

## Sleeper (Eleotridae) Diversity in North Carolina

The Family Eleotridae is a small family of just three species inhabiting North Carolina's shallow coastal waters. These species, unknown to most, are: Fat Sleeper, *Dormitator maculatus*, Largescaled Spinycheek Sleeper, *Eleotris amblyopsis*, and Emerald Sleeper, *Erotelis smaragdus* ([NCFishes.com](http://NCFishes.com); Tracy et al. 2020). The Fat Sleeper and Largescaled Spinycheek Sleeper don't venture very far inland, but both species can be found in some of the smaller tributaries to the lower Cape Fear and Neuse rivers.

Because of their lack of commercial or recreational importance, none of the species is a federally- or state-listed species (NCAC 2017; NCNHP 2020; NCWRC 2017). And due to their obscurity, they really don't have any common or vernacular names other than the American Fisheries Society-accepted common names listed previously (Page et al. 2013). Each species also has scientific (Latin) name (Appendix 1).

In North Carolina, Fat Sleeper appears restricted to shallow fresh and estuarine waters including coastal streams, ponds, and ditches in the Cape Fear, White Oak, Neuse, and Tar basins as far north as Ocracoke Island on the Cape Hatteras National Seashore, Dare County (Ross and Rohde 2004; Tracy et al. 2020). In South Carolina, the Fat Sleeper is often found in coastal fresh waters, but is more common in brackish waters, especially in areas of low salinity (Rohde et al. 2009). It may reach a length of 380 mm (15 inches), but is seldom longer than 250 mm (10 inches) (Rohde et al. 2009).

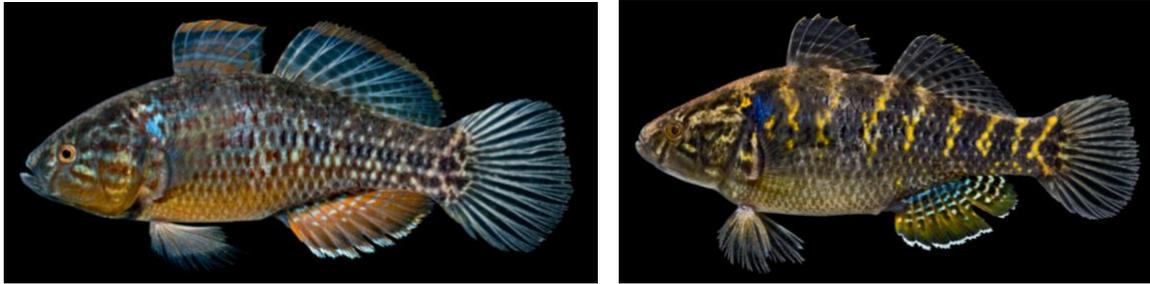
Largescaled Spinycheek Sleeper is found in the Cape Fear, White Oak, and Albemarle basins as far north as off of Roanoke Island in the Croatan Sound, Dare County. In South Carolina, the Largescaled Spinycheek Sleeper tolerates a wide range of salinity and has been found in fresh and brackish water and in low-salinity upper estuaries, often over a mud substrate (Rohde et al. 2009; Ross and Rohde 2004). It reaches a length of 250 mm (10 inches) (Rohde et al. 2009).

The Emerald Sleeper is extremely rare in North Carolina – it is only known from two specimens (Ross and Rohde 2004). The first specimen was collected at night on March 04, 1987 from the intake canal of the Brunswick Nuclear Plant in Brunswick County, which opens onto the lower Cape Fear River estuary near Southport. This 67 mm Standard Length specimen was vouchered in the formerly Carolina Power and Light Company fish collection, but it cannot be located (Kyle Hussey, Duke Energy, pers. comm.). The second specimen was collected by trawl on May 18, 1993 at the northwest end of Masonboro Island in New Hanover County. This 92 mm Standard Length specimen was gifted to the Florida Museum of Natural History (UF Catalogue No. 96684). No other specimens have been collected from North Carolina waters since then. The closest known localities are from Volusia County, Florida (Fishnet 2, <http://www.fishnet2.net/>, accessed February 19, 2021).

Key characteristics for their proper identification include the number of dorsal fin spines, dorsal fin rays, and pectoral fin rays; the lateral series scale count; the presence or absence of a preopercular spine; the presence of cycloid or ctenoid scales; and the length of the anterior extension of the caudal fin.

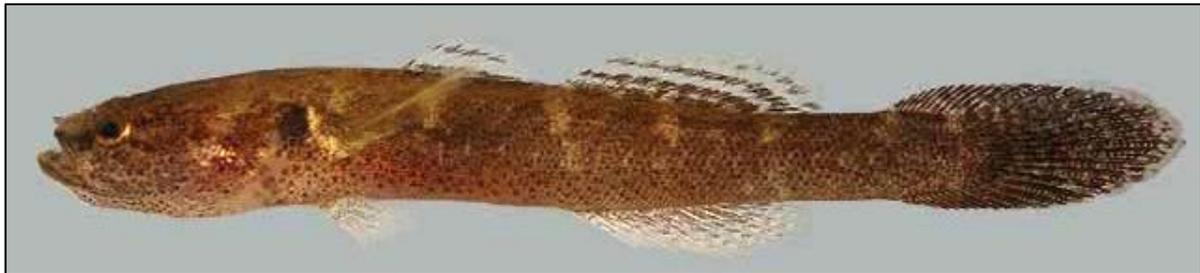
**Identification Key to the Freshwater and Marine Species of Sleepers (Family Eleotridae) in North Carolina**

- 1a. No blueish spot above the opercle and anal fin without blueish bars. First dorsal fin with six spines. Preopercle spine present (concealed, often covered with skin). Pectoral rays 16-18 (usually 17). Scales small, > 50 in lateral series .....2
- 1b. Blotch just above the opercle ringed in light blue with blueish bars on the anal fin (Figure 1). First dorsal fin with seven spines. Preopercular spine absent. Pectoral rays 14. Scales large, 33-36 in lateral series ..... Fat Sleeper, [\*Dormitator maculatus\*](#)\*

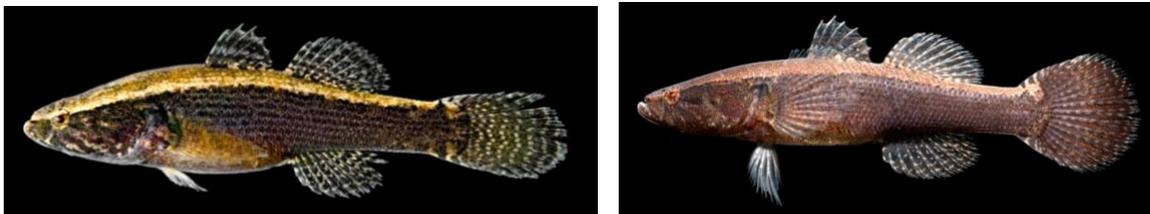


**Figure 1. Fat Sleeper. Left – Male; Right – Female.**

- 2a. Dorsum and sides not contrasting with one another (Figure 2). Caudal fin extending anteriorly onto body (Figure 2). Body very slender, elongate, and terete, the depth contained 7-9 times in Standard Length. Second dorsal fin with 12 rays. Scales cycloid and smooth, > 90 in lateral series ..... Emerald Sleeper, [\*Erotelis smaragdus\*](#)
- 2b. Pale dorsum in contrast to darker sides (Figure 3). Caudal fin not extending anteriorly on body; body depth moderate (Figure 3). Second dorsal fin with nine rays. Scales ctenoid and rough on posterior part of body, 40-65 in lateral series .....Largescaled Spinycheek Sleeper, [\*Eleotris amblyopsis\*](#)



**Figure 2. Emerald Sleeper. Photograph courtesy of the Smithsonian Tropical Research Institute’s Shorefishes of the Greater Caribbean online information system, <https://biogeodb.stri.si.edu/caribbean/en/pages/random/2707>, accessed 02/08/2021.**



**Figure 3. Largescaled Spinycheek Sleeper.**

\*Fat Sleeper may be confused with Banded Pygmy Sunfish, *Elassoma zonatum*, (<https://ncfishes.com/freshwater-fishes-of-north-carolina/elassoma-zonatum/>) whose distributions overlap one another. However, Fat Sleeper has two separated dorsal fins and a scaled head, whereas the Banded Pygmy Sunfish has a single dorsal fin and an unscaled head (Figures 4 and 5) (Rohde et al. 2009).



Figure 4. Fat Sleeper with white arrows pointing to a scaled head and separate dorsal fins.



Figure 5. Banded Pygmy Sunfish with white arrows pointing to a naked (unscaled) head and a single dorsal fin.