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NWRC Research Areas: Aquaculture

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Our scientists are defining economic impacts and developing strategies for reducing avian predation in aquaculture.

Much of the catfish served in the United States was probably grown in an aquaculture facility instead of being caught from rivers or lakes. Aquaculture, the commercial production of fish and shellfish for food, is an increasingly important

type of agriculture, especially in the southeastern United States. Unfortunately, fish-eating birds such as American white pelicans, double-crested cormorants, great blue herons, and great egrets are attracted to the pond-based and open-water facilities found in aquaculture areas. These birds feed upon fish, shellfish, shrimp, and crayfish produced in aquaculture facilities, often causing significant losses. In fact, cormorants eat more than \$5 million worth of catfish each year in Mississippi alone.

Because of the extensive losses suffered by aquaculture producers, the National Wildlife Research Center established a field station in Starkville, Mississippi, in 1988 to research not only the economic impacts but the hows and whys of bird predation and how to minimize or prevent it. NWRC scientists with the aquaculture research project study captive and free-ranging birds to better understand what conditions or behaviors influence predation rates. For example, scientists are looking at bird foraging patterns, bird population distributions, preferred prey size, and a host of other factors that may influence how much product is lost to bird predators. Additional studies are looking at the role that birds play in transmission of catfish diseases and parasites. Ultimately, all of these studies should provide data that will promote innovative approaches to reducing bird predation impacts on aquaculture.

Project Goals and Objectives

Goal: Develop an understanding of the economic impacts of damage inflicted on aquaculture production systems by cormorants, pelicans, wading birds, and waterfowl and develop tools and techniques for reducing that damage.

Objectives:

1. Determine the economic impact of cormorants, pelicans, and wading birds on different production systems used in the catfish, baitfish, and crawfish industries.
2. Develop and evaluate tools and strategies for dispersing fish-eating birds from off-site roosts, loafing areas and aquaculture facilities.

3. Determine the role of American white pelicans in the epidemiology of *Bolphorus* trematodes at catfish facilities.
4. Develop methods for monitoring double-crested cormorant distribution and population growth.
5. Develop methods for managing breeding colonies of double-crested cormorant impacts to yellow perch fisheries in the Les Cheneaux Islands area of Michigan.

Related Links

- [Aquaculture \(Peer Reviewed Publications\)](#)
- [Cormorant Initiative](#)
- [USDA Aquaculture Resources](#)

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