Wyoming (# MB715711-0).

Starlings, house sparrows and feral pigeons are considered non-indigenous, invasive species, and because of their negative impacts on, and competition with, native birds, are considered by many

[8] Avitrol could only be used by state certified pesticide applicators in Wyoming.

wildlife biologists and ornithologists to be an undesirable component of North American wild and native ecosystems. These three species are not protected by MBTA or state law and therefore no permit from the USFWS is required to conduct management actions. Any reduction in starling, house sparrow or feral pigeon populations in North America, even to the extent of complete eradication, could be considered beneficial to native bird species. Of the birds killed by WS personnel during bird damage management activities from FY 2006 through FY 2009, 95% of these birds were starlings and pigeons, both non-native, exotic species.

Additionally, blackbird, grackle, crow and magpie populations are healthy, and the problems they cause significant enough, that the USFWS has established a "standing depredation order" (50 CFR 21.43) for use by the public. Under this depredation order, no federal permit is required by anyone to remove these birds if they *are committing or about to commit depredations upon ornamental or shade trees, agricultural crops, livestock, aquaculture, or wildlife, or when concentrated in such numbers and manner as to constitute a health hazard or other nuisance*. Additionally, under Section 8 of the Wyoming Nongame Wildlife Regulation, the state of Wyoming has determined that a state permit is not required of any person to shoot or trap blackbirds (Brewer's, red-winged, rusty and yellow-headed), cowbirds, crows, grackles and magpies when found committing or about to commit depredations upon agricultural crops, livestock, ornamental or shade trees or when concentrated in such numbers and manner as to constitute a health hazard or other nuisance.

Quantitative population data for many species are estimated (http://rmbo.org/pif_db/laped/PED3.aspx) and population trend *(i.e.*, qualitative) data exist for most species from sources such as the breeding bird survey database (Sauer et al. 2008). The most recent population and population trend monitoring information suggests that the populations of the species targeted by WS generally continue to be healthy and stable or increasing. The take of most MBTA-protected species by Wyoming WS in a year is small enough that impacts on populations are not significant and this trend is expected to continue. WS annually reports take for MBTA-protected species to the USFWS. Take of bird species by WS in Wyoming during FY 2006 through FY 2009 (Tables 1-4) did not exceed the levels analyzed in the EA, indicating that WS activities had a low magnitude of impact on the target species.

Highly Pathogenic H5N1 Avian Influenza (HPAI)

Highly pathogenic avian influenza (H5N1) is caused by a virus in the Orthomyxovirus group. Viruses in this group vary in the intensity (virulence) of illness they may cause. Wild birds, in particular waterfowl and shorebirds, are considered to be the natural reservoirs for Avian Influenza (AI) (Clark 2003). Most strains of AI rarely cause severe illness or death in birds although the H5 and H7 strains tend to be highly virulent and very contagious (Clark 2003). One proposed method of introduction that may allow H5N1 AI to spread over a large geographical area is infection of migratory waterfowl followed by evolution into a strain that could transmit efficiently between humans (USGS 2005). In fact, it is thought that a change occurred in a low pathogenicity AI virus of wild birds allowing the virus to infect chickens, followed by further change into the H5N1 AI. H5N1 AI has been circulating in Asian poultry and fowl, resulting in death to these species. H5N1 AI likely underwent further changes, causing infection in additional species of birds, mammals, and humans. This is only the second time in history that a highly pathogenic form of AI has been recorded in wild birds. Potential routes for introduction of the virus into the U. S. include illegal movement of domestic or wild birds, contaminated products, and the migration of infected wild birds.

An interagency National Early Detection System (NEDS) was developed to detect the virus in all the North American flyways. The nationwide surveillance effort for H5N1 detection, a component of NEDS, was designed to provide an early warning for potentially catastrophic mortality in North American wild birds and poultry, and minimize the potential for human exposure. This surveillance

effort has detected some instances of low pathogenic AI viruses. This is not surprising, given that waterfowl and shorebirds are considered to be the natural reservoirs for AI. Tens of thousands of birds have been tested, with no evidence that the H5N1 AI is found in Wyoming or North America. Of 1,550 birds tested for H5N1 AI in Wyoming from October 2007 through January 2009, most were collected using non-WS hunter harvest or nonlethal methods (Table 5).

Table 1. Target Birds Killed by Wyoming WS Bird Damage Management Activities in FY 2006.

Species	DRC-1339	Shooting	Trapping	Total
California Gull	0	52	0	52
Common Raven	473	0	0	473
Rock Dove (Pigeon)	0	1,237	558	1,795
European Starling	0	0	5	5
Northern Flicker	0	1	0	1
Turkey Vulture	0	2	0	2
House Sparrow	0	0	6	6
TOTALS	473	1,292	569	2,334

Table 2. Target Birds Killed by Wyoming WS Bird Damage Management Activities in FY 2007.

Species	DRC-1339	Shooting	Trapping	Total
American Crow	0	122	0	122
American White Pelican	0	3	0	3
Black-Billed Magpie	13	0	0	13
Common Raven	581	5	0	586
Rock Dove (Pigeon)	54	518	385	957
European Starling	0	650	0	650
Northern Flicker	0	3	1	4
House Sparrow	0	4	0	4
TOTAL	648	1,305	386	2,339

Table 3. Target Birds Killed by Wyoming WS Bird Damage Management Activities in FY 2008.

Species	DRC-1339	Shooting	Trapping	Total
American Crow	0	113	0	113
Black-Billed Magpie	80	7	0	87
Common Raven	276	5	0	281
Great Horned Owl	0	2	0	2
Rock Dove (Pigeon)	71	818	411	1300
European Starling	18,362	2,050	0	20,412
Northern Flicker	0	3	2	5
Turkey Vulture	0	3	0	3
House Sparrow	0	99	0	99
TOTAL	18,789	3,100	413	22,302

Table 4. Target Birds Killed by Wyoming WS Bird Damage Management Activities in FY 2009.

Species	DRC-1339	Shooting	Trapping	Total
American Crow	337	0	0	337
Black-Billed Magpie	0	0	1	1
Canada Goose	0	0	33	33[1]
Common Grackle	50	0	0	50
Common Raven	289	9	0	298
Rock Dove (Pigeon)	220	1,142	384	1,746
European Starling	18,148	129	4	18,281
Northern Flicker	0	4	0	4
Turkey Vulture	0	10	0	10
TOTAL	19,044	1,294	422	20,760

[1] 32 of 33 captured with alpha-chloralose and euthanized.

2. Effects of WS Bird Damage Management on Non-target Species Populations, Including T/E Species

WS uses an adaptive IWDM approach to most effectively resolve damage problems and to reduce effects on populations of non-target species. To reduce the risks of adverse effects to non-target species, WS selects methods that are as target-selective as possible or applies such methods in ways to reduce the likelihood of adversely affecting non-target species. WS also uses trained professional employees to conduct bird damage management programs in Wyoming.

DPs are not necessary for non-lethal harassment of birds protected only under MBTA, but a Section 7 consultation and permit could be required for WS to conduct damage management on migratory birds listed under the ESA. Employees monitor areas where bird damage management is scheduled and notify the USFWS if a federally listed species is observed. There are

10 federally listed T/E species in Wyoming (http://www. fws.gov/ecos/ajax/tess_public/pub/ stateOccurrenceIndividual. jsp?state =WY). WS conducted an ESA Section 7 consultation with the USFWS to ensure that WS activities do not adversely affect T/E species. In addition, WS prepared a Biological Assessment (BA), which determined the proposed bird damage management program has no effect on federally listed species in Wyoming. The BA also determined that the proposed action would not likely adversely affect the bald eagle population and may be beneficial to bald eagles and the traveling public if eagles were dispersed from commercial airport properties (B. Kelly, Ecological Services, USFWS letter to R. Krischke, WS, December 19, 2005 and Intraagency Consultation). Only 7 non-target birds were killed during the monitoring period (Tables 6-10). There were no adverse effects on any T/E species or any other non-target species.

Table 5. Birds Killed by Wyoming WS while Conducting Highly Pathogenic Avian Influenza (HPAI) Surveillance.

Species	FY06	FY07	FY08	FY09
California Gull	7	0	0	0
Ring-billed Gull	0	3	0	0
Common Nighthawk	1	0	0	0
American Avocet	0	1	0	0
Killdeer	6	3	1	0
Baird's Sandpiper	1	0	0	0
Least Sandpiper	7	0	1	0
Greater Yellowlegs	0	4	0	0
Lesser Yellowlegs	10	4	0	0
Red-necked Phalarope	2	0	0	0
Semipalmated Sandpiper	2	1	2	0
Short-billed Dowitcher	2	0	0	0
Spotted Sandpiper	1	0	1	0
Stilt Sandpiper	1	0	1	0
Willet	0	3	0	0
American Wigeon	1	31	0	0
Green-Winged Teal	0	12	0	0
Blue-winged Teal	1	7	0	0
Bufflehead	0	1	0	0
Common Goldeneye	0	1	0	0
Gadwall	0	13	0	0
Greater Scaup	0	2	0	0
Lesser Scaup	1	3	0	0
Mallard	4	27	1	0
Northern Pintail	2	1	0	0
Northern Shoveler	0	9	0	0
Redhead	1	6	0	0
Ring-necked Duck	0	8	0	0
Ruddy Duck	0	1	0	0
Wood Duck	0	2	0	0
Unidentified Duck	1	0	0	0
Canada Goose	0	48	0	0

3. Risks Posed by WS Bird Damage Management Methods to the Public and Domestic Animals

The methods used by WS to resolve bird damage management problems includes pesticides. The primary pesticide used by WS in Wyoming is DRC-1339. This pesticide has one of the most extensive databases of any pesticide, and it poses little risk of secondary poisoning because it is metabolized so rapidly (Cunningham et al. 1979, Schafer 1984, Knittle et al. 1990, Schafer 1991). This compound is also unique because of its relatively high toxicity to most pest birds (*e.g.* starlings, blackbirds, corvids, pigeons) but low-to-moderate toxicity to most raptors and almost no toxicity to mammals (DeCino et al. 1966, Palmore 1978, Schafer 1991). Numerous studies have shown that DRC-1339 poses little acute hazard to the public, pets and non-target animals when used in accordance with label directions (USDA 2001a, b). Risks are also site-specific and can be minimized by the choice of bait and selection of bait sites (Linz et al. 1997, Sawin et al. 1999). Prior to the application of DRC-1339, prebaiting is conducted to assess the amount of treated bait needed for the project and to monitor for non-target species. If non-target species are present at or use the bait site, DRC-1339 baiting is postponed, the site is continually monitored and non-target species are hazed from the bait site, a new bait site is selected and prebaited, or different bait is selected that is not attractive to the non-target species. WS used a total of 911.3 grams of DRC-1339 during FY 2006-2009 to resolve bird damage problems. DRC-1339 take represents 81.6% of the total lethal take of birds by WS and 94% of

starlings killed were taken with DRC-1339. The remaining birds were taken by shooting (14.6%) and trapping/hand capture (3.8%) (Tables 1-4). There were no known incidents of adverse effects to any domestic pets or members of the public related to Wyoming WS use of DRC-1339 during FY 2006-2009.

Table 6. Nontarget Birds Killed by Wyoming WS Bird Damage Management Activities in FY 2006.				
Species	DRC-1339	Shot	Captured	Total
Common Raven	0	0	1	1
Table 7. Nontarget Birds Killed by Wyoming WS Bird Damage Management Activities in FY 2007.				
Species	DRC-1339	Shot	Captured	Total
None	0	0	0	0
Table 8. Nontarget Birds Killed by Wyoming WS Bird Damage Management Activities in FY 2008.				
Species	DRC-1339	Shot	Captured	Total
None	0	0	0	0
Table 9. Nontarget Birds Killed by Wyoming WS Bird Damage Management Activities in FY 2009.				
Species	DRC-1339	Shot	Captured	Total
Black-Billed Magpie	2	0	0	2
House Finch	0	0	1	1

The use of shotguns, air rifles, and other firearms is selectively employed on target species and helps to reinforce bird scaring and harassment efforts. Use of firearms is closely evaluated because of potential safety and public perception issues. To help ensure safe use, WS employees who carry firearms as a condition of employment are required to maintain firearms certification after successfully completing an initial approved firearms safety course and must comply with the Lautenberg Amendment. There were no known firearms incidents related to humans or non-target animals during the reporting period.

WS occasionally employs the use of live traps to capture target birds. Such traps, when used properly, are harmless to birds; hence, non-target captures can be released unharmed and the traps pose no risks to the public or domestic pets. No non-target animals or humans were injured or killed while using traps to capture nuisance or damage-causing birds.

4. Efficacy of WS Bird Damage Management Methods

WS believes that it is important to maintain the widest possible selection of damage management methods to effectively resolve bird damage problems. Some methods may be more or less effective, or applicable depending on weather conditions, time of year, biological factors, economic considerations, legal and administrative restrictions, the skill of the personnel using the method and the guidance provided by WS Directives. Some methods may be effective for low to moderate target bird population levels, while the same method(s) may fail as flock sizes increase and birds become more acclimated to human activity/disturbance. WS personnel are trained in the effective use of each bird damage management method.

Under the current Wyoming WS program, all methods are used as effectively as practicably possible, in conformance with the WS Decision Model (Slate et al. 1992) and WS Directives. Such an IWDM strategy incorporates the most effective methods to alleviate wildlife-caused damage while considering biological, environmental, economic, and social factors. The effectiveness of the program can be defined in terms of reducing economic losses, health and safety hazard risks, and minimizing property damage, while at the same time protecting people, non-target species and the environment.

Wyoming WS conducted 1,324 bird damage management operational work tasks[9] and 83 technical assistance work tasks[10] from FY 2006 through FY 2009 (Management Information System (MIS) 2006-2009). Monetary losses from bird damage reported to WS from FY 2006 through FY 2009 were estimated at $176,622 (Table 10). These losses represent only a portion of the actual total losses, and serve more as an indicator of the types of damage rather than an indicator of the total magnitude of the damage. Requests from the public to address bird problems ranged from structural damage to homes and property, livestock predation, consumption and contamination of livestock feed, bird predation at aquaculture facilities, and threats to human and livestock health and safety.

The majority of reported damage was to property, with estimated damages assessed at $152,800, while damage to agricultural resources ranked second highest, with estimated losses at $23,722. Bird damage management resource loss data show that northern flickers were the single largest cause of damage at an estimated $150,600, followed by common ravens at $21,600 (MIS 2006-2009).

Table 10. Bird Damage Reported to Wyoming WS during FY 2006 through FY 2009 (MIS 2006-2009)[1]

RESOURCE TYPE DAMAGED[2]	MAJOR BIRD SPECIES[3]	ESTIMATED COST OF DAMAGE
Property: Non-residential Buildings, Residential Buildings, Landscaping	Northern Flickers, American Crows, European Starlings	$152,800
Agriculture: Predation on Livestock (calves/lambs), Consumption and Contamination of Livestock Feed, Aquaculture	Common Ravens, European Starlings, American White Pelicans, Black-Billed Magpies,	$23,722
Human Health and Safety[4]: Disease Transmission Threats	Pigeons	$100
TOTAL		$176,622

[1] These losses represent only a portion of the total losses statewide caused by birds and serve more as an indicator of the types of damage rather than the magnitude of damage.
[2] Resources are ranked with respect to the amount of damage that was reported.
[3] Species are ranked with respect to the amount of resource damage that was reported.
[4] Damage assessments for disease transmission and threats to people and human safety are difficult to quantify.

Cooperators reimburse WS for requested bird damage management programs. Because cooperators are unlikely to fund ineffective programs, the status of bird damage management projects conducted by Wyoming WS under the current program indicates high effectiveness. The analyses in the EA remains valid for the effectiveness of damage management measures to reduce or minimize damage associated with migratory and non native exotic bird species in Wyoming.

Relationship of This Review and Supplement to Other Management and Environmental Documents

WS Programmatic EIS. WS issued a programmatic EIS which analyzed program activities (USDA 1997) and Record of Decision on the National APHIS-WS program. Information from USDA (1997) has been incorporated by reference into USDA (2008) and this Supplement.

Bird Damage Management in Wyoming EA: WS issued an EA and Decision analyzing bird damage management activities conducted by WS in Wyoming. USDA (2008) included analysis of actions and

[9] A "operational control" work task is defined as one (1) visit to a property where WS is conducting a bird damage management activity/project. It is common to have several work tasks or visits associated with a single property where bird damage management is occurring before the problem is solved (*e. g*., flicker removal).
[10] "Technical assistance" work tasks are normally only a single visit to a property or a single contact by WS.

methods to reduce bird damage to protected resources as requested. That analysis remains relevant to current program activities, including the potential impacts to T&E species, and potential impacts associated with the methods used during bird damage management. Information from USDA (2008) has been incorporated by reference.

Executive Order (EO) 13186 and MOU between USFWS and WS. EO 13186 directs agencies to protect migratory birds and strengthen migratory bird conservation by identifying and implementing strategies that promote conservation and minimize the take of migratory birds through enhanced collaboration between agencies and American Indian tribes. A national-level MOU between the USFWS and WS is being developed to facilitate the implementation of EO 13186.

Invasive Species EO 13112. Authorized by President Clinton, EO 13112 establishes guidance to agencies to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause. The EO, in part, states that each agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law: 1) reduce invasion of exotic species and associated damages, 2) monitor invasive species populations and provide for restoration of native species and habitats, 3) conduct research on invasive species and develop technologies to prevent introduction, 4) provide for environmentally sound control, and 5) promote public education on invasive species.

COMPLIANCE AND MONITORING

Bird damage management activities have been conducted by Wyoming WS in a manner consistent with all applicable environmental regulations, including the ESA, MBTA and NEPA. WS representatives will continue to consult, as necessary, with USFWS, FAA, WGFD, and/or the WDA regarding performance of wildlife damage management activities. Furthermore, the Wyoming WS program reports annually to the USFWS the number and species of migratory birds protected by the MBTA that WS killed. The USFWS is responsible for monitoring bird populations to ensure no adverse effect to bird populations. The USFWS has authority for managing migratory birds protected under the MBTA and for issuance of depredation permits (50 CFR 21.41). Depredation permits are not necessary for birds not protected by the MBTA or for non-lethal harassment of species protected by the MBTA. Substantial changes in the scope of work, changes in relevant guidance documents, or environmental regulations may trigger the need for further analysis.

ANALYSIS SUMMARY

After review of USDA (2008), the associated FONSI, and information contained in this Supplement, impacts on the quality of the human environment from WS activities conducted pursuant to USDA (2008) have been determined to be insignificant and no substantive changes in the analyses are necessary. Wyoming WS' bird damage management activities, based on the information found within this Supplement, fall within the scope of analysis in USDA (2008). WS will continue to conduct bird damage management according to program procedures, protection measures, and mitigation factors discussed in USDA (2008), and in coordination with the USFWS.

The current program is environmentally acceptable, addressing the issues and needs while balancing the environmental concerns of management agencies, landowners, advocacy groups, and the public. The analyses in USDA (2008) and this Supplement adequately addresses the identified issues which reasonably confirm that no significant impacts, individually or cumulatively, to wildlife populations or the quality of the human environment have occurred from the current program, nor does the current program constitute a major federal action that would warrant the development of an EIS.

Based on this Supplement, the issues identified in USDA (2008) are best addressed by continuing the current program and applying the associated minimization measures discussed in Chapter 3 of USDA (2008). The current program: (1) provides for bird damage management techniques using a combination of the most effective methods and does not adversely affect the environment, property, and/or non-target species, including T/E species; (2) offers the greatest chance at maximizing effectiveness and benefits to resource owners and managers while minimizing cumulative impacts on the quality of the human environment; (3) presents the greatest chance of maximizing net benefits while minimizing adverse impacts to public health and safety; and (4) offers a balanced approach to the issues of humaneness and aesthetics when all facets of those issues are considered. However, the foremost considerations are that: 1) bird damage management will only be conducted by WS at the request of landowners/managers, 2) management actions are consistent with applicable laws, regulations, policies and orders and coordinated with the USFWS and WGFD, and 3) no adverse impacts to the environment were identified in the analysis. The Wyoming WS program will continue to provide effective and practical technical assistance and operational management techniques that reduce damage.

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APPENDIX A

WYOMING WS BIRD DAMAGE MANAGEMENT EA QUALITY ASSURANCE CHECKLIST[11]

Effects on Target Species Populations

- ✓ Bird damage management actions were directed toward localized populations, groups and/or individual offending birds, depending on the species and magnitude of the problem.
- ✓ WS generally conducts activities on such "anthropogenic abundant[12]" species.

Effects on Non-target Species Populations

- ✓ Non-target animals captured in live-traps were released at the capture site unless the APHIS/WS Specialist determined that they would not survive.
- ✓ Pre-baiting was used to monitor for the presence of non-target birds before the application of DRC-1339 baits.
- ✓ If non-target species were present or likely to be present where avicides were to be used, WS personnel remained on site to discourage non-target visitation.

Protecting Human Safety

- ✓ No injuries or illnesses to members of the public occurred as a result of WS bird damage management activities.
- ✓ According to requirements outlined in "Implementation Plan for Use of DRC-1339 for Control of Starlings by USDA Wildlife Services in Rural Settings in Wyoming", WS notifies selected state and federal natural resource and public health agencies prior to or immediately following application of DRC-1339 to inform them of the project details. These agencies are thereby informed that reports of dead starlings and pigeons are not due to disease outbreaks (such asWest Nile virus) and do not pose threats to non-target mammals (humans, cats, dogs).

Use of Pesticides

- ✓ All pesticides used by WS in Wyoming are registered with the Environmental Protection Agency (EPA) and the Wyoming Department of Agriculture (WDA).
- ✓ Pesticide use, storage and disposal conform to label instructions, WS Directives, other applicable laws and regulations and Executive Orders 12898 and 13045.
- ✓ To the best of the knowledge of the project or program manager, APHIS/WS employees 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.

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[11] Checklist of Standard Operating Procedures to minimize or avoid adverse environmental effects.

[12] Species which are common due to human-caused environmental changes; these species, which include, but are not limited to, mourning doves, American robins, crows, cowbirds, starlings and red-winged blackbirds, have benefited from humans converting vast forests of North America into farms, fields, pastures and house lots (Conover 2002).

- ✓ Pesticide use was primarily restricted to private property.

- ✓ APHIS/WS employees who used pesticides during the reporting period were certified to use such pesticides in accordance with EPA and WDA-approved programs and participated in recertification programs to keep informed of new developments and maintain their certifications.

- ✓ Material Safety Data Sheets for avicides are provided to all WS personnel involved with specific bird damage management activities.

Historic Preservation

- ✓ APHIS/WS determined that this agency's actions do not have the potential to affect historic resources.

Humaneness

- ✓ Birds captured in live traps are humanely euthanized by cervical dislocation or other approved methods.

- ✓ DRC-1339 was used in over 81.6% of the total lethal take of birds. DRC-1339 acts in a humane manner, producing a quiet and apparently painless death.

Endangered, Threatened and Sensitive Species

- ✓ No non-target take of any threatened or endangered (T/E) species occurred.

- ✓ A review of the Section 7 Consultation and Letter of Concurrence from the United States Fish and Wildlife Service (USFWS) determined that bird damage management activities were conducted in accordance with guidance provided by the USFWS.

- ✓ "Reasonable and Prudent Alternatives" (RPAs) or "Reasonable and Prudent Measures with Terms and Conditions" (RPMs) from the 1992 or other Biological Opinion from the USFWS were applicable to this action. To the best of the knowledge of the project or program manager, all of the RPAs and/or RPMs were met during the reporting period.

- ✓ On federal lands, T/E and sensitive species were addressed during the work planning process, as appropriate.

Native American Cultural Issues

- ✓ No activities were conducted on Native American tribal lands; any such actions would only be conducted on tribal lands at the request of the tribe(s).

Federal, State, County, City and other Public Land Management Issues/Conflicts

- ✓ Bird damage management activities on federal, state, county, city and other public lands were conducted in accordance with work plans or signed Cooperative Agreements or Agreements for Control.

- ✓ Vehicle access was limited to existing roads or trails unless otherwise authorized by the respective agency.

Additional Measures to Minimize Impacts

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

- ✓ Preference was given to nonlethal damage management when practical and effective.

- ✓ Lethal control was implemented after a request for assistance was received from the property or resource owner/manager when a bird damage management problem could not effectively be resolved through nonlethal damage management and where Agreements for Control or other comparable documents allowed for such operational damage management activities.