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Observations of Nocturnal Foraging in the Double-crested Cormorant

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Abstract.—Double-crested Cormorants (*Phalacrocorax auritus*) are normally considered a diurnal species. Here we describe cormorants foraging nocturnally in an oxbow lake in Mississippi. We have observed this behavior only once during 30 capture attempts over seven years. Received 22 October 1997, accepted 3 March 1998.

Key words.—Double-crested Cormorant, foraging, Mississippi, nocturnal, *Phalacrocorax auritus*.

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Double-crested Cormorants (*Phalacrocorax auritus*) are normally considered a diurnal species (Palmer 1962; King *et al.* 1995; King 1996). While trying to capture cormorants for a radio-telemetry study in January 1997, we observed them foraging at night on an oxbow lake in Mississippi. This note describes the circumstances surrounding this observation.

To capture cormorants, we flush them from their roost trees at least one hour after dark. The birds are then netted from a boat equipped with flood lights (King *et al.* 1994). At approximately 2000 h on 30 January 1997, prior to flushing cormorants from a roost on Lake Chotard, in the delta region of Mississippi (32°34' N, 91°01' W), we observed a raft of 60 cormorants exhibiting typical diurnal foraging behavior. These birds were diving and surfacing with what appeared to be 10-cm-long shad (*Dorsoma* spp.) in their bills. These cormorants did not exhibit the usual escape swimming and diving behavior that we normally observe with cormorants flushed from roost trees (King *et al.* 1994). The cormorants continued foraging until we moved the boat into the middle of the raft and began our capture attempts. The moon had not yet risen, there was no discernible wind, and the ambient temperature was about 2°C. The lake's surface was covered with a layer of powder-down feathers from a flock of about 4,000 cormorants, 500 American White Pelicans (*Pelecanus erythrorhynchos*), and 200 Ring-

billed Gulls (*Larus delawarensis*) that had been foraging and loafing on the lake for the last few weeks (J. Laney, pers. comm.).

We also noticed eye-reflection of shad spaced about one-two m apart on the water's surface throughout the area covered with powder down. Personnel at the boat landing also heard and saw shad breaking the surface. Although we are not sure why the shad were at the water's surface, one possible explanation may be that the shad were foraging on plankton that migrate to the water's surface at night (Horne and Goldman 1994).

The authors have been involved in more than 30 cormorant capture attempts in Alabama and Mississippi over the last seven years. The observation described here is the only time we have observed either cormorants foraging nocturnally or shad at the water's surface. In the delta region of Mississippi, shad typically comprise a large portion of the diet of cormorants (Glahn *et al.* 1995). These nocturnally-foraging cormorants appeared to be taking advantage of an abundant, easily exploitable food source.

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