

# A LIST OF FISHES FROM THE SOUTHERN TIP OF THE FLORIDA PENINSULA <sup>1</sup>

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The distribution of Florida fishes has not received sufficient attention to permit accurate delineation of the ranges for many species. One of the least known areas of the state is the southern tip, much of which is covered by the Everglades. This area is an extremely difficult one to collect, except under the fortuitous circumstances which we enjoyed during a recent field trip. A drought had concentrated the fishes in residual waters at a time when the noxious insects were not intolerable, permitting us to obtain a variety of fishes, some of which we took in satisfactory series. The specimens obtained have been deposited in the University of Florida Fish Collection.

We were reasonably satisfied that our collections, plus the several sight records, produced the majority of the strictly freshwater species to be expected. Such is not the case for the euryhaline fishes, but many of these are known as a result of published records from the Florida Keys. Thus this list is directed mainly to documenting the occurrence of those freshwater fishes which we found at the southern tip of the Florida peninsula.

The stations at which we collected were located in several of the major physiographic regions of south Florida as defined by Davis (1943), and we use his terminology below:

Everglades-Lake Okeechobee Basin: Stations 1 and 2.

Southern Coast and Islands:

Mangrove swamp present: Stations 11-17 and 19-24.

Mangrove swamp absent: Stations 3, 4, and 7-10.

Miami Rock Ridge: Stations 5 and 6.

Southwest Coast and Ten Thousand Islands: Station 18  
(Narrow fringe of mangrove swamp bordering water-course).

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<sup>1</sup> A contribution from the Florida State Museum and the Department of Biology, University of Florida.

Salinities, when stated to the nearest tenth of a ppt., were measured in the laboratory with a hydrometer. Several salinities were estimated in the field by taste. Those stations for which no salinity is indicated were considered to be strictly fresh water.

Bailey, Winn, and Smith (1954: 148-50) have treated the problem of subspecific designation of species considered polytypic by one or more recent authors. For the purposes of this paper we follow their example for most species.

Many of the stations visited were located within the Everglades National Park. Collecting in the Park was made possible by the kind permission of the superintendent, Mr. Dan Beard, whose staff extended to us many courtesies in the field.

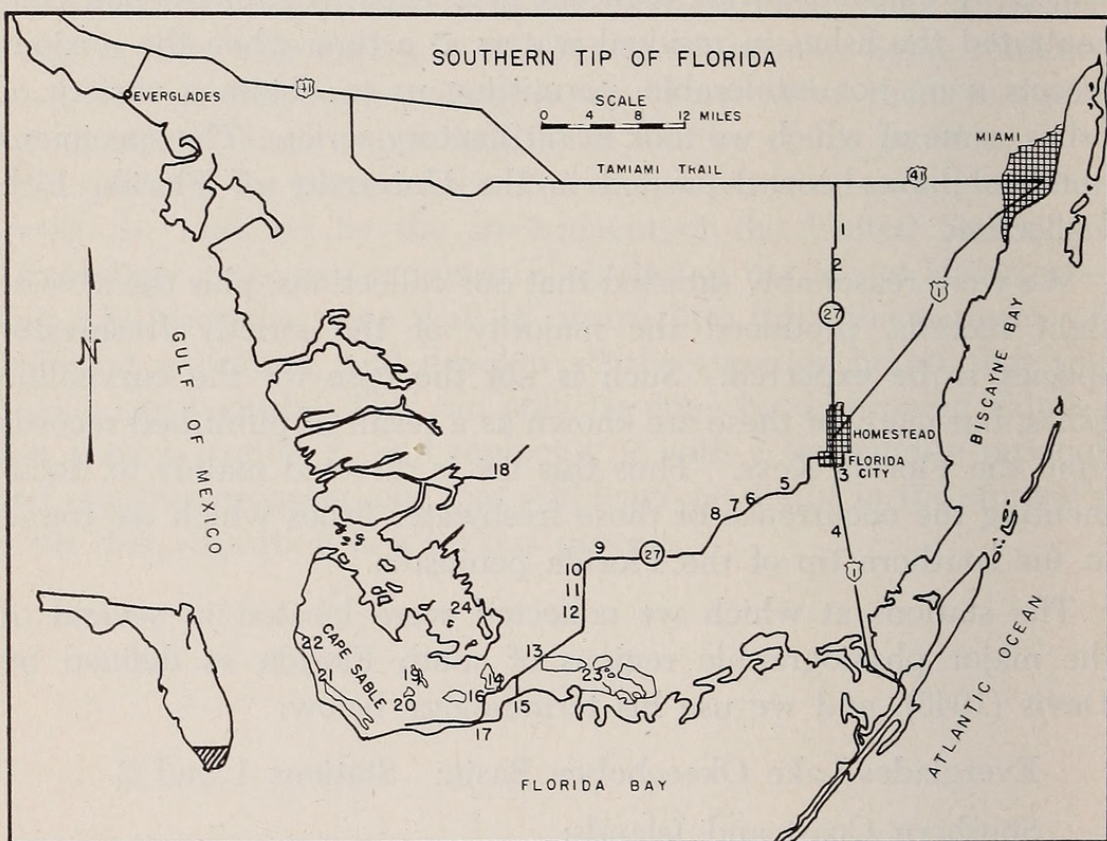


Figure 1. The approximate location of the collecting stations are shown by numbers corresponding to the numbered stations in the text.

(Map prepared by E. Coogle, staff artist.)

### COLLECTING STATIONS

The species numbers enclosed in parentheses are, for various reasons, reliable sight records. All other species numbers listed are represented by specimens in the University of Florida Fish

Collection. The approximate locations of the stations are shown on Figure 1.

Station 1. Canal beside Florida highway 27, 17.6 miles north of Homestead, Dade Co., May 8, 1955, Kilby and Caldwell (field no. K-5-855-2). Water very turbid, greenish, very low; bottom mud and rock; *Ceratophyllum* abundant, patches of *Pontederia* and *Typha* along edges; depth to 4 feet, width 30 feet. Fish collected by cast net and seine. UF 5068-76.

Species: 2, (3), 9, 10, 15, 20, 21, 29, 31, 32.

Station 2. Canal beside Florida highway 27, 13.8 miles north of Homestead, Dade Co., May 8, 1955, Kilby and Caldwell (field no. K-5-855-1). Water very turbid, greenish, very low; bottom mud and rock; choked with *Najas*; depth to 4 feet, width 20 feet. Fish collected with seine. UF 5061-67.

Species: 2, 14, 20, 21, (28), 29, 30.

Station 3. Roadside ditch 1 mile south of Florida City on U. S. highway 1, Dade Co., May 7, 1955, Kilby and Caldwell (field no. K-5-755-1). Water clear, green, low; bottom limey mud; abundant *Najas*, *Cabomba*, and filamentous green algae, some unicellular green algae; depth to 6 feet, width 35 feet. Fish collected with cast net and traps. UF 5013-18.

Species: 2, 10, 28, 29, 30, 31, 32.

Station 3A. From the same ditch but about a mile south of Station 3, Mr. A. Newton made a collection on July 7, 1949. UF 211-13.

Species: 20, 21, 22.

Station 4. Canal beside U. S. highway 1, 8 miles south of Homestead, Dade Co., May 6, 1955, Kilby and Caldwell (field no. K-5-655-1). Water clear, colorless, low; rock bottom; sparse *Ruppia* and filamentous green algae along the edge; depth to 6 feet, width 50 feet. Fish collected with cast net, dip net, traps, and hook and line. UF 5001-07.

Species: (2), 14, 20, 21, 28, (29), 30, 31, 32.

Station 5. Borrow pit along Florida highway 27, approximately 2 miles west of Florida City, Dade Co., May 7, 1955, Kilby and Caldwell (field no. K-5-755-2). Water clear, colorless, very low; bottom white marl mud and rock; very sparse patches of *Chara*;

depth to 10 inches, width to 15 feet. Fish collected with seine. UF 5094-99.

Species: 13, 15, 18, 19, 20, 22.

Station 6. Borrow pit along Florida highway 27, 0.8 miles west of the main entrance to the Everglades National Park, Dade Co., May 7, 1955, Kilby and Caldwell (field no. K-5-755-13). Water clear, colorless, very low; bottom marl rock; sparse filamentous green algae; depth to 4 feet, width 75 feet. Fish collected with seines and traps. UF 5051-54.

Species: 20, 22, 29, 31.

Station 7. Canal and adjacent Taylor Slough (Anhinga Trail) along Florida highway 27, in the immediate vicinity of the Royal Palm Ranger Station, Everglades National Park, Dade Co.; bottom rock with mud in patches; abundant *Najas* and various emergent aquatic plants; depth to 4½ feet, width 5 to 25 feet.

7A. February 2 and 3, 1955, Caldwell. Water clear, colorless, level normal.

Species: (2), (3), (10), (20), (28), (29), (30), (32).

7B. May 7, 1955, Kilby and Caldwell (field no. K-5-755-14). Water clear, greenish, low. Fish collected with seines and traps. UF 5055-60.

Species: 2, 10, 15, 20, 21, 29.

Station 8. Canal beside Florida highway 27, 0.5 miles west of the Royal Palm Ranger Station, Everglades National Park, Dade Co., May 7, 1955, Kilby and Caldwell (field no. K-5-755-3). Water clear, greenish, low; bottom mud on rock; abundant *Najas* and filamentous green algae, some *Nelumbo*; depth to 3 feet, width 20 to 25 feet. Fish collected with cast net and traps. UF 5019-24.

Species: (2), 9, (10), (15), (20), (21), 28, 29, 30, 31, 32.

Station 9. At concrete bridge beside Florida highway 27 in canal 12.6 miles southwest of the Royal Palm Ranger Station, Everglades National Park, Dade Co., May 7, 1955, Kilby and Caldwell (field no. K-5-755-12). Water clear, colorless, low; bottom rock; very sparse *Najas*; depth to 2 feet, width 25 feet. Fish collected with seine. UF 5048-50.

Species: 2, 28, 30.

Station 10. Canal beside Florida highway 27, 15 miles southwest of the Royal Palm Ranger Station, Everglades National Park, Dade Co., May 7, 1955, Kilby and Caldwell (field no. K-5-755-4). Water clear, colorless, low; bottom lime mud and rock; abundant *Najas* and filamentous green algae; depth to 2 feet, width 20 feet. Fish collected with cast net and dip net. UF 5026-30.

Species: (2), 9, 15, 20, 21, (28), 30.

Station 11. Canal beside Florida highway 27, 16.5 miles southwest of the Royal Palm Ranger Station, Everglades National Park, Dade Co., May 7, 1955, Kilby and Caldwell (field no. K-5-755-5). Water very turbid, green, low; salinity 2.4 ppt.; bottom mud on rock; abundant *Najas* and filamentous algae; depth to 5 feet, width 30 feet. Water very stagnant, numbers of dead fish floating.

Species: (2), (4), (13), (20), (21), (22), (29), (30).

Station 12. Canal beside Florida highway 27, 17.4 miles southwest of the Royal Palm Ranger Station, Everglades National Park (at Whiskey Creek), Dade Co., May 7, 1955, Kilby and Caldwell (field no. K-5-755-6). Water moderately turbid, brownish, low; salinity 22.2 ppt.; red mangrove (*Rhizophora*) along the edge, some filamentous green algae; depth to 6 feet, width 10 to 30 feet. Fish collected with dip net. UF 5031-32.

Species: (2), (4), 16, 20, 21, 22, (29).

Station 13. Boat landing on north side of West Lake Pond along Florida highway 27, 23 miles southwest of the Royal Palm Ranger Station, Everglades National Park, Dade Co., May 7, 1955, Kilby and Caldwell (field no. K-5-755-7). Water very turbid, milky, low; salinity 7.0 ppt.; no vegetation; depth to 2 feet. Fish collected with seine. UF 5033-37.

Species: 16, 19, 20, 22, (25), 37.

Station 14. Boat landing on south side of Coot Bay Pond at the Coot Bay Ranger Station, Everglades National Park, Monroe Co. Bottom rock fill; no vegetation; depth to 4 feet.

14A. February 1, 1955, Caldwell. Water very turbid, milky, level normal. Salinity not taken.

Species: (20).

14B. May 7, 1955, Kilby and Caldwell (field no. K-5-755-10). Water very turbid, greenish, level normal; salinity 21.0 ppt. Fish collected with seine. UF 5042-47.

Species: 5, 7, 22, 23, 26, 27, 37.

Station 15. Florida Bay at end of Snake Bight canal, Everglades National Park, Monroe Co., May 7, 1955, Kilby and Caldwell (field no. K-5-755-11). Water very turbid, milky, high tide; salinity estimated by taste to exceed 25 ppt.; bottom lime mud; no vegetation; depth to 2 feet. Fish collected with seines. UF 5088-93.

Species: 11, 12, 16, 19, 22, 26.

Station 16. East end of Homestead canal near the Coot Bay Ranger Station, Everglades National Park, Monroe Co. Bottom mud; no vegetation; depth to 3 feet, width 25 feet.

16A. January 23 and 24, 1955, Caldwell. Water fairly turbid, brownish, level normal. Salinity not taken.

Species: (1), (2), (20), (25).

16B. May 7, 1955, Kilby and Caldwell (field no. K-5-755-8). Water fairly turbid, greenish-brown, level normal; salinity 41.1 ppt. Fish collected with cast net. UF 5038.

Species: 4.

Station 17. Florida Bay at Flamingo, Everglades National Park, Monroe Co. Bottom mud and sand.

17A. April 19, 1954, Caldwell and Leonard Giovannoli (field no. C-4-1954-1). Water turbid, colorless; low tide (rising); salinity 39.3 ppt.; depth 5 feet; approximately 1 mile from shore; sparse shoal grass (*Halodule*) and turtle grass (*Thalassia*). Fish collected hook and line. UF 5156-57.

Species: 6, 35.

17B. May 7, 1955, Kilby and Caldwell (field no. K-5-755-9). Water very turbid, milky brown; high tide; salinity 42.1 ppt.; depth to 3 feet; along shore; no vegetation. Fish collected with cast net and seine. UF 5039-41.

Species: 7, 36, 37.

Station 18. Junction of Avocado Creek and Rookery Branch at Little Banana Patch (headwaters of Shark River), Everglades Na-

tional Park, Monroe Co., January 28, 1955, Caldwell, Noble Enge, Nathan Moskowitz, Dale W. Rice, and Gerald Simon (field no. C-1-2855-1). Water clear, colorless, level normal; moderate current; bottom mud, marl, peat, and detritus; abundant *Najas*, some *Cabomba* and filamentous green algae; depth to 6 feet. Though this creek is fed by runoff from the Everglades proper, it has a marked resemblance to the run of a typical large Florida spring. Fish collected with hook and line and dip net. UF 4459-62.

Species: (2), (9), (15), 20, (25), 28, 29, 30, (32).

Station 19. Southeast shore of Middle Fox Lake, Everglades National Park, Monroe Co., January 24, 1955, Caldwell, Enge, Moskowitz, Rice, and Simon (field no. C-1-2455-1). Water clear, colorless, level normal; brackish by taste; bottom mud, marl, and detritus; no vegetation; depth less than 1 foot. Fish found in a submerged hollow log. UF 4463.

Species: 38.

Station 20. Southeast shore of Gator Lake, Everglades National Park, Monroe Co., January 24, 1955, Caldwell, Enge, Moskowitz, Rice, and Simon (field no. C-1-2455-2). Water fairly turbid, colorless, level normal; brackish by taste; bottom mud, marl, and detritus; red mangrove (*Rhizophora*) prop roots; depth 1 foot. Fish collected with dip net. UF 4464.

Species: 20.

Station 21. Southeastern end of Little Sable Creek near its junction with Lake Ingraham, Everglades National Park, Monroe Co., January 26, 1955, Caldwell and Enge. Water turbid, colorless, low tide; salinity estimated by taste to exceed 25 ppt.; bottom black mud; no vegetation; depth 1 foot, width 25 feet. Fish collected by flipping it onto the bank with a canoe paddle.

Species: (33).

Station 22. Northeastern portion of Little Sable Creek, Everglade National Park, Monroe Co., January 26, 1955, Caldwell, Enge, Moskowitz, Rice, and Simon. Water turbid, colorless, mid tide; salinity estimated by taste to exceed 25 ppt.; bottom black mud; no vegetation; depth to 3 feet, width 30 feet.

Species: (1), (2), (4), (20), (23), (25).

Station 23. Streams connecting West Lake and Long Lake and connecting Long Lake and Cuthbert Lake, Everglades National Park, Dade Co., February 2, 1955, Caldwell. Water fairly turbid, colorless; level normal; salinity estimated by taste to exceed 25 ppt.; bottom mud; no vegetation except red mangrove (*Rhizophora*) roots; depth 1 foot.

Species: (2), (20).

Station 24. Whitewater Bay about midway down eastern side on a spit of land, Everglades National Park, Monroe Co., February 1, 1955, Caldwell (field no. C-2-155-1). Water clear, colorless, level normal; salinity estimated by taste to exceed 25 ppt.; bottom marl and sand; very sparse green algae, red mangrove (*Rhizophora*) roots; depth to 3 feet. Fish collected with dip net. UF 4465.

Species: 27, (34).

#### LIST OF SPECIES

The station numbers in parentheses indicate that the species was observed but not collected.

#### SHARKS

##### 1. *Sharks*

Though none were definitely seen or collected, evidences seen by one of us (DKC) at stations (16A), (22), and in the Little Shark River near Tarpon Bay (just southwest of Station 18), and statements by park rangers, indicate that sharks occur in enclosed waters in the southwest tip of the peninsula.

#### LEPISOSTEIDAE—Gars

##### 2. *Lepisosteus platyrhincus* DeKay. Florida spotted gar

This is undoubtedly the most abundant large fish in the freshwaters of the area studied.

Stations: 1, 2, 3, (4), (7A), 7B, (8), 9, (10), (11), (12), (16A), (18), (22), (23).

#### AMIIDAE—Bowfins

##### 3. *Amia calva* Linnaeus. Bowfins; Mudfish

Stations: (1), (7A).

## MEGALOPIDAE—Tarpons

4. *Tarpon atlanticus* (Valenciennes). Tarpon  
Stations: (11), (12), 16B, (22).

## ELOPIDAE—Ten Pounders

5. *Elops saurus* Linnaeus. Ten pounder; Ladyfish  
Station: 14B.

## CLUPEIDAE—Herrings

6. *Harengula pensacolata pensacolata* Goode and Bean. Pilchard  
Station: 17A.

## ENGRAULIDAE—Anchovies

7. *Anchoa mitchilli* (Valenciennes). Bay anchovy  
Stations: 14B, 17B.

## CATOSTOMIDAE—Suckers

8. *Erimyzon sucetta* (Lacépède). Lake chubsucker; Eastern chub-sucker

A single specimen (UF 458) of this species is in the University of Florida Fish Collection labeled "open limestone cave between Coomes and Florida City, Dade Co., (vicinity of Station 3), collected on December 17, 1930, by M. K. Brady".

## CYPRINIDAE—Minnows

9. *Notemigonus crysoleucas* (Mitchill). Golden shiner  
Stations: 1, 8, 10, (18).

## ICTALURIDAE—Catfishes

10. *Ictalurus natalis* (LeSueur). Yellow bullhead  
Stations: 1, 3, (7A), 7B, (8).

## CYPRINODONTIDAE—Killifishes

11. *Fundulus grandis* Baird and Girard. Killifish  
Station: 15.  
12. *Fundulus similis* (Baird and Girard). Long-nosed killifish  
Station: 15.

13. *Fundulus confluentus* Goode and Bean. Spottfin killifish  
Stations: 5, (11).
14. *Fundulus chrysotus* Holbrook. Golden topminnow  
Stations: 2, 4.
15. *Lucania goodei* Jordan. Red-finned killifish  
Stations: 1, 2, 5, 7B, (8), 10, (18).
16. *Lucania parva* (Baird and Girard). Rainwater killifish  
Stations: 12, 13, 15.
17. *Adinia xenica* (Jordan and Gilbert). Diamond killifish  
Reported from the stomachs of the Wood Ibis, *Mycteria americana*, from Alligator Lake (vicinity of Station 20) by Howell (1932: 115) as *A. multifasciata*.
18. *Jordanella floridae* Goode and Bean. Flagfish  
Station: 5.
19. *Cyprinodon variegatus* Lacépède. Sheepshead killifish  
Reported by Howell (*loc. cit.*) from Alligator Lake (vicinity of Station 20).  
Stations: 5, 13, 15.

## POECILIIDAE—Livebearers

20. *Gambusia affinis* (Baird and Girard). Gambusia  
Reported by Howell (*loc. cit.*) from Alligator Lake (vicinity of Station 20). Mr. Luis R. Rivas of the University of Miami has a *Gambusia* from brackish waters of southern Florida which is in the process of description (personal communication). Quite possibly some of our specimens, especially those from the brackish water stations, represent the new form.  
Stations: 1, 2, 3A, 4, 5, 6, (7A), 7B, (8), 10, (11), 12, 13, (14A), (16A), 18, 20, (22), (23).
21. *Heterandria formosa* Agassiz. Least killifish  
Stations: 1, 2, 3A, 4, 7B, (8), 10, (11), 12.
22. *Mollienesia latipinna* LeSueur. Sailfin molly  
Reported by Howell (*loc. cit.*) from Alligator Lake (vicinity of Station 20).  
Stations: 3A, 5, 6, (11), 12, 13, 14B, 15.

## BELONIDAE—Needlefishes

23. *Strongylura* sp.

We have juvenile specimens from Station 14B which we are unable to place specifically. Sight records of adults from Station (22) are also included here for like reason.

## APHREDODERIDAE—Pirate-perches

24. *Aphredoderus sayanus* (Gilliams). Pirate-perch

There is a single specimen (UF 541) in the University of Florida Fish Collection labeled "open limestone cave between Coomes and Florida City, Dade Co., (vicinity of Station 3), collected on December 17, 1930, by M. K. Brady".

## MUGILIDAE—Mulletts

25. *Mugil cephalus* Linnaeus. Striped mullet

Stations: (13), (16A), (18), (22).

26. *Mugil curema* Cuvier and Valenciennes. White mullet

Stations: 14B, 15.

## ATHERINIDAE—Siversides

27. *Menidia beryllina* (Cope). Tidewater silverside

Stations: 14B, 24.

## CENTRARCHIDAE—Sunfishes

28. *Micropterus salmoides floridanus* (LeSueur). Florida large-mouth bass

Stations: (2), 3, 4, (7A), 8, 9, (10), 18.

29. *Chaenobryttus coronarius* (Bartram). Warmouth

This appears to be the most abundant Centrarchid in the area.

Stations: 1, 2, 3, (4), 6, (7A), 7B, 8, (11), (12), 18.

30. *Lepomis punctatus* (Valenciennes). Stumpknocker; Spotted sunfish

Apparently the most abundant *Lepomis* in this region.

Stations: 2, 3, 4, (7A), 8, 9, 10, (11), 18.

31. *Lepomis microlophus* (Günther). Shellcracker; Redear sunfish

This species was reported from Alligator Lake (vicinity of Station 20) by Howell (*loc. cit.*) as *L. holbrookii*.

Stations: 1, 3, 4, 6, 8.

32. *Lepomis macrochirus* Rafinesque. Bluegill  
Stations: 1, 3, 4, (7A), 8, (18).

SERRANIDAE—Sea Basses

33. *Mycteroperca microlepis* (Goode and Bean). Gag  
Station: (21).

LUTJANIDAE—Snappers

34. *Lutjanus griseus* (Linnaeus). Gray snapper; Mangrove snapper  
Station: (24)

SPARIDAE—Porgies

35. *Lagodon rhomboides* (Linnaeus). Pinfish  
Station: 17A.

LEIOGNATHIDAE—Moharras

36. *Eucinostomus gula* (Cuvier and Valenciennes). Common moharra  
Station: 17B.
37. *Eucinostomus argenteus* Baird and Girard. Spotfin moharra  
Stations: 13, 14B, 17B.

BATRACHOIDIDAE—Toadfishes

38. *Opsanus beta* Goode and Bean. Toadfish  
Station: 19.

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