DECISION
AND
FINDING OF NO SIGNIFICANT IMPACT

ENVIRONMENTAL ASSESSMENT:

BIRD DAMAGE MANAGEMENT IN ILLINOIS

April 23, 2008

I. INTRODUCTION

The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Wildlife Services (WS) and U.S. Fish and Wildlife Service (USFWS) released an Environmental Assessment (EA) on "*Bird Damage Management in Illinois*" in April 2008 which analyzed potential environmental impacts of alternatives for reducing bird damage problems in Illinois. 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 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 1992). Ordinarily individual WS damage management actions are categorically excluded and do not require an EA (7 CFR 372.5(c), 60 Fed. Reg. 6000-6003, 1995). However, to evaluate and determine if there might be any potentially significant impacts to the human environment from Illinois WS' proposed bird damage management alternatives, this EA was prepared. The EA documented the need for bird damage management in Illinois and assessed potential impacts of various alternatives for respond to bird damage and other related problems. This document provides notice of WS' choice of a management alternative and determination regarding the magnitude of the environmental impacts associated with that alternative that were made using information in the EA.

The EA was prepared in cooperation with the United States Department of the Interior Fish and Wildlife Service (USFWS) and United States Army Corps of Engineers and in consultation with the Illinois Department of Natural Resources (IDNR), Illinois Department of Public Health, and City of Chicago Department of Environment. The multi-agency approach met NEPA's interdisciplinary team requirement; ensured that the analysis adequately addressed potential environmental impacts of bird damage management alternatives and ensured that all proposed actions would in compliance with relevant laws and regulations. All WS BDM activities will be conducted consistent with the Endangered Species Act of 1973 as amended, Memoranda of Understanding among the WS and the cooperating and consulting agencies, and all applicable federal state and local laws and regulations.

II. BACKGROUND

The determination of a need for WS assistance with BDM in Illinois is based on requests for assistance with bird damage to agricultural resources, natural resources, property, livestock, bird-related risks to public health and safety. Some of the types of damage that resource owners/managers seek to alleviate include: bird damage to corn crops, dairies, food processing plants; damage to utilities; public historical and municipal areas; protection workers from pest bird-related health and safety threats; protection of Threatened and Endangered (T&E) species; and protection of public health and safety at airports. WS may

also receive requests for assistance with surveillance and management of wildlife for diseases transmissible to humans or livestock. Details on the conflicts associated with bird damage in Illinois are provided in the EA. State agencies in Illinois provide advice and issue permits to control bird damage but do not provide operational assistance. Private companies do provide some management services, but they may be too expensive, not geographically available, or not knowledgeable in a particular damage situation. In addition, some resource owners/managers feel more comfortable with Wildlife Services as the Federal authority in BDM.

The Migratory Bird Treaty Act (MBTA), as amended, provides the USFWS regulatory authority to protect families of birds that contain species that migrate outside the United States. The law prohibits any "take" of these species, except as permitted by the USFWS. Property owners/managers may obtain permits from the USFWS that allow the take of birds causing damage. WS provides technical assistance for most permit applicants prior to submission of the WS Form 37 which is used by the USFWS when issuing migratory bird permits for damage management. Illinois Compiled Statute (ILCS): 520 ILCS 5/2.37, Subject to federal regulations and Section 3 of the Illinois Endangered Species Act, the Department may authorize owners and tenants of lands or their agents to remove or destroy any wild bird or wild mammal when the wild bird or wild mammal is known to be destroying property or causing a risk to human health or safety upon his or her land. Consequently, WS involvement is not mandatory for property owners/managers to take action to resolve bird damage problems. The EA only evaluated alternatives for WS involvement in BDM and cannot change Illinois State Statutes and IDNR/USFWS policy permitting private landowners access to lethal and nonlethal alternatives for managing bird damage. Therefore, a major factor in determining how to analyze potential environmental impacts of WS' involvement in BDM is that such management will likely be conducted by state, local government, or private entities that are not subject to compliance with NEPA, even if WS is not involved. This means that the Federal WS program has limited ability to affect the environmental outcome (*status quo*) of BDM in the state, except that the WS program is likely to have lower risks to nontarget species and less impact on wildlife populations than some actions that may be taken by resource owners/managers. In the absence of a WS program, some individuals experiencing damage may take illegal or unsafe action against the problem species either unintentionally due to lack of training, or deliberately out of frustration of continued damage. In these instances, adverse impacts on the environment may be greater than with a professional WDM program. Despite the limitation to WS' influence on the environmental status quo and associated limit to federal decision-making, this EA process is valuable for informing the public and decision-makers of the substantive environmental issues and alternatives for management of mammal damage.

III. ISSUES ANALYZED IN THE EA

The following issues were identified as important to the scope of the analysis (40 CFR 1508.25) and each of the proposed alternatives was evaluated relative to its impacts on these issues.

- Cumulative Effects of WS Bird Damage Management on Target Species Populations
- Effects of WS Bird Damage Management on Non-target Species Populations, Including T/E Species
- Risks Posed by WS Bird Damage Management Methods to the Public and Domestic Animals
- Efficacy of WS Bird Damage Management Methods
- Impacts to stakeholders, including aesthetics

IV. ALTERNATIVES ANALYZED IN DETAIL

Chapter 3 of the EA analyzes three potential alternatives that were developed to address the issues identified above. A detailed discussion of the anticipated effects of the alternatives on the issues is provided in Chapter 4 of the EA. The following summary provides a brief description of each alternative and its anticipated impacts.

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 No Action alternative, as defined here, is consistent with the CEQ's (1981) definition which states that "No Action" may be interpreted as being the continuation of current management practices.

The current and proposed program is an adaptive integrated Illinois WS bird damage management program for the protection of agricultural and natural resources, aquaculture, property, and public health and safety. WS would continue to respond to requests for assistance with, at a minimum, technical assistance, or where appropriate and permitted by the USFWS and IDNR, operational damage management whereby WS personnel conduct bird damage management actions. The IWDM approach would allow for the use of legally available nonlethal and lethal bird damage management methods, either singly or in combination, to meet requester needs for reducing bird damage (EA Appendix C). Agricultural producers, airport managers, property owners and others requesting assistance would be provided information regarding the use of effective non-lethal and lethal techniques, as appropriate. Non-lethal methods include, but are not limited to, lure crops, environmental/habitat modification, behavior modification, decoy traps and other live traps, exclusionary devices, nest destruction, chemical repellents, reproductive inhibitors, and alpha chloralose (AC). Lethal methods considered by WS include: shooting, egg addling/destruction, snap traps, DRC-1339, and euthanasia techniques such as CO_2. WS may recommend hunting or Depredation Permits to resource owners when these methods are deemed applicable to certain bird damage management situations. Bird damage management would be conducted on private or public property where a need has been documented, WS assistance has been requested, and an *Agreement for Control* or other comparable document has been completed. All management actions would comply with applicable State, Federal and local laws and regulations.

Alternative 2 - *Only Non-lethal Bird Damage Management.* This alternative would require WS to only use and recommend non-lethal methods to resolve bird damage problems. Appendix C provides a detailed description of nonlethal damage management methods available to WS. Requests for information regarding lethal management approaches would be referred to the IDNR, USFWS, extension agents, local animal control agencies, or private businesses or organizations. Individuals might choose to implement WS non-lethal recommendations, implement lethal methods or other methods not recommended by WS, contract for WS direct control services, use contractual services of private businesses, or take no action. Persons receiving technical or operational assistance with nonlethal methods from WS could still resort to lethal methods that were legally available to them. WS would not make recommendations to the USFWS and IDNR regarding the issuance of permits to resource owners to allow them to take birds by lethal methods. Under this alternative, AC would be used by WS personnel only to capture and relocate or release birds. WS would not use the avicide DRC-1339. Currently, DRC-1339 and AC are only available for use by WS employees. Therefore, use of these chemicals by private individuals would be illegal. However, the avian toxicant Starlicide is similar to DRC-1339 and would remain available to licensed pesticide applicators.

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 Illinois. WS would not be available to provide technical assistance or make recommendations to livestock producers, airport and landfill managers, property owners or others requesting assistance. However, State and local

agencies, and private individuals could conduct bird damage management. In some cases, damage management methods applied by non-WS personnel could be used contrary to their intended or legal use, or more than what is recommended or necessary. In addition, DRC-1339 and AC are only available for use by WS employees. However, the avian toxicant Starlicide is similar to DRC-1339 and would remain available to licensed pesticide applicators.

V. FEDERAL & STATE ENDANGERED SPECIES CONSULTATION

At the time the EA was submitted for public comment, WS was in the process of conducting an informal Section 7 consultation with the USFWS regarding potential risks to federally-listed threatened and endangered species. On April 22, 2008 WS received notice that the USFWS concurred with WS' determination that the proposed action may affect but is not likely to adversely affect Whooping Cranes (*Grus americana*), Piping Plovers (*Charadrius melodus*), or Least Terns (*Sterna antillarum; letter from R. Nelson, USFWS to S. Beckerman, WS*). WS has determined that the proposed BDM program would have no impact on any other federally-listed threatened or endangered species in Illinois. WS also determined that the proposed action may affect but will not adversely affect state-listed threatened or endangered birds or gray wolves (*Canis lupus*), and would have no effect on any other state-listed threatened or endangered species. On April 11, 2008, WS received notice that the IDNR concurred with this determination (letter from S. Flood, IDNR to S. Beckerman, WS).

VI. MONITORING

The Illinois WS program will annually monitor the impacts of its actions relative to each of the issues analyzed in detail in the EA. This evaluation will include reporting the WS take of all target and nontarget species to help ensure there are no adverse impacts on the viability of State native wildlife populations or non-target species including State and Federally-listed threatened/endangered species. IDNR expertise will be used to assist in determining impacts on state wildlife populations.

VII. PUBLIC INVOLVEMENT

The EA was available for public review and comment during a 30-day period (03/14/08 – 04/14/08), which complies with public involvement guidelines/policies contained in NEPA, CEQ regulations, and APHIS WS Implementing Regulations, as well as all pertinent agency laws, regulations, and policies. A Legal Notice of Availability was placed in The State Journal Register, a daily newspaper with geographic coverage of all of the proposed project area, for three days (03/14/08 – 03/16/08). WS also sent notices of availability and/or copies of the EA and amendment to individuals and organizations that WS knew might have an interest in the EA. WS received one request for a copy of the Pre-Decisional EA. WS received 4 comments on the EA during the comment period. Responses to comments in the letters are provided in Appendix B of this document.

VIII. AGENCY AUTHORITIES

Wildlife Services Legislative Authority. WS is the Federal program authorized by law to help reduce damage caused by wildlife. The primary statutory authorities for the APHIS-WS program are the Act of March 2, 1931 (46 Stat. 1468; 7 U.S.C. 426-426b) as amended, and the Act of December 22, 1987 (101 Stat. 1329-331, 7 U.S.C. 426c). The mission of the USDA/APHIS/WS program is to provide federal leadership in managing conflicts with wildlife. Wildlife Services' mission, developed through its strategic planning

process (USDA 1999), is: 1) "to provide leadership in wildlife damage management in the protection of America's agricultural, industrial and natural resources, and 2) to safeguard public health and safety." WS recognizes that wildlife is an important public resource greatly valued by the American people. By its very nature, however, wildlife is a highly dynamic and mobile resource that can cause damage to agriculture and property, pose risks to human health and safety, and affect industrial and natural resources. WS conducts programs of research, technical assistance and applied management to resolve problems that occur when human activity and wildlife conflict.

Additionally, Memoranda of Understanding among WS and other governmental agencies also define WS responsibilities in wildlife damage management. For example, a Memorandum of Understanding between the FAA and WS recognizes WS role and expertise in providing wildlife hazard management assistance to the aviation community. It states, that the "FAA or the certificated airport may request technical and operational assistance from WS to reduce wildlife hazards."

United States Department of the Interior, Fish and Wildlife Service (USFWS). The primary responsibility of the United States Department of the Interior, Fish and Wildlife Service (USFWS) is fish, wildlife, and plant conservation. While some of the USFWS's responsibilities are shared with other Federal, State, Tribal, and local agencies, the USFWS has special authorities in managing the National Wildlife Refuge System; conserving migratory birds, endangered species, certain marine mammals, and nationally significant fisheries; and enforcing Federal wildlife laws. The USFWS is charged with implementation and enforcement of the Endangered Species Act of 1973, as amended and with developing recovery plans for listed species.

Illinois Department of Natural Resources Legislative Authority. The Illinois Department of Natural Resources authority in wildlife management is given under ILCS Chapter 520. The mission of the IDNR is to manage, protect and sustain Illinois' natural and cultural resources; provide resource-compatible recreational opportunities and to promote natural resource-related issues for the public's safety and education.

Illinois Department of Agriculture. The mission of IDOA is to be an advocate for Illinois' agricultural industry and provide the necessary regulatory functions to benefit consumers, agricultural industry, and our natural resources. The agency will strive to promote agri-business in Illinois and throughout the world. The IDOA registers pesticides for use in the state of Illinois.

Illinois Department of Public Health. The mission of the IDPH is to promote the health of the people of Illinois through the prevention and control of disease and injury. The IDPH is responsible for certifying structural pesticide applicators in the state of Illinois for both general use and restricted use pesticides in accordance with the Illinois Structural Pest Control Act. Illinois WS employees applying pesticides are certified pesticide applicators through the IDPH.

IX. DECISION and RATIONALE

I have carefully reviewed the EA. I believe the issues identified in the EA are best addressed by selecting Alternative 1, Continue the Current WS Adaptive Integrated Bird Damage Management Program (No Action/Proposed Action) and applying the associated Standard Operating Procedures and monitoring measures discussed in Chapter 3 of the EA. Alternative 1 provides the best range of damage management methods considered practical and effective, best addresses the issues identified in the EA, provides safeguards for public safety, and accomplishes WS' Congressionally directed role in protecting the Nation's agricultural and other resources including meeting WS' obligations to the IDNR, and cooperating counties and residents of Illinois. WS policies and social considerations, including humane issues, will be considered

while conducting BDM. While Alternative 1 does not require non-lethal methods to be used, WS will continue to provide information and encourage the use of practical and effective non-lethal methods (WS Directive 2.101). I have also adopted the EA as final because WS did not receive any comments that changed the analysis.

FINDING OF NO SIGNIFICANT IMPACT

The EA indicates that there will not be a significant impact, individually or cumulatively, on the quality of the human environment because of the proposed action, and that these actions do not constitute a major Federal action. I agree with this conclusion and therefore determine that an EIS will not be necessary or prepared. This determination is based on the following factors:

1. BDM, as conducted by WS in the State of Illinois, is not regional or national in scope. Although BDM projects may occur anywhere in the State, individual activities will occur at localized properties.

2. Based on the analysis documented in the EA, the Proposed Action would pose minimal risk to public health and safety. Risks to the public from WS methods were determined to be low in a formal risk assessment (USDA 1997, Appendix P). The Proposed Action is expected to result in a direct beneficial impact on human health and safety, natural resources, property, and livestock health by reducing the potential health and safety risks posed by birds at airports, dairies/feedlots, municipal sites, industrial sites, agricultural sites, public and private land in Illinois.

3. The Proposed Action will not have a significant impact on unique characteristics such as park lands, prime farm lands, wetlands, wild and scenic areas, or ecologically critical areas. Built-in mitigation measures that are part of WS' standard operating procedures and adherence to laws and regulations that govern impacts on elements of the human environment will assure that significant adverse impacts are avoided.

4. The effects on the quality of the human environment are not highly controversial. Although there may be opposition to killing birds, this action is not controversial in relation to size, nature, or effects. Based on consultations with the State wildlife management authorities, the Proposed Action is not likely to cause a controversial disagreement among the appropriate resource professionals.

5. Standard Operating Procedures adopted and/or described as part of the "Proposed Action" minimize risks to the public, prevent adverse effects on the human environment, and reduce uncertainty and risks. Effects of methods and activities, as proposed, are known and do not involve uncertain or unique risks.

6. The Proposed Action does not establish a precedent for future actions. This action would not set a precedent for future BDM actions that may be implemented or planned within the State. Effects of the Proposed Action are minor and short-term in nature and similar actions have occurred previously in the State without significant effects.

7. No significant cumulative effects were identified through this assessment. The EA discussed cumulative effects of WS on target and non-target species populations and concluded that such impacts were not significant for this or other anticipated actions to be implemented or planned within the State. Adverse effects on wildlife or established wildlife habitats would be minimal.

8. This action will not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places and will not cause loss or destruction of significant scientific,

cultural, or historic resources. Bird damage management would not disturb soils or any structures and therefore would not be considered a Federal undertaking as defined by the National Historic Preservation Act.

9. WS determined that the Proposed Action would not result in any adverse effects on state or Federally-listed threatened or endangered species.

10. The Proposed Action is consistent with Local, State, and Federal laws that provide for and/or restrict WS bird damage management. Therefore, WS concludes that this project is in compliance with Federal, State and Local laws for environmental protection.

For additional information regarding this decision, please contact Scott Beckerman, State Director, APHIS,WS, 2869 Via Verde Dr., Springfield, IL 62703 or by phone @ 217-241-6700.

Robert L. Hudson
Acting Regional Director, Eastern Region
USDA-APHIS-WS

4/23/08
Date

APPENDIX A

RESPONSES TO COMMENTS

This Appendix contains issues raised by the public during the comment period for this EA and WS' response to each of the issues. Comments from the public are numbered and are written in bold text. The WS response follows each comment and is written in standard text.

1. EA covers too broad an area. EA does not meet the need for site specific analysis required by NEPA. WS should produce several regional EAs for the state or a statewide Environmental Impact Statement (EIS)

We believe the scope of the EA and environmental impacts from implementation of the proposed action were analyzed at a level appropriate for the proposed action. The bird species analyzed in the EA are the species for which requests for assistance have been received by WS and services were provided (Section 1.3 in the EA). The analysis contains a thorough review of issues relevant to the proposed action for each of the alternatives including risks to target species, nontarget species and consideration of humanness and sociological relevant to bird damage management (Chapter 4).

WS has determined that preparation of an EA to address bird damage management activities is appropriate. Illinois WS only conducts bird damage management in a very small area of the state where damage is occurring or likely to occur. In terms of considering cumulative impacts, one EA covering the entire State provides a better analysis than multiple EAs covering smaller zones. The EA emphasizes major issues as they relate to specific areas whenever possible, however, many issues apply wherever bird damage and resulting management occurs, and are treated as such. In addition, the agency has the discretion to determine the geographic scope of its NEPA analyses (Kleppe v Sierra Club, 427 U.S. 390, 414 (1976), CEQ 1508.25) and WS has determined that the scope of this EA is appropriate (Sections 1.5 and 2.4.1 in the EA). If a determination was made that the proposed action would have a significant environmental impact, then WS would have prepared an EIS before actions were taken (40 CFR 1508.9).

WS personnel use the WS Decision Model (Slate et al. 1992, USDA 1997 Revised) to develop the most appropriate strategy to reduce damage and detrimental environmental effects from damage management actions (Section 3.1.2 in the EA). When a request for assistance is received and after consultation with the requester, WS personnel evaluate the appropriateness of strategies and methods in the context of their availability (i.e., legal and administrative) and suitability based on biological, environmental, economic and social considerations. Damage management actions are generally conducted on only a small portion of the habitat occupied by the target species. As professional wildlife biologists, WS analyzes the effects to bird populations, and recognizes that the damage situation may change at any time in any location. Wildlife populations are dynamic, mobile and renewable. Decisions made using the Decision Model (Slate et al. 1992) are in accordance with plans, goals, and objectives of WS, IDNR, USFWS and all other applicable management authorities and any minimization and standard operating procedures (SOP) described in the EA or established as part of the Decision.

Like other management organizations (e.g., fire departments, emergency clean-up organizations, etc.), WS can sometimes predict the location and types of needs, damage, and risks from historical records or past damage problems, and take action to prevent or reduce the damage. We cannot, however, always predict the exact locations or need to reduce wildlife damage at all locations and to do so would be highly speculative. This phenomenon would be like a fire department predicting where the next fire will occur. WS can and does provide an analysis of impacts of their actions to reduce bird damage within the scope of the EA. The site-specificity problem occurs when trying to determine the exact location and animal(s) that is, or would be

responsible for damages before the damage situation occurs. Preparing individual EAs for each project would be managerially impossible while still providing for public input during the NEPA process and would not allow WS to respond to requests nor deliver services in a timely manner.

In summary, WS has prepared an EA that provides as much information as possible to address and predict the locations of potential bird damage management actions and coordinates efforts with the USFWS, IDNR and other cooperating agencies as appropriate, to insure that protected bird populations remain healthy and viable. Thus, the EA addresses substantive environmental issues pertaining to bird damage management in Illinois. WS can and does provide an analysis of affects of their actions to reduce bird damage within the scope of the EA. WS believes it meets the intent of NEPA and that this EA is the only practical way for WS to comply with NEPA and still be able to accomplish its mission, particularly under emergency situations. WS determined that a more detailed analysis would not substantially improve the public's understanding of the proposal, the analysis, the decision-making process, and pursuing a more detailed analysis might even be considered inconsistent with NEPA's emphasis on reducing unnecessary paperwork (Eccleston 1995).

2. This EA fails to fully explain what procedures WS would use under either the proposed action or the other alternatives to evaluate damage.

We disagree with this claim as demonstrated by the analysis in the EA and WS' programmatic EIS (USDA 1997 Revised). The WS Decision Making process is a thought process for evaluating and responding to routine damage complaints (Section 3.1.2) similar to other professions (Slate et al. 1992). Slate et al. (1992) is a published article that is cited in the EA during discussion of the WS Decision Model. The article provides more detail about the WS Decision Model, and USDA (1997 Revised) provides detail and examples of how the model is used. WS' professionals evaluate the appropriateness of strategies, and methods are evaluated for their availability (*i.e.*, legal and administrative) and suitability based on biological, economic, environmental and social considerations. Following this thought process, the methods deemed practical for the situation are developed into a management strategy and the results are documented in our Management Information System. The results are summarized and provided to the cooperating agencies to use for monitoring and evaluation purposes. We attempted to reach a balance between providing enough information for the public and decision makers and to also comply with CEQ regulations to reduce bulk and excessive paperwork (Eccleston 1995).

3. Incentives or disincentives for WS to engage in different management approaches should be discussed.

Under various acts of Congress, the Secretary of Agriculture is authorized to carry out wildlife control programs necessary to protect the Nation's agricultural and other resources (46 Stat. 1468-69, 7 U.S.C. §§ 426-426b, as amended and Public Law No. 100-202, § 101(k), 101 Stat. 1329-331, 7 U.S.C. § 426c). This authority has been delegated to the WS program. WS is a cooperatively funded, service-oriented program that only responds to damage situations after a request for assistance is received and an Agreement for Control is signed by the landowner/ administrator for other comparable document is in place. WS cooperates with other Federal, State, and local government entities, educational institutions, private property owners and managers, and with appropriate land and wildlife management agencies, as requested, with the goal of effectively and efficiently resolving wildlife damage problems in compliance with all applicable Federal, State, and local laws.

4. EA does not provide data on the efficacy of lethal or non-lethal techniques. Need for action is based on the assumption that WS' damage management strategies benefit agricultural producers, property owners, natural resource managers and others. WS needs to provide information on the efficacy of the WS program as a whole and not just individual methods.

It is recognized that the most effective approach to resolving wildlife damage is to use an integrated approach which may call for the use of several damage management methods simultaneously or sequentially (USDA 1997, Revised). The purpose behind Integrated Wildlife Damage Management (IWDM) is to implement effective management methods in a cost-effective manner while minimizing the potentially harmful effects on humans, target and non-target species, and the environment[1]. Under the proposed alternative, the analysis showed that the methods proposed for use under an IWDM approach are the most effective and practical way to resolve damage problems. The efficacy of each alternative is based on the types of methods employed under that alternative. The efficacy of each method is based, in part, on the application of the method, the restriction on the use of the method(s), the skill of the personnel using the method and, for WS personnel, the guidance provided by WS Directives and policies. It is recognized that some methods may be more or less effective, or applicable depending on weather conditions, time of year, biological considerations, economic considerations, legal and administrative restrictions, the species responsible, magnitude of the damage, extent of damage, duration and frequency of the damage, prevention of future damage, presence of non-target species, or other factors. Because these various factors may preclude the use of certain methods, it is important to maintain the widest possible selection of damage management methods to most effectively resolve bird damage problems. Data and studies on the efficacy of specific damage management techniques are provided in Appendix B.

While information on efficacy of WS statewide bird damage management programs, a study in California did assess the cost effectiveness of the California WS program (bird and mammal programs combined) which also uses an integrated wildlife damage management approach to reduce conflicts with wildlife (Schwiff et al. 2005). Results from the study found that for every dollar a county invests in the California WS program, they receive between $6.5 and $10.00 in benefits. For the period of 2003 – 2007, WS has evaluated cooperator satisfaction with the Illinois WS bird damage management program by making note of cooperator complaints regarding assistance provided by WS in annual monitoring reports. Cooperator satisfaction from 2003 – 2007 has ranged from 98% - 100%. Most WS assistance with BDM in Illinois is paid for by cooperators. Cooperators who do not feel that they have received adequate assistance from WS are unlikely to request future assistance, nor are they likely to recommend WS to other individuals with similar problems.

5. Lethal control is not effective. Data is needed on efficacy and cost-effectiveness of the alternatives, especially the proposed action, and duration of control actions using different approaches.

We disagree with this claim, and as referenced by commenter, Avery (2002) also cited studies where lethal damage management did reduce losses to crops (Elliott 1964, Larsen and Mott 1970, Palmer 1970, Plesser et al. 1983, Tahon 1980, Glahn et al. 2000 as cited in Avery 2002) and posed little danger to non-target species (Glahn et al. 2000). Avery (2002) also stated that it seems reasonable that local, short-term crop protection can be achieved through reduction in depredating bird populations, however, quantification of the relationship between the numbers of birds killed and the associated reduction in crop damage is lacking.

Further, perhaps a better way to state this is by asking the question, "Does the value of damage or the damage avoided equal or exceed the cost of providing bird damage management?" CEQ does not require a formal, monetized cost-benefit analysis to comply with NEPA (40 CFR 1508.14) and consideration of this issue is not essential to making a reasoned choice among the alternatives being considered. USDA (1997, Revised, Appendix L) states:

> *"Cost effectiveness is not, nor should it be, the primary goal of the APHIS WS program. Additional constraints, such as the environmental protection, land management goals, and others, are*

[1] The cost of management may sometimes be secondary because of overriding environmental, legal, human health and safety, animal welfare, or other concerns.

considered whenever a request for assistance is received. These constraints increase the cost of the program while not necessarily increasing its effectiveness, yet they are a vital part of the APHIS WS Program."

An analysis of cost-effectiveness in many bird damage management situations is difficult or impossible to determine because the value of benefits may not be readily calculable and personal perspectives differ about damage. For example, the potential benefit of eliminating pigeons from nesting in industrial buildings or starlings from a livestock facility could reduce incidences of illness among unknown numbers of building users or livestock. Since some bird-borne diseases are potentially fatal, or severely debilitating, the value of the benefit may be high. However, no studies of disease problems with and without bird damage management have been conducted[2], and, therefore, the number of cases prevented because of bird damage management are not possible to estimate. Also, it is rarely possible to conclusively prove that birds are responsible for individual disease cases or outbreaks. In addition, there are no studies available to assess the potential damage with and without bird damage management at airports. When a problem is identified at an airport and WS is requested to assist in reducing bird/aircraft strike risks, WS responds. Whether a damaging or fatal bird/aircraft strike would have occurred is speculative, however airport managers, the FAA and WS err on the side of reducing risks and potential bird strike damage.

Another example of the difficulty inherent in determining the cost-effectiveness of BDM is the management of some wildlife species to protect other wildlife species, such as Threatened and Endangered species. Civil values have been assigned for many common species of wildlife and can be used to calculate their value. However, in the case of Threatened and Endangered species, their value has been judged "incalculable" (Tennessee Valley Authority vs. Hill, US Supreme Court 1978), making it more difficult to specifically quantify the economic benefit to restore or protect Threatened and Endangered species.

6. We are concerned that the management methods used by WS may not include the most recent innovations in methods for preventing and reducing bird damage. WS must indicate what steps are taken to ensure that its Specialists are trained in and *using* the most effective and humane methods currently available.

WS uses trained, professional employees to conduct bird damage management programs in Illinois and continues to train employees on newly developed and available techniques. The NWRC functions as the research arm of WS by providing scientific information and development of methods for wildlife damage management that are effective and environmentally responsible (Linz et al. 2002). NWRC scientists work closely with WS state programs, wildlife managers, researchers, and others to develop and evaluate wildlife damage management techniques. (See Section 3.2.2).

The analysis in the EA is based on the best information and methods available, or that are being developed but not yet available. As mentioned numerous times, WS uses an integrated approach and the WS Decision Model to develop management strategies that alleviate damage in the most cost effective manner possible while minimizing the potentially harmful risks to humans, pets, non-target species and individuals. Appendix C and Chapter 4 of the EA discuss products that are currently available as well as products that may be considered should they become available at a future time. The commenter specifically mentions methyl anthranilate and anthraquinone which are discussed in detail in Appendix C.

7. WS should provide examples of past BDM efforts that span the range of depredating species, damage types, and WS responses. It would be helpful for the EA to clarify whether the gull program

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[2] These questions and relationships are outside the scope of this EA and are more appropriate as research projects. We have used the best information available to prepare the analysis in the EA (40 CFR 1502.22).

in Chicago is the only example of WS use of an integrated BDM strategy to resolve a problem or if there are many such programs.

The following are examples of WS' response to some typical requests for assistance with bird damage management in Illinois. It is important to remember that when WS receives requests to relocate or remove flocks and roosts of birds, the reasons for the request are rarely attributable to one type of damage but usually include a combination of issues including damage to equipment and facilities from acids in fecal material; simple mechanical safety complaints (slippery work surfaces) from employees working in areas with accumulations of fecal material; costs associated with cleaning contaminated surfaces; aesthetic complaints related to noise, odor or mess; and concerns about potential disease transmission.

Bird Damage at Dairies and Feedlots: WS encourages dairy farmers to take steps to try to reduce starling access to cattle feed. Most dairy farms utilize free stall barns, where cattle are fed in the barns. They use the same barns all year round, so the barns must provide adequate ventilation for cooling in the summer. This gives starlings access through the peaks, and also through the curtained sides of the barns. Putting mesh of a size small enough to exclude starlings from entering the barns through the peaks restricts ventilation during the summer, and causes ice build-up in the winter, as moisture from inside the barn condenses and freezes on the mesh in freezing temperatures, which are very common during the winter in Illinois. The only effective alternative is forced-air ventilation, which is extremely expensive to install and is cost-prohibitive for most dairy operations.

WS discourages feeding cattle on the ground, which encourages feeding by starlings. Cattle feedlot operations usually feed cattle outside in open pens with exposed feed bunks. There is no cost-effective way to exclude starlings from these feeding areas. WS also recommends adjusting feeding schedules and feeding when starlings are not usually foraging. Feeding cattle at night when starlings are roosting has been suggested as a way to prevent starling consumption of cattle feed, but often solves only part of the problem because cattle usually need to be fed at least twice each day, once in the morning and once in the evening.

Starlings also consume and contaminate cattle feed in feed storage areas. Most cattle operations utilize outside feed storage areas. Feed piles or concrete feed bunks are covered with plastic, but at least one face must be kept open for mixing feed and feeding cattle. WS recommends covering the exposed face of the feed pile when not in use, but many large cattle operations mix feed and/or feed cattle around the clock. Even at smaller operations, it's not usually possible, or feasible to cover and uncover the open face of the feed pile each time the cattle are fed.

Starlings habituate quickly to frightening devices, such as recorded starling distress calls, pyrotechnics, and propane cannons. Pyrotechnics and propane cannons are not feasible, or safe to use in barns, such as the free-stall barns used in most dairy operations. When non-lethal alternatives are inadequate to address damage problems at dairies and cattle feedlots, WS generally uses the avicide DRC-1339 to reduce bird numbers at the site. In most cases, even after several weeks, the cooperators report a 75% – 90% reduction in starling numbers compared to pre-treatment. Illinois WS has had several cooperators indicate they have had lower starling numbers the following winter season.

Risks to Human Health and Safety: WS implements an Integrated Bird Damage Management strategy at two international airports in Illinois. With this strategy the use of pyrotechnics is the first step in keeping birds from utilizing the same airspace as airplanes. One example of this would be a situation where a flock of 10,000 European starlings were roosting at a terminal. These birds would fly over the airfield every morning when leaving the roost and again in the evening when returning to the roost. The airport did not want lethal management methods used at this site. The first step was having the airport remove the structures the birds were roosting in. Once that was accomplished, WS personnel used pyrotechnics to disperse the roost in two nights.

Another method in our Integrated Bird Damage Management program is exclusion. WS has installed a Kevlar grid system over a stormwater retention basin at a southern Illinois airport, as well as a creek at a northern Illinois airport. These sites were being utilized by many different species of waterfowl and wading birds. The grid system deters these species of birds from landing in the basin or stream. WS is also working with a central Illinois airport as well as one of the international airports on a research project trying to determine the best grid wire spacing to deter certain species of waterfowl and wading birds.

WS is also conducting an endophytic fescue research project at two airports in Illinois. This project consists of planting 12 types of enodphytic fescue and monitoring it for two years. WS personnel will monitor the plots for wildlife use, overall coverage and height. At the end of the project WS should be able to determine what type of fescue will grow the best in this region as well as what type of fescue will deter wildlife. This will give us another tool to help keep wildlife away from airports.

One of the other nonlethal management techniques that we implement is capture and relocation. Illinois WS deals with a large number of hawks utilizing airfields. After obtaining the proper Federal and State permits, WS captures and relocates many hawks every year. The hawks are captured, handled, banded and released as humanely as possible.

In another type of situation unrelated to airports, a southern Illinois water district contacted WS because 300-400 vultures were roosting on a local water tower. They water district was concerned with possible contamination to the nearby town's water supply. WS suggested the use of pyrotechnics or propane cannons to harass the vultures. This technique could not be implemented due to a neighboring land owner that raised captive cervids. The land owner did not want the pyrotechnics to stress his captive cervids. WS then used two avian dissuaders (high intensity laser lights, not harmful to wildlife) and three vulture effigies to disperse the roost of vultures in three nights. WS contacted the water district for 6 months after the dispersal and the vultures had not returned. This technique has also been implemented at a power plant where vultures have been roosting on the exhaust stack.

Bird Damage to Property: The Illinois WS program provides both direct control and technical assistance to individuals, businesses and local, State, and Federal government agencies in response to human health and safety concerns, or property damage associated with large concentrations of European Starlings and Rock pigeons. WS generally makes an initial site investigation to verify the species and number of birds involved, what type of damage is occurring and where, how they are gaining access to the damage sites, and to formulate a damage management strategy which is recommended to the complainant.

In some situations, both human health and safety issues and property damage may be involved. WS was contacted by a large metropolitan area that was concerned with the amount of fecal material that was building up from pigeons that were nesting and loafing under two overpasses. Under the overpasses were two terminals for their metropolitan mass transit buses. People had to walk through large quantities fecal material and in some cases people were being defecated on. WS installed exclusion netting under these bridges to keep the pigeons out of the area.

8. WS has omitted an alternative that would require, in each damage situation, that all feasible non-lethal methods be exhausted before turning to lethal control.

This comment apparently suggests that WS does not consider non-lethal methods when devising a management strategy. This is far from the truth and all reasonable alternatives were evaluated in the EA. WS' proposed alternative, Adaptive Integrated Bird Damage Management, as outlined in the EA is similar to a non-lethal before lethal alternative because WS encourages and considers the use of non-lethal methods before lethal methods (WS Directive 2.101). Adding a non-lethal before lethal alternative and the associated

analysis would not add additional information to the analysis for the public or decision maker. WS recognizes that the most effective approach to resolving wildlife damage is to use an integrated approach which may call for the use of several damage management methods (non-lethal and/or lethal) simultaneously or sequentially. If the requester is already using non-lethal methods or if the birds have habituated to scare tactics, repellents or loud noises, etc., WS would not consider continuing to implement those techniques because they have not proven effective. When evaluating methods for a damage situation, WS recognizes that some methods may be more or less effective, or applicable.

9. The EA fails to objectively analyze the issue of humaneness and it is the agency's responsibility to take this seriously.

WS disagrees with this claim and takes the issue of humaneness of methods seriously (Section 2.2.5 and 4.1.5 in the EA) and WS continues to evaluate existing and new methods for animal welfare and humaneness concerns. WS' mission is to reduce bird damage, not bird populations and WS spends thousands of dollars each year to develop and bring to the field newly developed and more species specific and humane methods. Commenter stated that, "We note as well that unnecessary death is a significant issue in any proposed management action." WS couldn't agree more with that sentiment. While it is regrettable that wild animals die to alleviate damage in some situations, WS believes that if an animal death must occur, then it should occur with a minimum amount of distress and pain, in as short a period of time as practical, and with compassion. Commenter was apparently suggesting that only non-lethal methods should be used to protect resources from bird damage or potential damage. What if damage occurs in spite of the use of non-lethal methods? WS is trying to achieve a "balance" between the needs of people, recognizing that people are part of the environment, and animals while keeping issues like protection of the environment, economics, humaneness, etc. in perspective. Questions like, "Is it more humane to allow birds to fly across runways or inhabit livestock facilities, or to remove the birds and the hazards that exist?" need to be asked and answered. WS recognizes that animal welfare organizations are concerned that some methods used to manage wildlife damage may expose animals to pain and suffering. However, WS also recognizes another side to this issue, as perceived by traveling publics, airport managers, the livestock industry and others. WS believes that humaneness of an action or management plan must not only consider the effects of the action on the wildlife but also on the people or other species that may be or are affected by the wildlife. Ideally, such protection would be achieved through non-lethal means, but when non-lethal means are not practical or effective, lethal means may be the only way to accomplish such protection.

10. An action is not more or less humane because it is more or less technically feasible. WS must be clear about the fact that it is not using the most humane method possible for reasons of feasibility or cost effectiveness.

WS does not contend that a technique is humane because it is more or less technically feasible. WS states that it seeks to use methods that cause the least amount of animal suffering within the constraints imposed by current technology and funding, while still providing sufficient damage management to resolve problems. Humaneness is addressed in the EA sections 2.2.5 and 4.1.5 and in the discussion of WS mitigation in standard operating procedures in EA Section 3.4.

11. Unnecessary death should be avoided. Lethal control of animals without action to prevent recurrence of problems (either before or after control) is unacceptably shortsighted and inappropriate.

The IWDM strategy used in the preferred alternative would encompass the use of practical and effective methods of preventing or reducing damage while minimizing harmful effects of damage management measures on humans, target and non-target species, and the environment. Under this action, WS could provide technical assistance and direct operational damage management, including non-lethal and lethal

management methods by applying the WS Decision Model (Slate et al. 1992). When appropriate, physical exclusion, habitat modification or harassment would be recommended and utilized to reduce damage. In other situations, birds would be removed as humanely as possible using: shooting, trapping, and registered pesticides. In determining the damage management strategy, preference would be given to practical and effective non-lethal methods. WS Directive 2.101 *Selecting Wildlife Damage Management Methods* establishes that preference will be given to non-lethal methods when practical and effective. All WS assistance with damage management includes a review of any preventive measures that have been tried by the cooperator, advice on practical and effective ways to prevent the damage problem that are not already in place, and, where applicable, advice on ways to improve the efficacy of preventive methods already in use.

12. WS statement that the safety and effectiveness of DRC-1339 have been demonstrated is inaccurate. Review by Harray (2001) contradicts this assertion. Similarly, Gamble et al. (2002) observed that the USFWS had sufficient concerns for non-target birds from DRC-1339 to contract with the USGS to develop a risk assessment for non-target birds.

We are aware of the study by Harray (2001). Much of the research conducted on DRC-1339 has been conducted by or in cooperation with biologists at the National Wildlife Research Center (NWRC). After reviewing the analysis by Harray, it is the impression of research biologists at the National Wildlife Research Center familiar with the majority of the research on DRC-1339 and the data requirements for pesticide registration by the EPA that the report was critically flawed and that the author's main conclusions were untenable. The review omitted or failed to discuss several important studies bearing on the impacts of DRC-1339 to non-target birds. The report only used one criterion for evaluating the value of toxicity studies and fails to acknowledge that there are options for avian toxicity testing as well as alternative professional views regarding the most appropriate design for acute toxicity testing including Lipnick et al. (1995), Bruce (1987) and standards developed by the American Society for Testing and Materials. The review implied that research that was not conducted under Good Laboratory Practices was inadequate for pesticide risk assessment including those studies conducted prior to establishment of GLP procedures. We do not agree. The EPA promulgated GLP regulations in October 1989 to promote the quality of data tracking; to ensure that research is reconstructable and of known, documented quality; and to provide a legal basis for regulators to accept some studies. GLP regulations do not guarantee the quality of experimental design, analysis or inference. Biologists from NWRC also did not concur with the author's dismissal of studies that failed to utilize a standard research design (letter from M. Tobin, NWRC, to Mr. L. Gamble, USFWS, April 18, 2001).

More importantly, DRC-1339 has been used operationally in the U.S. since 1967. Data available on the product have met the stringent registration requirements of the US EPA. To date, there has been no evidence of major non-target kills or adverse impacts on non-target species populations. Data available at the time the study by Harray (2001) was completed and subsequent non-target species risk analysis and toxicity studies by NWRC indicate that the product is highly toxic to some non-target species. It is because of these risks that WS developed a product label which requires that a period of pre-baiting and observation be conducted prior to using DRC-1339. If non-target species are observed at the sight, WS may adjust the bait application location and application strategy to avoid risks to non-target species or may cancel the proposed use of DRC-1339 at that site.

The report by Gamble et al. (2002) was primarily in reference to the use of DRC-1339 to reduce blackbird and grackle damage to sunflower fields where it is difficult to restrict access of non-target birds to treated bait. WS does not propose this type of DRC-1339 application for to reduce damage to crops in Illinois.

13. EA omits use of U.S. Environmental Protection Agency (EPA) Ecological Risk Assessment for avitrol. Assessment indicates there may be greater nontarget species risks than noted in EA.

WS has reviewed the EPA Ecological Risks Assessment for avitrol (EPA 2007). The assessment identified the following potential ecological risks from avitrol use: risk of environmental contamination and local impacts on plants from avitrol which may be washed of bait during rain events, risks to animals which may drink water which has accumulated in avitrol bait stations during rainfall events, risks of direct consumption of avitrol by nontarget species, secondary hazards to predators which may consume animals which have eaten avitrol. The EPA evaluation was conducted using application as directed by the label and does not take into account additional precautions used by Illinois WS to reduce potential risks from the use of this product. Risks associated with use of avitrol broadcast on the ground and avitrol exposure to rainfall are eliminated because WS always uses bait stations to administer avitrol. As noted in the EA (Section 4.3.2), WS personnel remain on site during avitrol application and will remove bait during a rainfall event unless the bait station is placed in a location where the bait will not be exposed to rainfall. Any bait left after a treatment will be disposed of in accordance with label directions. As noted in EA Section 4.3.2, in addition to pre-baiting requirements on the label, WS use of bait stations and WS harassment of nontarget species which may approach during bait application prevents risks of nontarget species directly consuming treated bait. Consequently this type of risk from WS' use of avitrol are negligible.

Both the EA and the EPA report discuss potential secondary hazards to predatory animals and both analysis reference Ecological Incident Information System (EIIS) records of four predatory bird deaths, including one Peregrine Falcon, that were determined to be due to ingestion of poisoned birds (EPA 2007). Unlike the EPA report, the EA also makes note of recent hypothesis that exposure to sublethal doses of avitrol may cause disorientation and contribute to building collision deaths of raptors, especially birds in urban areas. No effects were observed in predatory and scavenging species fed avitrol-treated blackbirds, but no information was available on the amount of avitrol in the blackbirds. The dose required to kill a blackbird is lower than for more resistant bird species such as pigeons. The EPA report noted that it would be possible for birds in the wild to consume more avitrol than the birds were fed in the laboratory studies.

There are three likely routes by which a predator or scavenger could be exposed to avitrol treated birds; through consumption of birds behaving erratically because they have consumed a toxic dose of avitrol, consumption of carcasses of birds killed with avitrol, and consumption of birds which had consumed a sublethal dose of avitrol. As noted above, the EPA report considered risks from avitrol in light of label requirements not Illinois WS procedures to reduce risks. Risk of raptors catching and consuming birds behaving erratically because of avitrol poisoning is minimized by the presence of WS personnel at the treatment site who can harass any nontarget birds, including raptors, which may approach the treatment area. WS patrols the area around the treatment site and collects and properly disposes of carcasses of birds killed with avitrol. Data from Schafer et al. (1991) indicate that avitrol is non-accumulative in tissues and rapidly metabolized by many species. It is difficult to know the circumstances surrounding the mortality of the raptor species noted in the EIIS. However it should be noted that most avitrol use in Illinois is by private contractors who, while they may comply with label directions, may not employ the extra protective measures used by Illinois WS. Although mortality of individual nontarget birds has occurred and is regrettable, to date, there has been no evidence of major non-target kills or adverse impacts on non-target species populations.

WS use of avitrol is extremely limited. For the period of 2005-2007, WS has only used avitrol at 2 – 3 sites and only for a total period of 2 – 3 days. WS does not anticipate substantive changes in future need to use avitrol to resolve damage problems.

Based on the low rate of WS use of avitrol and the information provided here and in the EA, we conclude risks to nontarget species from WS use of avitrol are likely to be very low and will not adversely impact state populations of nontarget species.

14. EPA Ecological Risks Assessment for avitrol also provides information that avitrol is relatively ineffective as a frightening agent for House Sparrows. For species that are not frightened by behavior of birds which have consumed avitrol and species which do not have the disorientation/alarm response to avitrol, avitrol is simply a poison which kills a large portion of the flock.

The EA notes that avitrol is a toxicant. The potential for avitrol to also serve as a frightening agent depends on the target species. As noted in the EPA Ecological Risk Assessment, blackbirds grackles, cowbirds, crows and seagulls exhibit a strong behavioral response to avitrol and are highly responsive to reactions of treated birds. Starlings show a behavioral response to avitrol but flock members are less responsive to the behavior of treated birds. Rock Pigeons and House Sparrows do not exhibit a strong behavioral response to avitrol exposure and do not respond well to behavior of treated birds. As noted in the EA, Illinois WS plans to use avitrol for any species noted on the label except Rock Pigeons. If use of a toxicant is identified as the appropriate response to problems with starlings, WS is likely to use DRC-1339 and not avitrol. However, WS does use avitrol to reduce problems with House Sparrows and we agree with commenter that when used on house sparrows avitrol likely acts primarily as a toxicant and not a frightening agent. Based on the information above, we have adjusted the description of avitrol in EA Section 4.2.2 and Appendix C accordingly. The EA prediction on total House Sparrow take has been made based on past experience on the number of birds that are likely to be killed using avitrol and other lethal WDM methods and does not need to be altered because of this change.

15. We strongly urge you to stop killing birds.

We realize that the death of any animal is unacceptable to many people and regrettable. WS continues to pursue efforts to improve non-lethal methods and the selectivity of our damage management methods, and maintain and fund the National Wildlife Research Center (NWRC) to develop such methods. Research, however, suggests that most animals adjust and habituate to non-lethal methods such as sounds or scare techniques and the methods soon become unsuccessful (Bomford and O'Brien 1990, Conover 2002). Despite extensive research, the efficacy of most non-lethal techniques remains unproven or inconsistent (Bomford and O'Brien 1990, Conover 2002). Further, if birds are relocated or moved to a different location, a consideration of success of a non-lethal program depends on where the relocated birds move because birds at a new location can also cause a problem. In addition, most reported bird repellents are not currently registered by the U.S. Environmental Protection Agency or the Illinois Department of Agriculture for this use and, therefore, cannot be legally used or recommended by WS for this purpose in Illinois. Limiting bird damage management to non-lethal methods would not allow for a full range of integrated techniques to resolve damage management problems. We believe that implementation of only non-lethal methods would not allow WS the ability to address every damage situation in the most effective manner. This restriction in WS ability to respond to bird damage problems could be especially problematical in situation where expediency is required to address public health and safety risks.

16. List of target species needs to be more specific.

Section 1.2 has been changed from reading that "Bird species addressed in this EA include but are not limited to:" to reading as follows "Several bird species have potential to be the subject of WS BDM activities in Illinois. Bird species addressed in this EA include: American Crows (*Corvus brachyrhynchos*), Red-winged Blackbirds (*Agelaius phoeniceus*), Brown-headed Cowbirds (*Molothrus ater*), Common Grackle (*Quiscalus quiscula*), European Starlings (starlings) (*Sturnus vulgaris)*, House Sparrows (sparrows) (*Passer domesticus*), Gray Catbirds (*Durnetella carolinensis*), Rock Pigeon (*Columba livia*), Wild Turkeys (*Meleagris gallopavo*), Herring Gulls (*Larus argentatus*), Ring-billed Gulls (*Larus delawarensis*), Double-crested Cormorants (*Phalacrocorax auritus)*, Killdeer (*Charadrius vociferous*), Canada Geese (*Branta canadensis*), Mallards (domestic/wild) (*Anas platyrhynchos*), Blue-winged Teal (*Anas discors*), Green-winged Teal (*Anas crecca*), American Coot (*Fulica Americana*), Semipalmated Plover (*Charadrius*

semipalmatus), Buff-Breasted Sandpiper (*Tryngites suberficllis*), Least Sandpiper (*Calidris minutilla*), Pectoral Sandpiper (*Calidris melantos*), Semipalmated Sandpiper (*Calidris pusilla*), Solitary Sandpiper (*Tringa solitaria*), Common Snipe (*Gallinago gallinago*), Lesser Yellowlegs (*Tringa flavipes*), Greater Yellowlegs (*Tringa melanoleuca*), Mourning Doves (*Zenaida macroura*), Mute Swans (*Cygnus olor*), Barn Swallows (*Hirundo rustica*), Cliff Swallows (*Hirundo pyrrhonota*), Bank Swallows (*Riparia riparia*), Tree Swallows (*Tachycineta bicolor*), Chimney Swift (*Chaetura pelagica*), Common Swift (*Apus apus*), Great Blue Herons (*Ardea herodias*), Green Heron (*Butorides virescens*), Great Egrets (*Ardea alba*), Cattle Egrets (*Bubulbus iris*), Red-tailed Hawks (*Buteo jamaicensis*), Rough-legged Hawk (*Buteo lagopus*), Great Horned Owls (*Bubo virginianus*), American Kestrels (*Falco sparverius*), Cooper's Hawk (*Accipiter cooperii*), Turkey Vultures (*Cathartes aura*), Black Vultures (*Coragyps atratus*), Northern Flickers (*Colaptes auratus*), Downy Woodpeckers (*Picoides pubescens*), Hairy Woodpeckers (*Picoides villosus*), and feral, domestic and exotic birds."

Accordingly, Section 4.2.2 "Other Target Species" has also been changed to read from

"Target species, exclusive of state or federally-listed T/E species, in addition to the bird species analyzed above, could be killed or have nests removed in small numbers by WS during damage management activities." to "In addition to the bird species analyzed above, other bird species listed in Section 1.2 could be killed or have nests removed in small numbers by WS during damage management activities."

17. Editorial comments.

Editorial comments included noting discrepancies in data, requested clarifications to tables, editing in literature citations, and clarity, and these resulted in several minor editorial changes to the document. Thank you for these comments.

APPENDIX B

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