

PROGRESS REPORT

Habitat use, survival, and reproductive success of female Florida mottled ducks (*Anas fulvigula fulvigula*) using the Everglades Agricultural Area and urban-suburban habitats in eastern Florida.

Reporting Period: January - May 2009

Objectives:

- 1) Examine and compare habitat use patterns, daily and seasonal movements, and home range sizes of female mottled ducks using agricultural and urban-suburban habitats..
- 2) Estimate and compare annual and season-specific survival rates of female mottle ducks using agricultural and urban-suburban habitats.
- 3) Estimate nest success of female mottled ducks and examine effects of nest site characteristics and breeding phenology on nest success.

Activities:

Trapping - Forty-seven adult female mottled ducks using rural habitats were implanted with transmitters in 7-9 September 2008. Molting ducks were captured in agricultural areas at night using airboats. Trapping of urban ducks began on 7 February 2009. We used several different trapping methods, including an air-powered net cannon, remote controlled land and water traps, and walk-in box traps. Whole corn was used to bait traps at 3 separate sites. Two trap sites were located on ponds adjacent to condominiums (Mediterranea in Riviera Beach and Cielo in Palm Beach Gardens) while the third trap site was on a series of canals in a suburban neighborhood (West Donald Ross in Palm Beach Gardens). In total we captured 8 females at Meditteranea, 6 at Cielo, and 2 at West Donald Ross. Females were trapped during 7– 26 February ($n = 11$) and 22 – 31 March ($n = 5$). Ducks were weighed, measured, and banded with U. S. Fish and Wildlife Service leg bands. A radio transmitter (18 g; AI-2M [12], Holohil System Ltd., Carp, Ontario, Canada) was then surgically implanted into the abdomen of each bird using the methods described by Korschgen et al. (1996). All surgeries were conducted by either Dr. Darryl Heard or Ron Bielefeld. Post surgery, birds were allowed a minimum recovery time of 60 minutes and released where they were captured.

Tracking/Habitat Use - Radiotracking of each bird began immediately after release, but data for each bird was not considered valid until 7 days after release. We located each bird that was accessible from the ground as often as possible, typically 3 times per week. We used vehicle-mounted antennas to triangulate the location and calculate an error ellipse. Most ducks used Stormwater Treatment Areas (STA) in the fall and early winter. In late January, however, as smaller wetland areas and the STAs began to dry up due to advancing drought conditions, many birds began using the marshes associated with the Everglades and Lake Okeechobee. By mid-March nearly all of the rural caught ducks were using those areas, which can only be reached by airplane due to its remoteness. Those birds were located from the air an average of 3 times per month. Our goal was to locate them once a week, but weather usually caused the cancellation of a least one flight per month. May is the beginning of the wet season in south Florida and this year it came on very quickly with conditions going from moderate drought to very wet in just a couple of weeks. The change in surface water conditions associated with this abundant rainfall appears to have caused birds to move off of the Everglades and Lake Okeechobee marshes and back onto more ephemeral wetland habitats. A large proportion of our rural birds have now moved back into the Everglades Agricultural Area (flooded ditches and agricultural fields) and the STAs near where they were originally captured back in September of 2008. It will be interesting to see how many of these birds choose to undergo wing molt on or near the same areas they used in 2008. Thus far, over 2600 locations have been recorded. There have been 13 mortalities, only one of which was an urban duck.

Nest monitoring - We began to detect nesting attempts in March. If a female was found in the same location for 2 consecutive days, we used a hand-held Yagi antenna and walked in on the bird to determine if she was in nesting cover. If the female was in nesting cover, we located

the nest, recorded the coordinates, and marked the area with flagging. We also recorded the number and age (by candling) of eggs and then calculated nest age to determine when the nest was likely to hatch. While females were incubating we relocated them frequently (once or twice a day) to confirm that the nest was still active. If a female was not found on the nest for 2 consecutive days, we checked the nest to determine whether it had been abandoned, depredated, destroyed, or was still active. Six nests have been found to date. One hatched, one was depredated, and the remainder is in progress. Four of six nests are in urban areas.

Future Plans and Goals:

We will continue to locate radio-marked females regularly until they die or until the transmitters fail. We also will continue to monitor current nests and identify new nesting attempts. We will begin trapping and radio-marking new females in rural environments in early August and in urban-suburban areas in early October. Our goal is to capture and radio-mark an additional 100 females in 2009. Summary and analysis of data from the first field season will begin in Fall 2009.