

**UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
WILDLIFE SERVICES**

ENVIRONMENTAL ASSESSMENT

**FOR REDUCING CONFLICTS DUE TO LARGE POPULATIONS OF GULLS
AT THE [REDACTED]
[REDACTED], NEW HAMPSHIRE**

Prepared by: John McConnell and Marsha Barden
59 Chenell Drive, Suite 7
Concord, NH 03301-8548

Reviewed by: Dennis Slate
State Director
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PURPOSE AND NEED

[REDACTED] located on [REDACTED], New Hampshire (Fig. 2). [REDACTED] has requested assistance from WS with problems caused by large populations of herring gulls (*Larus argentatus*), great black-backed gulls (*Larus marinus*) and, to a lesser degree, ring-billed gulls (*Larus delawarensis*) at the [REDACTED]. Concerns include:

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- 3) operator safety and effectiveness when large numbers of gulls actively feed on the working face obstructing terrain topography, materials, obstacles and hindering waste placement and compaction activities;
- 4) deposition of food items, other landfill refuse, and fecal material on private residential properties as well as municipal structures adjacent to or in the vicinity of the landfill;
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- 6) increased cost of maintaining and replacing [REDACTED] and customer equipment damaged by corrosive gull droppings;
- 7) the ability to proactively address potential future conflicts with landfill abutters as the landfill expands and gull population numbers continue to increase and
- 8) the ability to comply with the New Hampshire Department of Environmental Services Solid Waste Rule: Part Env-Wm 2506.03 requiring the control of birds as a potential disease vector.

The [REDACTED] encompasses approximately [REDACTED] acres, typically operates six days a week and typically processes 3,000 tons of municipal solid waste (MSW) material daily. Material is initially deposited by trucks with up to 25 ton loads at one or more “working faces”. Waste placement and compaction continue throughout the day until all active working faces are covered with tarps or a mixture of wood chips and soil. Habitat adjacent to the constructed sideslopes and working face of the active [REDACTED] landfill is comprised of several areas that have been final capped and stabilized with a vegetative cover and low lying continuous tracts of level sand; essential for the future development of additional landfill footprints and MSW disposal activity. Water accumulates at low lying areas throughout the facility. Herring, great black-backed and, to a lesser degree, ring-billed gulls concentrate in large numbers at the [REDACTED]. Gulls are attracted to the facility as a feeding and loafing area. Factors contributing to the large population of gulls at the [REDACTED] include: 1) an easily accessible and substantial daily food source, 2) proximity to the seacoast, ([REDACTED]) and the nearby [REDACTED], New Hampshire (a gull breeding and wintering site), 3) availability of fresh standing water (on-site storm water basins, rivers and [REDACTED] municipal waste water treatment plant lagoons) and 4) numerous suitable loafing sites on capped or future landfill areas. Gulls are

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attracted to the working face to feed and use the surrounding uncapped landfill sideslopes as loafing areas. Photographic indexing surveys conducted by WS at the facility during the winter of 1998 indicate that gull population numbers typically peak between November and March with daily visitation documented between 6,000 to 8,000. Gull population estimates for this same time period are between 25,000 to 30,000 (█████ pers. Comm.). Due to gull population turnover, gulls in flight or using other portions of the landfill and those arriving throughout the day; a more reliable estimate of daily gull visitation is derived by using a correction factor of 5.0 which accounts for gull population turnover due to gulls flying to and from the landfill during each operating day (Belant 1993). Determining total daily visitation may be obtained by multiplying the number of gulls seen by 5.0, which indicates that gull visitation is actually several times higher than the numbers observed by WS. A conservative total of 30,000 (5.0 x 6,000) gulls would be a more reliable index of daily gull visitation to the facility which is slightly greater than █████ estimates and extrapolates from WS photographic indexing totals.

OBJECTIVE:

To address conflicts associated with large populations of gulls at the █████. █████ primary management objective would be zero gull visitation to the working face. Meeting this objective would reduce maintenance and replacement costs associated with the accumulation of gull droppings on machinery and property; reduce human health and safety threats associated with gulls on active working faces; control potential disease vectors and improve relations with neighboring property owners. The long-term recommendation would be to conduct continuous integrated harassment activities annually; with support of habitat management, exclusion and limited take.

BACKGROUND:

Large numbers of gulls are attracted to and use landfills as feeding and loafing areas throughout North America. In the northeastern United States, landfills often serve as foraging and loafing areas for gulls (*Larus sp.*) throughout the year, while attracting larger populations of gulls during migration periods (Bruleigh 1998). Concentrations of gulls at landfills usually occur in close proximity to people and often result in complex conflicts. Gulls that visit landfills may loaf and nest on nearby rooftops, causing health concerns, aesthetic distractions and structural damage to buildings and equipment. They may contaminate public water supplies if they concentrate on municipal ponds or lakes (Hatch 1996). Gulls can cause damage to some agricultural crops. They may pose health and safety risks to personnel involved in landfill operations. Gulls can pose significant hazards to air traffic when they occur in large numbers near airports (Cleary et al. 1996). Concentrations of gulls often impact the productivity and survivorship of rare or endangered colonial species such as terns (USDI 1996).

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In cooperation with [REDACTED], WS initiated an intensive integrated gull harassment pilot project at the [REDACTED] on September 13, 1999. This one time pilot project was conducted to determine if a longer-term project could be successful in meeting project goals. If a longer-term project was conducted, an Environmental Assessment (EA) and public notification process would be initiated by WS. The non-lethal harassment methods include: pyrotechnics, propane cannons and distress calls. To emphasize the non-lethal component of this harassment project, only a limited number of gulls have been taken to date (Fig. 1). The pilot project was initiated in early fall when gull numbers are typically lower to reduce the potential immediate impact on landfill abutters. Preliminary assessment of the project has resulted in WMNH requesting Wildlife Services longer-term involvement in the project.

Gulls attempting to use the landfill as feeding and loafing area were harassed five days a week by WS and [REDACTED] employees for the reporting period of Sept. 13-Nov. 5, 1999. Harassment efforts were initiated at the facility prior to gulls daily feeding activities. Pyrotechnic usage and number of gulls taken were recorded daily. The total number of pyrotechnics fired at the

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3) On March 12, 1992, Dennis Slate communicated with [REDACTED] by letter, reiterating the recommendations for overhead wires for building rooftops, continuing to cover the waste with tarps at the end of the day, and using pyrotechnics with limited take under the conditions of a FWS permit to harass gulls from accessing the working face. A USFWS depredation permit application was enclosed in the correspondence.

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Alternative 1. No New Action:

The present methods employed by ██████ to reduce gull visitation to the ██████ are: pyrotechnics, propane cannons, distress calls, habitat management and the limited take of gulls to enhance the use of pyrotechnics. WS would continue to assist ██████ with obtaining a Migratory Bird Depredation Permit. Under this alternative no new actions, lethal or non-lethal would be employed by WS to reduce concentrations of gulls or attractiveness of the ██████ ██████ to gulls. If WS does nothing, ██████ personnel will likely continue to conduct gull harassment activities intermittently as time from their other duties permits. Because personnel have other duties that prevent them from making a full-time commitment to deterring gulls, ██████ management has found this approach to be insufficient in addressing the gull problem. Gull harassment activities would not be persistent or effective enough to deter large numbers of gulls from feeding and loafing at the facility. Landfill equipment operators and clients would gain no relief from the health and safety problems associated with the large numbers of gulls. Equipment maintenance costs would continue to be incurred by ██████ and other persons using the facility. Potential disease vectors would not be controlled. As the landfill increases in elevation, conditions associated with increasing gull populations may become more visible in the surrounding community.

Alternative 2. Non -Lethal:

Habitat Modification/Management. Habitat modification to discourage gull use of the ██████ facility includes reducing or eliminating food, nesting and loafing sites and water. ██████ provides both feeding and loafing sites and some areas of temporary fresh water. ██████ would be responsible for continuing and completing habitat modifications. Current mowing regimes allow for increased grass height to discourage gulls from loafing at specific areas. However, vegetation has to be maintained in grass-herbaceous state and not allowed to succeed to shrubby vegetation because any significant root penetration may adversely affect the landfill's final cover system. Vegetation management conducted by ██████ has not significantly reduced gull visitation to the facility. A modern landfill provides large areas of open sand and grassy hills which are ideal loafing areas for gulls. Where feasible, filling or draining ponds or installing overhead wires would make them less attractive to gulls. ██████ would be responsible for continuing landfill cover activities to reduce food availability. However, because the facility requires access throughout the day, food sources cannot be covered until the end of the day. Gulls must be prevented from reaching the food source by additional methods throughout the day. Vegetation management activities, a practical tool in certain situations, has not reduced gull visitation to this active landfill.

Exclusion. Gulls may be excluded from areas with overhead wires installed in a variety of configurations at differing heights because gulls require considerable space to land. ██████ would be responsible for installing overhead wire, plastic netting or monofilament wire over the

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Habitat Modification/Management. Habitat modification to discourage gull use of the ██████ facility includes reducing or eliminating food, nesting and loafing sites and water. ██████ provides both feeding and loafing sites and some areas of temporary fresh water. ██████ would be responsible for continuing and completing habitat modifications. Current mowing regimes allow for increased grass height to discourage gulls from loafing at specific areas. However, vegetation has to be maintained in grass-herbaceous state and not allowed to succeed to shrubby vegetation because any significant root penetration may adversely affect the landfill's final cover system. Vegetation management conducted by ██████ has not significantly reduced gull visitation to the facility. A modern landfill provides large areas of open sand and grassy hills which are ideal loafing areas for gulls. Where feasible, filling or draining ponds or installing overhead wires would make them less attractive to gulls. ██████ would be responsible for continuing landfill cover activities to reduce food availability. However, because the facility requires access throughout the day, food sources cannot be covered until the end of the day. Gulls must be prevented from reaching the food source by additional methods throughout the day. Vegetation management activities, a practical tool in certain situations, has not reduced gull visitation to this active landfill.

Exclusion. Gulls may be excluded from areas with overhead wires installed in a variety of configurations at differing heights because gulls require considerable space to land. ██████ would be responsible for installing overhead wire, plastic netting or monofilament wire over the

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Repellents. Methyl anthranilate (ReJeX-iTÔ TP-40 or AP-50) has shown some efficacy in repelling gulls from shallow pools of water used for loafing. This substance is a food additive (grape flavoring) that is safe for human consumption and is formulated to repel birds. [REDACTED] would be responsible for purchasing and applying the material. [REDACTED] has employees certified to apply pesticides with the New Hampshire Pesticide Control Board. WS would provide a list of vendors to [REDACTED]. Methyl anthranilate may have some continued applicability as part of an integrated program at TREE. If used, EPA label instructions would be strictly followed. There would be no adverse impacts on the environment. The product's high price would be mitigated by selective use as only one part of an integrated control program. [REDACTED] has previously used methyl anthranilate at the [REDACTED] facility. Applications have been ineffective in reducing gull visitation to the facility. The volume of waste and the daily rate of deposition prevent the use of methyl anthranilate until the end of the day. Taste and odor repellents cannot be implemented to control gull access to the active working faces during working hours. This method would be most effectively used during covering of the working face at the end of the day.

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Harassment (Frightening). The use of frightening devices can be extremely effective in reducing bird concentrations. Harassment activities would include the use of various auditory harassment methods (pyrotechnics) including: screamers, bangers, shell crackers and other firecracker-like methods, and propane cannons to reduce gull visitation to the landfill. The keys to a successful bird harassment program are timing, persistence and diversity of devices. Gulls are more apt to disperse from a feeding or loafing area they have occupied for only a brief period than one they have used for a lengthy period.

Pyrotechnic devices (screamers and bangers) are typically discharged from a 15 mm pistol and ignited by a blasting cap. Various types of noise are produced as the pyrotechnic reaches between 75 to 200 feet in the air. The 12-gauge exploding shells (shell crackers) are discharged from a shotgun and produce an aerial explosion. When properly discharged, these methods cause negligible impacts except for the desired harassment of gulls and perhaps turkey vultures, crows, starlings, grackles or other birds commonly attracted to landfills. Pyrotechnics and propane cannons generally produce minimal noise impacts when used in the landfill environment. ██████████ and WS personnel would be responsible for conducting pyrotechnic harassment activities. WS would train ██████████ gull control employees in gull harassment methods and strategies and the proper use of various pyrotechnics and safety equipment (ear and eye protection). ██████████ would provide pyrotechnics. Fire hazards would be accounted for when using pyrotechnics and propane cannons. Fire extinguishers would be kept at the site where pyrotechnics are being discharged. Harassment sites would be selected a safe distance from the working face and also provide maximum auditory accessibility to gulls attempting to access the working face. No State or Federal permits are required to conduct auditory or visual bird harassment activities.

Remotely fired LP gas exploders (propane cannons) are a preferred method to reduce staff-time and frighten birds. They may be moved and fired on command to increase their effectiveness. ██████████ would be responsible for providing the LP gas exploders. WS recommends remotely-fired devices over-time fired cannons to reduce the chance of gulls acclimating to predictable firing schedules. However, time-fired cannons could also be used to augment other methods. WS has provided ██████████ with information regarding the potential purchase and implementation of a remotely detonated propane cannon.

Gull distress tapes are recorded vocalizations of gulls in stressful situations. The level of noise can be regulated by volume controls on speakers attached to the tape player. Distress tapes may

cause an annoyance to persons close to speakers, but otherwise produce no impacts except possibly helping to disperse gulls. ██████████ would be responsible for providing recorders and amplifying speakers. WS would provide a list of vendors to ██████████. Distress calls currently in use at ██████████ are insufficiently amplified to be effective in deterring gulls. High quality, mobile amplifiers would increase effectiveness of this tool.

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Remotely fired LP gas exploders (propane cannons) are a preferred method to reduce staff-time and frighten birds. They may be moved and fired on command to increase their effectiveness. ██████████ would be responsible for providing the LP gas exploders. WS recommends remotely-fired devices over-time fired cannons to reduce the chance of gulls acclimating to predictable firing schedules. However, time-fired cannons could also be used to augment other methods. WS has provided ██████████ with information regarding the potential purchase and implementation of a remotely detonated propane cannon.

Gull distress tapes are recorded vocalizations of gulls in stressful situations. The level of noise can be regulated by volume controls on speakers attached to the tape player. Distress tapes may

cause an annoyance to persons close to speakers, but otherwise produce no impacts except possibly helping to disperse gulls. ██████████ would be responsible for providing recorders and amplifying speakers. WS would provide a list of vendors to ██████████. Distress calls currently in use at ██████████ are insufficiently amplified to be effective in deterring gulls. High quality, mobile amplifiers would increase effectiveness of this tool.

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Oversized human effigies placed at strategically visible locations can enhance harassment efforts. The use of effigies presents no impact other than enhancing the overall effectiveness of an integrated gull harassment program. WS would be responsible for construction, placement and repair of effigies. Because startle responses eventually diminish (often within days or a few weeks) as a function of several factors, including weather conditions, bird numbers and the availability of nearby unprotected foods (Feare et al. 1986), effigies would be moved frequently and paired with propane cannons when possible.

Waste Management has been conducting harassment activities at the [REDACTED] using pyrotechnics, propane cannons and distress calls. Large quantities of pyrotechnics have been discharged annually at the facility. However, current and previous harassment activities, conducted on a part-time basis, have been less than successful and gull populations and the associated conflicts continue to increase at [REDACTED]. Harassment activities have not been conducted persistently on an ongoing basis, lack incorporation of adequately diverse methods and have been initiated after large populations of gulls have habituated to the facility as a source of food and a loafing area. Repellency is variable, and depends on the persistence and skill of the operator, the attractiveness of the crop, the numbers of birds present and the availability of alternative food sources (e.g. Mott 1978; Mott and Timbrook 1986, Salmon and Conte 1981).

Many factors have contributed to the lack of success of the harassment activities previously conducted by [REDACTED]. Harassment activities have been conducted only intermittently by landfill personnel as time from their other duties permits. Without a persistent pyrotechnic program established, propane cannons have proven ineffective and have not augmented harassment activities. Cannons have not always been used when needed or moved frequently enough. The size of the working face and distant and numerous locations of suitable loafing areas has limited the utility and effectiveness of gull distress calls. The initiation (timing) of harassment activities by [REDACTED] has been after gull numbers have increased and habituated to [REDACTED] as a feeding and loafing area. Also, the amount of MSW managed daily at the facility has proven adequate to support a large population (at times 30,000) of gulls on a daily basis. Gulls have habituated to the intermittent pyrotechnic program and their numbers have increased to intolerable levels. Effigies have not been incorporated into the harassment program. In summary: a persistent, long-term, well timed and efficient integrated harassment program has not been successfully implemented by [REDACTED]. The intermittent harassment activities conducted by [REDACTED] have been insufficient to overshadow the attractiveness of the facility to gulls as a feeding and loafing area.

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Alternative 3. Local Gull Population Suppression:

Shooting. Shooting gulls can be a highly selective and useful form of control under certain conditions. Killing gulls with emphasis on local population suppression could provide short-term relief from gull conflicts at the [REDACTED]. [REDACTED] would conduct shooting activities under

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Shooting is not a very successful method for reducing large colonies because of the relatively small number of gulls that can be shot (Soloman 1994). Given that the gulls at ██████ are also part of a large transient regional gull population, this intensive effort would have to continue for an extended period of time (probably almost continuously) each year. ██████ has conducted limited shooting activities within the conditions of their permits at the ██████ facility since 1994 to enhance the effectiveness of gull pyrotechnic harassment efforts. Sporadic shooting by ██████ has not been well coordinated with the persistent usage of other harassment activities (pyrotechnics). Consequently, ██████ shooting efforts have not reduced gull visitation to the landfill. Attempts to suppress the local population at the landfill would in all likelihood elicit a vocal, negative response from some groups and individuals opposed to this approach, given that the recent taking of gulls has had limited or no success in resolving conflicts.

Alternative 4. Integrated Management:

The preferred alternative will heavily emphasize use of integrated non-lethal harassment, enclosure, when practical, and habitat modification. Limited take of gulls would occur to enhance and maintain the integrity of the emphasized non-lethal strategy. If gulls have to be taken, they would be removed under a strictly adhered-to shooting protocol to insure maximum benefit to the overall control strategy designed to meet project objectives. The objectives of this project are to: reduce safety threats to humans, reduce human health threats by controlling potential disease vectors, reduce property and equipment damage, reduce maintenance costs and improve relations with neighboring property owners. The long-term recommendation would be to conduct integrated harassment activities annually, initiating harassment in September and continuing through April. Effective harassment programs are typically ongoing and persistent. The success of relocating gull nesting colonies in New York required 3 continuous years using non-lethal methods (Forbes, 1995).

Under this alternative, the use of pyrotechnics (screamers, bangers and shellcrackers), propane cannons and effigies along with selective removal of a limited number of gulls with 12 gauge steel shot to enhance noise harassment and effigies would comprise the primary harassment methods employed by WS and ██████. To enhance the effectiveness of the harassment program selective removal of a limited number of habituated or decoy gulls may be necessary. "Repellency" is enhanced when shooting is implemented concurrently, or when other measures are taken to slow

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the authority and guidelines of a USFWS Migratory Bird Depredation Permit issued to them. WS would remove gulls as agents of the ██████ permit or obtain their own USFWS Migratory Bird Depredation Permit. WS would assist ██████ with acquiring and renewing the permit annually. WS would provide bird identification training for landfill gull control personnel to ensure only species identified on the permit are removed. WS would also provide landfill personnel with training in gun safety and effective shooting. Only steel shot would be used and carcasses would be disposed of according to permit conditions.

Shooting is not a very successful method for reducing large colonies because of the relatively small number of gulls that can be shot (Soloman 1994). Given that the gulls at ██████ are also part of a large transient regional gull population, this intensive effort would have to continue for an extended period of time (probably almost continuously) each year. ██████ has conducted limited shooting activities within the conditions of their permits at the ██████ facility since 1994 to enhance the effectiveness of gull pyrotechnic harassment efforts. Sporadic shooting by ██████ has not been well coordinated with the persistent usage of other harassment activities (pyrotechnics). Consequently, ██████ shooting efforts have not reduced gull visitation to the landfill. Attempts to suppress the local population at the landfill would in all likelihood elicit a vocal, negative response from some groups and individuals opposed to this approach, given that the recent taking of gulls has had limited or no success in resolving conflicts.

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Additional secondary methods employed under this alternative to augment harassment activities may include distress calls at strategic locations, overhead wires, habitat management, Avitrol® (requires FWS and State permits) and methyl anthranilate repellents. Methyl anthranilate has been used at ██████, but to date with limited effectiveness. WS would advise ██████ on locations where methyl anthranilate might be used most cost effectively. ██████ or WS employees with current New Hampshire Certified Pesticide Applicators licenses would be responsible for applying repellents. EPA label instructions would be strictly adhered to. WS would be responsible for acquiring the necessary State or Federal permits. Overhead wires (or lines) may be installed above water or buildings to exclude gulls from certain loafing areas. Impacts to smaller, agile birds would be negligible. WS would consult with the USFWS regarding potential “May Affect” status for any Federal endangered species. ██████ would continue to manage vegetation growth on completed phases of the landfill to exclude gulls from these areas.

ENVIRONMENTAL CONSEQUENCES

The individual and cumulative impacts relative to the biological, sociocultural, physical and economic environments are discussed under each alternative presented in this section. Issues evaluated and discussed under each alternative include potential impacts to: target, non-target and threatened and endangered species, landfill abutters, human health and safety, water, the landfill and other persons directly using the facility. A summary comparing the impacts under each alternative is presented in Table 2.

Issues and Concerns

The following issues and concerns have been considered under all alternatives and are presented here to reduce redundancy. In some cases, actions involving removal of wildlife from residential areas may distress local residents who have developed affectionate bonds with individuals through feeding and observing them. WS is aware of this human dimension, recognizes that gulls may have aesthetic value and has acknowledged this possibility in its decision making process and will ensure animals are removed humanely only through approved methods.

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WS recognizes that herring, great black-backed and ring-billed gulls have aesthetic value. The actions taken under this EA would not noticeably reduce the ability of citizens to observe herring, great black-backed and ring-billed gulls in their natural environments.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations requires Federal agencies to analyze disproportionately high and adverse environmental effects of proposed actions on minority and low-income

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The following issues and concerns have been considered under all alternatives and are presented here to reduce redundancy. In some cases, actions involving removal of wildlife from residential areas may distress local residents who have developed affectionate bonds with individuals through feeding and observing them. WS is aware of this human dimension, recognizes that gulls may have aesthetic value and has acknowledged this possibility in its decision making process and will ensure animals are removed humanely only through approved methods.

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WS recognizes that herring, great black-backed and ring-billed gulls have aesthetic value. The actions taken under this EA would not noticeably reduce the ability of citizens to observe herring, great black-backed and ring-billed gulls in their natural environments.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations requires Federal agencies to analyze disproportionately high and adverse environmental effects of proposed actions on minority and low-income

documented in a timely fashion. Over a six year cooperative relationship WS has assisted ██████ in reducing wildlife hazards and attractants.

Additional secondary methods employed under this alternative to augment harassment activities may include distress calls at strategic locations, overhead wires, habitat management, Avitrol® (requires FWS and State permits) and methyl anthranilate repellents. Methyl anthranilate has been used at ██████, but to date with limited effectiveness. WS would advise ██████ on locations where methyl anthranilate might be used most cost effectively. ██████ or WS employees with current New Hampshire Certified Pesticide Applicators licenses would be responsible for applying repellents. EPA label instructions would be strictly adhered to. WS would be responsible for acquiring the necessary State or Federal permits. Overhead wires (or lines) may be installed above water or buildings to exclude gulls from certain loafing areas. Impacts to smaller, agile birds would be negligible. WS would consult with the USFWS regarding potential “May Affect” status for any Federal endangered species. ██████ would continue to manage vegetation growth on completed phases of the landfill to exclude gulls from these areas.

ENVIRONMENTAL CONSEQUENCES

The individual and cumulative impacts relative to the biological, sociocultural, physical and economic environments are discussed under each alternative presented in this section. Issues evaluated and discussed under each alternative include potential impacts to: target, non-target and threatened and endangered species, landfill abutters, human health and safety, water, the landfill and other persons directly using the facility. A summary comparing the impacts under each alternative is presented in Table 2.

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populations. WS has analyzed the effects of the proposed action and determined that implementation of the preferred alternative would not have adverse human health or environmental impacts on low-income or minority populations.

Alternative 1. No New Action:

This alternative would have no effect on gull populations and associated problems at the [REDACTED], as indicated by the history of the site. Gull harassment activities would not be persistent or effective enough to reduce large numbers of gulls from feeding and loafing at the facility. Under this alternative reported gull population totals have increased from approximately 1,000 in 1991 to approximately 30,000 in 1998. [REDACTED], aware of the increasing health and safety hazards to landfill personnel and clients, increasing equipment maintenance and repair costs, regulatory requirements to control birds as potential disease vectors, to reduce storm water pollution impacts due to potential contamination from gull droppings and a desire to maintain positive relations with neighboring property owners has found this alternative unacceptable. Under this alternative there are potential short and long-term negative human health and safety, equipment costs and neighbor relation impacts. The potential exists for increased long-term impacts related to fecal contamination of standing water on the [REDACTED] facility. A potential for fecal contamination of local water supplies would remain. Potential disease vectors would not be controlled. Equipment maintenance costs would continue to be incurred by [REDACTED] and other persons using the facility. As the landfill increases in elevation, conditions associated with increasing gull populations may become more visible in the surrounding community.

Rapid increases in herring and great black-backed gull populations and their potential adverse effects on other seabird populations became apparent in Maine by 1920 (Norton 1924). More recently, this problem has moved southward along the Atlantic Coast. During the 1930's fewer than 100 pairs of these gulls were nesting in Massachusetts. However, by the mid-1980's, the population was estimated at nearly 50,000 pairs (Blodget 1988). During the period 1976-1990, the nesting population of ring-billed gulls in the Canadian portion of the lower Great Lakes system increased from almost 56,000 pairs to some 283,000 pairs. This population increase may be associated with the apparent "urbanization" of gulls.

This alternative would have no negative cumulative impact on local or regional gull populations. If [REDACTED] is an important energy subsidy, local and regional gull populations may continue to

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increase, as will potential conflicts associated with large concentrations of gulls. Negative impacts to local and regional threatened and endangered species may be expected to continue or perhaps increase as interspecific competition for nesting space and gull predation remain high.

Alternative 2. Non-Lethal:

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Alternative 2. Non-Lethal:

Habitat Modification/Management. There are several diverse loafing areas and water attractants at various locations at [REDACTED] so that grass management and removing water sources would have only minimal effect on gull visitation and use at the landfill. Completed cells or capped landfills are typically earthen or grass covered surfaces. Changing these components of landfill operations would be very costly and could produce other unknown and undesirable effects. For example, gulls may utilize adjacent areas off site as loafing areas.

The effect of this alternative would be to deter gulls from desired loafing areas. Continuous landfill construction activities, size of the multiple working faces, rate of client visitation and distribution of loafing areas would make this a costly alternative producing only a minimal desired effect of dispersing gulls.

Repellents. Use of Methyl anthranilate (ReJeX-iTÔ TP-40 or AP-50) could reduce gull visitation to treated areas and could have some continued applicability in an integrated program at [REDACTED]. This pesticide is a food additive (grape flavoring), safe for human consumption, and is formulated to repel birds. If used, EPA label instructions would be strictly followed. There would be no adverse impacts on the environment. The product has been previously used with limited effect. The adverse economic impact of the product's high price would be mitigated by its selective use as one part of a diverse control program.

Avitrol® has been used at some landfills (e.g. [REDACTED] in Florida) as a part of an integrated approach to frighten gulls (Constantin 1995). Given its history at some other landfills, it should be considered as a potential method to effectively augment other harassment methods. Avitrol® (25% concentrate, EPA Reg. No. 11649-10) is generally lethal to the few gulls that consume treated bread baits, and the adverse reaction to the active ingredient 4-Aminopyridine frightens the flock from the treatment site. Use of Avitrol® would require a FWS permit and State pesticide permit. It can only be applied by certified applicators such as WS employees or some private sector pest control operators. All EPA label instructions would be strictly followed to prevent impacts to non-target species.

Harassment (Noise & Visual Frightening). This approach entails a long-term, full-time, aggressive, integrated control program of non-lethal harassment. The positive effect of this alternative could be to temporarily reduce gull visitation to the working faces, prevent gull population numbers from increasing and reduce various problems associated with large populations of gulls. Adverse effects of this alternative include: gull habituation to pyrotechnic

17

and visual deterrents resulting in increased usage of pyrotechnics and greater cost to the program. Reducing gull visitation to the facility over the long-term may not be accomplished through this alternative as gulls will habituate to harassment efforts over time.

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Harassment (Noise & Visual Frightening). This approach entails a long-term, full-time, aggressive, integrated control program of non-lethal harassment. The positive effect of this alternative could be to temporarily reduce gull visitation to the working faces, prevent gull population numbers from increasing and reduce various problems associated with large populations of gulls. Adverse effects of this alternative include: gull habituation to pyrotechnic

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Repellents. Use of Methyl anthranilate (ReJeX-iTÔ TP-40 or AP-50) could reduce gull visitation to treated areas and could have some continued applicability in an integrated program at [REDACTED]. This pesticide is a food additive (grape flavoring), safe for human consumption, and is formulated to repel birds. If used, EPA label instructions would be strictly followed. There would be no adverse impacts on the environment. The product has been previously used with limited effect. The adverse economic impact of the product's high price would be mitigated by its selective use as one part of a diverse control program.

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Harassment (Noise & Visual Frightening). This approach entails a long-term, full-time, aggressive, integrated control program of non-lethal harassment. The positive effect of this alternative could be to temporarily reduce gull visitation to the working faces, prevent gull population numbers from increasing and reduce various problems associated with large populations of gulls. Adverse effects of this alternative include: gull habituation to pyrotechnic

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The effect of this alternative would be to deter gulls from desired loafing areas. Continuous landfill construction activities, size of the multiple working faces, rate of client visitation and distribution of loafing areas would make this a costly alternative producing only a minimal desired effect of dispersing gulls.

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Habitat Modification/Management. There are several diverse loafing areas and water attractants at various locations at [REDACTED] so that grass management and removing water sources would have only minimal effect on gull visitation and use at the landfill. Completed cells or capped landfills are typically earthen or grass covered surfaces. Changing these components of landfill operations would be very costly and could produce other unknown and undesirable effects. For example, gulls may utilize adjacent areas off site as loafing areas.

The effect of this alternative would be to deter gulls from desired loafing areas. Continuous landfill construction activities, size of the multiple working faces, rate of client visitation and distribution of loafing areas would make this a costly alternative producing only a minimal desired effect of dispersing gulls.

Repellents. Use of Methyl anthranilate (ReJeX-iTÔ TP-40 or AP-50) could reduce gull visitation to treated areas and could have some continued applicability in an integrated program at [REDACTED]. This pesticide is a food additive (grape flavoring), safe for human consumption, and is formulated to repel birds. If used, EPA label instructions would be strictly followed. There would be no adverse impacts on the environment. The product has been previously used with limited effect. The adverse economic impact of the product's high price would be mitigated by its selective use as one part of a diverse control program.

Avitrol® has been used at some landfills (e.g. [REDACTED] in Florida) as a part of an integrated approach to frighten gulls (Constantin 1995). Given its history at some other landfills, it should be considered as a potential method to effectively augment other harassment methods. Avitrol® (25% concentrate, EPA Reg. No. 11649-10) is generally lethal to the few gulls that consume treated bread baits, and the adverse reaction to the active ingredient 4-Aminopyridine frightens the flock from the treatment site. Use of Avitrol® would require a FWS permit and State pesticide permit. It can only be applied by certified applicators such as WS employees or some private sector pest control operators. All EPA label instructions would be strictly followed to prevent impacts to non-target species.

Harassment (Noise & Visual Frightening). This approach entails a long-term, full-time, aggressive, integrated control program of non-lethal harassment. The positive effect of this alternative could be to temporarily reduce gull visitation to the working faces, prevent gull population numbers from increasing and reduce various problems associated with large populations of gulls. Adverse effects of this alternative include: gull habituation to pyrotechnic

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There are possible adverse effects to neighbors and surrounding properties including potential increased gull concentrations at these sites. Potential off-site problems associated with large populations of gulls would be monitored by WS and [REDACTED]. No state or Federal permits are required to conduct harassment activities. No federal or state endangered species are anticipated to be affected by this alternative. No negative environmental effect would result from the use of pyrotechnics effigies and distress tapes.

Non-lethal activities would have no cumulative impact on gull populations. Gull populations may continue to increase if the landfill is an important energy subsidy. Long-term negative impacts associated with large concentrations of gulls and an increasing gull population may occur locally and to a lesser degree regionally. Potential short and long-term negative impacts on local threatened and endangered species may be expected to continue if the effectiveness of non-lethal methods are not enhanced by limited take.

Alternative 3. Local Gull Population Suppression:

This alternative could result in the removal, primarily by shooting, of up to thousands of gulls annually. It could be unsafe to remove such large numbers, particularly around the working face with shotguns. Strictly adhered-to shooting lanes would have to be established and maintained as well as frequent refresher training for wildlife specialists to ensure safe program delivery. Rocket netting loafing gulls is a potential method to remove large numbers of gulls. It would likely be an unacceptable goal to remove all gulls attempting to visit the [REDACTED], given the large numbers of gulls attempting to feed and loaf at the facility and the new migrants that continually attempt to gain access. Attempts to suppress the local population at the landfill would in all likelihood elicit a vocal, negative response from some groups and individuals opposed to this approach.

Local gull suppression attempts, primarily by shooting, may result in the removal of up to 20 gulls per day. This daily total would result in 100 gulls removed weekly and greater than 5,000 (100/week x 52 weeks) to be potentially removed annually. However, implementation of only local gull suppression activities to reduce gull conflicts at [REDACTED] has not been previously

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(17% of the local population) as part of local gull suppression activities emphasizing lethal methods would have negative cumulative impacts on local or regional gull populations.

Removing thousands of gulls annually may have cumulative impacts on local and regional gull populations. Local populations would likely be reduced over time if sufficient numbers of breeding adults were removed. Assuming recruitment from immigration is manageable, this program would still need to be in place long-term. Regional gull populations would likely be impacted to a lesser degree than the local population that uses [REDACTED]. Cumulative regional impacts would depend on the number of migratory birds shot that are using [REDACTED].

Alternative 4. Integrated Management:

The proposed alternative would directly impact an estimated 30,000 gulls by preventing gulls from using the [REDACTED] for feeding and loafing, thus requiring them to seek alternative feeding and loafing areas. Dispersing gulls could potentially produce impacts on area airports, landfill abutters and the [REDACTED], New Hampshire. Gulls pose a significant safety hazard to aircraft and air passengers. WS would monitor gulls using the landfill to assess program effectiveness and possible adverse effects to the surrounding areas. However, long-term impacts should result in benefits to the surrounding areas due to the reduced numbers of gulls using the landfill for feeding and loafing for extended time periods. As part of quarterly wildlife meetings at [REDACTED] (10/28/99 and 1/19/00) WS consulted with representatives regarding increased gull activity. No increased gull activity has been reported by [REDACTED] personnel to date.

[REDACTED] personnel currently have authority under a USFWS Migratory Bird Depredation Permit to remove up to 400 herring, great black-backed or ring-billed gulls in any combination annually; not to exceed 75 in any given month. To address conflicts associated with large populations of gulls at the [REDACTED] facility and achieve the management objective of near zero gull visitation to the working face, WS anticipates requesting authority for the removal of an additional 200 gulls annually as part of ongoing persistent integrated harassment activities. Given the recent gull population increase along the east coast and an estimated index of daily gull visitation of up to 30,000 (5.0 x 6,000), the removal of an additional 200 gulls per year as part of integrated harassment activities emphasizing non-lethal methods would have very minor cumulative impacts on local or regional gull populations. If successful in meeting [REDACTED] objectives and if the landfill is an important energy subsidy; then overall gull carrying capacity would be reduced.

19

Therefore, ancillary impacts associated with large numbers of gulls using [REDACTED] such as threatened and endangered common and roseate tern recovery activities on [REDACTED], economic costs and human health and safety issues could be reduced.

WS has consulted with the U.S. Fish and Wildlife Service regarding concerns over potential impacts of implementing the EA including: installing overhead wires to exclude gulls from specific

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[REDACTED] personnel currently have authority under a USFWS Migratory Bird Depredation Permit to remove up to 400 herring, great black-backed or ring-billed gulls in any combination annually; not to exceed 75 in any given month. To address conflicts associated with large populations of gulls at the [REDACTED] facility and achieve the management objective of near zero gull visitation to the working face, WS anticipates requesting authority for the removal of an additional 200 gulls annually as part of ongoing persistent integrated harassment activities. Given the recent gull population increase along the east coast and an estimated index of daily gull visitation of up to 30,000 (5.0 x 6,000), the removal of an additional 200 gulls per year as part of integrated harassment activities emphasizing non-lethal methods would have very minor cumulative impacts on local or regional gull populations. If successful in meeting [REDACTED] objectives and if the landfill is an important energy subsidy; then overall gull carrying capacity would be reduced.

19

Therefore, ancillary impacts associated with large numbers of gulls using [REDACTED] such as threatened and endangered common and roseate tern recovery activities on [REDACTED], economic costs and human health and safety issues could be reduced.

WS has consulted with the U.S. Fish and Wildlife Service regarding concerns over potential impacts of implementing the EA including: installing overhead wires to exclude gulls from specific

(17% of the local population) as part of local gull suppression activities emphasizing lethal methods would have negative cumulative impacts on local or regional gull populations.

Removing thousands of gulls annually may have cumulative impacts on local and regional gull populations. Local populations would likely be reduced over time if sufficient numbers of breeding adults were removed. Assuming recruitment from immigration is manageable, this program would still need to be in place long-term. Regional gull populations would likely be impacted to a lesser degree than the local population that uses [REDACTED]. Cumulative regional impacts would depend on the number of migratory birds shot that are using [REDACTED].

Alternative 4. Integrated Management:

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areas, removal of a limited number of gulls and the impacts of gulls dispersing to surrounding areas. No adverse impacts to state or federally listed threatened or endangered species are anticipated under the preferred alternative (No. 4 Integrated Management) and documented through the attached letter e.g. Informal Section 7 Consultation.

There is potential for greater levels of noise heard by landfill personnel and abutters. Removing a limited number of gulls would enhance pyrotechnic effectiveness and require fewer to be used. Human safety concerns have been previously documented. WS and ██████ gull control personnel are aware of these concerns and would conduct all harassment activities a safe distance from landfill personnel and clients.

The proposed alternative would be conducted in compliance with all local, state and federal laws. The proposed alternative would reduce the problems associated with large populations of gulls using the ██████ Facility as a feeding and loafing area. WS and ██████ gull patrol employees would be responsible for conducting all pyrotechnic and shooting activities. WS would supervise ██████ gull control employees and ensure safety requirements are met. WS would be responsible for assisting ██████ with renewal of their Migratory Bird Depredation Permit and obtaining a permit for WS employees. Only WS and ██████ employees would conduct shooting activities.

Initiating the project in the early fall would be advisable to precede peak gull migration. Starting the project at this time would allow WS and ██████ to prevent gulls from establishing feeding and loafing territories rather than having to move them once they became established on site. WS would make available in a central location literature to aid landfill personnel and clients to understand the adverse effects of large populations of gulls, diseases gulls can transmit, habitat requirements of gulls and the adverse effects of purposely feeding gulls or allowing them sustained easy access to food.

Additional Safety Precautions

Because of the harsh terrain and types of material frequently encountered at the ██████ landfill all WS personnel involved in the control project will have had a series of Tetanus and Hepatitis pre-exposure vaccinations.

Informal Section 7 Consultation

The Predecisional EA was provided to the U.S. Fish and Wildlife Service, Senior Endangered Species Specialist, New England Field Office for review regarding potential impacts to federally listed or proposed threatened or endangered species on December 15, 1999 in accordance with Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543). No

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Public Notification

The [REDACTED] neighbors adjacent to the [REDACTED] have been briefed on the need to control gull visitation to the landfill, methods proposed and possible adverse effects to them. A list of persons and agencies consulted is provided (Appendix 2). WS attended [REDACTED] Quarterly Wildlife Meetings (10/28/99 and 1/19/00) and provided an update regarding the status of gull harassment activities at [REDACTED]. [REDACTED] reported no increased gull activity or gull related hazards to aircraft. Responses from questionnaires provided to persons using the landfill are reported in this document. A letter from the Senior Endangered Species Specialist of the New England Field Office, U.S. Fish and Wildlife Service documenting no adverse effect to threatened or endangered species is included. Public notification was conducted on February 7th and 8th, 2000 in the Fosters Daily Democrat Dover, New Hampshire. No requests for the EA or comments regarding the predecisional EA were received by WS during the 30 day comment period as a result of the public notification. Comments or a copy of the predecisional document may be obtained from the following address:

USDA, APHIS, Wildlife Services
59 Chenell Drive, Suite 7
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Individuals requesting the predecisional document will be acknowledged in the completed document. Signature of the Finding of No Significant Impact and Decision by the WS Eastern Regional Director represents a completed document. All other public comments are considered in the final decision.

Literature Consulted:

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ANIMAL AND PLANT HEALTH INSPECTION SERVICE
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FINDING OF NO SIGNIFICANT IMPACT

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FINDING OF NO SIGNIFICANT IMPACT

**AND
DECISION**

Reducing Potential Conflicts With Large Numbers
of Gulls Using the

[REDACTED], New Hampshire

USDA, APHIS, WS
59 Chenell Drive, Suite 7
Concord, NH 03301-8548

The proposed action is to implement an integrated wildlife damage management strategy (Alternative No. 4) for the purpose of reducing actual and potential adverse effects caused by large populations of gulls using the [REDACTED] located in [REDACTED], New Hampshire as a feeding and loafing area. These adverse effects include: potential health and safety hazards to landfill personnel and clients, equipment maintenance and repair costs associated with the accumulation of gull droppings, potential storm water pollution, potential disease vectors and potential negative relations with neighboring property owners. This strategy incorporates non-lethal auditory and visual harassment methods, limited removal of a select number of gulls to enhance the effectiveness of harassment efforts, exclusion methods, habitat modification, repellents and public education.

A careful review of the EA indicates that there will not be a significant impact on the quality of the human environment as a result of this proposal. I agree with this conclusion, and therefore, determine that an Environmental Impact Statement (EIS) will not be prepared. This determination is based on consideration of the following factors:

1. The proposed activities will occur in localized areas at and around the landfill. The proposed activities are not national or regional in scope.

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2. The proposed activities will not significantly affect public health and safety. The methods used to control gulls are highly target specific and are not likely to affect public health and safety. The proposed activities may benefit public health by controlling disease vectors.
3. The proposed activities will not have an impact on unique characteristics of the geographic area such as historical or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecological critical areas. The

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nature of the methods proposed for alleviating damages are not likely to affect the physical environment.

4. The effects on the quality of the human environment of the proposed activities are not highly controversial. Although some people are opposed to some aspects of bird damage management, the methods and impacts are not controversial among experts.
 5. The possible effects of the proposed activities on the quality of the human environment are not highly uncertain and do not involve unique or unknown risks.
 6. The proposed activities do not establish a precedent for actions with future significant effects or represent a decision in principle about a future consideration.
 7. There are no significant cumulative effects identified by this assessment. All gull removal will be coordinated with USFWS. The impacts on herring, great black-backed and ring-billed gull populations when combined with other sources of mortality have low to negligible impact.
 8. The proposed activities will not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places nor will it cause a loss or destruction of significant scientific, cultural, or historical resources.
 9. The proposed activities will fully comply with the Endangered Species Act of 1973, as amended. The proposed activities would not affect non target Federally or State listed threatened and endangered species. The proposed action will be likely provide indirect benefit to nesting shorebirds in the [REDACTED] by reducing gull predation and competition for nesting space. The USFWS has concurred with this conclusion.
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10. There are no irreversible or irretrievable resource commitments identified by this assessment, except for a minor consumption of fossil fuels for routine operations.
 11. The proposed activities will not threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment. Wildlife Services has consulted with the (state, local and Federal agencies involved).

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Additional copies of the EA are available upon request from the WS office identified above.

Gary E. Larson
Director, WS Eastern Region

Date

Attachment:

Reducing Conflicts Due To Large Populations of Gulls At the [REDACTED]
[REDACTED], New Hampshire

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Appendix 1. Individual Commentator Index

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2. Keep it up

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4. A very worthwhile project. For the past several weeks it has almost been a pleasant place to come to.
5. Shooting too close to trucks.
6. At time pyrotechnics have gone off close to me and my truck.
7. It is better with the gulls off-site.
8. Less poop on truck and saving me time and money.
9. Keep safe distance from trucks.

Appendix 2. Persons and Agencies Consulted

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2. Mike Amaral: Senior Endangered Species Specialist, New England Field Office, USFWS
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