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FISCAL YEARS 2000 and 2001 MONITORING REPORT and AMENDMENT TO AN ENVIRONMENTAL ASSESSMENT FOR BIRD DAMAGE MANAGEMENT CONDUCTED BY WILDLIFE SERVICES IN IDAHO
March 2002

INTRODUCTION

The United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Wildlife Services (WS) program, prepared an Environmental Assessment (EA) in 1998 which addressed the need to conduct Bird Damage Management (BDM) and analyzed potential impacts of various alternatives for responding to bird damage problems in Idaho. The EA analyzed bird damage management for: 1) protection of livestock feed and health, agriculture, and property, 2) threats from birds to public health and safety, and 3) bird caused nuisances.

A Decision and Finding of No Significant Impact (FONSI) were issued on December 18, 1998. The Decision selected Alternative 1, (the Proposed Action), which was to Continue the Current Federal BDM Program. A monitoring report was completed on March 27, 2000 which analyzed data from Fiscal Year (FY) 98 (Oct. 1, 1997-Sept. 30, 1998) and FY99 (Oct. 1, 1998-Sept. 30, 1999). The monitoring report concluded that a revision of the EA was not necessary and that the 1998 Decision remained valid since the affected environment and impacts remained essentially unchanged from the analyses in the EA. Copies of the EA, Decision, FONSI, and monitoring report are available from the Idaho WS State Office, USDA, APHIS, 9134 W. Blackeagle Drive, Boise, Idaho, 83709.

European starling (*Sturnus vulgaris*) damage at feedlots and dairies, and pigeons (*Columba livia*) and other birds posing nuisances and threats to human health and safety continue to be the most significant bird problems in the State, and starlings are the species most often targeted for removal during WS BDM efforts. Starlings, pigeons, and English/house sparrows (*Passer domesticus*) fit the definition of invasive species since they are non-native to the ecosystem and their introduction causes or is likely to cause economic or environmental harm or harm to human health. Concern over the impacts from such species was reflected in the Presidential signing of an Invasive Species Executive Order (13112) on February 3, 1999.

The purpose of this monitoring report and EA amendment is to: 1) review data relevant to FY00 and FY01 BDM activities in Idaho, 2) provide rationale for potential use of a new nonlethal BDM method and to provide more detailed description of the products and uses of methyl anthranilate, a nonlethal repellent, 3) determine if the Decision and FONSI made in conjunction with the 1998 EA are still appropriate, and, 4) take appropriate action if the affected environment or impacts have significantly changed from the analyses in the 1998 EA.

Scope of Bird Related Damage and Occurrences

BDM activities were carried out by the Idaho WS program in response to 274 and 191 occurrences of bird damage reported during FY00 and FY01, respectively. These requests for assistance were to resolve problems ranging from structural damage to homes and property, consumption and contamination of livestock feed, bird predation at aquaculture facilities, threats to human and health and safety, and various other bird nuisances. Total bird damage reported to WS during FY00 was $701,093 and in FY01, $1,107,447 (Table 1)[1]. The 2-year total is $1,808,540. A total of 72 complaints (26% of requests) were received in FY00, and 61 complaints (32%) were received during FY01 regarding starling, blackbird (*Icterinae* spp.), pigeon, and gull (*Larus* spp.) damage and threats of disease transmission at feedlots and dairies. In FY00 and FY01, feedlot and dairy operators' estimates of damage caused by these birds was $107,500 and $113,285, respectively. That represents about 15% of the total damage reported in

[1]These losses represent only a portion of the total losses statewide caused by birds and serve as an indicator of the types of damage rather than an indicator of the total magnitude of the damage. Damage assessment for nuisances, disease threat, aviation threats, and human safety is sometimes difficult to estimate.

FY00 and about 10% in FY01. Damage estimates to aquaculture and fish hatcheries from fish eating birds, such as great-blue herons (*Ardea herodias*), American white pelicans (*Pelecanus erythrorhynchos*), double-crested cormorants (*Phalacrocorax auritus*), common mergansers (*Mergus merganser*) ring-billed gulls (*Larus delawarensis*), and belted kingfishers (*Ceryle alcyon*), was reported at $285,800 in FY00 and $95,300. Bird damage to agriculture (field crops, fruits and nuts, range/pasture, landscaping, turf, and gardens) in FY00 was reported at $64,000 and $41,575 in FY01. Fifty one percent of all agriculture damage was attributed to Canada geese (*Branta canadensis*). Threats to public health and safety (droppings, bird strikes with aviation, disease transmission, and landfills) from a variety of bird species was reported at $165,021 in FY00, and $532,600 in FY01, which combined accounted for 39% of all reported damage from both years. Damage to structures, property, utility poles, water impoundments, commercial buildings, homes, and nuisances, caused by ring-billed and California gulls (*Larus californicus*), northern flickers (*Colaptes auratus*), pileated woodpeckers (*Dryocopus pileatus*), barn swallows (*Hirundo rustica*), starlings, and other birds was reported at $78,722 in FY00 and $324,687 in FY01. Combined, these damages accounted for about 22% of the total reported.

Table 1. Bird damage reported to WS in FY00 and FY01.

Resource Type	FY00	FY01	Total
Livestock Feed[1]	$107,500	$113,285	$220,785
Aquaculture[2]	$285,800	$95,300	$381,100
Agriculture[3]	$64,000	$41,575	$105,575
Public Health and Safety[4]	$165,021	$532,600	$697,621
Property and Nuisances[5]	$78,772	$324,687	$403,459
Total	$701,093	$1,107,447	$1,808,540

[1]Consumption and contamination of livestock feed and potential disease transmission.
[2]Commercial aquaculture and State and Federal hatcheries.
[3]Crops, fruits, nuts, range, pasture, landscaping, turf, and gardens.
[4]Potential disease transmission, bird droppings near human sources, bird strikes with aviation, and landfills.
[5]Damage to residential homes, commercial buildings, machinery, structures, and water impoundments.

MONITORING INFORMATION

Primary issues addressed in the 1998 EA included the impact of WS' bird removal on the viability of target and non-target bird populations, and the risks posed by BDM methods to the public and domestic pets. Data and discussion on these issues are presented below.

Cumulative Effects of WS BDM on Target Species Populations

Cumulative effects are the additive impacts on a species' population from all causes, including the mortality caused by Idaho WS activities. WS typically only conducts BDM: 1) on species whose populations are at relatively high levels, 2) only after damage has occurred, and 3) only in localized areas and for relatively brief periods of time. The numbers of birds taken by WS during FY00 and FY01 fell within the range of take analyzed in the 1998 EA, except for ring-billed and California gulls and American robins (*Turdus migratorius*). The magnitude of impact that WS activities had on these 3 species will be analyzed further in this document.

Effects of WS BDM on Non-target Species Populations, Including Threatened and Endangered Species

A common concern among members of the public and wildlife professionals, including WS personnel, is the potential effect of BDM on non-target species, particularly Threatened and/or Endangered (T/E) species. An estimated total of 803,985 birds and eggs were destroyed by WS personnel during BDM activities conducted in FY00 and FY01, with nearly 800,000 of these being starlings (Table 2) (WS 2002). Only 2 non-target starlings were reported killed in nest-box traps set for northern flickers. There were no T/E species killed or injured by any WS activities during this monitoring period, or adverse impacts to T/E species habitats.

Table 2. Number of birds killed and eggs destroyed, by method, in FY00 and FY01.

FY	SPECIES	DAMAGE MANAGEMENT METHODS						
		Snap Trap	Shooting	DRC-1339	Avitrol	Live Trapping	Egg Destruction[1]	Total
00	American Crows		3					3
	Black-billed Magpies		17					17
	Black-crowned Night Herons		1					1
	European Starlings	4	56	337,200				337,260
	Great-blue Herons		3					3
	Northern Flickers	5	4					9
	Pigeons		744	222				966
	Ring-billed Gulls		10					10
	Yellow-headed Blackbirds			400				400
01	American Robins		15					15
	Blackbirds - mixed species			500				500
	California Gulls		1,194		10		4,382	5,586
	Canada Geese		2					2
	European Starlings	3	59	457,000				457,062
	Great-blue Herons		4					4
	Northen Flickers	6	8					14
	Pigeons		466	200		121		787
	Ring-billed Gulls		478				868	1,346
Total		18	3,064	795,522	10	121	5,250	803,985

[1]Includes eggs and hatchlings. Approximately 67% were eggs and the remainder were hatchlings 1-4 days of age.

Risks Posed by WS BDM Methods to the Public and Domestic Pets

The primary BDM method used by Idaho WS is DRC-1339, an avicide registered by the Environmental Protection Agency (EPA) and the Idaho State Department of Agriculture (ISDA) for several uses. Application of DRC-1339 is limited specifically to WS employees, and DRC-1339 is one of the most extensively researched chemicals. It poses little risk of secondary poisoning because it metabolizes rapidly to nontoxic products (Cunningham et al. 1979, Schafer 1984, Knittle et al. 1990, Schafer 1991). This avicide is also unique because of its relatively high toxicity to most pest birds but low-to-moderate toxicity to most raptors and almost no toxicity to mammals (DeCino et al. 1966, Palmore 1978, Schafer 1991). Numerous studies conducted by WS have shown that DRC-1339 poses little acute hazard to the public, pets, and non-target animals when used according to label directions (Schafer 1996). Risks are also site-specific and can be minimized by the choice of bait and bait size (Linz et al. 1997, Sawin et al. 1999), and by careful pre-baiting and observation. Prior to the application of DRC-1339, pre-baiting is conducted to monitor for non-target species that might consume the bait. Pre-baiting is also helpful in estimating the consumption rate of target birds to avoid applying more bait than is necessary. WS applied a total of 11,206 grams of DRC-1339 during FY00 and FY01, or an average of about 12 pounds per year statewide. Over ninety-eight percent of the DRC-1339 used was for control of starlings in response to damage complaints (WS 2002). There were no known incidents of adverse effects to any pets or members of the public related to any BDM activities by WS during FY00 and FY01.

ACTIONS TO TAKE

Since the completion of the 1998 EA, a new nonlethal method/technique has become available for use by the WS BDM program. This document amends the 1998 EA to consider the use of that nonlethal method, provide more

detailed descriptions of the products and uses of methyl anthranilate (nonlethal chemical), and further assess the affects of WS' BDM activities on ring-billed and California gull and American robin populations. No additional analysis will be conducted since the above monitoring report determined that the affected environment remained essentially unchanged and the affects of implementing BDM remain consistent with the analyses in the 1998 EA.

AMENDMENT TO THE 1998 EA

Rationale for Use of an Additional Nonlethal BDM Method

WS uses an Integrated Wildlife Damage Management approach that considers legal and appropriate methods either used singly or in combination to meet the requester's needs for reducing bird damage. BDM would continue to be allowed in the State, when requested, on private or public property where a need exists and an *Agreement for Control* or other comparable document has been completed. Nonlethal methods may include, but are not limited to: habitat modification, cultural practices, animal behavior modification, lure crops, decoy traps, nest destruction, relocation, chemical repellents, and alpha chloralose (oral tranquilizer). However, not all methods are used on every project, but rather the WS Decision Model (Slate et al. 1992) is used to determine the most appropriate method(s) from those available to effectively resolve a particular problem. All management actions would comply with Federal, State, and local laws and regulations.

Lasers. Since the 1998 EA was prepared, an additional nonlethal BDM method, lasers, will be incorporated into the BDM program. Lasers are a relatively new technique used to frighten and disperse birds. The term "laser" is an acronym for Light Amplification by Simulated Emission of Radiation. Although the use of a laser to alter bird behavior was first introduced nearly 30 years ago (Lustick 1973), it received little attention until recently when it was tested at the APHIS, WS, National Wildlife Research Center. Results showed that several bird species, such as double-crested cormorants, Canada geese, other waterfowl, gulls (*Larus* spp.), vultures (*Cathartes aura* and *Coragyps atratus*), and American crows (*Corvus brachyrhynchos*) exhibited avoidance of laser beams during field trials (Glahn et al. 2001, Blackwell et al. 2002). The repellent or dispersal effect of a laser is due to the intense and coherent mono-wavelength light that, when targeted at birds, can have substantial effects on behavior and may illicit changes in physiological processes (APHIS 2001). Best results are achieved under low-light conditions (i.e, sunset through dawn) and targeting structures or trees proximate to roosting birds, thereby reflecting the beam. In field situations, habituation to lasers was not observed (APHIS 2001).

The avian eye generally filters most damaging radiation (e.g., short-wavelength radiation from the sun). In tests conducted with double-crested cormorants exposed to a relatively low-power Class-III B laser at a distance of 1 meter, no ocular damage was noted (APHIS 2001). However, unlike birds, the human eye, with the exception of the blink reflex, is essentially unprotected from thermal damage to retinal tissue associated with concentrated laser radiation. Lasers used by WS include the Class-III B, 5-mW, He-Ne, 633-nm Desman[1] laser, and the Class II, battery-powered, 68-mW, 650-nm, diode Laser Dissuader[2]. Because of the risk of eye damage, safety guidelines and specifications have been developed and are strictly followed by the user (Glahn and Blackwell 2000, OSHA 1991).

Methyl anthranilate was briefly mentioned in Appendix C of the 1998 EA as a nonlethal, chemical repellent used in BDM. Because WS endorses the use of nonlethal methods when appropriate, it was determined that these products warrant more detailed discussion than what was provided in the 1998 EA.

Methyl anthranilate's mode of action is physical whereby the repellent irritates the bird's taste buds, olfactory sensors, and skin. It is a naturally occurring constituent of concord and heavy red grapes and is approved by the Food and Drug Administration for use as an artificial grape flavoring in foods and soft drinks for human consumption, and in perfumes, cosmetics, and confectionery products. Methyl anthranilate is also a common

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[1]Referencing commercial products or brand names do not necessarily represent an endorsement of the United States Government.

compound found in neroli, (a fragrant pale yellow essential oil obtained from orange flowers), ylang-ylang (a tree of the custard-apple family of the Malay archipelago and Philippines), bergamot (a pear-shaped orange), jasmine (a shrub of the olive family), and other essential oils. Methyl anthranilate is easily synthesized from esterifying anthranilic acid. It is slightly soluble in water and freely soluble in alcohol or ether, and readily volatilizes under ultraviolet light and elevated temperatures.

There are 4 ISDA registered pesticide products that contain methyl anthranilate as the active ingredient. They are Rejex-it AG-36, Rejex-it AG-145, Rejex-it TP-40, and Bird Shield. WS has not used any of these products in the past, however, it is possible that there might be a need for their use in the future.

Rejex-it AG-36[2] (EPA Reg. No. 58035-9) is registered as a Canada goose (*Branta canadensis)* repellent for use on golf courses and other turf areas. The most current EPA stamped label for use in Idaho is dated September 24, 1998, but it was first registered by EPA in September 16, 1994. Rejex-it AG-36 is provided as a concentrate that must be diluted 1 part chemical with 3 parts of water before use. Ten gallons of spray mixture will cover approximately 1 acre (3.07 lbs. of active ingredient). Application should be repeated in 4 days or as warranted by Canada goose activity.

Rejex-it AG-145[2] (EPA Reg. No. 58035-13) is registered as a bird repellent for use on blueberries, cherries, and grapes. It is only registered for terrestrial uses and must not be applied to areas where surface water is present. Rejex-it AG-145 must be diluted at a ratio of 1 part chemical with 3 parts water prior to spray application. Spray mixture can be applied using a pump sprayer or power-blast sprayer. Certain application directions allow the use of aerial applications. The most current EPA stamped label for use in Idaho is September 24, 1998, but it was approved and registered by EPA on May 21, 1996.

Rejex-it TP-40[2] (EPA Reg. No. 58035-7) can be used to repel nuisance birds such as starlings, brown-headed cowbirds (*Molothrus ater*), ring-billed gulls, Canada geese, mallards (*Anas platyrhynchos*), and other birds that have become a nuisance or health hazard in the target area. It can be used at landfills and on non-fishbearing bodies of water. When used on water surfaces or at landfills, the rate of active ingredient can not exceed 8 pounds per acre of water surface or area. Rejex-it TP-40 can also be used as with a fog generator for indoor and outdoor applications. When applied with a fog generator, the chemical is used undiluted, but the rate may not exceed 1 (one) ounce per 10,000 cubic feet of space to be treated. The label restricts indoor applications to warehouses, hangers, garages, assembly plants, etc. When used outdoors, it can be applied to electrical substations, structures and buildings, trees and shrubs, airports, turf, lakes and ponds, in harbors and boat docks, and on cherries, blueberries, and grapes. The most current, EPA stamped label for use in Idaho is dated October 18, 2001, however, the EPA registered its use on September 16, 1994.

Bird Shield[2] (EPA Reg. No. 66550-1) is labeled as a bird repellent (various bird species) for commercial, agricultural, and household use on cherries, blueberries, grapes, corn, sunflowers, turf, non-fishbearing bodies of water, and structures. The maximum rate of active ingredient varies with the type of use. Applications to fruits, corn, sunflowers, and structures can be made using a back-pack sprayer, hand-held hose, pressurized applicator, or aircraft. When treating non-fishbearing waters and temporary pools located at or near airports, undiluted concentrate is added directly to pool until the appropriate amount has been applied. Rates must not exceed 2-4 gallons of concentrate for every 750 gallons of water. Reapply at 3 to 4 week intervals if necessary to maintain repellency. The most current EPA stamped label for use in Idaho is February 25, 2001, but it was originally registered by EPA on October 3, 1995.

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Bird Population Trend Analysis

Precise counts of the bird populations addressed in the 1998 EA or in this Amendment *do not exist*. When scientifically sound population estimates are lacking, it is common practice for management agencies to use population trend analyses to determine if species populations are "increasing," "stable," or "decreasing" and the magnitude of change. These trend analyses are determined by taking actual counts at specific locations at regular intervals and comparing several years data. Population trend data used by WS is obtained from two sources, the Breeding Bird Survey (BBS) and the National Audubon Society Christmas Bird Count (CBC). The BBS was developed by scientists from the Patuxent Environmental Science Center, United States Geological Survey (USGS) who analyze the field data and report the results. It is a roadside survey methodology which is conducted annually, primarily in June. Each route is 24.5 miles long, with a total of 50 stops located at 0.5 mile intervals along the route. Today, there are approximately 700 active BBS routes across the continental United States and Canada, of which nearly 2900 are surveyed annually (Sauer et al. 1997). The CBC is an early-winter survey of birds which occur within 2 weeks of December 25 (Butcher 1990). Although counts occur in Central and South America, most CBCs occur in North America. The sample area for a count is a circle that is 15 miles in diameter, and varying volunteers count all birds they see in the circle during a single day. WS recognizes there are shortcomings in the BBS and CBC counts, however, it is the most current and best information available.

Ring-billed Gull Biology and Population Impacts

Ring-billed gulls are the most common of the 4 gull species commonly found in Idaho. Ring-billed gull populations are concentrated near lakes, reservoirs, rivers, and other bodies of water. Like most gulls, ring-billed gulls are omnivorous, feeding on animal and plant matter. Common feeding sites are open refuse dumps, livestock feedlots, fish hatcheries, agricultural fields, and food processing plants. During the summer, ring-billed gull populations are distributed primarily in the northern half of the United States, but in Idaho, the majority of gulls can be found in the southern half of the State. During winter, ring-billed gulls migrate south and the greater concentration can be found in southern California and Arizona, New Mexico, Texas, and Florida. However, ring-billed gulls can be found year-round in Idaho. Its not known if these individuals had not migrated south or if they are individuals that have migrated from northern populations and have settled in Idaho to winter. Ring-billed gulls become sexually mature at about 3 years of age and have a life expectancy of approximately 20 years (Southern 1967, 1975).

BBS population trend data collected from 1966 to 2000 and analyzed by scientists at the USGS, Patuxent Wildlife Research Center (PWRC), indicate that ring-billed gull populations in the United States and Canada are stable (Figure 1) (Sauer et al. 2001) and populations are increasing in the United States (Sauer et al. 2001). Sixty-four out of 75 (83%) BBS regions report that ring-billed gull populations have increased from 1966 to 2000 (Sauer et al. 2001). In States that border Idaho (Montana, Oregon, Washington, and Wyoming, BBS data is not available for Utah and Nevada), ring-billed gull population trends are increasing, with the exception of Oregon that report declining population trends (Sauer et al. 2001). In Idaho, ring-billed gull population trends are increasing (Figure 2) (Sauer et al. 2001). The most current CBC data trend analyzed by the PWRC (1959 to 1988) also indicate a stable to increasing population trend in North America (Figure 3) (Sauer et al. 1996). When plotting CBC data collected in Idaho from 1996 to 2000, ring-billed gull counts decreased, stabilized, and then increased (Figure 4). The Smithsonian Institution (2001) classifies the ring-billed gull as "abundant," with populations increasing, and agrees with Ryder (1993) which estimates the North American population at 3-4 million. Conover (1983) concluded that the ring-billed gull population in the western United States has increased 356-475% from pre-1930 to 1980. He suggests that the creation of reservoirs throughout the western United States and expansion of irrigation agriculture have certainly contributed to the growth in ring-billed gull populations. In some areas of Atlantic Canada and the northeast United States, the mean annual population growth rates of 12% to 21% have been documented (Lock 1988).

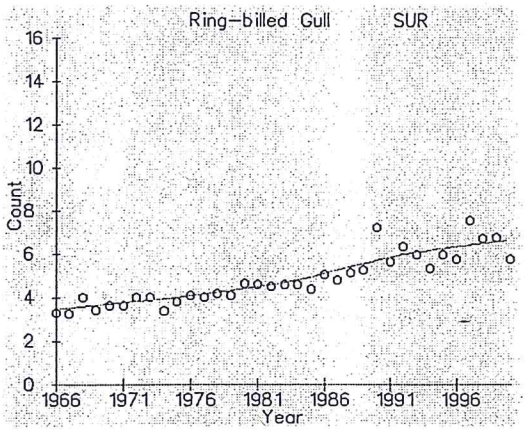

Figure 1. BBS population trend for ring-billed gulls in North America from 1966 to 2000 (Sauer et al. 2001).

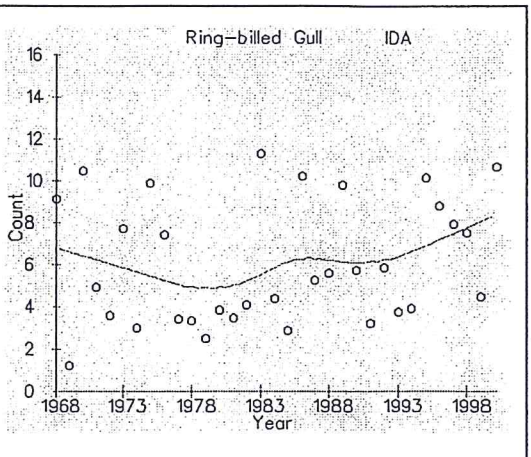

Figure 2. BBS population trend for ring-billed gulls in Idaho from 1966 to 2000 (Sauer et al. 2001).

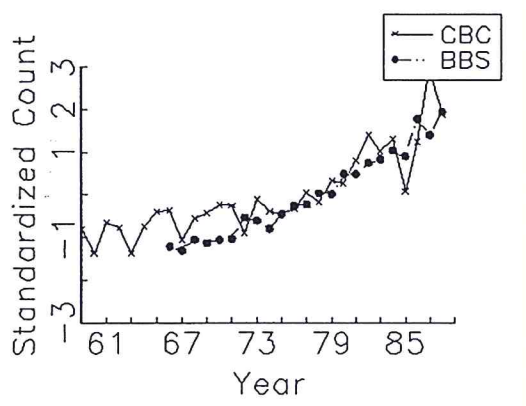

Figure 3. CBC population trend for ring-billed gulls from 1959 to 1988 (Sauer et al. 1996).

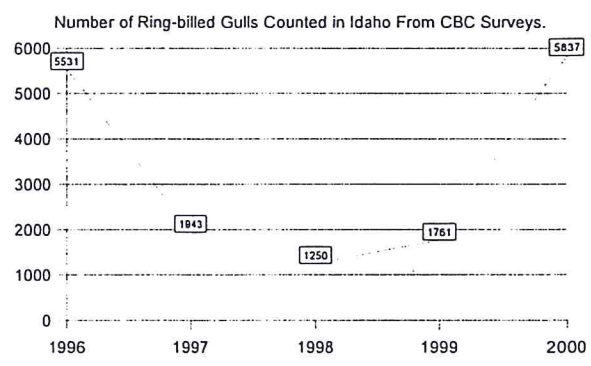

Figure 4. Number of ring-billed gulls counted in CBC survey routes from 1996 to 2000 in Idaho (National Audubon Society 2002). Data is compiled from survey routes (n=11) that were conducted for 5 consecutive years and where ring-billed gulls were counted in at least 1 of the 5 years.

During FY00 and FY01, WS received and responded to 18 reported occurrences of ring-billed gull damage, nuisances, and threats to human health and safety. Examples of damage types include fecal contamination at restaurants and to buildings, machinery, structures, and food processing plants; livestock feed contamination and consumption; livestock and human disease threat potential; aviation threats and human safety; and aquaculture. Ring-billed gull damage reported to WS in FY00 and FY01 totaled $420,000. In responding to requests for assistance and verifying damage, WS killed 488 adults by shooting and destroyed 868 eggs and hatchlings (about 67% of the 868 were unhatched eggs and hatchlings were 1-4 days of age) (Table 1). The areas where operational control activities occurred in FY00 and FY01 were in southwestern and south-central Idaho and covered an area of about 370 acres, which is about 0.00001% of the total analysis area.

Because: 1) ring-billed gull population trend data from Idaho, United States, and Canada indicate that populations are stable to increasing, 2) ring-billed gulls are very prolific and directly benefit from human development, 3) ring-billed gulls are highly mobile and capable of, and routinely colonize new areas, and 4) WS operational control activities are conducted on a relatively minute area within the analysis area, annual removal of 2,000 adult ring-billed gulls that are causing damage or nuisances and the destruction of 2,000 eggs, under the current Idaho WS program, would be expected to result in only a low magnitude of impact.

California Gull Biology and Population Impacts

The California gull is medium-sized gull with greenish-yellow to gray-green legs and feet, and a gray mantle back and black wingtips. The bill is yellow with a single red or red and black spot on both sides of the lower mandible (Larrison et al. 1967). It is similar in coloration and size to the ring-billed gull but lacks the black band around the bill (Robbins et al. 1983). California gulls migrate from the Pacific coast and arrive in Idaho in late March to April. They normally migrate back to the Pacific coast during August, with most of the population gone by October. Stragglers may stay as late as December (Larrison et al. 1967) and some individuals will remain year-round in Idaho. During the summer, they are more abundant in southern Idaho and the Snake River basin when compared to northern and central Idaho. Scattered flocks and nesting colonies can be found near irrigated agricultural areas and waterways. California gulls feed on earthworms, grasshoppers, and aquatic invertebrates and small invertebrates in fields (Larrison et al. 1967), fish hatcheries, and will scavenge at landfills and food processing plants. It is common to see California gulls and ring-billed gulls nesting in the same colony or mixed in the same flock. Average life expectancy is unknown, but the oldest band recovered-bird was 27 years old (Winkler 1996). The annual survival rate is 92% for sub-adults and 75%-79% for adults (Winkler 1996) and birds become sexually active at 4 years of age. The average clutch contains 3 eggs, with nests containing 4 and 5 eggs being reported (Bent 1963).

BBS population trend data collected from 1966 to 2000 indicate that California gull populations in the United States and Canada are stable (Figure 5) (Sauer et al. 2001). Fifty three percent (19 out of 36) of BBS regions throughout the United States and Canada report California gull populations have increase from 1980 to 2000 (Sauer et al. 2001). In States that border Idaho, 3 report stable to increasing population trends (Montana, Utah, and Wyoming) while 3 show decreasing population trends (Nevada, Oregon, and Washington) (Sauer et al. 2001). BBS data from Idaho indicate California gull populations from 1966 to 2000 were slightly decreasing (Figure 6) (Sauer et al. 2001), however the 7 most current years (1993 to 2000) show an increasing trend (5% average increase per year) in California gull populations (Sauer et al. 2001). CBC population trend data (1959 to 1988) indicate that the California gull populations are stable in North America (Figure 7) (Sauer et al. 1996). When plotting CBC data

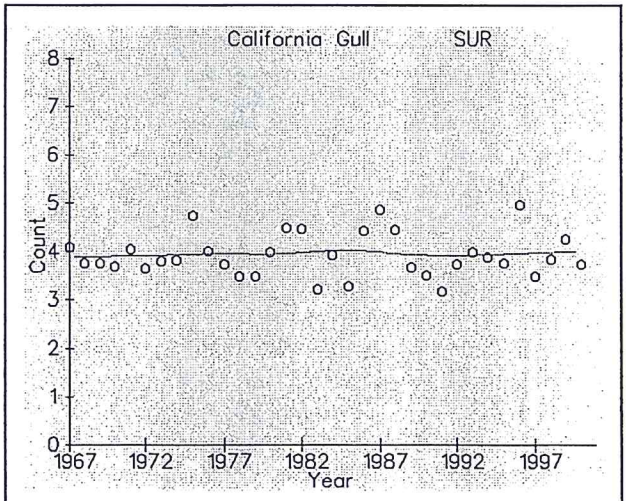

Figure 5. BBS population trend for California gulls in North America from 1966 to 2000 (Sauer et al. 2001).

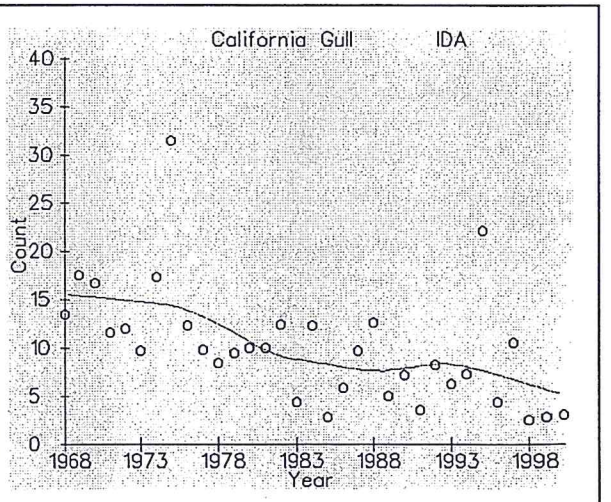

Figure 6. BBS population trend for California gulls in Idaho from 1966 to 2000 (Sauer et al. 2001).

collected in Idaho from 1996 to 2000, California gull counts have increased during the last 2 years (Figure 8) (National Audubon Society 2002). The Smithsonian Institution (2001) classifies the California gull population as "abundant and increasing." Conover (1983) compared the number of known California gull colonies from pre-1930 to known colonies in 1980 and concluded that the population in the western United States had doubled. A survey conducted from 1994 to 1997 of California gull colonies in California reported that populations have increased substantially in recent decades (Shuford and Ryan 2000).

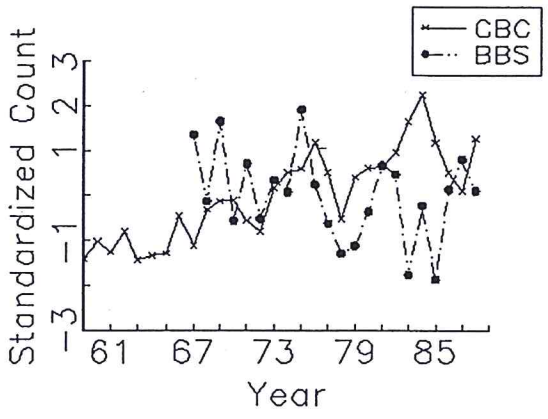

Figure 7. CBC population trend for California gulls from 1959 to 1988 (Sauer et al. 1996).

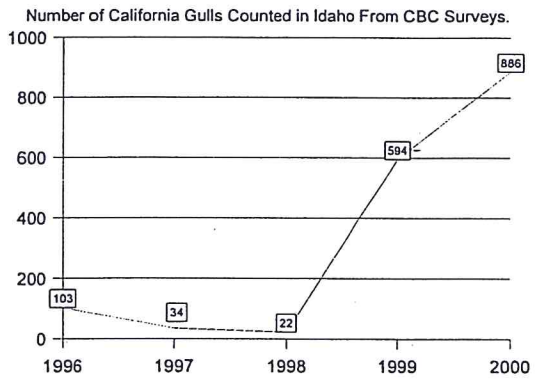

Figure 8. Number of California gulls counted in CBC surveys routes from 1996 to 2000 in Idaho (National Audubon Society 2002). Data is compiled from survey routes (n=11) that were conducted for 5 consecutive years and where California gulls were counted in at least 1 of the 5 years.

During FY00 and FY01, WS received and responded to 5 reported occurrences of California gull damage, nuisances, and threats to human health. Examples of damage types include potential disease transmission to humans; accumulation of fecal material on buildings, equipment, motor vehicles, and other structures; and erosion of banks and slopes of waste water containment ponds. California gull damage reported to WS in FY00 and FY01 was $220,500. In responding to requests for assistance and verifying damage, WS killed 1,194 adults by shooting and another 10 were estimated killed from the use of Avitrol (Table 1). WS also destroyed 4,382 eggs and hatchlings (about 67% of the 4,382 were eggs and hatchlings were 1-4 days of age). The area where direct control activities occurred was in southwestern Idaho and covered an area of about 10 acres which is less than 0.0000005% of the total analysis area.

Since: 1) BBS and CBC California gull population data indicate stable to slight-decreasing trends, 2) California gulls are very prolific and continue to expand their populations and colonize new areas, and 3) WS operational direct control activities are conducted on a relatively minute area within the total analysis area, annual removal of 1,500 adult California gulls annually that are causing damage or nuisances and the destruction of 4,500 eggs, under the current Idaho WS program, would be expected to result in only a low magnitude of impact.

American Robin Biology and Population Impacts

The American robin is a very familiar bird and is one of the most common, widely distributed birds in North America. In Idaho, robins are commonly seen from March to December and normally migrate south to California, Arizona, New Mexico, and Mexico during winter. It is recognized by its dark gray back and brick-red breast. The head and back of adult males are blackish, while females are dark gray. Juvenile robins are distinctive from adults in that they have speckled, rusty colored breasts (Peterson 1990). The diet of robins consist of insects, earthworms, and a variety of berries and fruits. Nests are constructed of grass and mud in orchard trees or shrubs, or on buildings (Robbins et al. 1983). Robins are mostly solitary, however, during winter, robins will form flocks and often roost

communally with other bird species (Smithsonian Institution 2001). Only the female incubates the eggs, which is about 12-14 days. The young are fed mainly by the female and will usually fledge in 14-16 days. Often adult robins will incubate a second clutch and males usually tend to the first clutch after they leave the nest. Clutches consist of 2-4 young per nest and broods average 2-3 per year (Smithsonian Institution 2001).

BBS population trend data collected from 1966 to 2000 indicate that American robin populations in the United States and Canada are increasing (Figure 9) (Sauer et al. 2001). One hundred (75%) out of 133 BBS regions report robin populations have increased from 1966 to 2000 (Sauer et al. 2001). In States that border Idaho, 5 report stable to increasing populations (Montana, Nevada, Utah, Washington, and Wyoming) while only Oregon shows slightly decreasing population trends (Sauer et al. 2001). BBS data from Idaho indicate robin populations from 1966 to 2000 are stable (Figure 10) (Sauer et al. 2001). The most current CBC data analyzed by the PWRC (1959-1988) indicate an increasing population trend for robins in North America (Figure 11) (Sauer et al. 1996). When plotting CBC data collected from Idaho from 1996 to 2000, counts of robins have decreased, increased, and decreased (Figure 12) (National Audubon Society 2002). The Smithsonian Institution (2001) classifies the robin as "abundant and widespread."

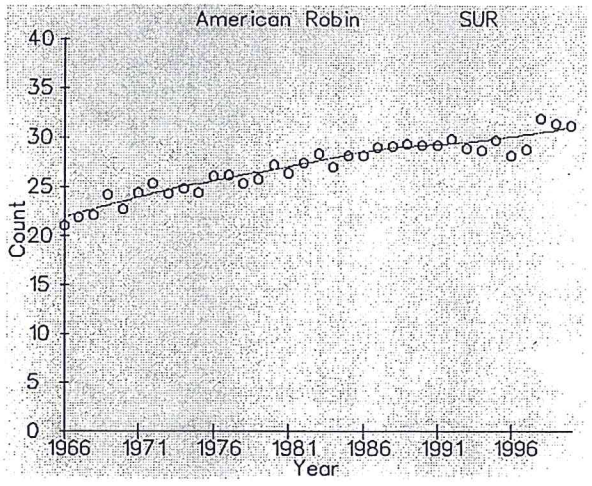

Figure 9. BBS population trend for American robins in North

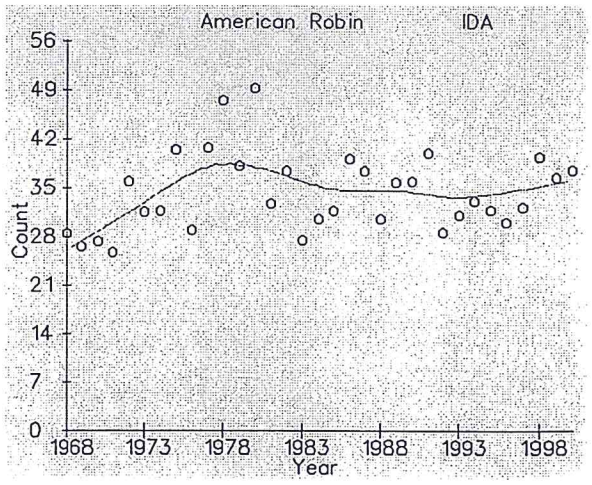

Figure 10. BBS population trend for American robins in Idaho

The Federal Aviation Administration reported that robins were involved in 70 civilian aircraft strikes from 1991 to 1997 (Cleary et al. 1998). In Idaho, robins primarily cause damage to fruits, such as cherries, grapes, and stone fruits; occasionally cause safety concerns with aviation; nuisance problems from nest building activities; and fecal accumulation on homes, businesses, and other buildings.

During FY00 and FY01, WS received and responded to 6 reported occurrences of robin damage to agriculture, primarily fruits such as cherries and grapes. Robin damage reported to WS in FY00 and FY01 was $9,100. In responding to the requests for assistance and after verifying damage, WS killed 15 adult robins by shooting. The area where direct control activities occurred was in southwestern Idaho and covered an area of about 40 acres in size which is less than 0.000001% of the total analysis area.

Since: 1) robin BBS and CBC population data indicate stable to increasing trends, 2) robins, like all migratory birds, are highly mobile and capable of occupying new areas, and 3) WS' operational control activities are conducted on a very small area within the analysis area, removal of 200 American robins annually that are causing damage or nuisances under the current Idaho WS program, would be expected to result in only a low magnitude of impact.

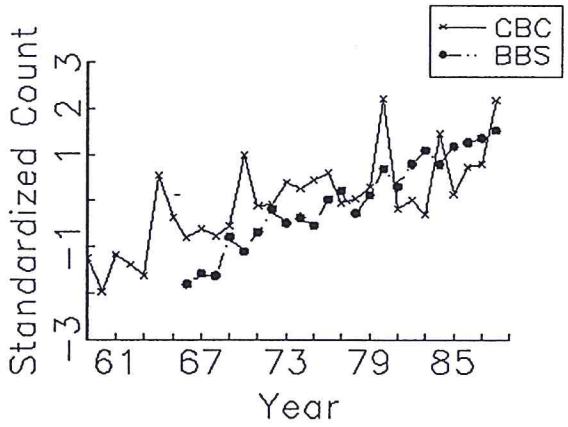

Figure 11. CBC population trend for American robins 1959 to 1988 (Sauer et al. 1996).

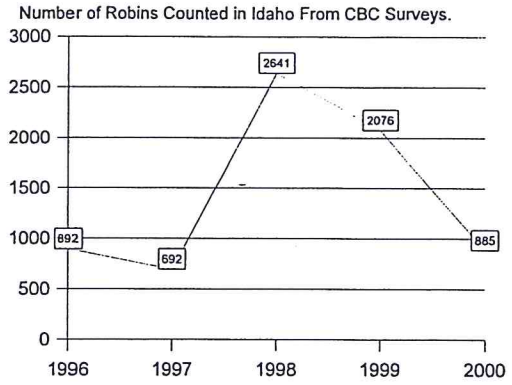

Figure 12. Number of American robins counted in CBC survey routes from 1996 to 2000 in Idaho. (National Audubon Society 2002). Data is compiled from survey routes (n=13) that were conducted for 5 consecutive years and where robins were counted in at least 1 of the 5 years.

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