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**THE DISTRIBUTION OF THE
FLAGFIN MOJARRA,
Eucinostomus melanopterus
(PISCES: GERREIDAE) WITH
ECOLOGICAL NOTES ON
TEXAS AND FLORIDA
POPULATIONS.**

In the course of reviewing the literature relevant to an ecological study of species of the family Gerreidae, I discovered that most recent faunal works on western Atlantic inshore fishes have failed to give the correct range for the distinctive flagfin mojarra, *Eucinostomus melanopterus* (Bleeker). In the western Atlantic, *E. melanopterus* is known to occur from Georgia to Brazil with a hiatus in its distribution from the tip of Florida to the Mississippi River. This species also occurs in the tropical eastern Atlantic from the Cape Verde Islands to the Zaire River (Curran, 1942). Published records of *E. melanopterus* in the western Atlantic include the central Georgia coast (Dahlberg, 1975); Texas (Longley, 1935); the West Indies (Longley, 1935; Fowler, 1950; Caldwell, 1966); the Gulf coast of Mexico (Darnell, 1962; Alvarez del Villar, 1970); the Caribbean coast of Central America (Longley, 1935; Caldwell, Ogren and Giovannoli, 1959; Caldwell and Caldwell, 1964; Gilbert and Kelso, 1971); and the Caribbean and Atlantic coasts of South America from Colombia to Rio de Janeiro, Brazil (Schultz, 1949; Caldwell and Caldwell, 1964; Cervigon, 1966; Mago, 1970). Additional localities cited in unpublished works include Jupiter Inlet, Florida (Christensen, 1965); Biscayne Bay, Florida (C.R. Robins pers. comm. in Herrema, 1974); and Louisiana (Curran, 1942).

Despite the above records, recent faunal works covering the Gulf of Mexico and the western Atlantic have failed to list the complete range of *E. melanopterus*. Hoese and Moore (1977) included *E.*

melanopterus as occurring in the north-eastern Gulf of Mexico and southeastern Atlantic coast of the United States but not in the northwestern Gulf of Mexico. These authors cited Curran (1942) but evidently failed to notice Curran's records of *E. melanopterus* from Louisiana and Texas. Walls (1975), however, did not mention this species in his work on the northern Gulf of Mexico. Finally, Randall and Vergara (1977) did not include Georgia and the east coast of Florida in their range for *E. melanopterus*. The only author who hints at the entire western Atlantic distribution of this species is Dahlberg (1975). His brief range description was "Georgia, Florida to South America".

I have verified the existence of *E. melanopterus* in Texas and Florida waters by the examination of 162 specimens in the Texas Cooperative Wildlife Collection, Texas A&M University (TCWC). These specimens are from several locations along the Texas coast and from Sebastian Inlet at the border of Brevard and Indian River counties, Florida (Table 1). The three specimens from Sebastian Inlet apparently represent the first records from that locality (Gilmore's [1977] record of *E. pseudogula* from this locality may refer to *E. melanopterus* [See next page].)

The confusion concerning the distribution of the flagfin mojarra appears unusual when one considers that this is one of the most distinctive gerreid species found in the western Atlantic. Several species in this region possess a more or less pronounced black blotch at the tip of the spinous dorsal, but only in *E. melanopterus* is this blotch solid, jet black in color and bordered below by a clear region (white in fresh specimens). The latter region is in turn bordered below by an area of scattered melanophores near the base of the fin (Curran, 1942). According to Curran (1942), this is also

Table 1. TCWC collections of *Eucinostomus melanopterus*

TCWC #	Date	State	County	Sal.	Tem.	Cover	Substrate	#	SL range (mm)
0306.27	6/16/75	Tex.	Cameron	34	32	Grass	Sandy mud	11	14.55 - 62.15
0575.24	9/27/75	Tex.	Cameron	—	26	Grass	Sandy mud	33	16.20 - 32.30
2891.1	5/28/76	Tex.	Cameron	—	—	Grass & algae	Mud	1	30.80
0889.2	5/28/76	Tex.	Cameron	—	—	—	—	26	23.25 - 33.00
2892.1	5/24/77	Tex.	Cameron	31	26	None	Sand & shell	10	60.15 - 80.20
2599.2	10/14/78	Tex.	Cameron	25	—	<i>Spartina</i>	Sandy mud	10	20.20 - 37.60
2598.2	10/14/78	Tex.	Cameron	25	24	<i>Spartina</i>	Sandy mud	2	20.20 - 24.70
0316.14	6/17/75	Tex.	Nueces	34	28	None	Sandy mud	4	33.90 - 79.50
2597.4	10/15/78	Tex.	Nueces	27	28	None	Sand	15	33.25 - 63.20
0781.5	9/28/75	Tex.	Aransas	22	30	<i>Spartina</i>	Mud	2	18.20 - 27.25
2890.1	9/28/75	Tex.	Aransas	20	26	None	Sand	1	24.25
2596.3	10/12/78	Tex.	Aransas	—	28	Grass	Mud & shell	1	41.05
1592.1	10/16/51	Tex.	Brazoria	—	—	—	—	18	17.85 - 43.45
2889.1	9/12/75	Tex.	Galveston	22	33	Grass	Sandy mud	25	14.45 - 45.50
2893.1	6/14/76	Fla.	Brevard - Indian River	32	27	Grass	Sand	1	34.10
2444.12	6/16/78	Fla.	Brevard - Indian River	32-35	29-32	Grass & algae	Mud & rocks	2	44.80 - 52.70

the only species of *Eucinostomus* that possesses nine (as opposed to eight) gill rakers on the lower limb of the first arch (including the one at the angle). The combination of high gill raker count and dorsal fin coloration make *E. melanopterus* the only Atlantic species of *Eucinostomus* that is readily identifiable at all sizes (excluding larvae which I have not yet examined).

Part of the confusion about *E. melanopterus* may be due to nomenclatural problems. Fishes now referred to the genus *Eucinostomus* have long been problematical for ichthyologists. When Evermann and Meek revised American gerreids in 1886, *E. melanopterus* plus several forms without a flagfin from both coasts of America were lumped under the name *Gerres gracilis* (Gill). Names placed in synonymy with *G. gracilis* were *Diapterus gracilis* Gill, *Gerres aprion* Günther, and *Eucinostomus harengulus* Goode and Bean (the latter species was also placed in *Diapterus* and *Gerres* by different authors). Furthermore, Meek and Hildebrand (1925) include species with and without a flagfin or an extra gill raker under the name *Eucinostomus californiensis* (Gill). Thus, old locality

data for at least four specific names among the Gerreidae may or may not refer to *E. melanopterus*.

More recently, the distinctiveness of the flagfin mojarra has been generally recognized, but there has been much debate about the proper specific name for this fish. Curran (1942) associated the name *Eucinostomus pseudogula* Poey with the slender mojarra, a form sometimes called *E. jonesi* (Günther) and definitely not synonymous with *E. melanopterus* (Bleeker). Some authors, however, have used the name *E. pseudogula* in reference to the form herein called *E. melanopterus* (e.g. Schultz, 1949; Caldwell, Ogren and Giovannoli, 1959; Caldwell and Caldwell, 1964; Gilbert and Kelso, 1971). A solution to this problem awaits further research, but if *E. pseudogula* Poey and *E. melanopterus* (Bleeker) are synonymous, the latter name has priority. In the interim, recent literature references to *E. pseudogula* cannot be applied to any species with certainty without an accompanying description or illustration.

One other name has been applied to the western Atlantic flagfin mojarra, but this name has caused little confusion.

Longley (1935) considered the African flagfin and the American flagfin to be separate species. Since Bleeker's original description of *Gerres* (= *Eucinostomus*) *melanopterus* was based on African specimens, Longley (1935) renamed the American form *Eucinostomus poeyi*. Curran (1942), however, considered the two forms conspecific, and the latter name has received little usage in the literature.

Eucinostomus melanopterus apparently occurs in a wide range of habitats (Table 1). It occurs on the Texas coast in the warmer months, when temperatures range from 24 to 33°C. Salinities for TCWC specimens ranged from 20 ‰ to 34 ‰, but this species has often been reported from freshwater (Curran, 1942). TCWC specimens of *E. melanopterus* were taken in areas with no cover, in grassbeds, or in *Spartina* marshes. Substrates varied from mud to sand to shell. The largest specimen is 80.2 mm SL, which is approximately one half of the maximum size reported by Curran (1942). Young fish (<20 mm SL) were taken in early summer and early to mid-fall. Preliminary data from the author's summer 1980 collections suggest that *E. melanopterus* is not only one of the numerically dominant mojarra in this area but is often one of the seasonally dominant members of the ichthyofauna.

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