

## **Hooded Mergansers Breeding in the Upper Coastal Plain of South Carolina**

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Densities of breeding Hooded Mergansers (*Lophodytes cucullatus*) in the southeastern United States are generally considered low (Bellrose 1980), and there is only limited information on their breeding biology (Morse *et al.* 1969, Kenamer *et al.* 1988). In South Carolina, for example, there are only a few reports of isolated breeding (Post and Gauthreaux 1989, McNair and Post 1993). Kenamer *et al.* (1988) reported that from 1982 through 1988, Hooded Merganser use of > 100 Wood Duck (*Aix sponsa*) nest boxes on the U.S. Department of Energy's Savannah River Site (SRS) in Aiken and Barnwell Counties, South Carolina, averaged less than one percent annually. In this account, I present additional data on breeding Hooded Mergansers at this same location from 1989 through 1996. Study areas on the SRS and methods used during this study were the same as those previously described in Kenamer *et al.* (1988).

### **Results and Discussion**

From 1982 through 1988, Kenamer *et al.* (1988) reported only 5 total Hooded Merganser nests, with a pair nesting about every other year and nest box use averaging 0.6% annually. From 1989 through 1996, however, nest box use by Hooded Mergansers more than tripled to 2.2% annually, with an average of 3 nesting attempts by Hooded Mergansers each year. I also observed an increase in the incidence of Hooded Merganser parasitism of Wood Duck nests in recent years, with 17 Wood Duck nests containing Hooded Merganser eggs over the period 1989-1996. In the 7 years prior to that period, only 3 Wood Duck nests were noted to contain Hooded Merganser eggs. My results indicate a growing breeding population of Hooded Mergansers on the SRS, although growth has been at a relatively slow pace. Hooded Mergansers do not attain sexual maturity until their second year of life (Bellrose 1980), and this may explain, at least in part, the slow growth I observed over 15 years in the SRS breeding population. I am unaware of the extent to which other local

breeding populations of Hooded Mergansers in South Carolina may also be growing.

Initiation dates of Hooded Merganser nests ( $n = 25$ , 1982-1996) on the SRS ranged from January 18 to March 22 and averaged February 23 ( $\pm 3$  Standard Error [SE] days). The latest initiation date of a successful nest was March 10. Phillips (1926) indicated that Hooded Mergansers in the Southeast had an early breeding season, and data from the SRS confirms that to be the case. Although Hooded Mergansers begin nesting relatively early in the year, the range of nest initiation dates for this species contrasts with that for Wood Ducks nesting on the SRS, which lasts from mid-January to late-June (Kenamer and Hepp 1987). It is not clear why Hooded Mergansers would have such a short breeding season, but differences in the diets of these species (see Bellrose 1980) and temporal changes in food abundance may play a significant role.

Clutch sizes of 21 completed Hooded Merganser nests on the SRS averaged 11 eggs (range: 8 -19). The single clutch of 19 eggs that I observed was likely the result of conspecific nest parasitism (the next largest clutch size was 13). Interestingly, 17 of those 19 eggs hatched, for a hatching rate of 89%. For all successful nests ( $n = 16$ ), brood size at hatching averaged 10 young, and the average hatching rate was 86%. Causes of nest failure included predation by ratsnakes (*Elaphe obsoleta*,  $n = 2$ ), raccoon (*Procyon lotor*,  $n = 1$ ), and Red-headed Woodpecker (*Melanerpes erythrocephalus*,  $n = 1$ ), and nest abandonments before ( $n = 4$ ) and after ( $n = 1$ ) incubation began. Egg measurements were recorded for 163 eggs from 15 nests. Egg length averaged  $54.1 \pm 0.11$  SE mm (range: 50.0 - 58.0 mm), while egg breadth averaged  $44.3 \pm 0.07$  SE mm (range: 40.7 - 46.5 mm). In contrast, Wood Duck eggs are somewhat shorter (51.1 mm), but are particularly smaller in breadth (38.8 mm, Bellrose 1980).

I attempted to capture all nesting females to measure body weight (+ 5 g) during incubation with a pesola spring scale. Incubation generally lasts for 33 days in Hooded Merganser nests (Morse *et al.* 1969). Early incubation (mean = day 6) female body weights from 10 nests averaged  $571 \pm 10$  SE g. Late incubation (mean = day 29) body weight averaged  $518 \pm 13$  SE g ( $n = 8$ ). For 6 nests, early and late incubation female body weights were recorded. Weight loss in those averaged  $59 \pm 12$  SE g, indicating about a 10% decrease in weight over the course of incubation. Compared to other species of North American waterfowl, Hooded Mergansers apparently lose relatively little body weight during incubation (see review by Gatti 1983).

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### **Literature Cited**

**Bellrose, F. C. 1980. Ducks, Geese, and Swans of North America. Stackpole, Harrisburg, Pennsylvania.**

**Gatti, R. C. 1983. Incubation weight loss in the Mallard. Canadian Journal of Zoology 61:565-569.**

**Kenamer, R. A. and G. R. Hepp. 1987. Frequency and timing of second broods in Wood Ducks. Wilson Bulletin 99:655-662.**

**Kenamer, R. A., W. F. Harvey IV, and G. R. Hepp. 1988. Notes on Hooded Merganser nests in the coastal plain of South Carolina. Wilson Bulletin 100:686-688.**

**McNair, D. B. and W. Post. 1993. Supplement to: Status and distribution of South Carolina birds. Contribution Charleston Museum 8.**

**Morse, T. E., J. L. Jakabosky, and V. P. McCrow. 1969. Some aspects of the breeding biology of the Hooded Merganser. Journal of Wildlife Management 33:596-604.**

**Phillips, J. C. 1926. A Natural History of the Ducks. vol. 4 Houghton Mifflin Company, Boston; 1986 reprint by Dover Publications, Inc., New York.**

**Post, W. and S. A. Gauthreaux, Jr. 1989. Status and distribution of South Carolina birds. Contribution Charleston Museum 18.**