

PROVIDING WILDLIFE SERVICES

Goal: Provide high-quality wildlife damage-management services for our customers that result in the protection of agriculture, wildlife and other natural resources, property, and human health and safety.

NATIONAL SUPPORT

Buck Island Reef National Monument Rat-Eradication Project—NWRC scientists from Fort Collins collaborated in December 2000 with biologists from the Alabama WS State office during a rat-eradication project in the USVI. Buck Island is a U.S. National Park and has suffered severe damage to native flora and fauna from introduced black (roof) rats. Sea turtle eggs and nests have been particularly vulnerable to the rats. Based on the team's earlier recommendations in February 1998, the NPS distributed a registered 0.005-percent diphacinone bait block in a grid of bait stations covering the entire 180-acre island, with a final baiting conducted last in October 2000. The December 2000 visit was to determine efficacy of the rat control program.

While no rats were captured over 5 days in any of the five trap-lines placed on the island, many house mice were captured. House mice (also an introduced species) had never been reported on the island previously, and none had been captured in all the previous trapping efforts. It is surmised that a population of house mice had probably been on the island for a long period of time, but had been suppressed by the black rats. Removal of the rats could have allowed irruption of the house mice. It remains to be seen whether this burgeoning mouse population will now impact the island's flora and fauna.

Beaver Damage at Arizona Demonstration Project—NWRC is collaborating with the Arizona WS program in response to a request by a State agency in the Southwest for research to identify means to resolve problems caused by beaver. The agency is restoring critical riparian and wetland habitats that were previously lost because of water resources development in the Phoenix metropolitan area. The restoration area is approximately 9.2 miles in length and 1 mile wide, encompassing about 5,600 acres and has been developed to determine the net benefit such a system and associated riparian habitat will have in the Salt, Gila, and Aqua Fria River area. This demonstration project has already successfully established a small wetland habitat occupied by a variety of flora and fauna. Unfortunately, excessive beaver activity is negatively affecting current status.

Although animal foraging is an expected and natural component of a balanced ecosystem, beaver activity at these sites has become destructive. Some areas have been rendered barren of aquatic plants, while numerous trees have been cut or girdled, and extensive burrowing has undermined dikes and islands. Lethal removal of animals is not a viable option, and a current lack of feasible sites prohibits relocating all but a few animals.

An NWRC scientist visited this site in March 2001 to assess the interest and feasibility of developing and obtaining funding for a multiyear research project to develop a strategy combining nonlethal approaches to deter destructive beaver activity while suppressing numbers by reducing reproduction and invasion rates.

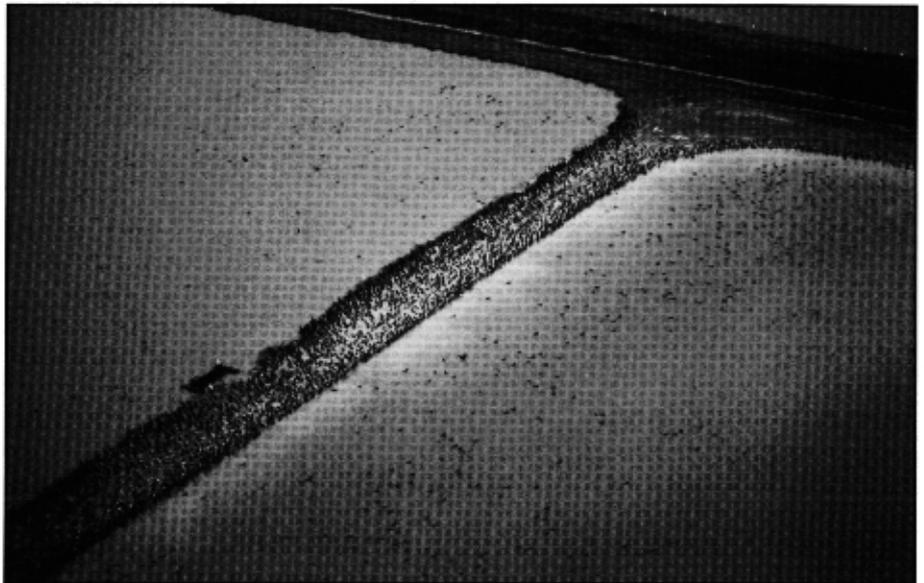
Catfish Aquaculture Farm Damage

Reduction—While conducting aerial surveys of double-crested cormorants and American white pelicans in March 2001, a biologist from the NWRC's Starkville, MS, field station located a catfish aquaculture farm with a particularly severe bird depredation problem. Approximately 5,000 pelicans and 1,500 cormorants were observed actively foraging in catfish ponds on the farm. The NWRC wildlife biologist immediately contacted a WS Specialist in Stoneville, MS.

The two biologists met at the site and dispersed the pelicans and cormorants from the area using a nonlethal laser device. Additionally, the biologists contacted the current owners and assisted with owner efforts to contract for harassment efforts at the site. Aerial surveys conducted later in March documented the complete absence of American white pelicans from the site and a reduction in cormorants from 1,500 to 3 individuals.

Michigan Bovine Tuberculosis Outbreak

—WS has received emergency funding from USDA to help resolve the bovine tuberculosis (TB) outbreak in cattle in Michigan. It appears that wildlife play a role in disease transmission by providing a reservoir for the disease as white-tailed deer and various carnivores collected during surveillance hunting and trapping have tested positive for TB. Three NWRC scientists joined Michigan WS staff in attending the 2-day conference on bovine TB in Lansing in March 2001. This forum, with more than 100 attendees, provided an update on the status of the outbreak and activities underway to combat it. The WS group was also able to meet with key participants from several State and Federal agencies, as well as Michigan State University researchers, to discuss roles and plan future research and management needs and collaborations.



The WS group then visited the outbreak area in northeastern Michigan where TB-positive cattle have been found on 14 farms. Based on the meetings and visits, WS personnel were able to assess the wildlife research and management needs. Research priorities include identification of deer-cattle interactions,

development of barriers to prevent deer movement onto cattle pastures, study of the potential use of coyotes as a sentinel species, and determination of other possible wildlife reservoirs and hosts of the disease. NWRC has developed a multiyear research project to address bovine TB and wildlife disease issues.

Skunk Rabies Vaccination Project—

Several NWRC employees from Fort Collins assisted WS biologists in implementing a skunk rabies vaccination project during May in Flagstaff, AZ. The project was in response to a request to WS from State and Federal agencies for help in controlling the spread of the virus. In January 2001, one skunk tested positive for a bat variant of rabies. Since this initial case, 17 road-killed, trapped, or nuisance skunks submitted to the Arizona Health Department have tested positive for the deadly virus. All areas within a 35-mile radius of Flagstaff were under quarantine until the end of July. Pet owners within this radius were advised to bring free-roaming pets indoors, keep pets leashed when on walks, and ensure that all pets are vaccinated against the disease.

WS has set up a quarter-mile grid system over the quarantine area for trapping and monitoring skunks. Skunks trapped within the core area where rabid skunks were previously found were euthanized and tested for rabies. Those trapped outside this core area were weighed, vaccinated, ear tagged, and released. Within the first 2 weeks of monitoring, 7 of 22 trapped skunks were euthanized, and 15 were vaccinated. Monitoring data indicate the WS program successfully halted this rabies outbreak in Flagstaff.

Gull-Billed Tern Predation in San Diego Bay

Bay—A small population of gull-billed terns nests in San Diego Bay near nests of the endangered western snowy plover and California least tern. Some gull-billed terns have been observed preying on the chicks of these endangered species. It is unknown whether predation is a random event by an individual tern or if multiple gull-billed terns from the colony prey on chicks.



During June 2001, in cooperation with California WS personnel and other Federal personnel, NWRC researchers developed a safe and effective trapping technique to capture and mark individuals birds. Following

marking, personnel observed tagged gull-billed terns foraging in least-tern and snowy-plover nesting areas. These data will help both our collaborators and WS in developing a management strategy for the terns.

American White Pelicans Banding Initiative

—For the fourth year, biologists from the NWRC's Starkville field station, with the help of 65 personnel from Federal and State agencies and wildlife conservation groups, banded 2,700 American white pelicans at the Chase Lake National Wildlife Refuge in North Dakota in July 2001. Chase Lake is the largest breeding colony for these birds in the United States. The pelicans breed in the north-central United States and Canada and migrate to the lower Mississippi River Valley for the winter.

Aquaculture producers in the Southeast are becoming more concerned about the impact of the pelicans on their industry. The birds not only feed at commercial aquaculture facilities but also appear to be the avian host for the trematode tentatively identified as *Bolbophorus* spp. Several producers have recently suffered crippling fish losses due to heavy infestations of these trematodes.

Observations of marked pelicans will enable researchers to estimate reproduction rates, age-specific survivorship, and colony fidelity. This study will provide information for assessing the population status of this species and evaluating management alternatives.

Air Force Base Habitat Management Plan

—A scientist from NWRC's Sandusky field station was invited to a Federal military base in Massachusetts in July 2001 to discuss NWRC's current research on grass management for airports and to review proposed habitat management plans for the base. Though airports can provide important habitat for birds whose numbers are in decline, bird-aircraft collisions are a major safety concern; therefore, habitat management must focus on minimizing birds in aircraft movement areas. A compromise plan was agreed upon for the airbase to provide habitat for upland sandpipers and grasshopper sparrows while minimizing attractive habitat near runways and



taxiways. All grass within 300 to 500 feet of runways and taxiways will be mowed as needed to maintain height at 7 to 14 inches. Grassland habitat outside these zones will be mowed only once every year after completion of the nesting season. In addition, some brushy areas away from aircraft movement will be converted back to grasslands to replace lost nesting habitat for plovers and sparrows near runways. Bird numbers and strike rates will be monitored to determine the effectiveness of this mowing plan and adjustments that may be needed.

National Wildlife Strike Database

—Since the 1960s, the FAA has maintained a paper-based filing system containing voluntary reports (sent in by pilots and airport personnel) of bird or other wildlife collisions with civil aircraft. Through an agreement with another Federal agency, NWRC's Sandusky field station has compiled all reported strikes since 1990 into an online National Wildlife Strike Database. Although 35,000 strikes were reported from 1990 through 2000, NWRC biologists estimate that this number represents only about 20 percent of strikes that actually occurred. This lack of reporting is a major hindrance to defining the nature and costs of wildlife strikes and in developing programs to reduce strikes.

To raise the reporting rate, an online reporting system was developed in 2001 [see <http://www.wildlife-mitigation.tc.faa.gov>]. Reports increased from 34 in April 2001 to 64 in June 2001. Strikes may still be mailed in to the Federal Aviation Agency (FAA) on Form 5200-7, but NWRC and the FAA are encouraging WS biologists and others working on airports to use the online system.

Pregnancy Detection Test for Wild Canids

—The diagnosis of pregnancy in the domestic dog is commonly made with abdominal palpation or ultrasound. Both techniques require experienced staff and cooperative animals. When performed on wild canids, sedation is typically required. A scientist at the NWRC Logan field station has found that relaxin, a hormone synthesized in the placenta, can be detected in coyote blood using commercially available assays. The presence of relaxin is a reliable tool for the detection of pregnancy in coyotes and a valid alternative to palpation. The methodology may be useful with other wild canids.

INTERNATIONAL COOPERATION

NWRC Scientist Assists Mexico in Site Selection and Design for New Airport—

In February 2001, a scientist from NWRC's Sandusky field station completed his fifth trip to Mexico since 1996 to assist biologists with the Mexican Government and National University of Mexico in evaluating bird hazards at the existing Mexico City International Airport (MCIA) and at proposed sites for a new international airport. These consultations have been sponsored by the Mexican Ministry of Communication and Transport through an agreement with the FAA. Bird species hazardous to aviation (e.g., waterfowl, raptors, and vultures) are common in the Mexico City region, and the Mexican Government wants to ensure that their existing airport and the new airport are designed and managed to minimize attractiveness to birds.

The biologists censused bird populations in wetland, agricultural, and landfill areas throughout the Mexico City region. Based on these surveys, the biologists made recommendations to not only minimize bird strike hazards at the proposed airport sites but also to develop and enhance important wetlands away from the proposed sites. In addition, the biologists undertook a small-mammal population study at MCIA to determine the food source for raptors and great egrets that frequent the runway areas. The biologists found abundant populations of four rodent species in airport grasslands. Maintaining grass at less than 5 inches high should reduce these rodent populations.

Such advanced planning and monitoring is essential for developing and implementing environmentally sound and efficient bird hazard-reduction programs for airports. Bird-aircraft collisions cost the aviation industry more than \$1 billion a year worldwide. Bird strikes are of particular concern in Mexico City because of the high elevation (about 7,400 ft) of the existing and planned airport sites.

Hutia Control at a Military Base in

Cuba—During May 2001, an NWRC scientist accompanied a wildlife specialist from the WS Virginia State office to a military base in Cuba to assess a rodent damage situation. It was apparent that hutia (known as banana rats) were very numerous at the base and were causing extensive damage to both natural vegetation and landscape plantings. These nocturnal rodents also had been chewing through wires and cables under vehicles and

leaving large amounts of feces. Hutia are native to Cuba but are rare outside the base because their large size (10–12 lb) makes them attractive as a high-protein food source.

Examination of dozens of hutia revealed that they are healthy and very successfully reproducing. Hutia appeared to use all types of habitats fully on the base, spending days underground or in trees and foraging extensively throughout the night. Current management by base personnel includes shooting and live-trapping. Management is considering the use of rodenticides in residential and remote areas where shooting is restricted or not practical. WS personnel are also helping to control the many other introduced and feral species that occur at the base, including goats, white-tailed deer, guinea fowl, pigeons, cats, and dogs as part of an effort to restore the native ecosystems.