

Mitigating Cattle Egret Strikes at Orlando International Airport

Wildlife Strikes Ground Flights

Wildlife strikes are major day-to-day threats for many airports. In addition to causing passenger injury, and even death, strikes can have long-term consequences to airports. They present aeronautical safety concerns and can cause direct economic losses. As a wildlife biologist at Orlando International Airport (MCO) for the past 18 years, Johnny Metcalf has seen plenty of wildlife strikes throughout his tenure. Most wildlife strikes that occur at MCO—the 13th busiest airport in the United States—are due to birds nesting around airport land.

A few years ago, Metcalf and other airport officials noticed an increase in the number of aircraft strikes with cattle egrets. Cattle egrets, a species of heron, live throughout subtropical zones, and they thrive in central Florida's humid climate and abundant wetlands. The airport is in an area of low-lying ponds and wetlands 6 miles southeast of the city center and is home to a sizeable and diverse population of birds, including cattle egrets.

Metcalf knew that the airport needed to act to prevent more strikes. He wanted to avoid simply shooting the birds, as past airport data showed that it didn't necessarily reduce the probability of a strike. As a panel member on *ACRP Synthesis 39: Airport Wildlife Population Management*, he realized he needed to take a more holistic approach.

Leveraging ACRP Guidance

Together with ACRP's earlier *ACRP Synthesis 23: Bird Harassment, Repellent, and Deterrent Techniques for Use on and Near Airports*, *ACRP Synthesis 39* provides a foundation for airports to develop an integrated wildlife management plan. An integrated approach combines the indirect, nonlethal methods described in *ACRP Synthesis 23* with the more direct, and sometimes lethal, methods found in *ACRP Synthesis 39*. These include trapping, nest destruction, pesticide and chemical use, and shooting. Based on the research, this combination of indirect and direct measures is more effective than a single approach to wildlife management.



Above: Birds foraging near MCO runway (Source: Johnny Metcalf).

ACRP Synthesis 39 also provides guidance related to threatened or endangered species as well as high-risk species. One of the most useful aspects of the report is a series of case studies from 15 airports around the country—including MCO—that have successfully implemented an integrated wildlife management plan. These case studies provide lessons learned about the effectiveness of both general and specific wildlife control measures that other airports can use to develop and implement their own plans or programs.

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Mitigating Cattle Egret Strikes at Orlando International Airport—continued

MCO's Plan Takes Flight

Metcalf referenced *ACRP Synthesis 39* several times while developing MCO's cattle egret management plan. He realized that curbing cattle egret reproduction on and near airport grounds was key to successfully reducing their numbers. After going step-by-step through the report, he ultimately adopted a three-pronged approach that involved removing nesting habitat, oiling eggs, and increasing predators.

As noted in *ACRP Synthesis 39*, oiling—which makes eggs nonviable—can be a very effective, nonlethal method for controlling bird populations. After one season of vigorously targeting nests and oiling eggs, Metcalf discovered a need to increase other animal

An integrated approach of habitat manipulation, selective nest elimination, species specific harassment, and time and location specific lethal removals have resulted in a decreasing trend in damaging strikes and a reduction in population observed on [MCO] property.

— *ACRP Synthesis 39: Airport Wildlife Population Management*, page 40

populations, especially cattle egret predators, and imported raccoons from local rehabilitators. But instead of releasing them in the cattle egrets' main rookery (or breeding colony), he introduced the raccoons in outlying areas and smaller satellite rookeries. That way, MCO avoided harming the raccoons and creating other operational problems at the airport.

Outcomes and Lessons Learned

The entire process to implement MCO's cattle egret management plan lasted approximately three years, and the results were well worth it. From 2011 to 2015, the cattle egret population decreased by 75 percent, which in turn reduced aircraft strikes. MCO now averages four strikes per 10,000 aircraft movements and 2.5 damaging strikes per 100,000 aircraft movements.

One of the most important lessons learned at the airport is the importance of continually collecting and analyzing detailed data. Metcalf and MCO's other wildlife control personnel have implemented a system that combines damaging and non-damaging strike data with daily wildlife activity reports to determine which species pose the highest risk. They then analyze



Above: Johnny Metcalf removes an alligator from MCO grounds (Source: Johnny Metcalf).

these data annually to determine when and where species like cattle egrets are most likely to occur. The airport uses this information to implement corrective actions and then re-evaluates its system to identify successes and areas for improvement.

ACRP Synthesis 39 has been a key ingredient of those successes. In addition to providing detailed planning guidance, it serves as a credible resource that Metcalf can reference whenever other airport officials have questions about MCO's plan or wildlife management in general. In fact, the report was so integral to MCO's success that staff used it in a presentation at a national conference on bird strikes in 2015/2016.

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