

DECISION

SUPPLEMENT TO THE ENVIRONMENTAL ASSESSMENT: CANADA GOOSE DAMAGE MANAGEMENT IN THE STATE OF CONNECTICUT

I. INTRODUCTION

The United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Wildlife Services (WS) program has prepared an Environmental Assessment (EA) to analyze the potential environmental and social impacts to the quality of the human environment from resolving damage associated with Canada geese (*Branta canadensis*) in Connecticut (USDA 2004). The EA documents the need for goose damage management in the State and assesses potential impacts on the human environment of four alternatives to address that need. The proposed action alternative evaluated in the EA continued an integrated damage management program to address the need to manage damage and threats associated with Canada geese when requested in the State.

After consideration of the analysis contained in the EA and review of public comments, a Decision and Finding of No Significant Impact (FONSI) for the EA was issued on July 15, 2004. The Decision and FONSI selected the proposed action alternative, which implemented an integrated damage management program in Connecticut using multiple methods to address the need to manage damage caused by Canada geese.

II. PURPOSE

The purpose of the EA was addressed in Section 1.2 of EA and remains applicable. The supplement to the EA was prepared by WS to: 1) evaluate disease surveillance and monitoring in the goose population; 2) evaluate new information that has become available from data gathering since the issuance of the 2004 Decision; 3) analyze WS' activities in Connecticut since the 2004 Decision was issued; and 4) include the United States Fish and Wildlife Service (USFWS) as a cooperating agency.

III. NEED FOR ACTION

The need for action was described in Section 1.3 of the EA (USDA 2004). The need for action arises from requests for assistance received by WS to reduce and prevent damage associated with Canada geese from occurring to four major categories: agricultural resources, natural resources, property, and threats to human health and safety. WS would only conduct goose damage management activities after receiving a request for assistance. Before initiating goose damage management activities in the State, a Memorandum of Understanding, cooperative service agreement, or other comparable document would be signed between WS and the cooperating entity, which lists all the methods the property owner or manager would allow to be used on property they own and/or manage. WS may also be requested to participate in disease surveillance and monitoring in the event of a disease outbreak or potential outbreak in the goose population.

Most requests for WS' assistance are associated with areas where geese congregate during migration periods and during nesting periods. Those requests for assistance are associated with fecal accumulations in public-use areas, damage to agricultural resources, hazards posed to aircraft from bird strikes, and damage occurring to property.

IV. MONITORING

The supplement evaluates WS' activities to resolve and prevent damage caused by Canada geese in Connecticut under the proposed action alternative since the Decision and FONSI were signed in 2004. The supplement includes a summary of program activities to determine impacts to those issues identified in the EA to ensure that program activities conducted since the Decision was issued in 2004 remains within the scope of analysis contained in the EA. If WS' activities were outside the scope of the analyses in the EA or if new issues are identified from available information based on monitoring, further analysis would occur. The EA would be supplemented to the degree as identified by those processes pursuant to the NEPA or a notice of intent to prepare an Environmental Impact Statement (EIS) would occur.

V. RELATIONSHIP OF THE EA TO OTHER ENVIRONMENTAL DOCUMENTS

The relationships of the EA and the supplement to other documents that address wildlife damage management were also discussed in the EA and the supplement. WS' programmatic Final Environmental Impact Statement (FEIS) contains detailed discussions of potential impacts to the human environment from methods that could be used by WS (USDA 1997). Since the completion of the EA, the USFWS has also developed a resident Canada goose management FEIS (USFWS 2005).

VI. DECISIONS TO BE MADE

Based on the scope of the EA, the decisions to be made are: 1) should WS conduct Canada goose damage management to alleviate damage to agriculture, property, natural resources, and threats to human health and safety, 2) should the Migratory Bird Program in Region 5 of the USFWS issue depredation permits to WS and other entities to conduct goose damage management activities, 3) should WS conduct disease surveillance and monitoring in the goose population when requested by the MDFW, the USFWS, and other agencies, 4) should WS implement an integrated methods strategy, including technical assistance and direct operational assistance, to meet the need for goose damage management in Connecticut, 5) if not, should WS attempt to implement one of the alternatives to an integrated damage management strategy as described in the EA, and 6) would the proposed action result in significant effects to the environment requiring the preparation of an Environmental Impact Statement (EIS).

VII. SCOPE OF ANALYSES IN THE EA

The EA evaluates goose damage management under four alternatives to reduce threats to human safety and to resolve damage to property, natural resources, and agricultural resources wherever such management is requested by a cooperator. The analyses in the EA are intended to apply to any action taken by WS to alleviate damage or threats of damage associated with geese that may occur in any locale and at any time within the State. The EA emphasizes major issues as those issues relate to specific areas; however, the issues addressed apply wherever goose damage and the resulting damage management activities could occur. The standard WS Decision Model (Slate et al. 1992, USDA 2004) would be the site-specific procedure for individual actions conducted by WS in the State. The supplement adds to the analysis in the EA and the 2004 Decision/FONSI. The information and analyses in the EA remain valid unless otherwise noted.

The USFWS has jurisdiction over the management of migratory birds and has specialized expertise in identifying and quantifying potential adverse effects to the human environment from goose damage management activities. The USFWS was a cooperating agency with WS in developing the supplement to analyze cumulative take of geese and to ensure compliance with the National Environmental Policy Act (NEPA). Migratory bird species are afforded protection from take by the Migratory Bird Treaty Act (MBTA); however, take can occur when deemed appropriate to the Act. Take can occur pursuant to the

MBTA once a depredation permit has been issued by the USFWS or through the establishment of depredation orders, which allow birds to be taken without the need for a depredation permit when the criteria of the order has been met. Therefore, any take involved with the alternatives would only occur at levels permitted when a depredation permit has been issued by the USFWS or under the depredation orders. The analyses in the EA and the supplement would ensure the USFWS compliance with the NEPA for the issuance of depredation permits for the take of geese in Connecticut, when required.

The supplement to the EA along with the EA and the 2004 Decision/FONSI were made available for public review and comment through the publication of a legal notice announcing a minimum of a 30-day comment period. The legal notice was published in the *Hartford Courant* and posted on the APHIS website located at http://www.aphis.usda.gov/wildlife_damage/nepa.shtml according to WS' public notification requirements (72 FR 13237-13238). A letter of availability was directly mailed to agencies, organizations, and individuals with probable interest in wildlife damage management in the State. One comment letter was received during the public comment period for the supplement to the EA. Comments received are summarized in Appendix A of this Decision along with responses to the comments.

VIII. AUTHORITY AND COMPLIANCE

WS is authorized by law to reduce damage caused by wildlife through the Act of March 2, 1931 (46 Stat. 1468; 7 USC 426-426b), as amended and the Act of December 22, 1987 (101 Stat. 1329-331, 7 USC 426c). Management of native migratory birds is the responsibility of the USFWS under the MBTA. As the authority for the management of migratory birds, the USFWS was consulted and provided input to ensure an interdisciplinary approach according to the NEPA and agency mandates, policies, and regulations. The Connecticut Department of Energy and Environmental Protection (CDEEP) is responsible for managing wildlife in the Connecticut, including Canada geese. Information from the USFWS and the CDEEP has been provided to WS to assist in the analysis of potential impacts of WS' proposed activities on goose populations in the State.

The EA, the supplement, and this Decision ensures WS' actions comply with the NEPA, with the Council on Environmental Quality guidelines (40 CFR 1500), and with APHIS' NEPA implementing regulations (7 CFR 372). All Canada goose damage management activities, including disposal requirements, would be conducted consistent with: 1) the Endangered Species Act of 1973, 2) the MBTA, 3) the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 5) applicable Executive Orders, and 6) applicable federal, state, and local laws, regulations and policies, including WS' Directives.

IX. AFFECTED ENVIRONMENT

Canada geese can be found throughout the year across the State (Mowbray et al. 2002) where suitable habitat exists for foraging, loafing, roosting, and breeding. Geese are capable of utilizing a variety of habitats in the State but generally use areas adjacent to or near bodies of water with relatively short vegetation. Nesting habitat could include wetlands, ponds, meadows, gravel bars along rivers, islands, agricultural fields, along irrigation ditches, reservoirs, sewage lagoons, city lakes, golf courses, subdivisions, highway medians, and on top of city buildings (Mowbray et al. 2002). Geese are also known to loaf, roost, and forage in similar habitat near water bodies preferring areas that are open with short vegetation that allows geese to detect approaching predators (Mowbray et al. 2002). Geese often roost on or near bodies of water; however, geese are known to travel to other areas to forage, such as agricultural fields. Since geese can be found throughout the State, requests for assistance to manage damage or threats of damage could occur in areas occupied by geese.

X. ISSUES ANALYZED IN DETAIL

Issues related to Canada goose damage management in the State were defined and preliminary alternatives were identified through consultation with the USFWS and with the CDEEP. The EA and the supplement were also made available to the public for review and comment through notices published in local media and through direct notification of interested parties.

Chapter 2 of the EA describes in detail the issues considered and evaluated in the EA (USDA 2004). The following issues were identified as important to the scope of the analysis (40 CFR 1508.25) with each alternative evaluated in the EA relative to the impacts on the major issues:

- Issue 1 - Effects on Target Canada Goose Populations
- Issue 2 - Effectiveness of Canada Goose Damage Management
- Issue 3 - Effects on Aesthetic Values
- Issue 4 - Humaneness and Animal Welfare Concerns of Methods Used by WS
- Issue 5 - Effects on Non-target Wildlife Species Populations, Including T&E Species

Those issues identified during the development of the EA were evaluated in the supplement by each issue as those issues related to WS' activities conducted since the original Decision was signed in 2004. Each of those issues was also evaluated as those issues related to conducting the proposed action alternative as described in the supplement to the EA.

XI. ISSUES NOT CONSIDERED IN DETAIL WITH RATIONALE

In addition to those issues analyzed in detail, several issues were identified during the development of the EA but were not considered in detail. The rationale for the decision not to analyze those issues in detail is discussed in the EA. WS has reviewed the issues not considered in detail as described in the EA and has determined that the analysis provided in the EA has not changed and is still appropriate. Effects on those issues continue to be insignificant.

XII. ALTERNATIVES ANALYZED IN DETAIL

Four alternatives were developed to respond to the issues identified in Chapter 2 of the EA and to address the need for action discussed in Chapter 1 (USDA 2004). Chapter 4 in the EA analyzes the environmental consequences of each alternative in comparison to determine the extent of actual or potential impacts on the issues. Below is a summary of the alternatives analyzed in detail.

- Alternative 1: Integrated Wildlife Damage Management (Proposed Action/No Action)
- Alternative 2: Technical Assistance Only by WS
- Alternative 3: Non-lethal Only by WS
- Alternative 4: No Federal WS Canada Goose Damage Management

The EA contains a detailed description and discussion of the alternatives and the effects of the alternatives on the issues identified. Appendix B of the EA provides a description of the methods that could be used or recommended by WS under each of the alternatives. The supplement to the EA provides additional discussion of methods available for use since the completion of the EA.

XIII. ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

Additional alternatives were also considered to address the issues but were not analyzed in detail with the rationale discussed in the EA (USDA 2004). WS has reviewed the alternatives analyzed but not in detail and determined the analyses in the EA are still appropriate for those alternatives considered.

XV. STANDARD OPERATING PROCEDURES

The WS program in Connecticut uses many standard operating procedures and conducts work pursuant to WS' Directives. Standard operating procedures are discussed in detail in Chapter 3 of the EA (USDA 2004). Those standard operating procedures would be incorporated into activities conducted by WS when addressing goose damage and threats in the State under the proposed action alternative.

XVI. ENVIRONMENTAL CONSEQUENCES FOR ISSUES ANALYZED IN DETAIL

Chapter 4 of the EA analyzes the environmental consequences of each alternative in comparison to determine the extent of actual or potential impacts on those major issues identified in the EA. The proposed action/no action alternative serves as the baseline for the analysis and the comparison of expected impacts among the alternatives. The analysis also takes into consideration mandates, directives, and the procedures of WS and the USFWS. The analyses in Chapter 4 of the EA indicate the potential impacts to the quality of the human environment would be similar across the alternatives.

Based on the analyses in the EA, the 2004 Decision determined the need for action and the issues identified in the EA were best addressed by selecting Alternative 1. The Decision also determined the implementation of the selected alternative would not significantly affect the quality of the human environment (USDA 2004). Between the federal fiscal year (FY) 2004 and FY 2011, WS has implemented a goose damage management program that responds to requests for assistance using an adaptive integrated methods approach as described under Alternative 1 in the EA. The supplement to the EA evaluates the implementation of Alternative 1 from FY 2004 through FY 2011 to ensure individual and cumulative activities conducted pursuant to the alternative continue to be within the impact parameters evaluated in the EA based on current information and methods. Potential impacts of Alternative 2, Alternative 3, and Alternative 4 on the human environment related to the major issues have not changed from those described in the EA.

The following resource values in Connecticut are not expected to be significantly impacted by any of the alternatives analyzed in the EA: soils, geology, minerals, water quality/quantity, flood plains, wetlands, critical habitats (areas listed in threatened and endangered (T&E) species recovery plans), visual resources, air quality, prime and unique farmlands, aquatic resources, timber, and range. The activities proposed in the alternatives would have a negligible effect on atmospheric conditions including the global climate. Meaningful direct or indirect emissions of greenhouse gases would not occur because of any of the alternatives. Those alternatives would meet the requirements of applicable laws, regulations, and Executive Orders, including the Clean Air Act and Executive Order 13514.

The following issues were analyzed in detail in the supplement as they relate to those activities conducted in Connecticut by WS under the selected alternative from FY 2004 through FY 2011:

Issue 1 - Effects on Target Canada Goose Populations

Under the proposed action, WS would incorporate non-lethal and lethal methods described in Appendix B of the EA in an integrated approach in which all or a combination of methods could be employed to resolve a request for assistance. WS would recommend and operationally employ both non-lethal and

lethal methods, as governed by federal, State, and local laws and regulations under the proposed action. The appropriateness of methods and techniques would be applied based on the WS Decision Model using inputs from each request for assistance.

Non-lethal methods can disperse or otherwise make an area unattractive to geese that are causing damage; thereby, reducing the presence of those geese at the site and potentially the immediate area around the site where non-lethal methods are employed. Non-lethal methods would be given priority when addressing requests for assistance (WS Directive 2.101). However, non-lethal methods would not necessarily be employed to resolve every request for assistance if deemed inappropriate by WS' personnel using the WS Decision Model, especially in situations where the requesting entity has already attempted to resolve the damage or threats of damage using non-lethal methods. Non-lethal methods are used to exclude, harass, and disperse target wildlife from areas where damage or threats are occurring. When effective, non-lethal methods would disperse geese from the area resulting in a reduction in the presence of those geese at the site where those methods were employed. From FY 2004 through FY 2011, WS employed non-lethal methods to harass and disperse geese in the State as part of an integrated approach to managing damage and threats. Non-lethal methods are generally regarded as having minimal impacts on overall populations of wildlife since those species are unharmed. The continued use of non-lethal methods often leads to the habituation of birds to those methods, which can decrease the effectiveness of those methods. Lethal methods are often employed to reinforce non-lethal methods and to remove geese that have been identified as causing damage or posing a threat to human safety. The use of lethal methods would result in local reductions of geese in the area where damage or threats were occurring through the combination of dispersal of geese, and the number actually removed lethally. The number of geese removed from the population using lethal methods would be dependent on the number of requests for assistance received, the number of geese involved with the associated damage or threat, and the efficacy of methods employed.

Geese that could be lethally taken by WS under the proposed action could be taken by those persons experiencing damage or threats in the absence of WS' direct involvement under the other alternatives since the take of geese can occur when a depredation permit has been issued by the USFWS pursuant to the MBTA. In addition, geese could be lethally taken to alleviate damage or reduce threats under depredations orders and/or during the regulated hunting seasons in the State. Since the lack of WS' direct involvement does not preclude the taking of geese by those persons experiencing damage or threats, WS' involvement in the taking of those geese under the proposed action would not be additive to the number of geese that could be taken by other entities in the absence of WS' involvement. As was shown in the EA, geese have been lethally taken by other entities in the State to alleviate damage or threats of damage. The number of geese taken annually would likely be similar across the alternatives, since the take of geese could occur even if WS was not directly involved under Alternative 2, Alternative 3, and Alternative 4. Those activities proposed, including the proposed take of geese, under Alternative 1 would not be additive to the number of geese that could be taken by other entities under the other alternatives.

In addition, most non-lethal and lethal methods available for resolving damage or threats associated with geese would be available under any of the alternatives. The immobilizing drug alpha chloralose would be the only method that would not be available under all of the alternatives. The use of alpha chloralose would only be available under the proposed action alternative (Alternative 1) and Alternative 3 since the method is only available for use by WS' personnel. Therefore, WS' use of those methods available under all of the alternatives would not be additive to the environmental status quo since those methods could be employed by any entity experiencing damage or threats caused by geese. Alpha chloralose is only available to live-capture waterfowl, coots, and pigeons. Based on the evaluation in the EA (USDA 2004), the availability of alpha chloralose to manage damage or threats of damage associated with geese under the proposed action would not pose significant environmental risks when used by trained WS' personnel and in accordance with the use guidelines.

Based on those quantitative and qualitative parameters addressed in the EA and the supplement to the EA, the proposed take levels of geese addressed under the proposed action alternative (Alternative 1) would be considered of low magnitude when compared to population trend data, population estimates, and harvest data. The number of geese that could lethally be taken annually under the alternatives is likely to be similar since the take of geese that could occur whether WS was requested to conduct those activities or not. As was shown in the EA, other entities have addressed geese to alleviate damage; therefore, any geese that could be lethally taken under the proposed action alternative could be taken by other entities under the other alternatives. WS does not have the authority to regulate the number of geese taken annually by other entities. WS' take of geese would only occur at levels authorized and only when permitted by the USFWS.

In addition, based on the levels of take that have occurred previously by WS and other entities and in anticipation of the USFWS permitting the take of geese at levels addressed in the EA, the cumulative take of levels addressed are also of low magnitude when compared to those quantitative and qualitative parameters addressed in the EA and the supplement to the EA. The permitting of take by the USFWS ensures that cumulative take levels occur within allowable levels to maintain goose populations and to meet population objectives.

Issue 2 - Effectiveness of Canada Goose Damage Management

The methods available to those persons experiencing damage would be similar across the alternatives analyzed in detail. The only method that would not be available under all the alternatives analyzed in detail would be the use of alpha chloralose, which is restricted to use by personnel of WS only. Alpha chloralose would only be available and employed to alleviate damage or threats of damage under the proposed action alternative.

Since those methods available for resolving goose damage would be available to those persons experiencing damage or threats under all the alternatives, the effectiveness of those methods when used as intended would be similar amongst the alternatives. A common issue raised is that the use of lethal methods is ineffective because additional geese are likely to return to the area after removal occurs or the following year when geese return to the area, which gives the impression of creating a financial incentive to continue the use of only lethal methods. This assumes geese only return to an area where damage was occurring if lethal methods are used. However, the use of non-lethal methods is also often temporary, which could result in geese returning to an area where damage was occurring once those methods are no longer used. The common factor when employing any method is that geese could return if suitable habitat continues to exist at the location where damage was occurring and goose densities are sufficient to occupy all available habitats.

Dispersing geese using pyrotechnics, repellents, trained dogs, or any other non-lethal method often requires repeated application to discourage geese from an area, which increases costs, moves geese to other areas where they could cause damage, and are temporary if habitat conditions remain unchanged. Dispersing and the translocating of geese could be viewed as moving a problem from one area to another, which would require addressing damage caused by those geese at another location. WS' recommendation of or use of techniques to modify existing habitat or making areas unattractive to geese is discussed in Appendix B of the EA. WS' objective is to respond to a request for assistance with the most effective methods and to provide for the long-term solution to the problem using WS' Decision Model to adapt methods in an integrated approach to managing goose damage that is agreed upon by the cooperator.

As part of an integrated approach to managing goose damage, WS would have the ability to adapt methods to damage situations to effectively reduce or prevent damage from occurring. Under the

proposed integrated approach, all methods, individually or in combination, could be employed as deemed appropriate through WS' Decision Model to address requests for assistance. WS' objective when receiving a request for assistance under the proposed action would be to reduce damage and threats to human health and safety or to prevent damage from occurring using an integrated approach to managing goose damage. Therefore, under the proposed action, WS would employ methods adaptively to achieve that objective.

Issue 3 - Effects on the Aesthetic Values

Geese often provide aesthetic enjoyment to many people in the State through observations, photographing, and knowing they exist as part of the natural environment. Under all the alternatives, methods available that could be employed are intended to make resources unavailable or unattractive. Therefore, the use of methods often results in the removal of geese from the area where damage is occurring or the dispersal of geese from an area. Since methods available are similar across the alternatives, the use of those methods would have similar potential impacts on the aesthetics of geese. However, the dispersal and/or take of geese under the alternatives would not reach a magnitude that would prevent the ability to view geese outside of the area where damage was occurring. The effects on the aesthetic values of geese would therefore be similar across the alternatives and would be minimal.

Issue 4 - Humaneness and Animal Welfare Concerns of Methods

The issue of humaneness was also analyzed in detail in relationship to the alternatives. Since many methods addressed in Appendix B of the EA are available under all the alternatives, the issue of method humaneness would be similar for those methods across all the alternatives. As stated previously alpha chloralose is the only method that would not be available under all the alternatives. Under the proposed action alternative, WS would employ methods as humanely as possible. Under the other alternatives, methods could be used inhumanely if used inappropriately or without consideration of goose behavior by other entities. However, when used as intended, most methods would be considered humane. When attended to appropriately, the use of those methods would not increase distress of geese.

Issue 5 - Effects on Non-target Wildlife Species Populations, Including T&E Species

Another issue often raised is the potential impacts to populations of wildlife that could be taken as non-targets during damage management activities. While every effort is made to minimize the risks of lethally taking non-target wildlife, the potential does exist for the unintentional take of non-targets during damage management activities. Since FY 2004, non-targets have not knowingly been killed by the WS program during previous activities to reduce goose damage and threats using an integrated approach. Methods available to address goose damage would be similar across all the alternatives. Therefore, risks to non-targets from the use of those methods would be similar across the alternatives analyzed in detail when those methods are used as intended. The only method that would not be available under all the alternatives analyzed in detail would be the use of alpha chloralose, which is restricted to use by personnel of WS only. Although some risks to non-targets do occur from the use of alpha chloralose, those risks are minimal when used by trained personnel in accordance with WS Directive 2.430 and use guidelines. Based on information in the EA (USDA 2004), the use patterns of alpha chloralose would not pose increased risks to non-targets.

Under the no involvement by WS alternative, WS would not be directly involved with any aspect of goose damage management; therefore, no direct impacts to non-targets would occur from WS. Under the technical assistance only alternative, WS could provide information on the proper use of methods and provide demonstration on the use of methods but would not be directly involved with using methods to alleviate goose damage or threats. Similar to the no WS involvement alternative, under the technical

assistance alternative, if methods are applied as intended and with regard for non-target hazards, those methods would not result in the decline in non-target species' populations. If requestors are provided technical assistance but do not implement any of the recommended actions and takes no further action, the potential impacts to non-targets would be lower compared to the proposed action. If those persons requesting assistance implement recommended methods appropriately and as instructed or demonstrated, the potential impacts to non-targets would be similar to the proposed action. Methods or techniques not implemented as recommended or used inappropriately would likely increase risks to non-targets. When employing direct operational assistance under the proposed action alternative, WS could employ methods and use techniques that would avoid non-target take as described in Chapter 3 of the EA under the standard operating procedures.

The ability to reduce damage and threats caused by geese would be variable based upon the skills and abilities of the person implementing damage management actions under Alternative 2 and Alternative 3. If those methods available are applied as intended, risks to non-targets would be minimal to non-existent. If methods available are applied incorrectly or applied without knowledge of goose behavior, risks to non-target wildlife would be higher under any of the alternatives. If frustration from the lack of available assistance under Alternative 2 and Alternative 3 causes those persons experiencing goose damage to use methods that are not legally available for use, risks to non-targets would be higher under those alternatives. People have resorted to the use of illegal methods to resolve wildlife damage that have resulted in the lethal take of non-target wildlife (White et al. 1989, USFWS 2001, Food and Drug Administration 2003). Under the proposed action alternative, those persons could request direct operational assistance from WS to reduce damage and threats occurring which increases the likelihood that non-target species would be unaffected by damage management activities.

The New England Field Office of the USFWS has developed a website that provides up-to-date species occurrence information and provides an outline for action agencies to assist in determining whether consultation for projects is needed under Section 7 of the ESA. Based on review of the website, if T&E species are not present in the project area, WS would conclude the project would have "*no effect*" on T&E species. The no effect determination would be based on the absence of those species in the project area; therefore, no further consultation would occur with the USFWS as indicated by the website and pursuant to Section 7 of the ESA. If, after review of the procedures on the website, WS determines T&E species may be present in a project area based on information provided on the website, WS would follow those procedures outlined on the website to conclude with a determination of effects and the need for further consultation pursuant to Section 7. In addition, WS has determined that the proposed WS' activities would have no effect on any species listed as vulnerable or threatened and endangered by the CDEEP.

XVII. CUMULATIVE IMPACTS

No significant cumulative environmental impacts are expected from any of the alternatives, including the proposed action. Under the proposed action, the lethal removal of geese by WS would not have significant impacts on statewide goose populations when known sources of mortality are considered. No risk to public safety is expected when activities are provided or recommended to requesting individuals under Alternative 1, Alternative 2, and Alternative 3 since only trained and experienced personnel would conduct and/or recommend damage management activities. There is a slight increased risk to public safety when persons who reject assistance and recommendations and conduct their own activities under Alternative 2, and when no assistance is provided under Alternative 4. However, under all of the alternatives, those risks would not be to the point that the impacts would be significant. The analysis in this EA indicates that an integrated approach to managing damage and threats caused by geese would not result in significant cumulative effects on the quality of the human environment.

XV. DECISION AND RATIONALE

Based on the analyses of the alternatives developed to address those issues identified in the EA, including individual and cumulative impacts of those alternatives, the following decision has been reached:

Decision

I have carefully reviewed the EA and the supplement to the EA prepared to meet the need for action. I find the proposed action alternative (Alternative 1) to be environmentally acceptable, addressing the issues and needs while balancing the environmental concerns of management agencies, landowners, advocacy groups, and the public. The analyses in the EA and the supplement adequately addresses the identified issues, which reasonably confirm that no significant impact, individually or cumulatively, to wildlife populations or the quality of the human environment are likely to occur from the proposed action, nor does the proposed action constitute a major federal action. Therefore, the analyses in the EA and the supplement do not warrant the completion of an EIS.

Based on the analyses in the EA and the supplement, the issues identified are best addressed by selecting Alternative 1 (proposed action/no action) and applying the associated standard operating procedures discussed in Chapter 3 of the EA. Alternative 1 successfully addresses (1) goose damage management using a combination of the most effective methods and does not adversely impact the environment, property, human health and safety, and/or non-target species, including T&E species; (2) it offers the greatest chance of maximizing effectiveness and benefits to resource owners and managers while minimizing cumulative impacts on the quality of the human environment that might result from the program's effect on target and non-target species populations; (3) it presents the greatest chance of maximizing net benefits while minimizing adverse impacts to public health and safety; and (4) it offers a balanced approach to the issues of humaneness and aesthetics when all facets of those issues are considered. Further analysis would be triggered if changes occur that broaden the scope of activities conducted to manage goose damage in the State, that affect the natural or human environment, or from the issuance of new environmental regulations. Therefore, it is my decision to continue the implementation of the proposed action/no action alternative (Alternative 1) as described in the EA.

Finding of No Significant Impact

Based on the analyses provided in the EA and the supplement to the EA, there are no indications that continuing to implement the proposed action alternative (Alternative 1) would have a significant impact, individually or cumulatively, on the quality of the human environment. I agree with this conclusion and therefore, find that an EIS should not be prepared. This determination is based on the following factors:

1. Goose damage management as conducted by WS in the State would not be regional or national in scope.
2. The proposed action would pose minimal risk to public health and safety. Based on the analyses in the EA, the methods available would not adversely affect human safety based on their use patterns.
3. There are no unique characteristics such as park lands, prime farm lands, wetlands, wild and scenic areas, or ecologically critical areas that would be significantly affected. WS' standard operating procedures and adherence to applicable laws and regulations would further ensure that WS' activities do not harm the environment.

4. The effects on the quality of the human environment are not highly controversial. Although there is some opposition to goose damage management, this action is not highly controversial in terms of size, nature, or effect.
5. Based on the analysis documented in the EA and the accompanying administrative file, the effects of the proposed damage management program on the human environment would not be significant. The effects of the proposed activities are not highly uncertain and do not involve unique or unknown risks.
6. The proposed action would not establish a precedent for any future action with significant effects.
7. No significant cumulative effects were identified by this assessment or other actions implemented or planned within the area.
8. The proposed activities would not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would they likely cause any loss or destruction of significant scientific, cultural, or historical resources.
9. WS would review the USFWS website and the online measures described on the website on a site-by-site basis to determine if any T&E species are located within the project area in order to conclude with a determination of effects. Based on a determination of effects, WS would consult with the USFWS in accordance with the Endangered Species Act, if required. WS has also determined that the proposed activities would have no effect on species listed as threatened or endangered by the State.
10. The proposed action would comply with all applicable Federal, State, and local laws.

Rationale

The rationale for this decision is based on several considerations. This decision takes into account public comments, social/political and economic concerns, public health and safety, and the best available science. The foremost considerations are that: 1) goose damage management would only be conducted by WS at the request of landowners/managers, 2) management actions are consistent with applicable laws, regulations, policies and orders, and 3) no adverse impacts to the environment were identified in the analysis. As a part of this Decision, the WS program in Connecticut would continue to provide effective and practical technical assistance and direct management techniques that reduce damage and threats of damage.



Charles S. Brown, Director-Eastern Region
 USDA/APHIS/WS
 Raleigh, North Carolina

12/6/12

 Date

XVI. LITERATURE CITED

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APPENDIX A

RESPONSES TO COMMENTS ON THE SUPPLEMENT TO THE ENVIRONMENTAL ASSESSMENT: CANADA GOOSE DAMAGE MANAGEMENT IN THE STATE OF CONNECTICUT

During the public involvement process for the EA, WS received one comment letter. WS has reviewed the letter to identify additional issues, alternatives, and/or concerns that were not addressed in the EA. Comments received during the public involvement process are summarized below along with WS' response to those comments.

Comment 1 - The supplement should specifically identify participants who request goose damage management other than airports; WS should provide the locations in Connecticut where it has conducted direct management assistance and requests for WS assistance should be open to public scrutiny, especially since it is the public footing the bill

As was discussed in the need for action section of the EA (see Section 1.3), when the activities of geese result in the lost economic value of resources or threaten human safety, people characterize this as damage. When damage exceeds or threatens to exceed an economic threshold and/or pose a threat to human safety, people often seek assistance. The threshold triggering a request for assistance is often unique to the individual person requesting assistance and can be based on many factors (*e.g.*, economic, social, aesthetics). Therefore, how damage is defined is often unique to the individual person and damage occurring to one individual may not be considered damage by another individual. However, the use of the term “*damage*” is consistently used to describe situations where the individual person has determined the losses associated with wildlife is actual damage requiring assistance (*i.e.*, has reached an individual threshold). The term “*damage*” is most often defined as economic losses to resources or threats to human safety but could also be defined as a loss in aesthetic value or other situations where the actions of wildlife are no longer tolerable to an individual person.

Some damage and economic loss can be tolerated by cooperators until the damage reaches a threshold where damage becomes an economic burden. The appropriate level of allowed tolerance or threshold before employing lethal methods would differ among cooperators and damage situations. In addition, establishing a threshold would be difficult or inappropriate to apply to human health and safety situations. Although some locations where goose damage could occur can be predicted, not all specific locations or times where such damage would occur in any given year can be predicted. Again, the threshold triggering an entity to request assistance from WS to manage damage associated with geese is often unique to the individual; therefore, WS cannot predict where, when, and from whom such a request for assistance would occur. The EA emphasizes major issues as those issues relate to specific areas whenever possible; however, many issues apply wherever goose damage occurs. Providing the identity of entities who request assistance from WS in the EA would not add to the analyses, since the actions evaluated in the EA are the use of those methods available under the alternatives and the employment of those methods by WS to manage or prevent damage and threats associated with geese from occurring, when requested.

Comment 2 - Goose damage management should not occur at taxpayer expense

An issue often identified is the concern that wildlife damage management should not be provided at the expense of the taxpayer or that activities should be fee-based. This issue was specifically addressed in Section 2.4.2 of the EA. Funding for damage management activities associated with geese is derived from federal appropriations and through cooperative funding. Activities conducted in the State for the management of damage and threats to human safety from geese would be funded through cooperative

service agreements with individual property owners or managers. A minimal federal appropriation is allotted for the maintenance of a WS program in Connecticut. The remainder of the WS program is entirely fee-based. Technical assistance is provided to requesters as part of the federally funded activities, but all direct operational assistance in which WS' employees perform damage management activities would be funded through cooperative agreements between the requester and WS. Therefore, those entities requesting direct operational assistance from WS would provide the funding for damage management activities.

Comment 3 - Do complainers automatically qualify for WS' assistance which results in goose killings?

The WS program is the lead federal authority in managing damage to agricultural resources, natural resources, property, and threats to human safety associated with wildlife. WS' directives define program objectives and guide WS' activities to alleviate wildlife damage and threats. The need for action to manage damage and threats associated with Canada geese in Connecticut arises from requests for assistance received by WS to reduce and prevent damage. WS only conducts damage management activities after receiving a request for assistance. Before initiating damage management activities, WS and the cooperating entity would sign a Memorandum of Understanding, cooperative service agreement, or other comparable document that lists all the methods the property owner or manager would allow WS to use on property they own and/or manage.

The proposed action alternative would continue the current implementation of an adaptive integrated approach utilizing non-lethal and lethal techniques, as deemed appropriate using the WS Decision Model, to reduce damage and threats caused by Canada geese. WS would provide property owners or managers with information regarding the use of effective and practical non-lethal and lethal techniques. Property owners or managers may choose to implement WS' recommendations on their own (*i.e.*, technical assistance), use contractual services of private businesses, use volunteer services of private organizations, use the services of WS (*i.e.*, direct operational assistance), or take no action.

As was discussed throughout the EA and the supplement, WS' personnel use a thought process for evaluating and responding to requests for assistance depicted by the WS Decision Model (WS Directive 2.201) and described by Slate et al. (1992). WS' personnel assess the problem and then evaluate the appropriateness and availability (legal and administrative) of strategies and methods based on biological, economic, and social considerations. Following this evaluation, methods deemed practical for the situation are incorporated into a management strategy. After this strategy has been implemented, monitoring is conducted and evaluation continues to assess the effectiveness of the strategy. If the strategy is effective, the need for further management is ended.

Under WS Directive 2.101, preference is given to non-lethal methods when developing strategies to address requests for assistance with managing damage and threats associated with Canada geese when using the WS Decision Model. From federal fiscal year (FY) 2004 through FY 2011, the WS program in Connecticut employed non-lethal methods to harass and disperse 6,683 geese to alleviate damage or threats of damage. Those persons seeking assistance frequently contact WS after trying or considering non-lethal methods and subsequently found them to be impractical, too costly, or inadequate for effectively reducing damage. Since the objective is to alleviate or reduce damage and/or threats associated with Canada geese expeditiously (*i.e.*, in a timely manner) when requested, to prolong the time required to achieve the desired result through the use of methods that a cooperator has already tried or economically cannot afford to implement would not be prudent when damage caused by geese is economically burdensome to the requestor or when geese pose a threat to human safety.

Comment 4 - Is habitat modification recommended as a remedy to goose damage in the leaflets WS disperses?

Limited habitat modification and changing cultural practices are the first methods recommended in the leaflet distributed by the WS program in Connecticut for managing goose damage and threats of damage. Habitat modification methods and cultural changes recommended include, planting unpalatable vegetation such as pachysandra or English Ivy, planting hedges or other visual barriers, and installing decorative permanent barriers.

Comment 5 - Are communities and park officials invested in goose clean-up, using a variety of turf sweeping equipment? Problems with geese defecating on public beaches should obviously be handled by using turf-sweeping equipment

As stated previously, WS only conducts damage management activities after receiving a request for assistance. Therefore, what types of sweeping equipment and the investments made into sweeping equipment by communities and park officials in Connecticut is not available since many communities and park officials have not requested assistance from WS. The use and investment in those methods would occur at the discretion of the communities and park officials.

In many situations, either the cooperating entity has tried to employ non-lethal methods to resolve damage and has been unsuccessful or the reduction in damage or threats has not reached a level that is tolerable by the requesting entity. WS could employ other non-lethal methods, attempt to apply the same non-lethal methods, or employ lethal methods. In those cases, the implementation of non-lethal methods such as using sweeping equipment would be the responsibility of the requester.

Comment 6 - WS and state hunters are clearly not going to exterminate geese, so random killings are costly, unproductive, and unjustified

The WS program does not attempt to eradicate any species of native wildlife in the State. WS operates in accordance with federal and state laws and regulations enacted to ensure species viability. WS employs methods to target individual geese or groups of geese identified as causing damage or posing a threat of damage. Any reduction of a local population or group is frequently temporary because immigration from adjacent areas or reproduction replaces the animals removed. WS operates on a small percentage of the land area of Connecticut and only targets those geese identified as causing damage or posing a threat.

The purpose behind integrated management is to implement methods in the most effective manner while minimizing the potentially harmful effects on humans, target and non-target species, and the environment. The cost of management may sometimes be secondary because of overriding environmental, legal, human health and safety, animal welfare, or other concerns. Efficacy is based on the types of methods employed, the application of the method, restrictions 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.

The goal is to reduce damage, risks, and conflicts with Canada geese as requested and not to necessarily reduce/eliminate populations. Localized population reduction could be short-term because new individuals may immigrate to an area or individuals could be born to animals remaining at the site (Courchamp et al. 2003). The ability of a wildlife population to sustain a certain level of removal and to eventually return to pre-management levels does not mean individual management actions are unsuccessful, but that periodic management may be necessary. The return of wildlife to pre-management levels also demonstrates that limited, localized damage management methods had minimal impacts on species' populations.

Based on the evaluation of the damage situation, WS would employ the most effective methods individually or in combination based on prior evaluations of methods or combinations of methods in other damage management situations. Once employed, methods would be further evaluated for effectiveness based on a continuous evaluation of activities by WS. Therefore, the effectiveness of methods is considered as part of the decision making-process under WS' use of the Decision Model described in Chapter 3 for each damage management request based on continual evaluation of methods and results.

This comment also assumes geese only return to an area where damage was occurring if lethal methods are used. However, the use of non-lethal methods is also often temporary, which could result in birds returning to an area where damage was occurring once those methods are no longer used or birds become habituated to methods. Dispersing geese using non-lethal methods often requires repeated application to discourage geese from returning to locations, which increases costs, moves birds to other areas where they could cause damage, and are temporary if conditions where damage was occurring remains unchanged. Dispersing and the relocating of geese could be viewed as moving a problem from one area to another, which would require addressing damage caused by those geese at another location, which increases costs and could be perceived as creating a financial incentive to continue the use of those methods since birds would have to be addressed annually and at multiple locations.

Comment 7 - Geese should not be accused of “loafing” in an effort to make them appear like a nuisance

“Loafing” is a term behaviorists, ornithologists, and wildlife biologists use to describe an animal behavior. Loafing can occur on land or in the water when geese stand, sit, or slowly swim in one area for long periods. When WS describes geese as loafing, WS does not intend to make geese appear to be “lazy” or a “nuisance”, but is simply a description of a regular behavior of geese. Other common activities could include foraging, flying, and roosting.

Comment 8 - Geese should not be killed for engaging in natural behaviors.

As was discussed throughout the EA, WS' personnel use a thought process for evaluating and responding to requests for assistance, which is depicted by the WS Decision Model (WS Directive 2.201) and described by Slate et al. (1992). WS' personnel assess the problem and then evaluate the appropriateness and availability (legal and administrative) of strategies and methods based on biological, economic, and social considerations. Following this evaluation, methods deemed practical for the situation are incorporated into a management strategy. After this strategy has been implemented, monitoring is conducted and evaluation continues to assess the effectiveness of the strategy. If the strategy is effective, the need for further management is ended.

Under WS Directive 2.101, preference is given to non-lethal methods when developing strategies to address requests for assistance with managing damage and threats associated with Canada geese when using the WS Decision Model. WS' personnel are frequently contacted after requesters have tried or considered non-lethal methods and found them to be impractical, too costly, or inadequate for effectively reducing damage. Since the objective is to alleviate or reduce damage and/or threats associated with Canada geese expeditiously (*i.e.*, in a timely manner) when requested, to prolong the time required to achieve the desired result through the use of methods that a cooperator has already tried or economically cannot afford to implement would not be prudent when damage caused by geese is economically burdensome to the requestor or when geese pose a threat to human safety.

The National Wildlife Research Center (NWRC) has been and continues to be a leading research facility in the pursuit and development of non-lethal methods to address wildlife damage and threats. Research conducted by the NWRC on avian repellents and nicrobazine has led to the registration of several products

currently available to manage damage associated with geese. WS continues to be committed to using, pursuing, and developing non-lethal methods for resolving wildlife damage, including damage and threats associated with Canada geese.

Although non-lethal methods can be effective in alleviating damage or reducing threats of damage, the use of those methods in all situations are not always effective. Research indicates that most animals habituate to non-lethal methods, such as aversive sounds or visual deterrents, because of the lack of a negative stimulus that is realized after repeated use of the method. Non-lethal methods are employed to disperse wildlife away from areas where damage or threats of damage are occurring, which often relocates those wildlife species to other areas. If those species are dispersed to areas where damage or threats of damage no longer occur, the use of those methods has been successful. If the use of non-lethal methods disperses wildlife to areas where they cause damage or pose threats at that location, then the use of non-lethal methods alleviated damage or threats in one area but resulted in damage occurring in another area. Non-lethal methods can also cause a large group of wildlife to disperse into smaller groups, which can result in damage occurring at multiple locations.

The difference in human values regarding what does and does not constitute an appropriate response to wildlife damage, including the humaneness of the response was addressed in the EA. The effectiveness of methods available for use to manage damage or threats of damage associated with Canada geese was addressed in Section 2.3.2 and Section 4.1.2 of the EA. In addition, the aesthetic value of geese was addressed in the EA in Section 2.3.3 and Section 4.1.3. The humaneness and animal welfare concerns of methods available to manage damage or threats of damage were addressed in Section 2.3.4 and Section 4.1.4 of the EA.

Comment 9 - The goal of a breeding population of 15,000 Canada geese is arbitrary and unrealistic

The population goal for the Atlantic Flyway resident Canada goose population of 650,000 individuals was established in 1999 by the Atlantic Flyway Council in the Atlantic Flyway Resident Canada Goose Management Plan (Atlantic Flyway Council 1999). The goal of 15,000 for Connecticut was established by the Council not by WS. The purpose in establishing resident population goals for Atlantic Flyway States and Provinces was to achieve an optimal balance between the positive values and conflicts associated with resident geese. At the time, most state and provincial wildlife agencies considered the current populations to have exceeded the “*social carrying capacity*” (*i.e.*, public tolerance) with regard to damage and conflicts associated with resident geese.

Population goals for individual states and provinces were derived independently based on their respective management needs and capabilities. In some cases, the goals approximated population levels at an earlier time when problems were less frequent and less severe. In other cases, goals were calculated from what was judged to be a more desirable or acceptable density of birds. Unlike traditional population goals for waterfowl, they were intended to represent an optimal size, not a minimum number where being above the goal is desirable. Population goals may be revised in response to changes in goose populations, damage levels, public input, or other factors. Regardless, it is important that WS is aware and considers established population goals during the development of management strategies and projects.

Comment 10 - The supplement should reveal the impact to taxpaying residents for the yearly costs of WS' lethal methods to remove geese in Connecticut

The Council on Environmental Quality does not require a formal, monetized cost benefit analysis to comply with the NEPA. Consideration of this issue is not essential to making a reasoned choice among the alternatives considered in the EA. As part of an integrated approach under the proposed action alternative, evaluation of methods would continually occur to allow for those methods that are most

effective at resolving damage or threats to be employed under similar circumstance where geese are causing damage or posing a threat. Additionally, management operations may be constrained by cooperator funding and/or objectives and needs.

Providing the yearly costs would not add to the analyses, since the actions evaluated in the EA are the use of those methods available under the alternatives and the employment of those methods by WS to manage or prevent damage and threats associated with geese from occurring, when requested. As stated previously, those entities requesting direct operational assistance from WS would provide the funding for damage management activities.

Comment 11 - There is no correlation shown which indicates that public hunts, or shooting and gassing resident geese by WS agents resulted in reducing local populations where “damage or threats were occurring” because the estimated statewide population increased from 25,341 in 2004 to 31,272 in 2010 which hardly makes the case for more lethal WS’ activities

WS does not intend to use lethal methods as population management tools over broad areas. The use of lethal methods are intended to reduce the number of geese present at a location where damage is occurring by targeting those geese causing damage or posing threats. Since the intent of lethal methods is to manage those geese causing damage and not to manage the entire goose populations, those methods are not ineffective because geese return the following year or populations continue to increase. The goal is to reduce damage, risks, and conflicts with geese as requested and not to necessarily reduce/eliminate populations. Localized population reduction could be short-term and new individuals may immigrate or be born to animals remaining at the site (Courchamp et al. 2003). The ability of the goose population to sustain a certain level of removal and to eventually return to pre-management levels does not mean individual management actions are unsuccessful, but that periodic management may be necessary. The return of geese to pre-management levels also demonstrates that limited, localized damage management methods had minimal impacts on species’ populations.

Establishing hunting seasons and the allowed take during those seasons is the responsibility of the Connecticut Department of Energy and Environmental Protection under frameworks developed by the United States Fish and Wildlife Service. WS does not have the authority to establish hunting seasons or to set allowed harvest numbers during those seasons.

Comment 12 - Recommend that goose droppings be reduced by cleaning up after the birds and modify Canada geese habitats in parks and similar areas which involves altering physical and floral (biological) features of parks, corporate campuses, golf courses, and other urban and suburban landscapes without capturing or killing geese

As stated previously, habitat modification and changing cultural practices are the first methods recommended by the WS program in Connecticut for managing goose damage and threats of damage. Public education was addressed under the proposed action alternative in Section 3.2.3 of the EA. Technical assistance would provide those cooperators experiencing damage or threats associated with birds with information, demonstrations, and recommendations on available and appropriate methods available. Education is an important element of activities because wildlife damage management is about finding balance and coexistence between the needs of people and needs of wildlife. This can be extremely challenging as nature has no balance, but rather is in continual flux. In addition to the routine dissemination of recommendations and information to individuals or organizations sustaining damage, WS provides lectures, courses, and demonstrations to producers, homeowners, state and county agents, colleges and universities, and other interested groups. WS frequently cooperates with other entities in education and public information efforts. Additionally, technical papers are presented at professional meetings and conferences so that other wildlife professionals and the public are periodically updated on

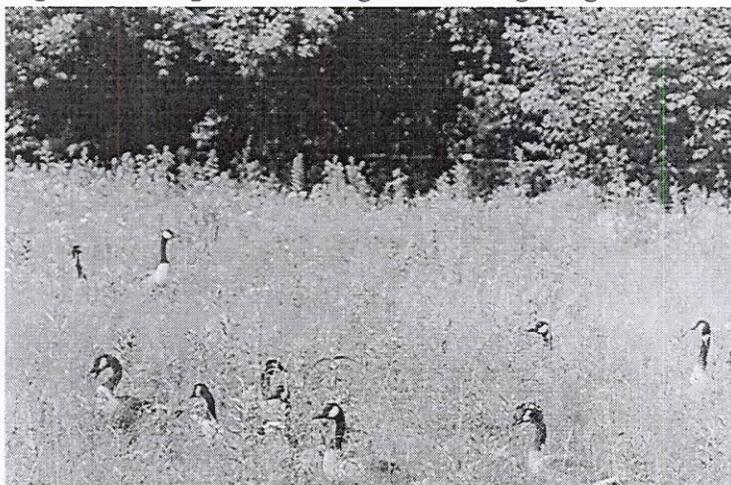
recent developments in damage management technology, programs, laws and regulations, and agency policies.

Comment 13 - Modifying grounds - allowing grass around airport runways, airport property and State Parks to grow several inches higher instead of mowing it – will deter geese otherwise drawn to short, mowed lawns and turf.

The length of grass around safety areas of airport runways is regulated by the Federal Aviation Administration and must be maintained at or below the regulated grass height. An airport cannot simply decide to allow the grass to grow in an attempt to deter geese. In addition, allowing grass to grow on an airfield, simply to deter geese, allows for other bird and mammal species to go undetected on the airfield. Connecticut State Parks have forested and open grassland habitat. However, to maintain their mandate to provide recreational opportunities for the residents of Connecticut, the State Parks maintain large areas of regularly mowed turf used for athletic fields, picnic areas, and other uses.

Although resident Canada geese prefer short grass for feeding and loafing, they can and do regularly use tall grass. This is especially true of areas where geese molt their flight feathers and lose their ability to fly in late spring and early summer when access to short grass is restricted or eliminated. As shown in Figure 1 below, geese do utilize areas with tall grass.

Figure 1 – Image of Canada geese utilizing tall grass habitat



Comment 14 - Opposition to the use of chemical methods mentioned in the supplement to capture and immobilize geese such as injecting alpha-chloralose into bread cubes as bait. Which locations has this chemical attack been imposed on geese?

To date, alpha chloralose has not been used to live-capture Canada geese in Connecticut by WS and WS does not have any current plans to use alpha chloralose. Use of alpha chloralose would require the prior authorization of Connecticut Department of Energy and Environmental Protection and appropriately trained staff. The use of alpha chloralose was analyzed in the EA and the supplement because the method is available and could be used, if necessary. It should be noted that alpha chloralose is not a toxicant but an avian tranquilizer that simply puts treated birds to sleep, at which time they can be safely and easily collected. Because alpha chloralose remains in the tissue, it cannot be used for Canada geese near the hunting season unless treated geese are either euthanized or held in captivity until the chemical is out of their system.

The other chemical methods discussed are non-lethal, non-toxic repellents based on methyl anthranilate or anthraquinone, which are naturally occurring chemicals that can effectively reduce goose damage without harm to the geese, people, or the environment. WS has not used repellents to manage goose damage in Connecticut; however, it could be used if requested by an existing or new cooperator.

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