

ORNITHOLOGICAL LITERATURE

Below is a brief summary of a recent publication from the scientific literature. This summary is intended to bring the findings of ornithological research that deals with the birds that occur in Alabama and northwest Florida to a larger audience.

Early onset of incubation by Wood Ducks. G. R. Hepp. 2004. *Condor* 106:182-186.

Many species of birds begin incubating their eggs before the clutch is completed. This behavior can lead to asynchronous development and in some species asynchronous hatching. In species that produce precocial young, however, asynchronous hatching typically does not occur because eggs laid late in sequence develop faster than eggs laid early. This paper investigates the possible advantages that might accrue to Wood Ducks (*Aix sponsa*), a species that produces precocial young and incubates its clutch before it is completed. It examines three hypotheses concerning early onset of incubation: (1) it maintains the viability of eggs laid early in sequence, that often become less viable if they remain unincubated, especially when exposed to high ambient temperatures, (2) it reduces the likelihood of intraspecific brood parasitism, which is common in Wood Ducks, and (3) it improves nesting success by reducing the time the nest is exposed to predators.

The egg viability hypothesis was not supported by the data collected. Females did not begin incubating earlier in the egg-laying sequence as the season progressed and ambient temperatures increased as predicted by the egg viability hypothesis. Results also did not support the brood parasitism reduction hypothesis. If the early onset of incubation prevented brood parasites from laying their eggs in nests, then those nests where females initiated incubation the earliest should have had fewer parasitic eggs when compared to females that spent less time on their eggs. Hepp found no relationship between the number of nights egg-laying females incubated and the number of parasitic eggs that were present in the nests. Further, females that had been incubating eggs at night often left their nests during the egg-laying time and so were not present at the nest to protect it from brood parasites.

Although sample sizes were small, Hepp did find evidence to support the shortened incubation period hypothesis. There was an inverse relationship between the number of nights females incubated and the length of the incubation period. That is, those females that initiated incubation early tended to have shorter incubation periods than those females that spent fewer nights on their incomplete clutches. The possible advantage of a shorter incubation period is that the nestlings are exposed to predators for a shorter period of time. However, research is now needed to examine whether developmental maturity and post hatching survival is lower in those hatchlings that undergo an accelerated (i.e., shorter) development period because of early onset incubation. In other words, are there tradeoffs associated with early onset of incubation behavior, accelerated development, and hatching synchronization in precocial birds? [Department of Forestry and Wildlife Sciences, 108 M. White Smith Hall, Auburn University, Auburn, AL 36849]—TMH.