DECISION
AND
FINDING OF NO SIGNIFICANT IMPACT

ENVIRONMENTAL ASSESSMENT: CANADA GOOSE DAMAGE MANAGEMENT IN THE STATE OF NORTH CAROLINA

United States Department of Agriculture
Animal and Plant Health Inspection Service
Wildlife Services

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I. Introduction

The United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Wildlife Services (WS) program prepared an Environmental Assessment (EA) to analyze the potential impacts to the quality of the human environment from resolving Canada goose damage related to the protection of property, agricultural commodities, natural resources, and human health and safety in North Carolina (USDA 2003)[1]. The EA documents the need for goose damage management in North Carolina and assesses potential impacts on the human environment of four alternatives to address that need. WS' proposed action in the EA implements an integrated damage management program in North Carolina to fully address the need to manage goose damage while minimizing impacts to the human environment.

The pre-decisional EA was made available to the public for review and comment through notices published in local media and through direct notification of interested parties. Comments from the public involvement process were reviewed for substantive issues and alternatives which were considered in developing the Decision for the EA. After consideration of the analysis contained in the pre-decisional EA and review of public comments, a Decision and Finding of No Significant Impact (FONSI) for the EA was issued on June 2, 2003. The Decision and FONSI selected the proposed action to implement an integrated damage management program using multiple methods to adequately address the need for goose damage management in North Carolina.

This new Decision and summary report will analyze WS' goose damage management activities in North Carolina since the 2003 Decision/FONSI was signed for the EA to: 1) facilitate planning and interagency coordination, 2) streamline program management, 3) ensure WS' activities remain within the scope of analyses contained in the EA, and 4) clearly communicate to the public the analysis of individual and cumulative impacts of the proposed action since 2003. This new Decision/FONSI ensures WS' actions comply with NEPA, with the Council on Environmental Quality (40 CFR 1500), and with APHIS' NEPA implementing regulations (7 CFR 372). All goose damage management activities, including disposal requirements, are conducted consistent with: 1) the Endangered Species Act of 1973, 2) the Migratory Bird Treaty Act, 3) Executive Order (EO) 12898[2], 4) EO 13045[3], 5) EO 13186[4], and 6) federal, state, and local laws, regulations, and policies.

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[1] Copies of the EA and 2003 Decision/FONSI are available for review from the State Director, USDA/APHIS/WS, 6213-E Angus Drive, Raleigh, NC 27617 or by visiting the APHIS website at http://www.aphis.usda.gov/wildlife_damage/nepa.shtml.

[2] Executive Order 12898 promotes the fair treatment of people of all races, income levels, and cultures with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

[3] Executive Order 13045 ensures the protection of children from environmental health and safety risks since children may suffer disproportionately from those risks.

[4] Executive Order 13186 directs federal agencies to protect migratory birds and strengthen migratory bird conservation by identifying and implementing strategies that promote conservation and minimize the take of migratory birds through enhanced collaboration.

WS is authorized by law to reduce damage caused by wildlife through 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). Wildlife damage management is the alleviation of damage caused by or related to the presence of wildlife and is an integral part of wildlife damage management (The Wildlife Society 1992). WS uses an integrated wildlife damage management approach in which a combination of methods may be used or recommended to reduce damage (WS Directive 2.105). The goal of wildlife damage management conducted by WS is to respond to requests for assistance to manage damage and threats to human safety caused by wildlife. Integrated damage management strategies employed by WS to resolve requests for assistance are based on WS' Decision Model (Slate et al. 1992, USDA 1997, USDA 2003).

II. Public Involvement

The pre-decisional EA was prepared and released to the public by a legal notice that was published in *The News and Observer*, *Roanoke-Chowan County News Herald*, *Winston-Salem Journal*, *Charlotte Observer*, *Greensboro News and Record*, *Beaufort Hyde News*, *New Bern Sun Journal*, *Fayetteville Observer*, *Asheville Citizen Times*, *Daily Advance*, *Gates County Index*, and *The Roanoke Chowan Shopper*. A legal notice of availability was published for one day in each newspaper beginning on April 23, 2003. The public was allowed to review and provide comment on the pre-decisional EA during the comment period which ended on May 25, 2003. A letter of availability was also mailed directly to agencies, organizations, and individuals with probable interest in the proposed program. Letters were mailed to 82 agencies, organizations, and individuals requesting comments on the pre-decisional EA. A total of five comment documents were received from the public during the comment period. All comments were analyzed to identify substantial new issues, alternatives, or to re-direct the program. Several minor editorial changes suggested by those commenting were incorporated into the pre-decisional EA. Those minor changes enhanced the understanding of the proposed program, but did not change the analysis provided in the EA. All comment documents are maintained in the administrative file located at the Wildlife Services State Office, Raleigh, North Carolina.

This new Decision along with the EA and the 2003 Decision/FONSI will be made available for public review and comment through a legal notice announcing a 30-day comment period. The legal notice will be published in *The News and Observer* 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). This new Decision will also be directly mailed to agencies, organizations, and individuals with probable interest in the proposed program. Comments received after publication of the legal notice notifying the public of this new Decision will be fully considered for new substantive issues and alternatives. Unless new substantial issues are brought to WS' attention, this new Decision will take effect upon the close of the comment period.

III. Monitoring

The WS program in North Carolina annually reviews program activities to determine impacts on issues identified to ensure that program activities are within the scope of analysis contained in the EA. The annual monitoring reports document WS' activities while discussing any new information that becomes available since the completion of the EA and the last monitoring report. If WS' activities, as identified in the annual monitoring reports, are outside the scope of the analyses in the EA or if new issues are identified from available information, further analysis would occur and the EA would be supplemented to the degree as identified by those processes pursuant to NEPA or a notice of intent to prepare an Environmental Impact Statement (EIS) would occur.

WS will continue to provide the number of geese taken during WS' activities to the U.S. Fish and Wildlife Service (USFWS) and to the North Carolina Wildlife Resources Commission (NCWRC) to ensure the magnitude of take by WS is within allowable harvest levels in North Carolina.

IV. Relationship of this Document to Other Environmental Documents

WS' Programmatic Final Environmental Impact Statement: WS has developed a programmatic Final Environmental Impact Statement (FEIS)[5] that addresses the need for wildlife damage management in the United States (USDA 1997). The FEIS contains detailed discussions of potential impacts to the human environment from wildlife damage management methods used by WS. Pertinent information available in the FEIS has been incorporated by reference into the EA and this Decision.

USFWS Resident Canada Goose Management FEIS: The USFWS has issued a FEIS addressing the need for and potential environmental impacts associated with goose damage management activities entitled "*Resident Canada Goose Management*" (USFWS 2005). The FEIS also contains detailed analyses of the issues and methods used to manage Canada goose damage. A Record of Decision (ROD) and Final Rule were published by the USFWS on August 10, 2006 (71 FR 45964-45993). On June 27, 2007, WS issued a ROD and adopted the USFWS FEIS (72 FR 35217). Information in the resident Canada goose FEIS has been incorporated by reference into this document.

V. Summary of WS' Canada Goose Damage Management Activities

WS continued to provide both technical assistance and direct damage management as part of an integrated damage management approach to preventing and resolving damage caused by geese in North Carolina from federal Fiscal Year (FY)[6] 2003 through FY 2007. Technical assistance was provided to cooperators through the dissemination of information regarding damage management techniques to prevent damage, methods demonstrations, and through site visits. Through technical assistance, WS' made recommendations on the appropriate methods available for use that a requestor could employ to resolve damage or reduce threats without WS' direct involvement.

Operational assistance occurs when WS is directly involved with employing methods to resolve, alleviate, or reduce threats associated with geese. As directed by the selected alternative, WS' applies multiple methods as part of an integrated damage management program to resolve requests for assistance. WS' technical assistance and direct operational programs are discussed in detail in the EA (USDA 2003) and are also discussed in WS' programmatic FEIS (USDA 1997). Requests for assistance received by the WS program in North Carolina by county from FY 2003 through FY 2007 are shown in Table 1.

Since FY 2003, WS has received 945 requests for assistance to manage damage associated with Canada geese in North Carolina. Of those 945 requests, over 66% are to alleviate damage or threats of damage to property. Property damage can occur from geese overgrazing turf and landscaping, posing threats to aircraft from being struck, and from fecal matter deposited on sidewalks, walkways, and turf. A total of 202 requests for assistance were received from FY 2003 through FY 2007 to address threats to human safety. Threats to human safety arise from the potential of disease transmission associated with human contact with fecal matter or surfaces contaminated with fecal matter deposited by geese, including fecal matter being deposited in water sources. Human safety threats can also arise from the potential of aircraft striking geese at airports which can threaten air passenger safety.

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[5] Copies of WS' programmatic FEIS are available from USDA/APHIS/WS Operational Support Staff, 4700 River Road, Unit 87, Riverdale, MD 20737-1234.

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

Table 1 - Number of technical and direct assistance requests by resource type and counties received by WS in North Carolina to manage damage associated with Canada geese from FY 2003 through FY 2007.

County	AG[a]	HS[b]	NR[c]	PR[d]	Total	County	AG	HS	NR	PR	Total
ALAMANCE	1	6	1	25	33	HYDE	0	6	0	0	6
ALLEGHANY	0	0	1	2	3	IREDELL	2	2	0	12	16
ANSON	1	0	0	1	2	JOHNSTON	2	1	0	4	7
BEAUFORT	1	2	0	0	3	LENOIR	0	0	0	3	3
BRUNSWICK	1	1	0	20	22	LINCOLN	2	0	0	6	8
BUNCOMBE	0	2	0	2	4	MACON	0	0	0	1	1
CABARRUS	2	1	1	11	15	MECKLENBURG	5	14	0	43	62
CARTERET	0	0	0	1	1	MITCHELL	0	1	0	0	1
CASWELL	1	0	0	2	3	MOORE	0	1	0	14	15
CATAWBA	0	0	0	3	3	NASH	6	1	1	7	15
CHATHAM	0	0	0	1	1	NEW HANOVER	0	9	0	5	14
CHOWAN	1	1	0	1	3	NORTHAMPTON	1	0	0	1	2
CLEVELAND	1	0	0	6	7	ONSLOW	0	3	0	1	4
COLUMBUS	1	0	0	0	1	ORANGE	0	2	0	4	6
CRAVEN	0	16	0	1	17	PASQUOTANK	6	2	0	8	16
CUMBERLAND	1	3	0	20	24	PENDER	0	0	0	1	1
CURRITUCK	1	11	0	1	13	PERQUIMANS	1	1	0	3	5
DARE	2	0	5	4	11	PERSON	2	0	0	1	3
DAVIDSON	6	2	0	11	19	PITT	0	1	0	0	1
DAVIE	1	0	0	4	5	POLK	0	0	0	1	1
DUPLIN	0	1	0	3	4	RANDOLPH	3	2	2	7	14
DURHAM	2	3	1	16	22	RICHMOND	0	0	0	1	1
EDGECOMBE	2	4	0	3	9	ROCKINGHAM	1	0	0	3	4
FORSYTH	6	6	0	18	30	ROWAN	3	0	0	9	12
FRANKLIN	0	0	0	1	1	STANLY	1	1	0	2	4
GASTON	0	1	0	0	1	SURRY	5	2	0	0	7
GRANVILLE	0	3	0	3	6	UNION	0	1	0	0	1
GREENE	2	0	0	1	3	WAKE	6	68	1	180	255
GUILFORD	9	8	0	120	137	WARREN	0	0	0	2	2
HALIFAX	0	1	0	6	7	WASHINGTON	0	1	0	0	1
HARNETT	4	1	0	1	6	WATAUGA	0	0	1	3	4
HENDERSON	2	1	0	4	7	WAYNE	1	8	0	12	21
HERTFORD	2	0	0	0	2	WILSON	2	1	0	2	5
HOKE	2	0	0	0	2	TOTAL	101	202	14	628	945

[a]AG = Agricultural Resources, [b]HS = Human Safety, [c]NR = Natural Resources, [d]PR = Property

WS' activities from FY 2003 through FY 2007 are summarized below.

WS' Goose Damage Management Activities in North Carolina during FY 2003

WS' continued to implement an integrated approach to resolving damage associated with geese in North Carolina during FY 2003 using non-lethal and lethal methods individually or in combination to successfully reduce damage. Requests for assistance were primarily received for the reduction of damage to agricultural resources and to reduce threats to human health and safety in North Carolina. Many projects were conducted to reduce damage or threats to multiple resources. WS conducted 236 technical assistance projects in FY 2003 involving 241 individuals that provided information and demonstration of methods available to reduce or prevent goose damage.

WS addressed a total of 261 geese in FY 2003 that were causing damage to agricultural resources, property, and were threatening human safety. WS' dispersed a total of 149 geese in FY 2003 using non-

lethal methods. Over 58% of the Canada geese addressed by WS were dispersed or harassed using non-lethal methods in FY 2003. Geese were primarily dispersed using pyrotechnics but were also dispersed using through physical actions such as human activities. As part of an integrated approach, WS also used lethal methods to remove geese from areas where damage was occurring. A total of 112 geese were taken using lethal methods by WS to alleviate damage or threats. WS also destroyed 620 goose nests in FY 2003.

Examples of WS' direct assistance in North Carolina in FY 2003 included: (1) protection of human health and safety through removal of goose nests to reduce incidents of aggressive geese attacking people, (2) reduction of goose-aircraft strikes, and enhancement of public safety at two North Carolina airports, and (3) reducing damage to sprouting agricultural crops such as soybeans, corn, and wheat.

WS' Goose Damage Management Activities in North Carolina during FY 2004

WS continued to provide technical assistance and direct assistance through the operational employment of methods to resolve requests to manage goose damage in North Carolina during FY 2004. Technical assistance was provided to those interested through recommendations and through the dissemination of information on how to effectively resolve goose damage using dispersal techniques and by altering cultural practices. A total of 272 technical assistance projects were conducted in FY 2004 by WS involving 272 individuals. WS provided technical assistance through the dissemination of information and making recommendations on effective methods to resolve goose damage.

Operational damage management was also conducted by WS in FY 2004 through the direct integration of methods and strategies to resolve damage caused by geese. Most requests for assistance to resolve damage caused by geese involved multiple resources. Requests for assistance were primarily received to resolve damage to property in FY 2004.

Requests to resolve or reduce damage threats occurred primarily from the risks to property and human safety from aircraft striking geese, overgrazing of landscape by geese, and from the cost and the need to clean aesthetically displeasing goose feces from property. As part of an integrated damage management approach, WS employed both non-lethal and lethal damage management methods to resolve damage caused by geese in North Carolina.

In FY 2004, WS addressed at total of 593 geese in North Carolina to reduce or prevent damage to property and to reduce threats to human safety. A total of 149 Canada geese addressed were non-lethally harassed and dispersed from damage areas. Pyrotechnics were the primary methods used to disperse geese in FY 2004. Lethal methods were used to remove 444 geese in North Carolina during FY 2004. Walk-in traps followed by euthanasia were the lethal method primarily used to take geese by WS. Take also occurring from the use of firearms and from the use of alpha chloralose followed by euthanasia. WS also destroyed a total of 363 Canada goose nests in FY 2004. Examples of WS direct assistance in North Carolina in FY 2004 included: (1) protection of human health and safety through removal of goose nests to reduce incidents of aggressive geese attacking people, and (2) reduction of goose-aircraft strikes and enhancement of public safety at three North Carolina airports.

WS' Goose Damage Management Activities in North Carolina during FY 2005

WS continued to respond to request for assistance to manage damage caused by Canada geese in FY 2005. Requests were received to manage damage caused by geese to agricultural resources, property, and to reduce threats to human safety. To resolve requests for assistance WS continued to implement an integrated approach by employing non-lethal and lethal methods to resolve damage management requests.

WS provided technical assistance to 172 people in FY 2005 and provided 145 leaflets on preventing and resolving goose damage, as well as information on the biology of geese.

In FY 2005, as part of an integrated damage management approach, WS employed non-lethal dispersal and harassment methods to alleviate or resolve damage to resources caused by geese. Geese were harassed or dispersed primarily through the use of pyrotechnics and through the auditory report of discharging a firearm. WS used non-lethal methods to disperse 459 geese from areas where damage or threats of damage were occurring in FY 2005.

To enhance non-lethal methods, WS lethally removed a total of 411 Canada geese in North Carolina. All geese were lethally removed during those months when birds present in North Carolina are considered resident as defined by the FEIS developed by the USFWS (USFWS 2005). WS also destroyed 17 Canada goose nests in FY 2005. Live capture traps followed by euthanasia was the primary method employed to resolve requests for damage management assistance with geese. Other methods employed included shooting and the use of alpha chloralose followed by euthanasia.

Examples of WS' direct assistance in North Carolina in FY 2005 included: (1) protection of human health and safety through removal of goose nests to reduce incidents of aggressive geese attacking people, and (2) reduction of goose-aircraft strikes, and enhancement of public safety at four North Carolina airports.

WS' Goose Damage Management Activities in North Carolina during FY 2006

WS continued to provide technical assistance and operational employment of methods to resolve requests for assistance to manage goose damage in North Carolina during FY 2006. Technical assistance was provided to those interested through recommendations and through the dissemination of information on how to effectively resolve goose damage using dispersal techniques and by altering cultural practices. WS provided technical assistance to 241 requesters in FY 2006 through the dissemination of information and making recommendations on effective methods to resolve goose damage. WS distributed 452 informational leaflets to those requests assistance in FY 2006.

Operational damage management was also conducted by WS in FY 2006 through the direct integration of methods and strategies to resolve damage caused by geese in North Carolina. Requests for assistance in FY 2006 were primarily received to protect human safety, primarily to reduce disease transmission threats caused by human contact with goose feces and to reduce threats to human safety from aircraft striking geese at or near airports. However, requests for assistance were also received to reduce threats and damages to property and agricultural resources.

As part of an integrated damage management approach, WS employed both non-lethal and lethal damage management methods to resolve damage caused by geese. Non-lethal techniques were used to disperse 482 geese in FY 2006. WS also used lethal means to remove 545 geese using primarily live capture traps followed by euthanasia. All geese that were lethally removed by WS were taken during those months when birds present in North Carolina are considered resident as defined by the FEIS developed by the USFWS (USFWS 2005). In addition, WS removed a total of 15 goose nests in FY 2006.

WS' Goose Damage Management Activities in North Carolina during FY 2007

Similar to FY 2006, WS used non-lethal methods to disperse 394 geese from areas where damage was occurring or to prevent damage from occurring using primarily pyrotechnics and shooting. WS also used lethal methods to take 541 geese in North Carolina in FY 2007, using primarily live-capture followed by euthanasia.

An example of WS' technical assistance in North Carolina in FY 2007 included providing free goose management information (including 61 informational leaflets) to 129 requesters. Examples of WS direct IWDM assistance in North Carolina in FY 2007 included: (1) protection of human health and safety through removal of seven goose nests to reduce incidents of aggressive geese attacking people, (2) reduction of goose-aircraft strikes, and enhancement of public safety at seventeen North Carolina airports where wildlife hazard assessments are being completed.

VI. Major Issues

The EA describes the alternatives considered and evaluates the identified issues. The following issues were identified as important to the scope of the analysis (40 CFR 1508.25):

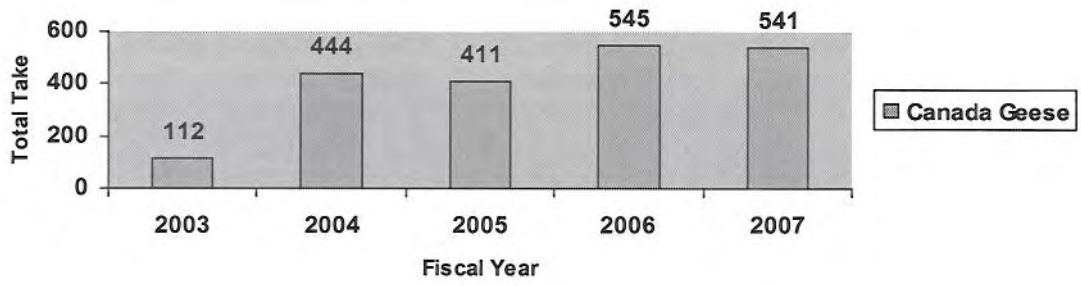
Issue 1 - Effects on Target Canada Goose Populations

A common concern when addressing damage associated with a wildlife species is the effects on the target wildlife species populations from methods used to manage damage associated with that species. The integrated approach of managing damage associated with Canada geese uses both non-lethal and lethal methods to resolve requests for assistance. Although non-lethal methods can disperse birds from areas where application occurs, those birds are generally unharmed. Therefore, no adverse affects are often associated with the use of non-lethal methods. However, methods used to lethally take geese can result in local reductions in goose populations in the area where damage or threats of damage were occurring.

The analysis for magnitude of impact from the lethal take of geese generally follows the process described in Chapter 4 of WS' programmatic FEIS (USDA 1997). Magnitude is described in WS' programmatic FEIS (USDA 1997) as "*...a measure of the number of animals killed in relation to their abundance.*" Magnitude may be determined either quantitatively or qualitatively. Quantitative determinations are based on population estimates, allowable harvest levels, and actual harvest data. Qualitative determinations are based on population trends and harvest data when available. Generally, WS only conducts damage management on species whose population densities are high and usually only after they have caused damage. WS' take is monitored by comparing numbers of animals killed with overall populations or trends in populations to assure the magnitude of take is maintained below the level that would cause significant adverse impacts to the viability of native species populations (USDA 1997).

WS' take of Canada geese in North Carolina from FY 2003 through FY 2007 are shown in Figure 1. Since FY 2003, a total of 2,053 Canada geese have been lethally taken by WS in North Carolina to alleviate or prevent damage to a variety of resources at the request of the resource owner. WS' highest take level of geese occurred in FY 2006 when 545 geese were lethally removed to prevent or alleviate damage.

Figure 1 - Canada Goose Take by WS in North Carolina from FY 2003 through FY 2007



The EA analyzed take by WS of no more than 5% of the estimated resident Canada goose population in North Carolina and no more than 1% of the migratory Canada goose population in the State annually under the proposed action. As defined by the USFWS, a Canada goose in considered a resident of the State when nesting during the months of March, April, May, or June and/or residing within the State from April through August (USFWS 2005). Those geese present in the State that are present outside of those months when geese are considered resident in the State will be considered migratory.

The population of resident geese in North Carolina during the development of the EA was estimated at 96,505 geese (Atlantic Flyway Council 1999, USDA 2003). No additional population estimates are available since the completion of the EA for resident Canada geese in North Carolina. However, based on trend information from the Breeding Bird Survey, geese are showing an increasing trend in North Carolina estimated at 13.2% annually since 1966 (Sauer et al. 2008). Since 1980, the breeding goose population in North Carolina has increased at an estimated rate of 14.3% annually (Sauer et al. 2008). Based on the increasing trends of breeding Canada geese, the resident population is likely close to or higher than the 96,505 estimate evaluated in the EA.

As shown in Table 2, WS' take of resident geese has not exceeded the level evaluated in the EA and as occurred within the scope of analysis in the EA. The EA evaluate a take level of up to 5% of the estimated resident Canada goose population in North Carolina. The highest percentage of take by WS occurred in FY 2006 and FY 2007 where 0.6% of the estimated resident goose population was lethally removed by WS to alleviate and prevent damage.

Table 2 – Resident Canada goose population estimates and WS' take of resident geese in North Carolina from FY 2003 through FY 2007.

Year	Resident Goose Population[a]	WS' Take of Resident Geese[b]	WS % take of total population
2003	96,505	112	0.1%
2004	96,505	398	0.4%
2005	96,505	411	0.4%
2006	96,505	545	0.6%
2007	96,505	541	0.6%

[a]Reported by calendar year, [b]Reported by fiscal year

The EA evaluated take by WS of those geese considered migratory would not exceed 1% of the estimated migratory population in North Carolina. As shown in Table 3, only in FY 2004 were geese taken by WS that were considered migratory. WS' take of migratory geese in FY 2004 represented 0.4% of the estimated migratory goose population. Take of migratory geese occurs primarily to reduce threats of aircraft striking geese at airports. WS' take of migratory geese in FY 2004 was within the scope analyzed in the EA (USDA 2003).

Table 3 – Migratory Canada goose population estimate and WS' take of migratory geese in North Carolina from FY 2003 through FY 2007.

Year	Goose Migratory Population[a]	WS' take Migratory Geese[b]	WS % take of total population
2003	13,685	0	0.0%
2004	12,692	46	0.4%
2005	10,646	0	0.0%
2006	14,228	0	0.0%
2007	13,179	0	0.0%

[a]Reported by calendar year, [b]Reported by fiscal year

Hunter harvest data for Canada geese since calendar year 2003 can be found in Table 4 along with the reported take from depredation permits issued by the USFWS for the take of Canada geese to alleviate or prevent damage. As shown in Table 4, WS' total take of 444 geese in FY 2004 represented 1.5% of the total known goose harvest in the State. In calendar year 2005, a total of 73,200 geese were estimated to have been taken during the regulated harvest season in North Carolina. WS' take of 411 geese in FY 2005 represents 0.6% of the total harvest in that year.

Table 4 – Take of Canada geese from all known sources in North Carolina from 2003 through 2007.

Year[a]	Hunter Harvest[b]	Depredation Take[c]	WS' Total Take	WS % take of Total
2003	41,859	835	112	0.3%
2004	28,129	995	444	1.5%
2005	73,200	583	411	0.6%
2006	43,300	1,031	545	1.2%
2007	54,360	585	541	1.0%

The USFWS has also permitted take of Canada geese by entities besides WS through the issuance of depredation permits to alleviate damage or threats of damage. Table 5 shows permitted take authorized by the USFWS along with the actual take of geese reported to the USFWS by permittees, the number of goose eggs destroyed, and the number of nests destroyed.

Table 5 – Take of Canada geese in North Carolina permitted by the USFWS and the take reported under those depredation permits.

Year	Take Permitted	Take Reported	Eggs Destroyed	Nests Destroyed
2003	1,920	835	1,523	30
2004	3,065	995	1,683	30
2005	4,423	583	2,302	0
2006	4,107	1,031	1,287	56
2007	4,127	585	12	6

The EA concluded that WS Canada goose damage management activities in North Carolina would have no cumulative adverse affects on the populations of Canada geese in North Carolina or the Atlantic Flyway.

WS' lethal take of Canada geese was within the estimated level of take analyzed in the EA. WS' damage management activities were site specific, and although local populations of geese were reduced or dispersed, there was no probable adverse impact on statewide or Atlantic Flyway populations of geese from WS' activities. Program activities and their potential impact on Canada geese have not changed from those analyzed in the EA. Based upon the information provided above, WS' management actions will have no adverse affect on state or Atlantic Flyway resident or migratory goose populations. The effects of WS' activities on Canada goose populations are expected to remain insignificant.

Issue 2 - Effectiveness of Wildlife Damage Management

An issue often raised is the effectiveness of methods employed to resolve and prevent damage or threats to human safety associated with Canada geese. WS' evaluated the effectiveness of methods available under each of the alternatives in the EA. The analyses in the EA indicated the proposed action would allow for the most effective use of methods by allowing for the employment of those methods individually or in combination to achieve the effectiveness desired by the requestor. The proposed action in the EA addressed the integration of methods to reduce habituation, to increase the effectiveness of

individual methods, to maximize effectiveness collectively of methods, and to allow for the successful reduction or prevention of damage.

The other alternatives restrict the methods available for use which further reduces the effectiveness of individual methods and prevents the use of methods that could be effective in reducing or preventing damage. By allowing an integration of non-lethal and lethal methods under the proposed action, those methods most effective to prevent or reduce damage are available. The proposed action also allows for the adaption of methods to the damage situation where types of methods are employed but are not successful at reducing or preventing damage. For example, allowing for an adaptive integrated approach to managing damage provides opportunities to evaluate methods after employment to determine effectiveness and to employ additional methods if a reduction in damage is not adequate for the requestor.

The EA further indicates that the objective of all methods is to reduce damage or prevent damage from occurring. All methods addressed in the EA are intended to exclude geese from an area where damage is occurring or could occur, to disperse or remove geese causing damage, or to otherwise make the area where damage is occurring unattractive through modification of habitat. Therefore, effectiveness can be defined by the amount of time required to achieve the desired result and the duration for which the desired result is maintained once methods are no longer employed or maintained. The proposed action allows for the use of the widest range of methods to allow for the most effective methods to be employed to achieve the desired results in a timely manner and for the longest duration.

Technical assistance was provided in a timely manner to all requestors. Potential impacts on the effectiveness of wildlife damage management have not changed from those analyzed in the EA. Impacts of the program on this issue are expected to remain insignificant.

Issue 3 - Effects on Aesthetics

As analyzed in the EA, WS would employ methods when requested that would result in the dispersal, exclusion, or removal of individuals or small groups of geese to resolve damage and threats. In some instances where geese are dispersed or removed, the ability of interested persons to observe and enjoy those geese would likely decline temporarily. The presence of geese in areas where geese were dispersed will likely increase upon cessation of damage management activities.

Even the use of exclusionary devices can lead to the dispersal of geese if the resource being damaged was acting as an attractant. Thus, once the attractant has been removed or made unavailable, geese will likely disperse to other areas where resources are more vulnerable.

The use of lethal methods would result in temporary declines in local populations resulting from the removal of those geese responsible for causing damage that resulted in a request for assistance. WS' goal is to respond to requests for assistance and to manage only those geese responsible for the resulting damage. Therefore, the removal of geese would result in localized declines. However, the overall populations of those target species would be not be impacted. Breeding Bird Surveys continue to indicate that populations of resident Canada geese in North Carolina are increasing. Based on the localized decline in the presence of geese, the EA concluded the effects on aesthetics would be variable depending on the stakeholders' values towards wildlife. However, the ability to view and enjoy geese in North Carolina would still remain if a reasonable effort is made to locate geese outside the area in which damage management activities occurred.

Conflicts with Canada geese were reduced at each location that WS provided direct management assistance thereby improving the aesthetic values of affected properties. Program activities and methods

and their potential impacts on aesthetics have not changed from those analyzed in the EA. Impacts of the program on aesthetics are expected to remain insignificant.

Issue 4 - Humaneness and Animal Welfare Concerns of Methods Used by WS

As analyzed in the EA, humaneness, in part, appears to be a person's perception of harm or pain inflicted on an animal. People may perceive the humaneness of an action differently. The challenge in coping with this issue is how to achieve the least amount of animal suffering.

Some individuals believe any use of lethal methods to resolve damage associated with wildlife is inhumane because the resulting fate is the death of the animal. Others believe that certain lethal methods can lead to a humane death. Others believe most non-lethal methods of capturing wildlife to be humane because the animal is generally unharmed and alive. Still others believe that any disruption in the behavior of wildlife is inhumane. With the multitude of attitudes on the meaning of humaneness, the analyses must consider the most effective way to address damage and threats caused by wildlife in a humane manner. WS is challenged with conducting activities and employing methods that are perceived to be humane while assisting those persons requesting assistance to manage damage and threats associated with wildlife. The goal of WS is to use methods as humanely as possible to effectively resolve requests for assistance to reduce damage and threats to human safety. WS continues to evaluate methods and activities to minimize the potential pain and suffering of those methods when attempting to resolve requests for assistance.

As mentioned previously, some methods have been stereotyped as "humane" or "inhumane". However, many "humane" methods can be inhumane if not used appropriately. For instance, a cage trap is generally considered by most members of the public as "humane". Yet, without proper care, live-captured wildlife in a cage trap can be treated inhumanely if not attended to appropriately.

Therefore, WS' mission is to effectively address requests for assistance using methods in the most humane way possible that minimizes the stress and pain of the animal. WS' personnel are experienced and professional in their use of management methods and methods are applied as humanely as possible.

WS' personnel are experienced and professional in their use of management methods, and methods are applied as humanely as possible. The EA concluded that the methods used by WS to manage Canada goose damage are relatively humane, but that some persons will view some methods used as inhumane. Impacts of the program on humaneness and animal welfare are expected to remain insignificant.

Issue 5 - Effects on Non-target Wildlife Species Populations, Including Threatened and Endangered Species

The issue of non-target species effects, including effects on threatened and endangered species arises from the use of non-lethal and lethal methods identified in the alternatives. The use of non-lethal and lethal methods has the potential to inadvertently disperse, capture, or kill non-target wildlife. WS' minimization measures and SOPs are designed to reduce the effects of goose damage management activities on non-target species' populations. To reduce the risks of adverse affects to non-target wildlife, WS selects damage management methods that are as target-selective as possible or applies such methods in ways that reduces the likelihood of capturing non-target species. Before initiating management activities, WS also selects locations which are extensively used by the target species and employs baits or lures which are preferred by those species. Despite WS' best efforts to minimize non-target take during program activities, the potential for adverse affects to non-targets exists when applying both non-lethal and lethal methods to manage damage or reduce threats to safety.

Non-lethal methods have the potential to cause adverse affects on non-targets primarily through exclusion, harassment, and dispersal. Any exclusionary device erected to prevent access of target species also potentially excludes species that are not the primary reason the exclusion was erected. Therefore, non-target species excluded from areas may potentially be adversely impacted if the area excluded is large enough. The use of auditory and visual dispersal methods used to reduce damage or threats caused by target species are also likely to disperse non-targets in the immediate area the methods are employed. Therefore, non-targets may be dispersed from an area while employing non-lethal dispersal techniques. However, like target species, the potential impacts on non-target species are expected to be temporary with target and non-target species often returning after the cessation of dispersal methods.

The lethal take of non-targets from using those methods described in the EA is unlikely with take never reaching a magnitude that a negative impact on populations would occur. Any potential non-targets live-captured using non-lethal methods would be handled in such a manner as to ensure the survivability of the animal if released. The potential adverse affects associated with non-lethal methods are negligible and, in the case of exclusion and harassment methods, often temporary. The use of firearms is selective for target species since animals are identified prior to application; therefore no adverse impacts are anticipated from use of this method. The use of chemical methods, when used according to label directions, poses minimal hazards to non-target wildlife (USDA 1997).

While every precaution is taken to safeguard against taking non-targets during operational use of methods and techniques for resolving damage and reducing threats caused by wildlife, the use of such methods can result in the incidental take of unintended species. Those occurrences are minimal and should not affect the overall populations of any species. WS' take of non-target species during activities to reduce damage or threats to human safety caused by geese is expected to be extremely low to non-existent. WS will continue to monitor annually the take of non-target species to ensure program activities or methodologies used in goose damage management do not adversely impact non-targets. WS' activities are not likely to adversely affect the viability of any wildlife populations from damage management activities.

No non-target species of wildlife were taken by WS during direct goose management assistance from FY 2003 through FY 2007. No negative effects on non-target wildlife species populations or their habitats have been identified.

A review of T&E species listed by the USFWS showed that additional listings of T&E species in North Carolina have occurred since the completion of the EA in 2003. Those species listed since the completion of the EA include the American burying beetle (*Nicroporus americanus*), cahow (*Pterodroma cahow*), Eskimo curlew (*Numenius borealis*), brown pelican (*Pelecanus occidentalis*), tan riffleshell (*Epioblasma florentina walkeri*), smalltooth sawfish (*Pristis pectinata*), finback whale (*Balaenoptera physalus*), humpback whale (*Megaptera novaeangliae*), right whale (*balaena glacialis*), sperm whale (*Physeter catodon*), gray wolf (*Canis lupis*), and pondberry (*Lindera melissifolia*). Of those species listed since the completion of the EA, only the smalltooth sawfish, finback whale, humpback whale, right whale, sperm whale, and pondberry are listed as currently occurring in North Carolina. For those species not currently listed as occurring in North Carolina, WS' activities to manage damage associated with Canada geese will have no effect on those species. The smalltooth sawfish is a tropical marine and estuarine fish while the whale species are marine mammals. Based on the proposed action and methods available for use under the proposed action, WS' activities to manage damage associated with Canada geese will have no effect on those species. The recovery plan for pondberry identifies three known locations in North Carolina located on private property in Bladen and Sampson counties. As shown in Table 1, WS has not conducted goose damage management activities in those counties since the completion of the EA. If activities are to occur in those counties, WS' will contact the USFWS to identify locations of pondberry in those counties. WS' activities and the methods described in the EA are not those that would result in habit destruction or damage. Based on the absence of requests for goose damage management in those

counties and the methods currently available for use to manage goose damage, WS' activities will have no effect on pondberry in North Carolina.

Program activities and their potential impacts on non-target wildlife species, including T&E species have not changed from those analyzed in the EA. Impacts on non-target wildlife species, including threatened and endangered species populations are expected to remain insignificant.

VII. Alternatives Analyzed in Detail

The EA contains a detailed description and discussion of the alternatives and the effects of the alternatives on the issues identified (USDA 2003). Appendix B of the EA provides a description of the methods that could be used or recommended by WS under each of the alternatives. WS has reviewed the alternatives analyzed and determined the analyses in the EA are still appropriate for those alternatives.

The following four alternatives were developed to respond to the issues:

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

VIII. Alternatives Considered but not Analyzed in Detail

The use of non-lethal methods before lethal methods was also considered as an alternative but was not analyzed in detail (USDA 2003). A complete evaluation and discussion of the alternative not considered in detail can be found in the EA along with the rationale. WS has reviewed the alternative analyzed but not in detail and determined the analyses in the EA are still appropriate for those alternatives considered.

IX. Canada Goose Damage Management Methods

Program activities and methods have not changed from those analyzed in the EA. A description of the Canada goose damage management methods that could be used or recommended by WS are provided in Appendix B of the EA (USDA 2003) and Chapter 2 (pages 1-9) ("*Management Techniques*") of the USFWS Canada Goose FEIS (USFWS 2005).

Since the completion of the EA, Nicarbazin (NCZ) (OvaControl–G™) has been evaluated as a chemical reproductive inhibitor that can be used to reduce Canada goose egg production and viability. NCZ is a restricted use pesticide registered by the EPA for use at site specific locations in highly populated urban areas, such as office parks, recreational parks, airports, golf courses, schools, hospitals, restaurants, and industrial sites. To be effective, NCZ must be fed daily and consistently consumed by geese throughout the nesting season which can last from eight to ten weeks.

NCZ is not currently registered for use in North Carolina. If and when this chemical method becomes available for use, and prior to WS' operational use of this method, WS will review and update the EA for NEPA compliance, as appropriate.

X. Environmental Consequences

WS has reviewed the EA and has determined that the environmental impacts on the quality of the human environment from activities conducted pursuant to the EA will continue to be insignificant, and that no substantive changes in the analysis are necessary at this time. From FY 2003 through FY 2007, the level

of WS' annual take of Canada geese in North Carolina falls within the scope of analysis provided in the EA. Any changes in the scope, methods, or a change in environmental rules or regulations may trigger additional analyses.

XI. Decision and Rationale

I have carefully reviewed the EA, the comments received during the public involvement process, the 2003 Decision/FONSI, and the information provided in this summary and new Decision document. I find the proposed program 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 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 that would warrant the development of an EIS. Therefore, the analysis in the EA remains valid and does not warrant the completion of an EIS.

Based on the EA, the issues identified are best addressed by continuing Alternative 1 (Proposed Action/No Action) and applying the associated mitigation measures 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, and/or non-target species, including threatened and endangered species; (2) it offers the greatest chance at maximizing effectiveness and benefits to resource owners and managers while minimizing cumulative impacts on the quality of the human environment 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 goose damage management activities, that affect the natural or human environment, or from the issuance of new environmental regulations.

The rationale for my 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 will only be conducted by WS at the request of landowners/managers, 2) management actions are consistent with applicable laws, regulations, policies and orders, and 3) no adverse impacts to the environment were identified in the analysis. As a part of this Decision, the WS program in North Carolina will continue to provide effective and practical technical assistance and direct management techniques that reduce damage.

The WS program in North Carolina will implement the proposed action in compliance with all applicable standard operating procedures described in Chapter 3 of the EA. This new Decision will take effect 30 days after publication of a legal notice making the EA, the 2002 Decision/FONSI, and this Decision available to the public for review and comment if no substantive issues or alternatives are identified during the public comment period. New issues or alternatives raised after publication of public notices will be fully considered to determine whether the EA and this Decision should be revisited and, if appropriate, revised, or if a Notice of Intent to prepare an EIS should be issued.

FINDING OF NO SIGNIFICANT IMPACT

The analysis in the EA, the 2003 Decision/FONSI, and this Decision indicates that there will not be a significant impact, individually or cumulatively, on the quality of the human environment as a result of this proposed action. I agree with this conclusion and therefore find that an EIS need not be prepared. This determination is based on the following factors:

1. Canada goose damage management, as conducted by WS in North Carolina, is not regional or national in scope.

2. The proposed action would pose minimal risk to public health and safety. Risks to the public from WS' methods were determined to be low in a formal risk assessment (USDA 1997).

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. Built-in mitigation measures that are part of WS' standard operating procedures and adherence to laws and regulations will 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 wildlife damage management, this action is not highly controversial in terms of size, nature, or effect.

5. Based on the analysis documented in the EA, the 2003 Decision/FONSI, 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.

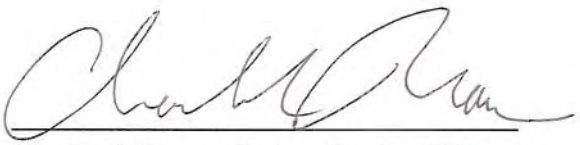
7. No significant cumulative effects were identified through the assessment in the EA, the 2003 Decision/FONSI, and this new Decision. The number of Canada geese killed by WS, when added to the total known take of these species, would fall within population management objectives supported by the North Carolina Wildlife Resources Commission and the U.S. Fish and Wildlife Service. The EA discussed cumulative effects of WS on target and non-target species populations and concluded that such impacts were not significant for this or other anticipated actions to be implemented or planned within the State.

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 has determined that the proposed project would not adversely affect any federal or North Carolina State listed threatened or endangered species.

10. The proposed action would be in compliance with all federal, state, and local laws.

For additional information concerning this Decision, contact North Carolina Wildlife Services Office, 6213-E Angus Drive, Raleigh, NC 27617.



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

9/18/03

Date

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