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## *Percina suttkusi*, a new species of logperch (subgenus *Percina*) From Louisiana, Mississippi, And Alabama (Perciformes, Percidae, Etheostomatini)

Bruce A. Thompson

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LOUISIANA STATE UNIVERSITY  
BATON ROUGE, LOUISIANA 70803

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*PERCINA SUTTKUSI*, A NEW SPECIES OF LOGPERCH (SUBGENUS  
*PERCINA*) FROM LOUISIANA, MISSISSIPPI, AND ALABAMA  
(PERCIFORMES, PERCIDAE, ETHEOSTOMATINI)

By Bruce A. Thompson<sup>1</sup>

Historically, most studies on logperches inhabiting rivers entering the Gulf of Mexico have referred them to a single taxon, usually called *Percina caprodes* (e.g., Douglas, 1974) and/or *Percina caprodes carbonaria* (e.g., Cook, 1959). However, several further species have been identified from the region. Stevenson (1971) described the distinct species *P. macrolepida*. Morris and Page (1981) indicated in their review of variation in midwestern logperches that *P. caprodes fulvitaenia* is distinct from *P. carbonaria*. Thompson (1985, 1995) described two additional species, *P. jenkinsi* and *P. austroperca*, and provided information on two undescribed species (which he referred to as *Percina* species "B" and "C"), for which Boschung (1992) provided distributional information. There are therefore seven logperch species currently known from rivers entering the Gulf of Mexico (*P. austroperca*, *P. caprodes*, *P. carbonaria*, *P. jenkinsi*, *P. macrolepida*, *P. species "B"*, and *P. species "C"*)—none of the junior synonyms of *Percina caprodes* noted by Collette and Knapp (1967) apply to logperches in southern United States. Etnier and Starnes (1993) reviewed several of these species (*P. caprodes*, *P. jenkinsi*, and Thompson's species "B") in their treatise on Tennessee fishes, and Mettee *et al.* (1996) listed four of them as occurring in Alabama (*P. austroperca*, *P. caprodes*, and Thompson's species "B" and "C").

<sup>1</sup> Coastal Fisheries Institute, Center for Coastal, Energy and Environmental Resources, Louisiana State University, Baton Rouge, LA 70803-7503

The species described herein was first reported as *P. caprodes* by Hay (1881, 1883) from Jackson, MS (Pearl River) and Enterprise, MS (Chickasawhay River), and was referred to as *Percina* species "C" by Thompson (1985, 1995). The present paper is the third in a series reviewing and revising the subgenus *Percina* in the southern United States. It brings to nine the number of described forms of logperch.

## MATERIALS AND METHODS

Specimens used in this study were from the collections of the American Museum of Natural History (AMNH), Academy of Natural Sciences of Philadelphia (ANSP), Auburn University Museum (AUM), Cornell University (CU), Geological Survey of Alabama (GSA), Illinois Natural History Survey (INHS), University of Kansas (KU), Museum of Comparative Zoology, Harvard University (MCZ), Mississippi Museum of Natural Science (MMNS), Mississippi State University (MSU), Northeast Louisiana University (NLU), Southeastern Louisiana University (SLU), Tulane University (TU) Osteological collection (O.C.), University of Alabama Ichthyological Collection (UAIC), University of Florida (UF), University of Michigan Museum of Zoology (UMMZ), University of Southern Mississippi (USM), United States National Museum (USNM), and University of Tennessee (UT).

Counts and measurements follow Hubbs and Lagler (1964), except as discussed by Thompson (1985, 1995). Comparative counts and proportional measurements for *P. austroperca*, *P. caprodes*, *P. jenkinsi*, and species "B" of Thompson (1985) are from Thompson (1985, 1995). Measurements were made with needle-point dial calipers and recorded to the nearest 0.1 mm. Lengths for all specimens are expressed as standard length (SL) in millimeters. Bar and body-pattern terminology follow Thompson (1985). Type material used for meristic counts is marked (c) in the lists below. Names of fish species follow Robins *et al.* (1991) except for the recognition of *Crystallaria* (Simons, 1991).

Determination of the spawning season of the new species was made from examination of histological preparations of ovaries from the following specimens: Pearl R.: TU 27685 (n=2, 75.9-92.9 mm SL), TU 39378 (n=4, 89.7-96.4 mm SL), TU 43370 (n=1, 93.0 mm SL), TU 44251 (n=2, 68.3-81.4 mm SL), TU 55178 (n=4, 93.1-112.1 mm SL), and TU 69078 (n=2, 100.4-109.0 mm SL); Alabama R.: TU 56878 (n=1, 102.5 mm SL), TU 67429 (n=1, 63.9 mm SL), and TU 105899 (n=1, 70.7 mm SL). Both Hematoxylin-Eosin (Prophet *et al.*, 1992) and PAS Hematoxylin Stain (Quintero-Hunter *et al.*, 1991) were used for ovarian examination. Oocyte stages follow Wallace and Selman (1981) and Selman and Wallace (1982).

Data for the paratypes and other specimens examined are listed as

specimens, size range in SL), locality, and date. Abbreviations used are: standard compass directions (with "of" deleted), Hwy=highway, km=kilometer(s), Co=county, Par=parish, US=United States, R=River, Cr=Creek, L=Lake, trib=tributary, RM=River Mile, and standard two-letter designations for states.

## *Percina suttkusi* new species

### Gulf Logperch

#### Figure 1

*Percina caprodes*--Hay (1881; locality in Chickasawhay R); Hay (1883, in part; localities in Mississippi); Douglas (1974, in part; distribution in Louisiana).

*Percina caprodes carbonaria*--Cook (1959, in part; distribution in Mississippi).

*Percina* species "C"--Thompson (1978; list of logperch species); Thompson (1985, 1995; comparisons with *P. jenkinsi* and *P. austroperca*).

*Percina* sp.--Mettee *et al.* (1996, in part; distribution, habitat, and ecology in Mobile Basin).

*Percina* sp. cf. *caprodes*--Boschung (1989, in part; distribution in Tombigbee R); Mettee *et al.* (1989a, in part; distribution in Black Warrior R); Mettee *et al.* (1989b, in part; distribution in western Mobile Basin); Pierson *et al.* (1989, in part; distribution in Buttahatchee R); Boschung (1992; distribution in Alabama); Suttkus *et al.* (1994; species association of *P. aurora*).

HOLOTYPE.--TU 176058. Adult male, 103.9 mm SL. Pearl River drainage: Mississippi: Pearl River Co.: Pearl River (River Mile 46.8) below Pools Bluff Sill, about 6 km S of Bogalusa, LA, off LA Hwy 21. Collected 23 Jan 1973 by R. D. Suttkus and B. A. Thompson.

PARATYPES.--A total of 1,445 specimens in 115 series; all specimens are paratopotypes. TU 27625 (14, 66.1-118.8) 18 Dec 1964. TU 27685 (226, 60.3-102.7) 16 Jan 1965. Out of TU 27685: AMNH 211067 (5, 77.1-101.8); CU 76689 (5, 79.4-102.4); KU 24851 (5, 77.6-106.7); MCZ 137561 (5, 72.9-112.9); NLU 72268 (5, 79.5-103.4); UF 100596 (5, 71.8-84.8); UMMZ 230855 (5, 78.3-110.0); USNM 338368 (5, 79.8-95.0); UT 91.4714 (5, 82.2-99.6). TU 27844 (9, 70.2-72.5) 12 Feb 1965. TU 27918 (2, 70.2-72.5) 4 Mar 1965. TU 30036 (3, 70.9-94.7) 25 Oct 1963. TU 31165 (1, 46.5) 24 June 1963. TU 31215 (1, 81.8) 20 May 1963. TU 31284 (1, 57.5) 11 July 1963. TU 31292 (4, 84.0-110.7) 13 Dec 1963. TU 31824 (1, 83.3) 15 Nov 1963. TU 31828 (1, 87.2) 15 Nov 1963. TU 32293 (1, 81.8) 7 May 1964. TU 33299 (3, 52.4-84.4) 12 June 1964. TU 33636 (7, 52.8-86.1) 10 July 1964. TU



Figure 1. A. *Percina suttkusi*, n. sp., TU 176058, 103.9 mm SL, holotype, Pearl River, MS. B. TU 80624, 103.5 mm SL female, same collection.

33736 (8, 52.8-91.3) 11 Aug 1964. TU 34381 (2, 65.1-65.9) 11 Sept 1964. TU 35762 (2, 86.5-95.2) 5 Nov 1964. TU 37270 (5, 71.2-86.8) 8 Apr 1965. TU 37315 (1, 72.6) 25 Mar 1965. TU 37343 (2, 86.4-103.9) 18 Mar 1965. TU 37365 (1, 79.4) 3 Apr 1965. TU 37859 (4, 67.8-91.0) 21 May 1965. TU 37929 (2, 78.1-81.4) 9 June 1965. TU 39326 (3, 75.3-103.6) 19 Nov 1965. TU 39378 (30, 74.9-114.6) 10 Dec 1965. TU 39553 (9, 81.8-106.8) 21 Jan 1966. TU 39680 (14, 77.0-105.8) 18 Feb 1966. TU 39723 (13, 75.7-112.9) 24 Feb 1966. TU 39805 (3, 72.6-89.3) 4 Mar 1966. TU 40224 (4, 71.2-89.4) 25 Mar 1966. TU 41888 (8, 74.5-92.9) 17 Oct 1966. TU 42106 (2, 83.7-109.8) 22 Oct 1966. TU 42137 (42, 77.7-107.4) 22 Oct 1966. TU 42168 (37, 74.3-113.7) 29 Oct 1966. TU 42198 (42, 76.5-115.8) 4 Nov 1966. TU 42442 (38, 72.1-110.7) 27 Nov 1966(c). TU 42709 (8, 77.3-106.9) 16 Dec 1966. TU 42908 (4, 84.3-114.8) 6 Jan 1967. TU 42971 (17, 73.6-107.4) 18 Jan 1967. TU 43020 (14, 77.0-112.8) 28 Jan 1967. TU 43272 (4, 89.5-112.2) 8 Feb 1967. TU 43370 (4, 70.8-93.5) 17 Feb 1967. TU 43832 (27, 70.2-112.1) 28 Feb 1967(c). TU 44251 (14, 69.6-102.3) 11 Mar 1967(c). TU 44554 (1, 79.3) 21 Mar 1967. TU 45079 (4, 93.0-103.2) 1 Apr 1967. TU 45282 (4, 72.6-89.8) 9 Apr 1967. TU 45996 (1, 86.3) 26 Apr 1967. TU 46034 (2, 77.0-91.2) 25 Apr 1967. TU 47118 (3, 85.2-111.7) 13/14 July 1967. TU 47169 (4, 77.0-100.2) 11 May 1967. TU 48102 (1, 75.4) 4 Oct 1967. TU 49070 (6, 83.5-113.9) 7 Dec 1967(c). TU 49101 (3, 86.2-110.6) 16 Dec 1967. TU 49532 (14, 67.8-114.0) 26 Dec 1967. TU 49794 (11, 81.6-109.7) 11 Jan 1968. TU

TU 50376 (1, 83.4) 21 Feb 1968. TU 53037 (3, 57.0-101.1) 9 July 1968(c). TU 53117 (10, 51.6-95.0) 18 July 1968(c). TU 53943 (19, 67.0-102.6) 23 Oct 1968. TU 55178 (21, 68.6-113.2) 10 Nov 1968. TU 55843 (4, 87.5-100.6) 15 Dec 1968; 1 specimen cleared and stained (O.C. 961). TU 56004 (24, 62.8-110.4) 9 Jan 1969. TU 56035 (25, 67.2-92.6) 17 Jan 1969. TU 56130 (31, 69.3-108.7) 24 Jan 1969. TU 56449 (37, 66.4-107.1) 7 Feb 1969. TU 56577 (1, 104.1) 20 Feb 1969(c). TU 59527 (7, 73.9-106.3) 28 Oct 1969. TU 62643 (10, 79.0-110.5) 22 Jan 1970. TU 63837 (25, 46.8-63.2) 10 July 1970. TU 68282 (14, 73.6-96.3) 25 Jan 1971(c). TU 68775 (7, 71.6-83.7) 20 Apr 1971. TU 69078 (139, 69.8-109.0) 14 Jan 1971; 3 specimens cleared and stained (O.C. 962). Out of TU 69078: ANSP 174258 (5, 83.2-88.6); INHS 37370 (5, 78.7-93.9); UAIC 11280.01 (5, 70.9-93.9). TU 72445 (6, 70.1-110.5) 26 Oct 1971. TU 75791 (26, 76.7-108.2) 25 Jan 1972. TU 76193 (56, 68.7-121.9) 1970. TU 80624 (19, 77.3-105.4) 23 Jan 1973(c). TU 81724 (2, 64.7-78.5) 17 Apr 1973. TU 83943 (2, 74.1-85.0) 16 Oct 1973. TU 86514 (29, 68.0-113.1) 14 Jan 1971. TU 90852 (7, 70.4-98.7) 29 Oct 1974. TU 92871 (8, 65.2-101.0) 28 Jan 1975(c). TU 93692 (1, 64.9) 28 Feb 1975. TU 94728 (3, 76.9-84.2) 6 Jan 1971. TU 96997 (13, 73.7-104.4) 22 Jan 1976. TU 99538 (1, 94.5) 13 Oct 1976. TU 100431 (12, 57.7-107.4) 10 Dec 1976(c). TU 100919 (4, 73.4-101.1) 19 Jan 1977. TU 105470 (6, 72.2-82.2) 19 Dec 1977. TU 105743 (8, 67.2-88.3) 26 Jan 1978. TU 106178 (1, 79.5) 23 Feb 1978. TU 111570 (5, 81.0-103.0) 31 Jan 1979(c). TU 116348 (8, 68.0-79.6) 30 Jan 1980. TU 120287 (8, 77.7-103.6) 22 Jan 1981(c). TU 124456 (2, 77.3-90.5) 28 Jan 1982. TU 124477 (8, 75.1-115.4) 5 Feb 1982. TU 124577 (5, 73.0-89.4) 19 Feb 1982. TU 128767 (1, 79.1) 27 Jan 1983. TU 129137 (1, 82.3) 28 Apr 1983. TU 133905 (5, 72.6-107.5) 19 Jan 1984. TU 139278 (3, 80.0-108.8) 7 Jan 1985. TU 143902 (2, 74.7-84.0) 30 Jan 1986. TU 147900 (5, 69.1-86.1) 22 Jan 1987. TU 150548 (2, 70.9-107.4) 29 Oct 1987. TU 151259 (4, 77.5-81.8) 14 Jan 1988. TU 157362 (3, 77.8-86.2) 25 Jan 1990. TU 159213 (1, 86.5) 19 Oct 1990. TU 160039 (9, 80.4-103.0) 3 Jan 1991. TU 162127 (15, 77.2-107.6) 2 Jan 1992(c). TU 167839 (1, 71.8) 23 Oct 1993. TU 169535 (1, 90.9) 15 Jan 1994. TU 171907 (1, 87.0) 15 Oct 1994(c). TU 172609 (2, 97.1-101.3) 14 Jan 1995(c).

ADDITIONAL MATERIAL EXAMINED.—A total of 522 specimens. The drainages that follow are listed from west to east.

Lake Pontchartrain drainage, Louisiana (n=94): East Baton Rouge Par: NLU 50975 (1, 100.4) Sandy Cr, LA Hwy 37, 26 June 1982. UF 59281 (1, 114.8) Amite R, LA Hwy 10, 30 June 1963. TU 75547 (9, 82.0-124.2) same as UF 59281, 28 Jan 1972. TU 83581 (4, 85.3-96.2) same as UF 59281, 11 Feb 1972. TU 81548 (1, 113.2) same as UF 59281, 17 Mar 1973. NLU 51771 (1, 85.8) same as UF 59281, 1 Oct 1982. NLU 52775 (3, 95.7-120.0) same as UF 59281, 26 Mar 1983. NLU 53058 (3, 98.7-131.2) same as UF 59281, 30 Apr 1983. NLU 66803 (1, 95.4) same as UF 59281, 2 Mar 1992. NLU 51247 (4, 68.6-114.1) Amite R, LA Hwy 432, 16 July 1982. NLU 51959 (3, 90.6-124.7) same as NLU 51247, 22 Oct 1982. Livingston Par: NLU 1886 (2, 69.8-87.6) Tickfaw R, US Hwy 190, 8 Jan 1965. Tangipahoa Par: SLU 4432 (3, 102.3-104.5) Natalbany R, LA Hwy 1064, 17 Oct 1991. TU 1032 (21, 28.7-50.9) roadside lake 1.6 km E Amite, 7 Jan 1948.

Tangipahoa R 8 km SE Hammond, 30 Apr 1969. SLU 76 (1, 91.0) Tangipahoa R 7.2 km ENE Hammond, 20 Apr 1969. SLU 78 (1, 121.7) Tangipahoa R 9.6 km E Hammond, 1967. NLU 4766 (5, 48.8-106.9) Tangipahoa R, US Hwy 190, 13 July 1966. TU 109834 (2, 83.4-86.1) same as NLU 4766, 22 Oct 1978. NLU 9357 (2, 93.3-99.0) Tangipahoa R 0.6 km S Ponchatoula, 18 Mar 1968. St. Tammany Par: NLU 6343 (5, 52.2-85.9) Tchefuncte R, Goodbee Landing, 2 May 1967. NLU 11008 (1, 93.8) Tchefuncte R near Goodbee, 23 July 1968. NLU 9695 (2, 93.5-100.0) Bogue Falaya near Covington, 18 Apr 1968. TU 45045 (4, 77.5-85.2) Bogue Falaya, Covington, 8 Apr 1967. TU 46126 (1, 85.5) same as TU 45045, 26 Apr 1967. TU 74839 (2, 66.0-70.3) same as TU 45045, 17 Dec 1970. TU 74876 (1, 89.9) Bogue Falaya, US Hwy 190, 9 Jan 1971. TU 74942 (1, 79.7) same as TU 74876, 6 Feb 1971. TU 74976 (2, 70.0-72.0) same as TU 74876, 6 Mar 1971. TU 75017 (1, 74.4) same as TU 74876, 4 Apr 1971. TU 75157 (2, 82.4-84.1) same as TU 74876, 3 July 1971. TU 80575 (2, 83.1-91.2) same as TU 74876, 13 Sept 1971.

**Pearl River drainage, Louisiana/Mississippi (n=43):** Louisiana: St. Tammany Par: TU 177448 (1, 80.2) W Pearl R 44.8 km below Pools Bluff Sill opposite Bradley Slough, 29 Oct 1995. TU 177407 (1, 85.7) W Pearl R just below Wilson Slough, 28 Oct 1995. TU 177218 (1, 90.0) Pearl R 28.6 km below Pools Bluff Sill, 27 Oct 1995. TU 61926 (3, 86.0-94.0) Pearl R 28 km below Pools Bluff Sill (RM 46), 25 Nov 1969. TU 177252 (1, 99.9) same as TU 61926, 27 Oct 1995. Washington Par: TU 109079 (2, 79.6-84.2) Pearl R near Coburn Cr, 29 Aug 1978. Mississippi: Lawrence Co: TU 172692 (1, 102.4) Pearl R at Silver Cr, 4 Feb 1995. TU 177557 (1, 82.9) same as TU 172692, 18 Nov 1995. TU 177583 (1, 87.5) Pearl R island bar 0.8 km below Bench Mark 209.2, 18 Nov 1995. Simpson Co: TU 61256 (1, 120.3) Strong R MS Hwy 28, 27/28 Jan 1970. NLU 19765 (1, 80.4) same as TU 61256, 11 June 1971. NLU 19531 (1, 54.1) TU 61256, 13 July 1971. TU 97204 (2, 104.4-106.6) same as TU 61256, 20 Feb 1976. USM 10700 (1, 104.9) Strong R at Everett Bridge, 19 Sept 1989. Leake Co: TU 128137 (1, 70.0) Pearl R, MS Hwy 13, 24 Oct 1982. TU 128192 (2, 71.3-75.2) Pearl R, MS Hwy 35, 24 Oct 1982. TU 128269 (6, 67.5-79.7) same as TU 128192, 29 Oct 1982. UF 60700 (2, 73.5-92.8) Standing Pine Cr, MS Hwy 488, 8 km SE Carthage, 22 Apr 1964. TU 128447 (3, 74.2-99.9) Labutchta Cr, MS Hwy 16, 7.8 km E Carthage, 31 Oct 1982. TU 128165 (4, 62.1-76.7) Pearl R at Edinburg, 24 Oct 1982. TU 128236 (6, 61.6-88.3) same as TU 128165, 29 Oct 1982. TU 128317 (1, 94.9) Noxapater Cr, MS Hwy 15, 30 Oct 1982.

**Wolf River drainage, Mississippi (n=2):** Harrison Co: MMNS 14761 (2, 54.5-61.5) Wolf R 19.2 km NW Gulfport, 1 Sept 1965.

**Pascagoula River drainage, Mississippi (n=117):** Clarke Co: USM 10702 (1, 76.5) Buckatunna Cr, MS Hwy 18, 20 Sept 1989. TU 171494 (1, 33.2) Buckatunna Cr, MS Hwy 512, 11 June 1993. Covington Co: NLU 20856 (1, 95.8) Bowie Cr S of US Hwy 49, 8 Oct 1971. Jones Co: UT 91.1177 (2, 73.8-74.4) Leaf R, I-59, 25 May 1976. Wayne Co: USM 10701 (5, 56.5-95.3) Buckatunna Cr Denham Landing, 22 Sept 1989. TU 8076 (1, 103.8) Yellow Cr 2.4 km E Waynesboro, 23 Mar 1954. Forrest Co: TU 86228 (10, 51.4-84.6) Lake Shelby

Brooklyn-McLaurine Rd, 1 Oct 1976. USM 1057 (1, 95.1) Walls Cr Johnson State Park, 22 Sept 1983. USM 4512 (1, 61.8) Walls Cr near L Shelby, 29 Sept 1988. Perry Co: USM 8612 (1, 76.8) Leaf R 11.5 km above Hwy 29, 20 Oct 1989. USM 9078 (1, 63.8) Leaf R 3.5 km below MS Hwy 29, 2 Aug 1990. USM 9169 (1, 62.7) same as USM 9078, 7 Aug 1990. USM 9125 (1, 86.2) Leaf R 4.5 km below MS Hwy 29, 1 Aug 1990. USM 8953 (3, 44.5-76.0) Leaf R 7.5 km below MS Hwy 29, 12 June 1990. USM 8913 (1, 52.8) same as USM 8953, 5 June 1990. USM 8941 (2, 37.1-48.2) leaf R 10.9 km below Hwy 29, 12 June 1990. Greene Co: USM 3886 (4, 20.5-77.0) Leaf R, mouth Holy Cr, 26 Apr 1988. USM 3975 (4, 29.0-36.1) Gatling Cr at mouth, 18 May 1988. USM 5191 (2, 17.8-30.6) Holy Cr at mouth, 6 June 1988. USM 5114 (2, 28.2-75.4) Leaf R 1.6 km above George Co line, 26 Apr 1988. USM 4037 (1, 40.6) Leaf R 2.4 km above Big Okitbee Cr, 24 May 1988. USM 4443 (1, 60.0) Chickasawhay R 2.9 km above Mineral Branch, 6 Aug 1988. USM 4914 (7, 18.4-31.0) Chickasawhay R 12.8 km below MS Hwy 63, 13 May 1988. George Co: TU 171449 (1, 33.3) Leaf R, US Hwy 98, 24 May 1993. TU 100158 (1, 71.1) Pascagoula R at jct with Leaf R, 22 Oct 1976. TU 100133 (2, 66.2-68.9) Pascagoula R across from Merrill, 22 Oct 1976. USM 4906 (3, 25.0-80.0) Pascagoula R 8 km above MS Hwy 26, 6 May 1988. TU 100186 (1, 62.8) Pascagoula R below MS Hwy 26, 26 Oct 1976. TU 89771 (3, 35.0-46.4) Pascagoula R 9.6 km SE Benndale, 13 July 1974. USM 4938 (2, 30.3-38.6) Pascagoula R 11.2 km below Wilkerson Ferry, 17 May 1988. USM 3931 (1, 66.9) "dead river" beside Smith Dead River, 7.2 km S Merrill, 10 May 1988. USM 6515 (9, 24.2-31.1) Dead Lake 1.6 km above MS Hwy 26, 10 May 1988. Jackson Co: TU 28083 (2, 46.1-57.5) Bluff Cr at Van Cleave, MS Hwy 57, 27 Oct 1962. MSU 4438 (1, 53.7) same as TU 28083, 21 Oct 1972. USM 10751 and MMNS 11624 (34, 50.8-96.9) Escatawpa R below I-10, 28 Sept 1983.

**Tombigbee River drainage, Alabama (n=179):** Washington Co: GSA 5177.17 (2, 63.9-67.7) Tombigbee R, T6N, R1E, Sec 2, 6 Aug 1990. Choctaw Co: GSA 7411.28 (2, 80.8-92.8) Souwilpa Cr Co Hwy 21, 30 May 1984. Clarke Co: GSA 5441 (1, 57.4) Tombigbee R oxbow, T5N, R2E, Sec 21. Sumter Co: TU 85734 (1, 67.1) Tombigbee R 4.8 km N Gainesville, 26 Oct 1973. AUM 21025 (1, 97.3) Tombigbee R (Gainesville L) 11.2 air km NNW Gainesville, 5 Aug 1980. AUM 19473 (1, 46.0) Tombigbee R (Gainesville L) 0.3 km E Warsaw, mouth of Phenachie Cr, 17 July 1979. AUM 19496 (1, 54.9) same as AUM 19473, 17 July 1979. Greene Co: AUM 19917 (21, 48.6-59.9) Tombigbee R (Gainesville L), 3.2 km below Sipsey R, 10 June 1980. Pickens Co: AUM 21029 (1, 51.4) Tombigbee R (Gainesville L) 4.8 km NE Warsaw, 25 July 1980. AUM 21179 (1, 56.4) Tombigbee R (Gainesville L) 8 km SE Cochrane, 9 July 1981. AUM 19733 (2, 80.7-88.5) Tombigbee R (Gainesville L) near Cochrane, 13 May 1980. UAIC 3043.32 (1, 55.3) Tombigbee R at Pickensville, 16 Aug 1968. AUM 19596 (1, 81.8) Tombigbee R at Pickensville, 16 Aug 1968. AUM 19596 (1, 81.8) Tombigbee R (Aliceville L) near Pickensville, 1 May 1980. AUM 20843 (2, 70.0-71.0) Tombigbee R (Aliceville L) 1.6 km WNW Pickensville, 11 Aug 1980. AUM 21191 (1, 85.8) Tombigbee R (Aliceville L) 3.2 km NW

L) 4.8 km NNW Pickensville, 3 Aug 1981. AUM 21186 (14, 50.0-95.6) Tombigbee R (Aliceville L), 4.8 km NW Pickensville, 11 July 1981. AUM 9860 (16, 49.9-65.2) Tombigbee R (Aliceville L), 6.4 km NW Pickensville, 29 June 1980. Greene Co: AUM 9237 (1, 47.7) Black Warrior R near Eutaw (RM 55), 30 July 1953. Tuscaloosa Co: GSA 5043.17 (1, 86.8) Big Sandy Cr, AL Hwy 69, 18 Sept 1989. UF 15022 (1, 83.6) Black Warrior R at Oliver Dam in Tuscaloosa. Mississippi-Lowndes Co: MSU 3021 (2, 54.5-81.7) Luxapalila R 1.6 km above mouth, 17 July 1973. MSU 5443 (1, 65.9) same as MSU 3021, 17 June 1976. MSU 7459 (1, 71.5) Luxapalila R 1.9 km above mouth, 23 Aug 1976. MSU 3078 (1, 43.8) Luxapalila R 0.4 km W MS Hwy 50, 17 July 1973. MSU 3944 (1, 101.0) same as MSU 3078, 17 Nov 1973. MSU 4171 (1, 83.9) same as MSU 3078, 29 Jan 1974. MSU 4401 (1, 82.3) same as MSU 3078, 27 Mar 1974. MSU 5072 (1, 28.8) same as MSU 3078, 17 June 1974. MSU 5129 (1, 72.5) same as MSU 3078, 17 June 1974. NLU 64471 (1, 98.7) Luxapalila R 1.6 km above Hwy 50, 27 May 1969. MSU 9085 (1, 86.1) Luxapalila T17S, R17W, Sec 21, 12 Sept 1992. UAIC 4357.25 (1, 91.9) Yellow Cr 3.2 km NE Steens, 19 Aug 1971. MMNS 17034 (2, 58.8-83.9) Tombigbee R (upper Aliceville L), 25 June 1981. UAIC 4389.29 (5, 72.3-85.2) Tombigbee R 6.4 km S US Hwy 82, 30/31 May 1972. MMNS 14419 (2, 78.3-80.0) un-named trib to Tombigbee R, 3.2 km S Columbus, 18 Aug 1979. MMNS 17339 (1, 67.2) Tombigbee R, 1.4 km S Columbus, 3 Oct 1979. MMNS 8640 (3, 32.9-53.8) Tombigbee R (upper Aliceville L), 1.6 km below old US Hwy 82, 1 May 1981. UAIC 4750.28 (2, 88.7-94.4) Tombigbee R above mouth Oak Slush Cr, T19N, R17E, Sec. 24. UAIC 4338.35 (4, 59.7-89.3) Tombigbee R 4.8 km above US Hwy 82, 25 Aug 1971. UAIC 4387.17 (1, 79.7) same as UAIC 4338.35, 22 May 1972. UAIC 9568.01 (1, 100.1) same as UAIC 4338.35, 2 Oct 1979. MMNS 16867 (1, 50.2) Tombigbee R at lower Columbus lock, 29 May 1981. NLU 61326 (3, 80.1-117.3) Tombigbee R (Tenn-Tom Waterway) Columbus gravel bar, 15 Feb 1988. MSU 47 (2, 79.9-84.0) Tombigbee R 0.8 km above MS Hwy 50, 17 Oct 1968. MSU 1538 (2, 35.8-40.8) same as MSU 47, 26 June 1970. MSU 2992 (1, 94.9) same as MSU 47, 21 May 1973. NLU 65051 (7, 26.2-89.0) same as MSU 47, 28 June 1973. MSU 4522 (2, 54.8-55.5) same as MSU 47, 18 Sept 1974. MSU 4751 (1, 64.3) same as MSU 47, 4 Oct 1974. MMNS 17230 (1, 69.4) Tombigbee R at middle Columbus lock, below Town Cr, 17 May 1983. MMNS 17165 (1, 53.7) Tombigbee R at Barton's Ferry Landing, 19 July 1983. MMNS 13445 (3, 83.3-92.9) Tombigbee R, middle Columbus L, 24 May 1984. MMNS 17084 (1, 90.5) same as MMNS 13445, 14 June 1983. Clay Co: NLU 63356 (1, 49.5) Tombigbee R at mouth of Town Cr, 27 Aug 1971. Monroe Co: MSU 4879 (1, 36.6) Buttahatchee R 0.8 km below MS Hwy 373, 16 July 1974. NLU 61325 (3, 65.0-101.1) Buttahatchee R 0.8 km below US Hwy 45, 16 Feb 1988. MSU 901 (1, 64.2) Buttahatchee R 0.8 km S Columbus Air Force Base N Gate, 27 Aug 1968. MMNS 8331 (1, 93.4) Buttahatchee R at jct Tombigbee R, 21 Aug 1980. NLU 59787 (3, 84.3-91.8) Tombigbee R (Tenn-Tom Waterway) side channel at Aberdeen Lock, 8 Jan 1987. MMNS 10149 (20, 36.8-54.3) Tombigbee R at Lock A, 19 July 1983. NLU 61029 (1, 95.6) Tombigbee R (Tenn-

Tombigbee R (Tenn-Tom Waterway) Columbia Lock, 25 May 1989. AUM 20653 (3, 50.5-79.6) Tombigbee R 4.8 km S Aberdeen, 23 July 1980. MMNS 17385 (1, 66.9) Tombigbee R at Morgan Bottom, S Aberdeen, 6 Aug 1980. MSU 5627 (1, 65.4) Mattubby Cr, US Hwy 45 4 km NW Aberdeen, 31 Aug 1971. MMNS 7259 (1, 65.9) Tombigbee R 3.5 km WNW Smithville, 14 Sept 1980. Itawamba Co: TU 14387 (1, 62.5) Tombigbee R 1.6 km W Fulton, US Hwy 78. UAIC 4412.28 (1, 80.8) same as TU 14387, 6 July 1972. MSU 4308 (3, 47.4-70.5) same as TU 14387, 18 Aug 1972.

**Alabama River drainage, Alabama (n=87):** Baldwin Co: UAIC 9708.15 (4, 56.5-88.6) Boatyard Lake 6.9 km WNW Tensas, 4 Aug 1988. TU 99977 (1, 76.8) Tensas R at Barton Landing, 21 Oct 1976. Monroe Co: TU 32583 (1, 42.5) Limestone Cr, AL Hwy 41, 30 May 1964. TU 130756 (1, 55.1) Alabama R at Limestone Cr RM 80, 9 Aug 1983. TU 47507 (1, 87.9) Alabama R at Silver Cr RM 87.7, 17 Aug 1967. TU 70827 (1, 56.4) Alabama R at Williamson Woodyard Landing RM 92, 3 Aug 1971. TU 78585 (1, 62.0) same as TU 70827, 15 Aug 1972. TU 99037 (1, 45.2) same as TU 70827, 5 Aug 1976. TU 83431 (6, 50.2-54.9) Alabama R at Davis Landing RM 97.1, 29 Aug 1973. TU 153144 (1, 56.2) Alabama R at Bailey Cr RM 99.1, 3 Aug 1988. TU 103548 (1, 57.7) Alabama R at Bates Bar RM 99.3, 10 Aug 1977. Clarke Co: TU 38736 (4, 39.8-68.2) Oxbox Lake at Choctaw Bluff, 29 June 1965. TU 35326 (3, 43.6-46.8) Alabama R at Choctaw Bluff, 2 July 1965. TU 99929 (1, 66.6) Alabama R across from Dixie Landing, 20 Oct 1976. Wilcox Co: TU 167577 (2, 48.5) Alabama R at Bear Cr RM 112.8, 7 Aug 1993. TU 56878 (1, 102.5) Alabama R at Wilcox Bar RM 120.4, 18 Mar 1969. TU 62734 (1, 50.1) same as TU 56878, 24 June 1970. TU 64617 (1, 69.3) same as TU 56878, 25 Sept 1970. TU 78188 (3, 33.6-36.8) same as TU 56878, 2 June 1972. TU 78558 (1, 66.6) same as TU 56878. TU 64583 (1, 73.3) Alabama R at Tait Bar RM 122.4, 25 Sept 1970. TU 62784 (2, 44.4-46.6) Alabama R at Yellow Jacket Bar RM 129.8, 23 June 1970. TU 64569 (1, 70.4) same as TU 62784, 25 Sept 1970. TU 66315 (5, 74.7-88.4) same as TU 62784, 17 Dec 1970. TU 68359 (5, 72.5-82.5) same as TU 62784, 17 Feb 1971. TU 83516 (1, 85.3) Alabama R at Holly Ferry Landing RM 131.0, 25 Sept 1973. TU 90011 (2, 62.7-67.6) same as TU 83516, 26 Sept 1974. TU 105899 (2, 70.7-77.1) same as TU 83516, 15/16 Feb 1978. TU 10878 (1, 53.7) same as TU 83516, 7 Aug 1978. TU 139680 (1, 79.5) same as TU 83516, 28 Feb 1985. TU 64553 (1, 65.1) Alabama R at Evans Lower Bar RM 133.0, 24 Sept 1970. TU 66371 (2, 78.0-79.7) same as TU 64553, 17 Dec 1970. TU 62809 (1, 49.0) Alabama R at Evans Upper Bar RM 135.7, 23 June 1970. TU 66352 (4, 74.5-80.5) same as TU 62809, 17 Dec 1970. TU 80066 (1, 82.4) same as TU 62809, 6 Dec 1972. TU 62822 (1, 53.0) Alabama R at Clifton Ferry Landing RM 137.3, 23 June 1970. TU 65387 (3, 55.9-62.3) same as TU 62822, 27 Aug 1970. TU 67429 (1, 63.9) same as TU 62822, 15 Mar 1971. Dallas Co: TU 167118 (1, 89.3) Alabama R and mouth of Chilatchee Cr, 26 Apr 1988. TU 32637 (8, 33.8-43.2) White Oak Cr, AL Hwy 41, 30 May 1964. TU 35362 (2, 50.4-52.4) same as TU 32637, 29 June 1964. AUM 7843 (1, 70.7) Mush Cr 10.7 km SE Cahaba, 17 Oct 1972. TU 35221 (1, 33.6)



TU 35221, 29 June 1964. Perry Co: AUM 5562 (2, 85.8-97.2) Perry Lake, off Cahaba R 2.4 km NW Sprott, 6 Feb 1969.

**DIAGNOSIS.**--*Percina suttkusi* (Fig. 1) is distinguished from all other members of the subgenus *Percina* Haldeman by the following combination of characteristics: 1) narrow red submarginal band in first dorsal (Thompson, 1995); 2) nape always entirely scaled; 3) scales absent from top of head between eyes; 4) serrated preopercle on some large adults; 5) no secondary darkening of head and body in breeding adults; 6) ctenoid scales present on interopercle, on prepectoral region, on head above cheek posterior to eye, on cheek almost to posterior end of jaw, and occasionally on breast; 7) lateral pattern dominated by thin vertical bars with only slight widening into blotches; 8) no tuberculation on scales or fins; and 9) reduced meristics.

*Percina suttkusi* has a narrow red band in the spinous dorsal fin. It is separable from *P. jenkinsi*, *P. macrolepidia*, *P. caprodes semifasciata*, and *P. c. caprodes* which have no such band, and from *P. caprodes fulvitaenia*, *P. carbonaria*, *P. "B"*, and *P. rex* which have wide red bands occupying 25 to 50% of the fin width. *Percina burtoni* and *P. austroperca* also have narrow spinous dorsal bands, but the band in *P. burtoni* is marginal for most of the fin. *Percina suttkusi* differs from most logperches (except *P. macrolepidia* and *P. caprodes semifasciata*) in possessing reduced meristics in certain fin-ray counts and most scale counts. *Percina suttkusi* always possesses a fully-scaled nape, distinguishing it from *P. caprodes semifasciata* and some *P. burtoni* and *P. rex*. Unlike *P. suttkusi*, *P. macrolepidia* possesses scales on the top of the head, but some *P. suttkusi* share the presence of normal scales in the prepectoral and lateral breast area and therefore can look very similar to *P. macrolepidia*. *Percina suttkusi* most closely resembles *P. austroperca*, with which it is allopatric. The two species share a scaled interopercle, a narrow red band in the spinous dorsal and thin body bars, but *P. suttkusi* has lower counts of total dorsal elements, anal rays, total pectoral rays, pored lateral line scales, and vertebrae (Thompson, 1995).

**DESCRIPTION AND COMPARISONS.**--*Percina suttkusi* is a medium-sized logperch exceeding 120 mm SL, but seldom reaching 130 mm SL. It is a slender species, but larger males become more robust during the spawning season. Frequency distributions of fin-ray and scale counts are presented in Tables 1 through 5. Proportional measurements for adult male and female *P. suttkusi* are given in Table 6. Thompson (1995) demonstrated that there is sexual dimorphism in this species in median fin proportions, with males having longer second dorsal and anal fin bases and longer second dorsal and anal fin lengths than females. There is no other significant sexual dimorphism in body proportions (Table 6). *Percina suttkusi* has a shorter snout than *P. jenkinsi*, giving smaller body proportions for any measurement that includes the snout. It has shorter pectoral fins than *P. jenkinsi*, with the pectoral and pelvic fin being nearly equal in length. *Percina suttkusi* also has a longer caudal peduncle than *P. jenkinsi*.

Table 1. Frequency distribution of fin counts for *Percina suttkusi*.

DORSAL SPINES										
Drainage	13	14	15	16	17	N	MEAN	SD	CV	
L. Pontchartrain		16	48	9	1	74	14.93	0.63	4.2	
Pearl R.	6	69	116	7		198	14.63	0.61	4.1	
Pascagoula R.	2	19	51	3	2	77	14.79	0.68	4.6	
Tombigbee R.	4	18	112	15		149	14.93	0.57	3.8	
Alabama R.	2	20	46	11		79	14.84	0.69	4.6	
DORSAL RAYS										
Drainage	13	14	15	16	17	N	MEAN	SD	CV	
L. Pontchartrain	2	11	42	19		74	15.05	0.72	4.8	
Pearl R.	2	79	105	11	1	198	14.65	0.63	4.3	
Pascagoula R.	9	46	21	1		77	14.18	0.64	4.5	
Tombigbee R.	9	75	62	2		148	14.39	0.62	4.4	
Alabama R.	2	39	36	2		79	14.48	0.60	4.1	
TOTAL DORSAL ELEMENTS										
Drainage	27	28	29	30	31	32	N	MEAN	SD	CV
L. Pontchartrain	1	6	11	33	21	2	74	29.99	1.00	3.3
Pearl R.	4	27	91	64	11	1	198	29.27	0.86	2.9
Pascagoula R.	1	24	33	16	1	2	77	28.97	0.93	3.2
Tombigbee R.	5	17	63	54	9		148	29.30	0.88	3.0
Alabama R.	1	12	33	27	6		79	29.32	0.87	3.0
ANAL RAYS										
Drainage	8	9	10	11			N	MEAN	SD	CV
L. Pontchartrain	1	31	40	2			74	9.58	0.57	5.9
Pearl R.	8	81	106	2			197	9.52	0.59	6.2
Pascagoula R.	12	56	8	1			77	8.97	0.56	6.3
Tombigbee R.	15	98	55	1			169	9.25	0.62	6.7
Alabama R.	1	41	34	3			79	9.49	0.60	6.3
TOTAL PECTORAL RAYS										
Drainage	25	26	27	28	29	30	N	MEAN	SD	CV
L. Pontchartrain	1	17	10	39	2	3	72	27.46	1.06	3.9
Pearl R.	6	75	35	78	2		196	26.97	0.97	3.6
Pascagoula R.		26	4	45			75	27.25	0.95	3.5
Tombigbee R.		14	12	107	9	7	149	27.89	0.83	3.0
Alabama R.		10	13	51	4	1	79	27.66	0.82	2.9

Table 2. Frequency distribution of pored lateral-line scales for *Percina suttkusi*.

NUMBER OF SCALES																	
Drainage	78	79	80	81	82	83	84	85	86	87	88	89	90	N	MEAN	SD	CV
L. Pontchartrain				4	6	6	12	17	18	5	6			74	84.84	1.83	2.2
Pearl R. <sup>1</sup>	1	2	7	11	33	41	51	28	17	6	1			198	83.50	1.72	2.1
Pascagoula R.		1	4	1	4	14	14	19	9	3	5			75	84.16	2.18	2.6
Tombigbee R.				3	3	22	30	41	21	20	5	3	1	149	84.99	1.67	2.0
Alabama R.		1	1	1	8	8	17	19	11	8	1	3	1	79	84.68	2.01	2.4

<sup>1</sup>One count of 76 not shown.

*Percina suttkusi* also has a shorter snout than *P. austroperca*. It has a thinner body; more narrow interorbit and P<sub>2</sub>-P<sub>2</sub> width; smaller gape; and more shallow caudal peduncle than *P. austroperca*. It possesses longer P<sub>2</sub> fins and snout-anal origin distance. Median fin proportions, both second dorsal and anal, have shorter bases and fin lengths in both sexes of *P. suttkusi* compared to *P. austroperca*.

Branchiostegal membranes are usually narrowly conjoined. The broad frenum and conical overhanging "logperch" snout is not as developed as in most other southern logperch species except in the largest males. There is virtually no variation in the cephalic sensory canal system with all canals normally uninterrupted. *Percina suttkusi* has the same counts for canals as presented for other logperches in Thompson (1985, 1995).

Dorsal spines vary from 13 to 17, with most having 14 or 15 spines. Dorsal rays also range from 13 to 17 with 14 or 15 being the dominant counts. *Percina suttkusi* usually has more spines than rays or equal numbers in the two dorsal fins. Seldom are there more rays than spines, the condition in *P. caprodes*, *P. austroperca*, and species "B". In this, *P. suttkusi* is most similar to *P. jenkinsi*. There are usually two anal spines, the first being about twice as thick as the second. Rarely there is only a single anal spine. Pectoral rays vary from 13 to 14, with total pectoral ray count ranging from 25 to 30 (usually 26 to 28). There is no significant geographic variation among the five drainage systems in fin-ray counts. Principal caudal fin-rays number 17 (1/8-7/1) as noted by Regan (1913).

There is considerable overlap in counts of both dorsal spines and rays for the five species of Gulf drainage logperch occurring east of the Mississippi River (*P. austroperca*, *P. caprodes*, *P. jenkinsi*, *P. suttkusi*, and *P. species "B"*), but *P. suttkusi* has the fewest combined total dorsal elements. It also has the lowest anal fin-ray count, and the lowest scale counts compared to these same three species.

*Percina suttkusi* is a large-scaled species, having among the lowest scale counts in the subgenus *Percina* along with *P. macrolepida*, *P. carbonaria*, and *P. caprodes*. Pored lateral line scales vary from 78 to 90 with 81 to 88 being the normal count. There are usually no pored scales posterior to the hypural

Table 3. Frequency distribution of diagonal (transverse) scale counts of *Percina suttkusi*.

ANAL FIN TO SPINOUS DORSAL														
Drainage	19	20	21	22	23	24	25	26	27	28	N	MEAN	SD	CV
L. Pontchartrain			2	14	29	15	12	1	--	1	74	23.39	1.21	5.2
Pearl R.	2	2	18	63	70	29	11	3			198	22.73	1.17	5.2
Pascagoula R.		5	8	20	14	16	5	4	1		73	21.88	1.60	7.3
Tombigbee R.				6	7	32	43	37	15	8	148	24.18	1.38	5.7
Alabama R.			3	4	7	20	25	13	5	2	79	23.63	1.49	6.3

## SECOND DORSAL TO ANAL FIN

Drainage	16	17	18	19	20	21	22	23	N	MEAN	SD	CV
L. Pontchartrain				11	26	26	11		74	19.50	0.93	4.8
Pearl R.	3	7	68	76	39	5			198	18.79	0.94	5.0
Pascagoula R.	3	2	24	22	10	10	2		73	19.00	1.33	7.0
Tombigbee R.		3	15	39	46	37	8		148	19.83	1.14	5.7
Alabama R.		2	9	28	19	17	2	2	79	19.68	1.23	6.2

## ABOVE LATERAL LINE

Drainage	7	8	9	10	N	MEAN	SD	CV
L. Pontchartrain	3	49	20	2	74	8.28	0.59	7.1
Pearl R.	35	142	21		198	7.93	0.53	6.7
Pascagoula R.	22	42	8		72	7.81	0.62	7.9
Tombigbee R.	12	88	46	3	149	8.27	0.63	7.6
Alabama R.	5	37	33	4	79	8.46	0.69	8.2

plate, with a few specimens having one or two scales. Possessing large scales and a terete, thin body, *P. suttkusi* has low diagonal scale counts, with the anal fin to spinous dorsal count being 19 to 28, usually 21 to 25, the second dorsal to anal fin count being 16 to 23, usually 18 to 21, and scales above lateral line being seven to ten, usually seven to nine. These low diagonal scale counts gives *P. suttkusi* a very low "diagonal sum" (Thompson, 1985) ranging from 42 to 58, primarily 45 to 54. The caudal peduncle circumferential scale count is also low, ranging from 24 to 32, usually 25 to 30.

Total vertebral number is 42-44, with a mode of 43 and a mean of 42.9 (n=131) based on specimens from all five major drainages. *Percina suttkusi* averages fewer vertebrae than the other three southeastern logperches, with *P. jenkinsi* having 45-47 (mean=45.4), *P. austroperca*, 43-45 (mean=44.0), and species "B" 44-46 (mean=44.8).

Gill rakers are usually 3+10, but vary from two to four on the upper arm and nine to 11 on the lower arm. This overlaps in count with both *Percina austroperca* and species "B", but is fewer than in *Percina c. caprodes* from the



Table 4. Frequency distribution of "diagonal sum" scale count of *Percina suttkusi*.

NUMBER OF SCALES																					
Drainage	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	NMEAN	SD	CV	
L. Pontchartrain																		74	51.16	2.11	4.1
Pearl R.																		198	49.45	2.10	4.3
Pascagoula R.																		72	48.75	3.07	6.3
Tombigbee R.																		148	52.24	2.58	4.9
Alabama R.																		79	51.77	2.97	5.7

Table 5. Frequency distribution of caudal peduncle circumference scale count of *Percina suttkusi*.

ABOVE LATERAL LINE															
Drainage	10	11	12	13	14							N	MEAN	SD	CV
L. Pontchartrain		19	27	23	5							74	12.19	0.90	7.4
Pearl R.		22	137	38								197	12.08	0.55	4.5
Pascagoula R.		6	40	24	4							74	12.35	0.71	5.8
Tombigbee R.	1	20	83	40	5							149	12.19	0.73	6.0
Alabama R.	1	10	21	37	12							81	12.60	0.93	7.4

BELOW LATERAL LINE															
Drainage	12	13	14	15	16							N	MEAN	SD	CV
L. Pontchartrain	14	27	20	11	2							74	13.46	1.05	7.8
Pearl R.	11	138	47	1								197	13.19	0.53	4.0
Pascagoula R.	3	44	24	3								74	13.37	0.63	4.7
Tombigbee R.	15	56	68	10								149	13.49	0.77	5.7
Alabama R.	3	19	29	29	1							81	14.07	0.89	6.3

TOTAL SCALES																			
Drainage	24	25	26	27	28	29	30	31	32							N	MEAN	SD	CV
L. Pontchartrain		14	5	19	10	14	7	3	2							74	27.65	1.88	6.8
Pearl R.		9	14	125	12	37										197	27.27	1.00	3.7
Pascagoula R.		3	3	39	3	21	3	2								74	27.72	1.30	4.7
Tombigbee R.	1	14	6	52	31	36	5	4								149	27.65	1.40	5.1
Alabama R.	1	2	8	11	9	19	21	9	1							81	28.68	1.73	6.0

Similar to most logperch, *P. suttkusi* usually has six pyloric caeca, uniform in size, in a 3+3 arrangement on either side of the stomach. Little variation exists, but rarely there are 2+3 with only a rudimentary sixth caecum.

The opercle and nape are entirely scaled with exposed ctenoid (Roberts, 1993) scales. There are also ctenoid scales just posterior to the eyes; completely covering the interopercle; and extending forward on the cheeks to the posterior end of the jaw, resulting in a more completely scaled head in *P. suttkusi*, similar to *P. macrolepida*. Some *P. suttkusi* also have partially scaled breasts. Similar to all other logperch, *P. suttkusi* lacks the large central breast modified scute found in the subgenera *Alvordius*, *Cottogaster*, *Ericosma*, and *Swainia*. The scutes on the pelvic arch and belly midline have less modification than in *P. jenkinsi*, *P. austroperca*, or species "B". Those on the pelvic arch number 2-7 in males, and 1-2 in females. Few females lack pelvic scutes. The modified midventral row of scutes is usually complete, separating into two rows immediately anterior to the vent. This midventral

Table 6. Proportional measurements of *Percina suttkusi*, expressed as thousandths of standard length.

Measurement	Holotype	Males (11)		Females (10)	
		Mean	Range	Mean	Range
Standard length	103.9	107.2	98.2-120.2	106.2	96.3-120.9
Thousandths of SL					
Head length	244	252.5	247-257	247.4	235-258
Snout length	83	81.1	75-87	80.2	71-89
Eye diameter	46	47.2	43-53	46.6	43-51
Upper jaw length	68	66.7	62-74	64.0	58-69
Post-orbit HL	118	123.8	121-130	122.5	114-132
Snout-D1 origin	301	305.2	298-315	303.9	293-321
Snout-D2 origin	624	633.5	624-642	638.4	618-655
Snout-A origin	640	644.2	629-656	657.9	632-675
Snout-P1 origin	234	235.5	228-248	235.6	220-249
Snout-P2 origin	283	284.5	269-315	288.7	274-308
D1 fin base	330	326.8	309-342	324.7	312-336
D2 fin base	219	203.9	189-219	192.7	185-199
D2 fin length	266	282.3	266-306	248.8	240-256
A fin base	128	142.2	131-157	119.4	106-139
A fin length	199	247.8	229-274	203.5	188-218
Body depth	161	166.7	154-183	166.1	147-179
Body width	132	130.5	119-146	131.5	115-141
Head depth	133	130.2	121-138	130.0	124-137
Head width	129	129.8	121-138	129.3	118-144
Interorbit width	48	48.7	44-52	47.8	44-53
P2-P2 width	68	69.7	65-75	67.0	64-73
Gape width	43	43.9	39-49	43.9	41-47
Snout depth	68	64.5	60-72	64.6	58-72
Snout width	60	59.6	55-63	56.5	52-62
P1 length	196	198.0	190-205	193.1	180-203
P2 length	192	185.6	178-193	177.6	168-189
Caudal peduncle depth	76	76.8	73-81	76.2	73-81
Caudal peduncle length	244	230.4	212-244	232.0	222-241

female *P. suttkusi*, more females possess belly scutes than in other species of logperch in southeastern United States, with 15-20 scutes being found on some large females.

**COLOR PATTERN.**--The body pattern of *P. suttkusi* consists of numerous narrow vertical bars, a "typical" logperch pattern. These bars are dark brown, contrasting with the tan-yellow background color on the upper half of the body. Often the entire body pattern is faint. The lower body is light cream-colored with no melanophores. There are nine whole body bars that are very slightly expanded into lateral blotches just below the lateral line. The posterior blotches are rounder than the anterior ones. *Percina suttkusi* possesses both half- and quarter bars that are not expanded into blotches. Some of the half bars are nearly as long as the whole bars, although quarter bars are always much shorter than either the whole or half bars. Quarter

adults, especially in those specimens with pale pigmentation. Anterior to the spinous dorsal fin there are usually 3-5 bars crossing the dorsal midline. *Percina suttkusi* lacks a prepectoral blotch, but there are sometimes a few melanophores at the base of the fin-rays. Head pigment is often pale and diffuse. Some specimens possess a faint subocular bar. Cheeks and opercles lack distinctive markings but have a light scattering of melanophores. Upper and lower jaws are lightly covered with melanophores. *Percina suttkusi* lacks the intense blackening on the head, anterior body, and fins seen in *P. carbonaria* and certain other logperches.

The spinous dorsal fin of *P. suttkusi* has a narrow red band, just submarginal to a faint black marginal band. Proximal to the red band there is a clear region in the fin and a black basal band that is most intense in males. This band darkens during the spawning season. The second dorsal fin has a series of dashes on the rays that form 3-5 irregular lines across the fin. The cross-hatching is often faint on large spawning males whose second dorsal becomes dusky on the interradiial membranes. The edge of the second dorsal fin sometimes is dusky, but never as dark as that of the spinous dorsal fin. The caudal fin pattern is similar to that of most other logperches, with a series of dashes on the caudal rays forming 5-6 irregular vertical lines across the fin. The anal fin is usually clear, but some specimens of both sexes have a slight flecking of melanophores on both the membranes and rays of the fin. The pelvic fins are usually clear. The pectoral fins are also clear with a slight yellow wash during life, but both paired fins can have very small melanophores scattered over the membranes and rays similar to the pattern occasionally seen on the anal fin. A large basicaudal spot is present in *P. suttkusi*, but it is usually less intense than that of other southeastern logperches.

*Percina suttkusi* commonly possesses "night saddles", 3-4 large secondary dorsal markings, located: 1) just anterior to the spinous dorsal, 2) at spinous dorsal spines 7-10, 3) between the dorsal fins, and 4) at posterior end of second dorsal.

**SIZE.**--The largest known *P. suttkusi* is a 131.2 mm SL female. There appears to be some geographic variation in size in that most large specimens are from the Lake Pontchartrain and Pearl River drainages while very few specimens over 100 mm SL have been collected from the Pascagoula, Tombigbee, or Alabama river drainages. There is no sexual dimorphism in maximum size.

**BIOLOGY.**--*Percina suttkusi* spawns from January through March as a "batch" spawner (Hunter, *et al.* 1985). Figure 2 shows the maturation of oocytes through the reproductive season. Ovaries in November possess only resting primary growth and slightly more mature cortical alveoli oocytes (Fig. 2a). By December, oocyte maturation has continued with leading stage oocytes now possessing yolk protein (Fig. 2b). Both January and March ovaries possess vitellogenic oocytes with advanced-stage vitellogenic oocytes

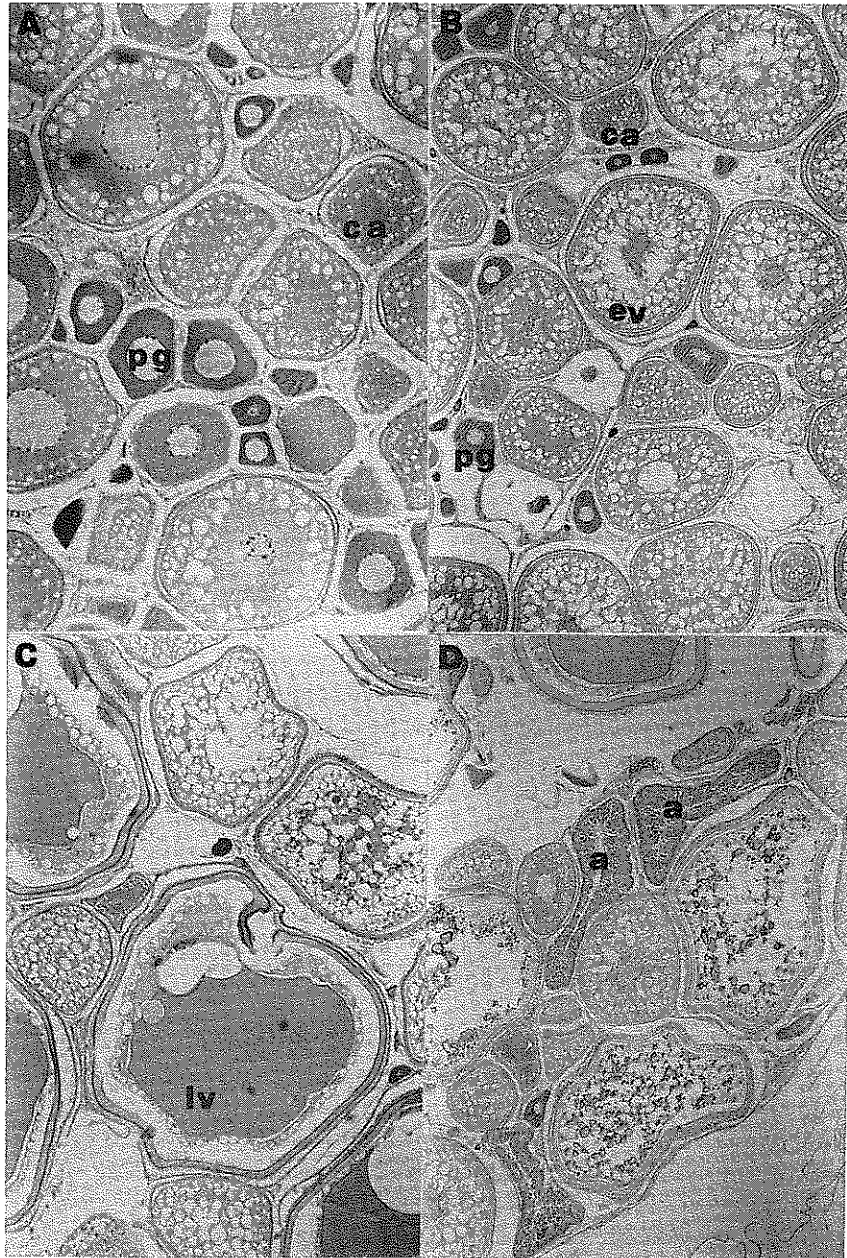


Figure 2. Light micrograph of *Percina suttkusi* ovary sections: A) TU 55178, 10 Nov 1968, 103.1 mm SL female showing primary growth (pg) and cortical alveoli (ca) stage oocytes. B) TU 39378, 10 Dec 1965, 96.4 mm SL female showing primary growth (pg), cortical alveoli (ca), and early vitellogenic (ev) with onset of yolk development. C) TU 27685, 16 Jan 1965, 75.9 mm SL female showing all oocyte stages, particularly late vitellogenic with coalesced yolk (lv). D) TU 105899, 15/16 Feb 1978, 70.7 mm SL female showing all oocyte stages and atretic oocytes (a).

filled with coalesced yolk protein, indicating that these oocytes will soon be shed in spawning. These ovaries have multiple-stage oocytes, a sign of batch-spawning mode. Some *P. suttkusi* from March collections have many atretic oocytes, suggesting that the reproductive season is nearly over, although some females still possess post-ovulatory follicles, cytological remnants of recent ovulation, indicating that some spawning is ongoing. Burt *et al.* (1988) discussed the advantages to small-bodied fish such as darters of batch spawning to increase total fecundity where body size limits the number of mature oocytes that a female can contain at any one time.

*Percina suttkusi* examined during this time period lack both breeding tubercles and tuberculate ridges, distinguishing it from the other logperch species in southeastern United States (Thompson, 1985, 1995). Examination of large collections taken by seine during the spawning season at the type locality showed a sex ratio of 1.8 males:1 female in January, increasing to 2.1:1 in February.

Harrises and Vickery (1970) reported a lack of trematode infestation in *Percina suttkusi* (as *P. caprodes*) in their study of fish parasites in the Pascagoula River.

**DISTRIBUTION.**--*Percina suttkusi* is found from the westernmost tributaries of Lake Pontchartrain in Louisiana eastward through the Pearl and Pascagoula drainages to the Mobile Basin in Alabama (Fig. 3). Except for one record in the Wolf River, it is absent from the smaller Mississippi coastal rivers between the Pearl and Pascagoula rivers. Its northernmost occurrence is in the Tombigbee River near the Fall Line in northeastern Mississippi. Its southeasternmost occurrence is in the Tensaw River, part of the Mobile Bay delta complex. The northeasternmost records in Alabama occur in the lower part of the Cahaba River below the Fall Line. Douglas (1974) considered all logperch in Louisiana to be *P. caprodes* but specimens from Lake Pontchartrain tributaries and the Pearl River are actually *P. suttkusi*. Cook (1959) recognized two morphs of logperch in Mississippi, *P. c. caprodes* from the Tennessee system and what she called *P. caprodes carbonaria* from the Mississippi, Pearl, and Pascagoula systems. Logperch from the Mississippi are actually *P. c. caprodes*, but she correctly noted the presence of a red band in the spinous dorsal fin of Pearl and Pascagoula specimens herein recognized as *P. suttkusi*. Studies listing logperches from the Tombigbee and Alabama rivers in Mississippi and Alabama (Timmons, 1982; Pierson, *et al.*, 1986, 1989; Boschung, 1987, 1989; Mettee *et al.*, 1987, 1989a, 1989b, 1996) include, for the most part, both *P. suttkusi* and an undescribed logperch, species "B" in their discussions and distribution maps. *Percina suttkusi* is (or was) syntopic with species "B" (Thompson, 1985, 1995) in the Tombigbee, Black Warrior, Cahaba, and Alabama river systems in Alabama and Mississippi. This syntopy will be discussed in detail in the description of Thompson's (1985) species "B" now being prepared.

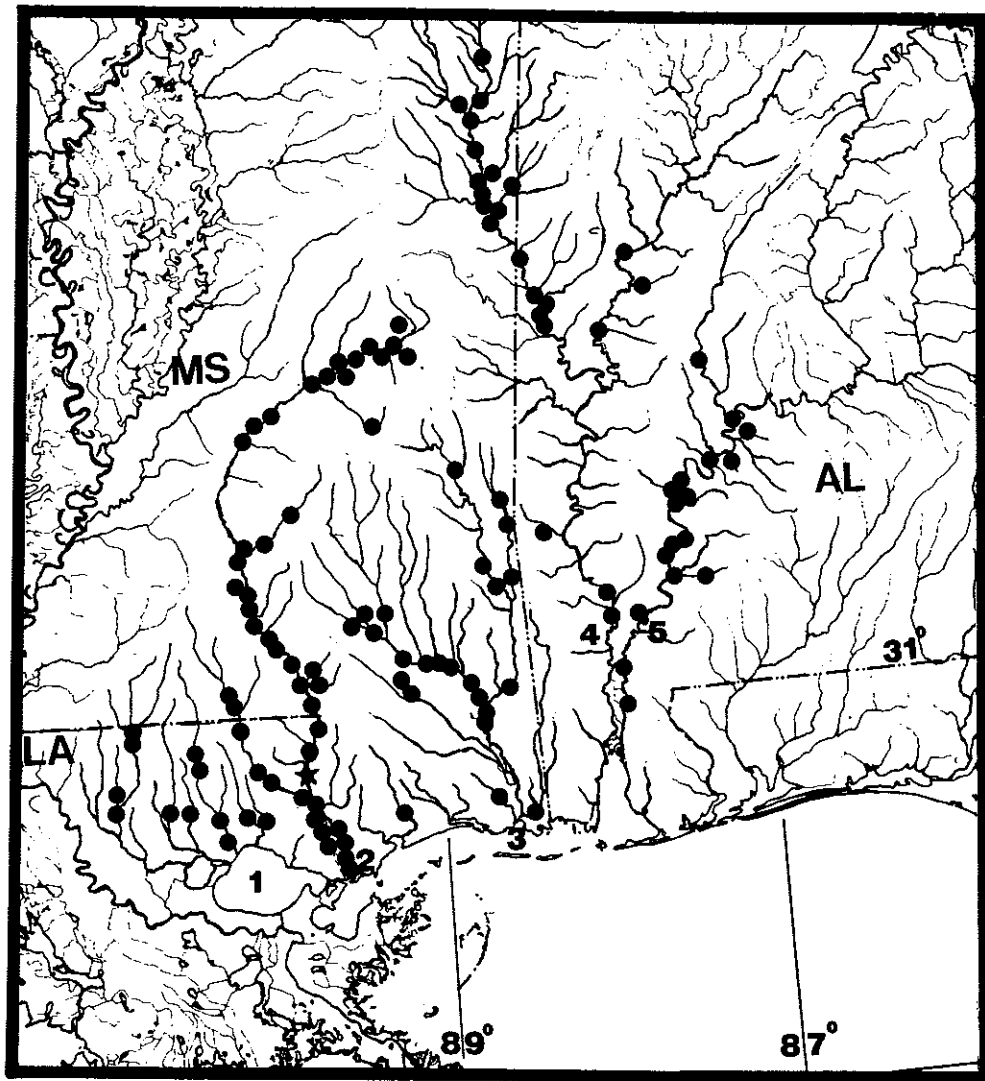


Figure 3. Distribution of *Percina suttkusi* in the Lake Pontchartrain (1), Pearl (2), Pascagoula (3), Tombigbee (4), and Alabama (5) drainages. The type locality is marked with a star.

Numerous fishes reach their westernmost occurrence along the Gulf Coast in the Lake Pontchartrain tributaries or their easternmost occurrence in the Mobile Basin, but *P. suttkusi* is the only species of logperch spanning the Lake Pontchartrain, Pearl, Wolf, and Pascagoula drainages (Swift *et al.*, 1986).



Figure 4. Type locality of *Percina suttkusi*, Pearl River below Pools Bluff Sill, River Mile 48.6; photograph taken 25 October 1979.

**ECOLOGY AND HABITAT.**--Figure 4 shows the type locality of *P. suttkusi*. Although the species has been taken in a variety of habitats, including backwaters and oxbow lakes, it prefers rivers and larger creeks. The largest collections have been taken from the main channel of the Pearl, Pascagoula, and Tombigbee rivers. The largest collections are known from the type locality, taken in gravel-bottomed runs 0.5 to 1.5 m deep. This habitat can be seen in Figure 4 in the region of the tree-covered island. The collections are from aggregations taken before and during the spawning season. Most individuals disperse from this habitat after spawning is completed in the spring.

Habitat of young-of-the-year *P. suttkusi* is not well documented. Those collected from shallow shoreline habitats from mid-April to mid-May ranged from 17.5 to 36.7 mm SL (mean=26.6 mm). Collections of larger juveniles are from backwaters and oxbow lakes (TU 1032, 38-51 mm; TU 35326, 44-47 mm; TU 38736, 40-68 mm). Movement of juveniles from riverine habitats to backwaters has not been substantiated.

Fish taken with *P. suttkusi* from the Pearl River at the type locality based on 20 collections made between November 1968 and April 1974 include the following species: *Lepisosteus oculatus*, *Anguilla rostrata*, *Dorosoma*

*nuchalis*, *Lythrurus roseipinnis*, *Macrhybopsis aestivalis*, *M. storeriana*, *Notemigonus crysoleucas*, *Notropis atherinoides*, *N. buccatus*, *N. longirostris*, *N. maculatus*, *N. texanus*, *N. volucellus*, *N. winchelli*, *Opsopoeodus emiliae*, *Pimephales vigilax*, *Carpiodes velifer*, *Erimyzon succetta*, *Hypentelium nigricans*, *Ameiurus melas*, *Ictalurus furcatus*, *I. punctatus*, *Noturus gyrinus*, *N. munitus*, *N. nocturnus*, *Pylodictis olivaris*, *Strongylura marina*, *Fundulus chrysotus*, *F. notatus*, *F. olivaceus*, *Gambusia affinis*, *Labidesthes sicculus*, *Ambloplites ariommus*, *Lepomis cyanellus*, *L. gulosus*, *L. macrochirus*, *L. megalotis*, *L. microlophus*, *Micropterus punctulatus*, *M. salmoides*, *Pomoxis annularis*, *P. nigromaculatus*, *Ammocrypta beani*, *A. vivax*, *Crystallaria asprella*, *Etheostoma chlorosomum*, *E. gracile*, *E. histrio*, *E. parvipinne*, *E. proeliare*, *E. swaini*, *Percina aurora*, *P. lenticula*, *P. nigrofasciata*, *P. sciera*, *P. nigrofasciata* X *P. sciera*, *P. shumardi*, *P. vigil*, and *Trinectes maculatus*.

**STATUS.**--*Percina suttkusi* presently has no special conservation status, either federally or at the state level. Although it is known from several thousand specimens, it has experienced strong declines in several rivers, particularly the Pearl, Tombigbee, and Alabama systems, over the past 15-20 years, becoming rare in areas where it once was common. The declining abundance of *P. suttkusi* strongly suggests that it tolerates riverine habitat alterations very poorly. Gunning and Suttkus (1991) documented its decline in the Pearl River and similar declines have occurred in impounded portions of the Tombigbee and Alabama rivers. For example, *P. suttkusi* has only been collected once since 1985 in the Alabama River between River Mile 92 and 137.3, probably due to siltation of gravel bars associated with several impoundments located along this stretch of the Alabama River.

**RELATIONSHIPS.**--Thompson (1995) considered *P. austroperca* to be the sister species of *P. suttkusi* (as *Percina* species "C") based on the shared characters of a narrow red band in the spinous dorsal fin and thin whole-, half-, and quarter-body bars. However, *P. austroperca* instead is probably the sister species of both *P. suttkusi* and *P. macrolepidia*. The *austroperca/suttkusi/macrolepidia* clade has more head- and anterior body scalation than do other logperches, probably a derived character. *Percina suttkusi* and *P. macrolepidia* share reduced meristics, scales on the top and sides of head, on the interopercle, in the prepectoral and lateral breast area; very thin body bars with half bars nearly as long as whole bars and little expansion of lateral blotches on the whole body bars. *Percina macrolepidia* has lost the narrow red band in the spinous dorsal fin and head scalation proliferated beyond the condition probably found in the shared *suttkusi/macrolepidia* ancestor. The distribution of these two forms is presently divided by the intrusion of *P. c. caprodes* into the lower Mississippi Valley.

Simons (1991) presented a phylogenetic hypothesis of darter genera, placing the genus *Percina* as the sister group to *Etheostoma* based on eight osteological characters, one of which, the articulation of postcleithra 2 and

show both the plesiomorphic (articulated postcleithra) and derived (floating postcleithrum) conditions. *Percina suttkusi* is interesting in also possessing both conditions, suggesting an intermediate phylogenetic position within the subgenus, or perhaps that the character provides little phylogenetic information. Additional study of this character is needed.

**ETYMOLOGY.**--I take great pleasure in naming this logperch, *Percina suttkusi*, for my friend and mentor, Royal D. Suttkus, recognizing his long-term study of this species in particular, and more broadly for his contributions to systematics and biology of fishes in southeastern United States. The common name, Gulf Logperch, refers to its distribution in rivers draining into the Gulf of Mexico.

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*Editor:* David A. Good