

**DECISION AND FINDING OF NO SIGNIFICANT IMPACT
FOR THE ENVIRONMENTAL ASSESSMENT:
BIRD DAMAGE MANAGEMENT IN THE STATE OF MINNESOTA**

November 2006

I. INTRODUCTION

The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Wildlife Services program (WS) 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). In January 2006, WS released an Environmental Assessment (EA) “*Bird Damage Management in the State of Minnesota*”. Ordinarily individual WS damage management actions are categorically excluded and do not require an environmental assessment (EA) (7 CFR 372.5(c), 60 Fed. Reg. 6000-6003, 1995). However, in order to facilitate planning, interagency coordination, and the streamlining of program management, and to clearly communicate with the public the analysis of cumulative impacts from WS’s proposed program, the EA on alternatives for managing feral pigeon (*Columba livia*), European starling (*Sturnus vulgaris*), English sparrow (*Passer domesticus*), blackbird (primarily red-winged (*Agelaius phoeniceus*), Brewer’s (*Euphagus cyanocephalus*) and rusty (*Euphagus carolinus*)), brown-headed cowbird (*Molothrus ater*), and common grackle (*Quiscalus quiscula*) damage in Minnesota was prepared. The EA documented the need for bird damage management (BDM) in Minnesota and analyzed the environmental impacts of alternative ways for WS to protect 1) property, 2) agricultural and natural resources, 3) livestock and dairies, and 4) human health and safety from bird damage. The EA and supporting documentation are available for review at the USDA-APHIS-WS Office, 34912 U.S. Hwy. 2, Grand Rapids, MN 55744.

The purpose of the proposed program is to reduce damage to agriculture, natural resources and property, and reduce risks to human health and safety resulting from the activities of pigeons, starlings, sparrows, blackbirds, cowbirds and grackles in Minnesota. The EA was prepared in consultation with the Minnesota Department of Natural Resources (MDNR) to determine impacts on state wildlife populations and to ensure that the proposed actions are in compliance with relevant laws, regulations, policies, orders and procedures. All WS BDM activities will be conducted consistent with all applicable Federal, State and local laws, regulations and policies including the Endangered Species Act of 1973.

II. BACKGROUND

The determination of a need for WS assistance with BDM in Minnesota is based on requests for assistance with bird damage to property, agricultural and natural resources, and bird-related risks to livestock and human health and safety. Details on the damage and risks to human health and safety caused by the target species are provided in the EA. Federal permits are not required to take feral pigeons, starlings, and English sparrows, which are not native to the U.S. Executive Order 13112 of February 3, 1999 prevents the introduction of invasive species and provides for their control to minimize the economic, ecological, and human health impacts that invasive species cause. The USFWS has a standing depredation order for blackbirds (red-winged, yellow-headed, Brewer’s and rusty), cowbirds, all grackles, crows, and magpies (50 CFR 21.43). Under this depredation order, no federal permit is required to control these species when found “committing or about to commit depredations on ornamental or shade

trees, agricultural crops, livestock, or wildlife, or when concentrated in such numbers and manner as to constitute a health hazard and or other nuisance”, as long as no parts of the birds are sold, the property is open to access by law enforcement officials, and no birds are killed contrary to State laws and regulations, including required State permits. MN statute 97A.015, Section 52, lists bird species which are not protected by state law including English sparrows, blackbirds, starlings and feral pigeons. Grackles and cowbirds are not specifically named on that list, but the MDNR considers these species to be part of the “blackbird” group listed in the statute (N. Huonder, MDNR, pers. comm).

The WS EA only evaluated alternatives for WS involvement in BDM and cannot change Minnesota state statutes or MDNR policy permitting private landowners access to lethal and non-lethal alternatives for managing bird damage on their own. Therefore, a major overarching factor in determining how to analyze potential environmental impacts of WS’ involvement in BDM is that in most instances, such management will likely be conducted by state, local government, or private entities that are not subject to compliance with NEPA if WS is not involved. This means that the Federal WS program has limited ability to affect the environmental outcome 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 alternatives available to resource owners/managers. Therefore, WS has limited ability to affect the environmental *status quo*. Despite this limitation 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 damage by these species.

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.

- Effects on target bird species
- Effects on other wildlife species, including threatened and endangered (T&E) species
- Effects on public health and safety
- Impacts to stakeholders, including aesthetics
- Humaneness and animal welfare concerns of methods used

An additional 4 issues were discussed but not addressed in detail for each alternative including:

- No wildlife damage management at taxpayer expense; wildlife damage management should be fee based
- Bird damage should be managed by private nuisance wildlife control agents
- Appropriateness of preparing an EA (instead of an EIS) for such a large area
- Effectiveness of bird damage management methods

IV. ALTERNATIVES ANALYZED IN DETAIL

The following Alternatives were developed to analyze and respond to issues. Four additional alternatives were considered but not analyzed in detail. A detailed discussion of the effects of the Alternatives on the issues is analyzed in the EA.

Alternative 1: Technical Assistance Only

This alternative would not allow for WS operational BDM in Minnesota. WS would only provide technical assistance and make recommendations when requested. Producers, property owners, agency personnel, or others could conduct BDM using any legal lethal or non-lethal method available to them. Currently, DRC-1339 and alpha-chloralose are only available for use by WS employees. Therefore, use of these chemicals by others would be illegal. However, the restricted use pesticide, Starlicide, is similar to DRC-1339 and may be used by certified applicators. Avitrol could also be used by state certified restricted-use pesticide applicators.

Alternative 2: Integrated Bird Damage Management Program (Proposed Action/No Action)

Wildlife Services proposes a bird damage management program that uses an IWDM approach to respond to damage to property, agricultural resources, livestock, and public health and safety caused by feral pigeons, European starlings, English sparrows, blackbirds, cowbirds, and grackles in the State of Minnesota. Damage management would be conducted on public and private property in Minnesota when the resource owner (property owner) or manager requests assistance. The IWDM strategy 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. However, non-lethal methods may not always be applied as a first response to each damage problem. The most appropriate response could often be a combination of non-lethal and lethal methods, or could include instances where application of lethal methods alone would be the most appropriate strategy.

Alternative 3: Non-lethal Bird Damage Management Only by WS

This alternative would require WS to only use non-lethal methods to resolve bird damage problems. Requests for information regarding lethal management approaches would be referred to MDNR, FWS, 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 WS' non-lethal technical and direct control assistance could still resort to lethal methods that were available to them. Currently, DRC-1339 and alpha-chloralose are only available for use by WS employees. Therefore, use of these chemicals by others would be illegal. However, the restricted use pesticide, Starlicide, is similar to DRC-1339 and may be used by certified applicators. Avitrol could also be used by state certified restricted-use pesticide applicators.

Alternative 4: No Federal WS Bird Damage Management

This alternative would eliminate federal involvement in BDM in Minnesota. WS would not provide direct operational or technical assistance and requesters of WS' assistance would have to

conduct their own BDM without WS input. Information on BDM methods would still be available to producers and property owners through other sources such as USDA Agricultural Extension Service offices, universities, or pest control organizations. Requests for information would be referred to MDNR, FWS, local animal control agencies, or private businesses or organizations. Individuals might choose to conduct BDM themselves, use contractual services of private businesses, or take no action. DRC-1339 and alpha-chloralose are only available for use by WS employees. Therefore, use of these chemicals by private individuals would be illegal. However, the restricted use pesticide, Starlicide, is similar to DRC-1339 and may be used by certified applicators. Avitrol could also be used by state certified restricted-use pesticide applicators.

V. MONITORING

The Minnesota 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 no adverse impact on the viability of any target or non-target species including State and Federally listed threatened and endangered species. MDNR expertise will be used to assist in determining impacts on state wildlife populations.

VI. PUBLIC INVOLVEMENT

As part of this process, and as required by the CEQ and APHIS-NEPA implementing regulations, an announcement of the availability of the EA for public review and comment was made through “Notices of Availability” (NOA) published in the major newspapers in Minnesota (Minneapolis Star Tribune and Duluth News Tribune, January 10-12, 2006), and through direct mailings to parties that have specifically requested notification. Nineteen copies of the pre-decisional EA were sent to organizations, individuals, and public agencies that had previously requested copies of all WS EAs, and 22 letters were sent out announcing that the EA was available. WS received 2 requests for copies of the EA for review, and received only 1 comment letter on the EA. WS response to the issues raised in the comment letter are provided in Appendix A of this document.

VII. 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 1989), 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.

Minnesota Department of Agriculture (MDA)

The Pesticide Division of MDA enforces state laws pertaining to the use and application of pesticides. The MDA monitors the use of pesticides in a variety of pest management situations. It also licenses private and commercial pesticide applicators and pesticide contractors. The MDA licenses restricted use pesticide dealers and registers all pesticides for sale and distribution in the state of Minnesota.

Minnesota Department of Natural Resources (MDNR)

The Commissioner of the MDNR is authorized by Minnesota Statutes, 1996, Chapters 84 and 97, sections 84.027 and 97A.045, to provide for the control, management, restoration, conservation and regulation of bird, fish, game, forestry and all wildlife resources of the State of Minnesota. None of the target species in the EA are protected under Minnesota state law (M.S. 97A.015, subd.52).

U.S. Fish and Wildlife Service (USFWS)

The primary responsibility of the USFWS is fish, wildlife, and plant conservation. While some of the USFWS's responsibilities are shared with other Federal, State, Tribal, and local entities, 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 Migratory Bird Treaty Act (MBTA) gives the USFWS primary statutory authority to manage migratory bird populations in the U.S. The USFWS is also charged with implementation and enforcement of the Endangered Species Act of 1973, as amended and with developing recovery plans for listed species.

VIII. DECISION AND RATIONALE

I have carefully reviewed the EA and the input resulting from the EA review process. I believe the issues identified in the EA are best addressed by selecting Alternative 2, *Integrated Bird Damage Management Program (Proposed Action/No Action)*, and applying the associated standard operating procedures and monitoring measures discussed in Chapter 3 of the EA. The analyses in the EA demonstrate that Alternative 2 provides the best range of damage management methods considered practical and effective, has low impacts on target and non-target species, provides safeguards for public safety, addresses the issues, and accomplishes WS' Congressionally directed role in protecting the Nation's agricultural and other resources. WS policies and social considerations, including humane issues, will be considered while conducting BDM. While Alternative 2 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 adopted the EA as final because no information was received during the public comment period that would change 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 this 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. Feral pigeon, starling, sparrow, blackbird, cowbird, and grackle damage management, as conducted in Minnesota is not regional or national in scope.
2. The proposed action will not have an impact on unique characteristics of the areas such as historical or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecological critical areas.
3. The effects on the quality of the human environment are not highly controversial. Although there is opposition to WS damage management, this action is not controversial in relation to size, nature or effects.
4. Standard Operating Procedures adopted as part of the proposed action lessen risks to the public and prevent adverse effects on the human environment and reduce uncertainty and risks.
5. The proposed action does not establish a precedent for future actions with significant effects. This action would not set precedence for additional WS damage management that may be implemented or planned in Minnesota.
6. The number of animals taken (both target and non-target) by WS annually is small in comparison to their total populations. Adverse effects on wildlife or wildlife habitats would be minimal.
7. No significant cumulative effects were identified by this assessment or other actions implemented or planned within the area.
8. Wildlife Services' bird damage management activities would not affect cultural or historic resources. The proposed action does not affect districts, sites, highways, structures or objects listed in or eligible for listing in the National Register of Historic Places, nor will it cause a loss or destruction of significant scientific, cultural, or historical resources.
9. An evaluation of the proposed action and its effects on State and Federally listed T/E species determined that there would be no significant adverse effects on these species. The proposed action will fully comply with the Endangered Species Act of 1973, as amended. Consultations with the MDNR have taken place and their input was used to develop Standard Operating Procedures for the proposed action.
10. This action would be in compliance with federal, state and local laws or requirements for damage management and environmental protection.

For additional information regarding this decision, please contact William J. Paul, USDA, APHIS, WS, 34912 U.S. Hwy. 2, Grand Rapids, MN 55744.

Charles S. Brown, Regional Director
USDA-APHIS-WS – Eastern Region

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. 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 MDA for this use and, therefore, cannot be legally used or recommended by WS for this purpose in Minnesota. 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.

2. The EA is too broad in terms of geographic location and species addressed. The EA lacks the site specificity required by NEPA.

We believe the scope of the EA and impact to bird species 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 1.2 in the EA). The impact of WS' damage management actions was analyzed for each species (Chapter 4).

WS has determined that preparation of an EA to address bird damage management activities is appropriate. Minnesota 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 EA's 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 1.4.4 and 2.2.3 in the EA). If in fact 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' mission is to reduce bird damage, not bird populations. 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 3.2.3 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 birds (see Section 2.3.3 in the EA). As professional wildlife biologists, WS analyzed the effects to bird populations, and recognize 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, MDNR the USFWS and all other applicable management authorities and any minimization and standard operating procedures (SOP) described in the EA and adopted 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 and impacts 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 and MDNR 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 Minnesota. 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).

3. This EA fails to fully explain what procedures WS will 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 3.2.3) similar to other professions. 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.

The commenter made reference to the WS Decision Model (Slate et al. 1992) as “*a one-page, seven-box, idealized diagram, not sufficient to describe this proposed action.*” 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) provides detail and examples of how the model is used. In compliance with CEQ regulations, agencies are encouraged to tier their EAs to previously prepared EISs and to incorporate material by reference in order to reduce the volume of NEPA documents (40 CFR 1502.20, 40 CFR 1502.21). 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).

4. WS should provide examples of past BDM efforts that span the range of depredating species, damage types, and WS responses.

The following are examples of WS’ response to some typical requests for assistance with bird damage management. 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 Minnesota. The only effective alternative is forced-air ventilation, which is extremely expensive to install and is cost-prohibitive for most cattle 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 (See also Section 3.3.3). 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. Some cattle operations have, in the past, contracted pest control operators to use avitrol, registered as a chemical frightening agent, to keep starlings out of

barns or away from feed areas. Most report that avitrol use was ineffective, providing only short-term relief if any at all.

WS has worked with several cooperators in Minnesota to reduce available perching structures inside barns. This has had mixed results, as many structures starlings perch on are necessary for structural support of the buildings. Depending upon the design of the structure, it can be extremely difficult and expensive to block starling access to all perch sites.

When non-lethal alternatives are inadequate to address damage problems at dairies and cattle feedlots, WS has used the avicide DRC-1339 to reduce bird numbers at the site. WS makes follow-up calls to the farms treated with DRC-1339 from 2-4 weeks after the treatments to see how effective and long-lasting the treatment effect is and how satisfied the cooperator is with the treatment. In most cases, even after several weeks, the cooperators report a 70 – 80% reduction in starling numbers compared to pre-treatment. Minnesota WS has had several cooperators indicate they have had lower starling numbers the following winter season, and have requested a treatment program of every other year because the year after the treatment, starling numbers hadn't built up enough to justify treatment every year. Minnesota WS has only treated one site where the cooperator asked that WS return for a second treatment within the same season. This was only because the cooperator forgot that he scheduled his cattle vaccinations the same day as the DRC-1339 treatment, and the starlings didn't feed as heavily because of the additional human activity.

Risks to Human Health and Safety: Some of the most common requests for pigeon control pertaining to human health and safety are from industrial sites and other businesses. Concerns at these sites may include fecal contamination of work areas, employee break/lunch sites, and air quality/disease transmission problems related to the presence of nesting or roosting sites near air intake sites for the building. In one instance, WS was contacted by a plant's safety officer who was concerned about pigeons inside their main production building. Several employees had been hit with pigeon droppings from the birds roosting or flying over their work areas. The pigeons had also learned where the break room was and would wait for the doors to open, and fly into the break room where employees ate their lunches. There was a concern for both contamination of employees lunches from the pigeon droppings and from parasites, such as mites and lice that the pigeons often carry. Additionally, a portion of one of their older buildings was being refurbished into office space, and the cooperator was in the process of cleaning up the years of pigeon droppings that had accumulated at the site. Some birds were still getting inside the building, but the cooperator was having difficulty identifying the entry point. In addition to health and safety concerns, employee cars in a parking garage were getting covered with pigeon droppings.

There was a very large pigeon population at the plant, partially because of some old abandoned buildings on the property that the pigeons were using for roosting. WS determined that the best solution would be an integrated approach. WS recommend tearing down, or pigeon-proofing some of the old abandoned buildings the pigeons were roosting in, and identified the pigeon entry points into the production buildings and the new office site so barriers could be installed. WS also recommended the cooperator consider resurfacing some of the flat roofs at the facility because pigeons were using water pools formed on the roofs from melting snow as a water source during the winter when other water sources were not available. WS lethally removed some pigeons to try to reduce the number of birds in and around the plant with pellet rifles inside the buildings and in the parking garage, and conducted a DRC-1339 treatment on the roof of the production plant.

Bird Damage to Agricultural Crops: WS' response to bird damage to agricultural crops usually consists of technical assistance and/or the loan/sale of pyrotechnics or other frightening devices to cooperators. WS response to blackbird damage to agricultural crops includes recommendations for habitat

management (e.g., eliminating and/or reducing attractiveness of nearby nesting, loafing and roosting habitat), cultural practices including switching crop types and varieties to those less vulnerable to bird damage, timing planting and harvest to minimize exposure to flocks of migrating blackbirds, lure crops, and the use of frightening devices which may or may not be reinforced with occasional shooting (See Appendix B). WS continues to monitor the development of repellents for the protection of crops. At present, product registration and cost are still significant limitations to the use of repellents (Avery and Cummings 2002).

Bird Damage to Property: The Minnesota 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 feral pigeons. WS generally makes an initial site investigation to determine how we can best serve the cooperator. During these investigations, we try 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 the best way to eliminate or at least minimize the damage.

In some situations, both human health and safety issues and property damage may be involved. WS was contacted by a paper production facility, where pigeons were getting inside the buildings, damaging expensive paper production equipment with their droppings, and also by getting caught in the machines. In addition to this, the pigeons caused a human health and safety concern because of their droppings accumulating on handrails and in employee work areas. WS assisted the cooperator by identifying how and where the pigeons were entering the buildings, suggesting ways to eliminate these entry points, and providing instructions on how to trap and remove the pigeons.

When lethal removal is necessary, many cooperators contract with WS to conduct the pigeon removal. WS utilizes trapping, pellet guns, and/or DRC-1339, an avicide, to reduce pigeon numbers on a site.

5. 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.

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 environment¹. 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.

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

Data and studies on the efficacy of specific damage management techniques are provided in Appendix B. (See also Section 2.3.4 and discussion of methods used at Dairies and Cattle Feedlots in Issue 4)

6. WS wants the “business” of doing bird damage management work and their motives for promoting the proposed action are questionable.

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, Tribal, 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.

7. On what basis does WS believe that illegal actions by “frustrated” people will increase over current levels in the absence of the proposed action?

WS damage management assistance is provided to individuals requesting assistance with a wildlife damage problem. In seeking WS assistance, these individuals have demonstrated that they are not content to allow their current situation to continue. In the absence of readily available WS assistance with wildlife damage management, these individuals are still likely to work to manage their damage problem. In the U.S., wildlife belongs to the public and individuals with wildlife damage problems often expect the government to provide assistance with problems caused by “the public’s” wildlife. Based on comments received from the public on various wildlife damage management issues, perceived or actual absence of government assistance can result in anger and frustration on the part of individuals experiencing damage.

As stated in the EA some individuals may seek advice and guidance from the State, USFWS, University or other entity, but, in Minnesota, these entities rarely have the resources available to provide operational assistance with wildlife damage management. Concerns about environmental impacts should be less for individuals who receive and use technical assistance from qualified sources. However, risks may still be greater than with a professional WDM program because the individual conducting the WDM may not have the experience of a WDM professional or access to the same WDM tools.

A few individuals are likely to resolve the problem on their own without seeking assistance or advice from a qualified authority. Impacts of these efforts will be variable depending upon the knowledge of the individual conducting the WDM. Some individuals may inadvertently make mistakes which could lead to greater environmental impacts than with a WS program. Other individuals may knowingly use illegal and inappropriate solutions. Examples of situations where individuals have used illegal methods to resolve perceived problems with bird damage to crops include the 1997 conviction of an individual in Arkansas who used carbofuran-laced rice to kill birds in his fields. The action resulted in the death of hundreds of migratory birds including red-winged blackbirds, mourning doves and savannah sparrows (Federal Wildlife Officers Association 1997). In 1999 and two individuals in Illinois were convicted of killing birds with carbofuran-treated wheat. Over 20,000 red-winged blackbirds and over 7,000 brown-headed cowbirds, grackles, starlings, larks and short-tailed shrews were found dead on the farm. The Illinois department of Natural Resources reported that the bird’s bodies had to be disposed of as hazardous materials because of the amount of chemical they had ingested (Gansmann 2000). In 2002 an Ohio man was convicted of killing federally protected migratory birds with corn treated with Warbex, an

agricultural insecticide. Birds killed included mourning doves, Canada geese, crows, meadow larks, horned larks, killdeer, red-winged blackbirds and grackles (Federal Wildlife Officers Association 2002).

Although the availability of operational and technical assistance from WS cannot guarantee that these types of incidents won't happen, it is our professional opinion that individuals will be less likely to try inappropriate damage management methods if effective, professional assistance is readily available.

8. Crops that the bird species that are subject of the EA have been documented to damage are listed without context. Are all these listed crops grown in Minnesota and how extensively?

The EA specifically mentions that the majority of complaints received by WS are related to damage to sunflower crops by migrating flocks of blackbirds. The 2005 Minnesota State Agriculture Overview (NASS 2006) reported that 75,000 acres were planted in sunflowers which produced 183,950,000 lbs of sunflowers valued at over 26.2 million dollars. Value of sales for other crops produced in the state that are discussed in the EA as being susceptible to damage by the target bird species include fruits, tree nuts and berries - \$12.9 million; corn for grain \$2,085.8 million, winter wheat \$1.7 million. Data on sorghum production was available for 2002, when 7,942 bushels were harvested from 185 harvested acres (NASS 2002). In Minnesota, WS also receives reports of blackbird damage to wild rice. In most years, estimated losses to blackbirds are reported to range from 5 – 30% (Minnesota Cultivated Wild Rice Growers, <http://www.ipmcenters.org/cropprofiles/docs/mnwildrice.html>). Minnesota ranks second in the U.S. in wild rice production. In 1998 Minnesota produced approximately 5.5 million pounds of wild rice.

Wildlife damage is not evenly distributed among all producers of a particular commodity. Although impacts on a crop/industry as a whole may seem low, impacts on individual producers can be substantial. WS responds to wildlife damage complaints on a case by case basis and uses the WS Decision model to develop response strategies specific to the nature and magnitude of the damage at each site.

9. Claim that the target species in the EA are responsible for damage to roofs, metal structures and painted finished and can cause power outages is unsupported.

Bird feces are highly acidic and can be corrosive to paint and metal surfaces. Potential for damage is greatest in situations where large numbers of birds congregate in one area to roost or loaf. Bird feces can also have corrosive effects on monuments and decorative stonework on buildings. Gómez-Heras et al. (2004) evaluated the impact of extracts from pigeon feces on limestone. Results from the study indicated that accumulations of pigeon droppings generate solutions with low pH and high salinity when they are leached by water. The derived solutions contain high concentrations of salts which had been identified as possible decay agents on stone monuments and historical buildings in other studies. Gómez-Heras et al. (2004) concluded that pigeon excrement should be considered as a potentially important factor in the long-term decay of stone.

Microbes within bird excrement also can cause damage to materials for buildings and monuments. Channon (2004) studied the impact of pigeon excrement on marble, Portland stone, Bath stone and concrete which is used as building material for monuments and heritage stonework on buildings. They treated the stones with pigeon excrement and at the end of one year of exposure to environmental conditions, cleaned the stones by scraping with a flat scraper then brushing with a stiff-bristled nylon brush and finally rinsing with a low-pressure water spray until all visible evidence of fouling had been removed and all that remained were a few persistent stains on the surface of the stonework. Condition of the stones was recorded at the end of the cleaning process and then the stones were left exposed to the elements and monitored for an additional 4 years. Despite the cleaning process, nutrients from the excrement has penetrated the surface of the material and provided sufficient resources for moss to grow at

the damage sites. Extent of initial damage and moss development varied between materials. In areas with acidic rainfall, the moss may serve as a pad which retains water and exacerbate problems with corrosion due to acid rainfall. Bassi and Chiatante (1976) determined that pigeon excrement constituted a highly favorable substrate for fungal growth and that the fungal growth may contribute to the damage of marble surfaces mechanically and through the secretion of acidic products.

Although most examples are from pigeons, similar impacts are likely for other bird species. Washing/scraping feces from surfaces can reduce the problem but require time and effort which, for some businesses/managers may result in loss of staff time as personnel are assigned to cleaning chores or the cost of hiring an individual/company to do the cleaning.

Electric utility companies in Washington State have requested WS assistance with problems caused by large concentrations of starlings roosting at substations and on utility poles. Fecal accumulations on electrical equipment compromise insulators, resulting in fires, shorts in electrical systems, risks to employee safety, and loss of power to customers. One incident in Eastern Washington resulted in loss of power for 11 hours in December when temperatures were below freezing. Cost to replace equipment was \$10,000 but there also was lost service revenue, employee overtime and other expenses. The loss of revenue due to outages can cost over 1 million dollars a day on major transmission lines in a power system

There are methods available to wash equipment, but they often require shutting down power at the affected site and rerouting power to customers which can also cost over a million dollars in costs to route/acquire power from other sources.

One rural electrical administration reports that approximately 10% of its outage hours are attributable to birds, primarily starlings. Problems are caused when large numbers of starlings perch on 2-3 spans of power lines. If the birds suddenly flush from the lines at one time it can cause the lines to swing close to one another and short the system. Some equipment can be reset but lines using fuses generally have loss of power until a team can replace the shorted fuse. Power utility problems with starlings generally occur in locations near food sources including fruit orchards, dairies, cattle feedlots, and landfills.

In these situations WS endeavors to work with the utility company and the individuals owning/managing the food source to resolve the problem. Solutions to these problems include the range of non-lethal and lethal methods to reduce bird access to crops, livestock facilities, and landfills as well as visual frightening devices (reflectors) installed at the utility structures, noisemakers and similar frightening devices to discourage birds from loafing and roosting on utility structures, systems to clean utility equipment, and reduction of local starling numbers with lethal methods.

10. Claim that the non-native species targeted in the EA have negative impacts on native birds is not sufficiently supported for Minnesota.

This comment was made in reference to Section 4.1.2.2 wherein WS states that reductions in numbers of non-native species could have benefits for local native bird populations. Protection of native bird species from competition by non-native birds was not included in the need for action of this EA. The information in the EA was provided to document that the proposed action may have unintended *beneficial* impacts on non-target species. The text referenced does include examples of adverse impacts of non-native species on species and situations that may occur in Minnesota. In addition to material in the EA, total nest failure was the main factor influencing Eastern bluebird (*Sialia sialis*) nesting success in nest boxes in Wisconsin (Randuzel et al. 1997). House sparrows were one of the main factors influencing nest success, but risks appeared to be reduced through nest box design. Nest competition with starlings was identified as a

factor determining selection of nest sites by northern flickers in British Columbia (*Colaptes auratus*; Fisher and Wiebe 2006). In Ohio, Ingold (1994) documented starling competition for freshly excavated nest sites created by red-bellied woodpeckers (*Melanerpes carolinus*) which lost 39% of their nest cavities to starlings, northern flickers which lost 14% of their nest cavities to starlings, and red-headed woodpeckers (*Melanerpes erythrocephalus*) which lost 15% of their nest cavities to starlings. However, these interactions may not have had losses in fecundity since at least some of these birds were able to re-nest. In a different study twenty-seven of 40 pairs lost a total of 42 nest cavities to starlings (Ingold 1998). The presence of nearby nest boxes did not appear to benefit nesting success for most flickers as only 1 pair of flickers used a nest box. Potential for positive impacts on non-target species are limited because of the limited number of sites and relatively small area impacted by WS activities.

11. The EA overstates the potential harm [health risk] from wild animals, in order to gain public acceptance. Sections on risks to human and livestock health and safety do not indicate that there is any risk of disease to the public in Minnesota from the bird species covered in this EA.

The limited records of disease occurrence attributable to birds in Minnesota does not mean absence of risk but may only mean lack of reliable research in this area. Few studies are available on the occurrence and transmission of zoonotic diseases in wild birds. Study of this issue is complicated by the fact that some disease-causing agents associated with birds (e.g., Salmonella), may also be contracted from other sources. WS works with cooperators on a case-by-case basis to assess the nature and magnitude the wildlife conflict including providing information on the limitations about what we know regarding health risks associated with large flocks and roosts of birds. It is the choice of the individual cooperator to tolerate the potential health risks or to seek to reduce those risks.

Although not specific to Minnesota, there have been cases of cattle becoming infected with the avian strain of tuberculosis in Michigan. Avian tuberculosis is ubiquitous and causes disease in birds. The disease is most often found in wild birds that live in close association with humans and livestock and in avian scavengers. When a captive flock of birds becomes infected, it is best to destroy the flock because treatment is usually ineffective. When testing for bovine TB, avian TB will cause a similar result in the caudal fold test, requiring further testing and a possible quarantine of the cattle heard until further testing is completed to rule out bovine TB (Witmer et al. 2003). In Vermont, avian TB has resulted in false positives in the caudal fold test an average of 156 times annually since 1982, all resulting in some type of quarantine of the cattle herd. Minnesota is currently working to identify, contain and eliminate a bovine TB outbreak in Northwestern Minnesota. In 2006, WS assisted USDA, APHIS, VS in depopulating the bird population on a farm in Minnesota that was positive for Avian TB. Minnesota can't apply for accreditation as TB free until two years after its last infected herd is eliminated. False positives from avian TB could complicate efforts to address bovine TB issues in the state.

The goal of agricultural and human health programs is to prevent diseases/illness from occurring. Similarly agricultural biosecurity programs are designed to prevent diseases from occurring and, in the instance that a disease outbreak occurs or a Foreign Animal Disease is detected, to prevent the spread of the disease. The presence of large numbers of wild birds that can and do move among multiple farms can be a risk to these biosecurity efforts (Clark and McLean 2003).

Papers like Hubálek (2004), which lists pathogenic organisms in migratory birds, provide an indication of the range of potential disease risks associated with wild birds. For most of these diseases, the risk of transmission from birds to humans is likely very low. The primary two human health issues related to the target species of this EA are Salmonella and Histoplasmosis.

Histoplasmosis is a fungal disease that affects the lungs which is caused by the organism *Histoplasma capsulatum*. The accumulated feces at bird roosts have long been known to be associated with the occurrence of the illness. In most instances of health risks associated with bird roosts, the roost has been in place for a period of years. The disease is generally contracted when the soil/feces below the roost is disturbed by wind on dry soil or human activity. As with many diseases, infants, young, the elderly and those with compromised immune systems are at the greatest risk of severe illness.

Salmonellosis is a well documented human and animal pathogen. In humans this organism most often results in “food poisoning” characterized by acute intestinal pain and diarrhea. Several types of the *Salmonella* bacteria are carried by wild birds with varying degrees of impact on humans and livestock. Friend (1999) reported relative rates of detection of *Salmonella* sp. in free ranging birds. *Salmonella* spp. isolates were frequent in gulls/terns and songbirds, common in herons/egrets, doves/pigeons, and infrequent in crows.

Again, 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.

12. Determination that control is needed to reduce health risks caused by the presence of birds at a particular site is a health risk should only be made by appropriate public health authorities.

We do not concur that a determination from a public health authority is required prior to conducting BDM for the protection of human health and safety. As stated above, the goal of agricultural and human health programs is to prevent diseases/illness from occurring. Similarly agricultural biosecurity programs are designed to prevent diseases from occurring and, in the instance that a disease outbreak occurs or a Foreign Animal Disease is detected, to prevent the spread of the disease. Hygiene concerns and health risks related to fecal contamination of work surfaces, dining areas (e.g., break rooms and outdoor restaurants), and air quality and health concerns caused by birds roosting or nesting near air intake for buildings are obvious and do not require formal confirmation by a health professional. Some health risks, like the risk of histoplasmosis from the accumulated feces at bird roosts have been well documented. In some instances, the request for damage management has come from a company’s safety officer, visiting veterinarian, or other health official. Municipalities that consider moving large bird roosts in response to health and safety concerns will usually consult with a local health official prior to taking action.

13. 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, Plessner 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 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 conducted², 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.

(See also discussion of methods used at Dairies and Cattle Feedlots in Issue 4, Issue 5, and Section 2.3.4 of the EA).

14. WS should provide proof that non-lethal options have been tried first and found to be ineffective.

This request would only be applicable to a mandatory non-lethal before lethal alternative. This alternative is similar to Alternative 2 except that WS personnel would be required to always recommend or use non-lethal methods prior to recommending or using lethal methods to reduce bird damage. Both technical assistance and direct damage management would be provided in the context of a modified IWDM approach. Alternative 2, the Proposed Action, recognizes non-lethal methods as an important dimension

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).

of IWDM, gives them first consideration in the formulation of each management strategy, and recommends or uses them when practical before recommending or using lethal methods. However, the important distinction between the Non-lethal Methods First Alternative and the Proposed Alternative is that the former alternative would require that all non-lethal methods be used before any lethal methods are recommended or used.

While the humaneness of the non-lethal management methods under this alternative would be comparable to the Proposed Program Alternative, the extra harassment caused by the required use of methods that may be ineffective could be considered less humane. As local bird populations increase, the number of areas negatively affected by birds would likely increase and greater numbers of birds would be expected to congregate at sites where non-lethal management efforts were not effective. This may ultimately result in a greater number of birds being killed to reduce damage than if lethal management were immediately implemented at problem locations (Manuwal 1989). Once lethal measures were implemented, bird damage would be expected to drop relative to the reduction in localized populations of birds causing damage.

Since in many situations this alternative would result in greater numbers of birds being killed to reduce damage, at a greater cost to the requester, and result in a delay of reducing damage in comparison to the Proposed Alternative, the “Non-lethal Methods Implemented Before Lethal Methods” Alternative will not be given further analysis. (See also response to Issue 14).

15. 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.

16. 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 Minnesota 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. Chapter 2 and Appendix B 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 which is discussed in detail in Appendix B and anthraquinone which is currently only registered for use in geese. Examples of WS use of integrated damage management systems are provided above in the response to Issue 4.

17. 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 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.

18. Description of death by DRC-1339 as relatively painless is inaccurate.

The statement was made relative to a statement made in the published literature on DRC-1339 which states that the birds die a quiet and apparently painless death (Shafer et al. 1983). WS agrees that a quiet death does not necessarily equate to a painless death.

19. 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.

20. 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.

21. 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 (e.g., 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 the use of DRC-1339 to reduce damage to crops in Minnesota (EA Section 3.2.4.4).

APPENDIX B

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