

Wildlife Services

Protecting People
Protecting Agriculture
Protecting Wildlife

Wildlife Services (WS), a program within the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS), provides Federal leadership and expertise to reduce wildlife damage to the Nation's agriculture, natural resources, human health and safety, and property. Fish farmers turn to WS for responsible and environmentally sound solutions for damage caused by wildlife, which can cost the aquaculture industry millions of dollars.

Factsheet

November 2010

Assisting American Aquaculture



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Annual fish production in the United States is valued at \$1 billion. Fish production in the United States continues to be important, particularly in the East, where millions of dollars worth of catfish, tilapia, trout, baitfish, ornamental fish, shellfish, and crawfish are grown and harvested annually. For example, in 2007, aquaculture producers sold more than \$53 million in Idaho trout (37 million pounds), more than \$230 million in Mississippi catfish (280 million pounds), and \$110 million in Arkansas catfish and baitfish.

Wildlife Problems at Fish Farms

Aquaculture producers report that fish-eating birds cause significant economic loss. A single day of foraging by a flock of 250 American white pelicans could cost a catfish farmer as much as \$3,000. Some operations report 1-year losses in excess of \$200,000. In the Delta region of Mississippi, cormorants eat \$10 to 13 million worth of channel catfish each year.

In addition to predation, fish-eating birds can spread fish diseases. The American white pelican is a host of the trematode *Bolbophorus damnificus* and has been known to spread this parasite to commercial catfish farms. The resulting economic losses can be severe, as *B. damnificus* infection can cause high mortalities in catfish or make them unmarketable. Fish-eating birds also can spread the parasite that causes whirling disease in trout and salmon. This disease poses a significant threat to coldwater sportfish. Within weeks of being infected, the fish sustain

A propane cannon is one noisemaking method used to disperse birds.



nerve damage and skeletal deformities that cause them to swim erratically in a “whirling” motion and have difficulty feeding and avoiding predators.

Minimizing Losses

When fish farmers need responsible and environmentally sound solutions for damage caused by wildlife, they turn to WS. The program’s wildlife biologists conduct on-site evaluations to assess damage and identify the species causing it. They offer recommendations and technical advice, as well as management assistance, to aquaculture producers. WS recommends and conducts integrated wildlife damage management programs that consider and include the application of a variety of methods. At aquaculture facilities, these methods often include scaring and exclusionary techniques such as netting and noisemakers.

WS encourages the use of netting, wire grids, and fencing, which offer fish farmers long-term protection against wildlife damage. For some farmers, however, the cost associated with the installation of the physical barriers makes them impractical. In addition, some farmers report that the barriers interfere with normal fish-rearing operations and require substantial monitoring and repairs.

For additional relief, WS recommends noisemakers, such as propane cannons and cracker shells, and visual devices, like “eye-spot” balloons, remote-control boats and airplanes, and scarecrows. Unfortunately, many birds quickly adapt to the sight and sound of such devices. If exclusionary and scaring techniques fail to reduce losses, the U.S. Department of the Interior’s Fish and Wildlife Service (FWS) can issue a depredation permit to remove a limited number of birds

from a specific farm. Removal can make nonlethal control methods more effective. When WS assists in lethal removal, the methods and numbers of birds removed is controlled and can be carried out with limited environmental impacts.

The issuance of permits is rigidly controlled because most fish-eating birds are protected by the Migratory Bird Treaty Act. The Public Resource Depredation Order (50 CFR§21.48) authorizes State fish and wildlife agencies, federally recognized tribes, and USDA’s WS to lethally remove cormorants when they are causing damage to public resources.

Research Projects

Given aquaculture’s importance as a source of food for American consumers, USDA’s National Wildlife Research Center (NWRC) conducts research and field studies to develop new damage management methods and to improve existing ones. The majority of the NWRC’s research concentrates on the development and refinement of nonlethal control methods.



A WS biologist prepares a bird specimen for submission to the laboratory where stomach contents can be analyzed for disease and parasite research.

In addition, WS continues to work with FWS to study the ecology, behavior, food habits, population modeling, and migratory patterns of fish-eating birds.

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NWRC scientists have identified that cormorants are as likely to feed at catfish ponds containing food fish as at fingerling ponds. Because catfish in food fish ponds have higher value, farmers should focus management efforts to minimize those losses. NWRC continues efforts to document the distribution and growth of double-crested cormorant populations. This research will be used to develop regional and flyway-based population management strategies.

Additional Information

For more information about aquaculture and WS, contact 1-866-4USDA-WS (1-866-487-3297) or visit the program's Web site at www.aphis.usda.gov/wildlife_damage/.



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