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PERCINA KATHAE, A NEW LOGPERCH ENDEMIC TO THE MOBILE BASIN IN MISSISSIPPI, ALABAMA, GEORGIA, AND TENNESSEE (PERCIDAE, ETHEOSTOMATINI)

By Bruce A. Thompson[1]

This paper is the fourth in a series describing several new species of logperch from the southeastern United States (Thompson 1985, 1995, 1997). For each of these species, populations have long been known, but unrecognized. In the case of the species described herein, Jordan (1877a) first reported on populations when he noted logperch that were "abundant in all the tributaries of the Etowah, Oostanaula, and Coosa Rivers." He did not, however, recognize their distinctiveness since he referred them to the widespread species *Percina caprodes* and stated that "comparison with northern specimens fails to show any difference of any sort." Jordan (1877b), in a comparison of logperch from Texas, made further reference to having examined several specimens of "*P. caprodes*" from the Alabama River (probably the same specimens he listed in his 1877a work, referring to the three rivers listed there collectively as the Alabama River, into which they all flow). Jordan and Brayton (1878) listed three logperch localities in the Etowah River, eight in the Oostanaula River, and four in the Coosa River, providing additional locality information from the more generalized listings in Jordan (1877a). In addition, they noted further specimens from the Alabama River at Montgomery, AL, collected by T. Bean in 1876. Gilbert (1891) examined populations of this species (as *Etheostoma caprodes*) from the Black Warrior, Cahaba, and Coosa rivers, noting that they are

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"everywhere abundant." Similarly, Moenkhaus (1894) included specimens in his study on the variation of logperch, noting, in reference to specimens from Choccolocco Creek (called Chocola Creek), the broad, intense body bars of the new species. Fowler (1945) reported on 61 specimens of the new species (as *P. c. caprodes*) from five localities in the Coosa River and Bailey and Gosline (1955) included 12 specimens (as *P. (Percina) caprodes carbonaria*) from the Black Warrior drainage in their study of percid vertebrae. Clearly, this new species has long gone unrecognized; even when not reported as *P. caprodes* or *P. caprodes carbonaria*, museum specimens usually have been confounded with the recently described *P. suttkusi* (Thompson, 1997).

Collette and Knapp (1967) reported ten names available for logperch taxa, five they considered to be valid (*P. burtoni, P. caprodes caprodes, P. caprodes carbonaria, P. caprodes semifasciata*, and *P. rex*) and five they considered to be synonyms of *P. caprodes semifasciata* (*P. bimaculata, P. evermanni, P. manitou, P. nebulosa*, and *P. zebra*). Neither these names nor the five additional names applied to logperch taxa subsequently (*P. austroperca, P. fulvitaenia, P. jenkinsi, P. macrolepida*, and *P. suttkusi*) apply to the species described herein. This paper provides a description of the species referred to as *Percina* "B" or the Mobile logperch by Thompson (1985, 1995, 1997). This brings the number of recognized forms of logperch to eleven. These are: *P. austroperca, P. burtoni, P. caprodes caprodes, P. c. semifasciata, P. carbonaria, P. fulvitaenia, P. jenkinsi, P. macrolepida, P. rex, P. suttkusi* and the species discussed below.

MATERIALS AND METHODS

Specimens used in this study were from the collections of Auburn University Museum (AUM), Cornell University (CU), Geological Survey of Alabama (GSA), Illinois Natural History Survey (INHS), Louisiana State University Museum of Natural Sciences (LSUMZ), Museum of Comparative Zoology, Harvard University (MCZ), Mississippi Museum of Natural Science (MMNS), Mississippi State University (MSU), Northeast Louisiana University (NLU), Southern Arkansas University (SAU), Texas Natural History Collections (TNHC), Tulane University (TU), University of Alabama Ichthyological Collection (UAIC), University of Alberta Museum of Zoology (UAMZ), Florida State Museum, University of Florida (UF), University of Michigan Museum of Zoology (UMMZ), University of New Orleans (UNOVC), United States National Museum (USNM), and University of Tennessee (UT).

Counts and measurements were made according to Hubbs and Lagler (1964) except as discussed by 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. Logperch bar and body-pattern terminology follow Thompson

(1985). Except for subspecific designations, names of fish species follow Robins *et al.* (1991).

The following logperch were examined for meristic, morphometric, scalation, and pigment pattern comparisons to the new species (numbers in parentheses are sample size and SL range):

Percina austroperca: specimens listed in Thompson (1995). *Percina burtoni*: TU 59883 (1, 101.5) 18 Oct 1969; TU 59906 (1, 133.3) 18 Oct 1969; TU 72133 (1, 50.0) 11 June 1971; TU 89496 (1, 119.1) 29 July 1974. *Percina c. caprodes*: In addition to specimens listed in Thompson (1985, 1995): TNHC 8315 (6, 67.7-111.6) 18 Apr 1971; TNHC 8377 (1, 74.8) 18 Apr 1971; TNHC 8427 (1, 82.0) 19 June; TU 50679 (15, 103.0-135.0) 21 Mar 1966; TU 132638 (1, 68.1) 8 Oct 1983; TU 141664 (2, 101.1-111.9) 10 July 1985. *Percina caprodes semifasciata*: MCZ 62166 (15, 59.1-85.2) 25 and 29 July 1983; MCZ 60475 (22, 54.1-83.5) 28 July 1983; UAMZ 5373 (20, 65.8-83.5) 2 Aug 1984. *Percina carbonaria*: TU 97397 (53, 57.5-125.7) 27 Feb 1976. *Percina fulvitaenia*: TU 10236 (2, 87.7-107.7) 2 May 1955; TU 38039 (3, 94.2-105.6) 21 June 1965; TU 54075 (7, 64.8-99.2) 21 June 1968; TU 54123 (4, 96.3-107.7) 22 June 1968; TU 57625 (2, 107.2-112.3) 20 Apr 1969; TU 84743 (3, 92.7-115.7) 18 Aug1973; TU 133000 (12, 55.4-75.5) 12 Aug 1975; SAU 7500 (27, 73.5-96.0) 25 Apr 1975; NLU 70978 (20, 55.8-103.2) 29 Aug 1994. *Percina jenkinsi*: In addition to specimens listed in Thompson (1985): TU 182016 (2, 71.0-90.3) 29 June 1970; NLU 44937 (3, 87.2-91.2) 8 Apr 1980; AUM 25298 (1, 75.1) 24 July 1983. *Percina macrolepida*: specimens listed in Thompson (1995). *Percina rex*: LSUMZ 12050 (2, 109.4-113.7) 29 Mar 1977; TU 25876 (2, 61.4-109.3) 18 June 1962; TU 69304 (3, 52.9-105.3) 12 Apr 1971; TU 71033 (17, 48.5-108.2) 12 Apr 1971; TU 101862 (1, 30.5) 26 July 1976. *Percina suttkusi*: In addition to specimens listed in Thompson (1997): AUM 6225 (1, 84.8) 31 Oct 1970; AUM 16350 (1, 69.6) 1970.

Determination of spawning season was made from examination of histological preparations of ovaries from the following specimens of the new species (numbers in parentheses as above):

Black Warrior drainage: GSA 7687.12 (1, 100.4) 23 Mar 1988; TU 77069 (1, 120.0) 4 Apr 1972; AUM 27100 (1, 114.8) 10 June 1991. Coosa drainage: UF 91408 (2, 99.1-124.3) 20 Jan 1992; AUM 23844 (1, 99.4) 30 Jan 1983; AUM 23871 (2, 84.5-96.5) 20 Feb 1983; TU 76485 (1, 97.3) 15 Mar 1972; TU 76443 (3, 84.3-101.9) 15 Mar 1972; TU 68213 (3, 97.9-103.8) 18 Mar 1971; TU 78217 (3, 97.8-118.2) 31 May 1972; TU 70380 (2, 103.1-103.4) 1 June 1971; UF 94173 (1, 119.2) 24 July 1992; TU 68511 (1, 105.7) 23 Sept 1970; TU 74390 (1, 98.0) 8 Dec 1971; TU 74487 (1, 115.3) 8 Dec 1971; TU 66425 (2, 89.6-102.7) 16 Dec 1970. Tallapoosa drainage: TU 167106 (1, 104.0) 5 Apr 1988; TU 176533 (1, 100.5) 6 Sept 1994; TU 171114 (1, 111.2) 6 Nov 1990. 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).

Material examined is listed as follows: drainage: state: county: locality: catalog number (number of specimens, size range in SL), date.

Abbreviations used are: standard compass directions (with "of" deleted), Hwy=highway, km=kilometer(s), Co=county, US=United States, R=River, Cr=Creek, Fk=Fork, L=Lake, trib=tributary, RM=River Mile, and standard two-letter designation for states.

Percina kathae new species
Mobile Logperch
Figure 1

Percina caprodes--Jordan (1877a, b); Jordan and Brayton (1878); Boschung (1961); Smith-Vaniz (1968); Dahlberg and Scott (1971); Stiles and Etnier (1971); Barclay and Howell (1973); Mettee (1978); Boschung and O'Neil (1981); O'Neil *et al.* (1981); Pierson and Schultz (1984); Travnichek and Maceina (1994); Wood and Mayden (1997).
Etheostoma caprodes--Gilbert (1891); Moenkhaus (1894).
Percina caprodes caprodes--Fowler (1945).
Percina (Percina) caprodes carbonaria--Bailey and Gosline (1955).
Percina caprodes carbonaria--Suttkus and Ramsey (1967).
Percina "B"--Thompson (1978); Thompson (1985); Thompson (1995); Thompson (1997).
Percina (Percina) sp.--Pierson, *et al.* (1986b); Etnier and Starnes (1994).
Percina sp.--Mettee *et al.* (1987).
Percina sp. cf. *caprodes*--Boschung (1989); Mettee *et al.* (1989a, b); Pierson *et al.* (1989); Hubbard *et al.* (1991); Boschung (1992); Suttkus *et al.* (1994); Ballard and Pierson (1996).
Percina species--Mettee *et al.* (1996).

HOLOTYPE.--TU 121416. Adult male, 112.4 mm SL. Mobile River system: Alabama: Shelby Co.: Cahaba River, County Hwy. 52, 4 km W of Helena (T20S, R3W, Sec 20). Collected 6 May 1981 by R. D. Suttkus and D. L. Nieland.

PARATOPOTYPES.--A total of 25 specimens. TU 35248 (7, 100.1-116.0) 28 June 1964, TU 38198 (4, 88.1-108.5) 24 June 1965, TU 40608 (6, 64.0-114.7) 11 Apr 1966, USNM 342553, formerly MSU 7545 (5, 61.3-105.5) 15 Apr 1978, UT 91.1571 (2, 94.6-113.8) 15 Apr 1978, TU 121560 (1, 98.3) 5 June 1981.

OTHER PARATYPES.--A total of 190 specimens. The drainages below are listed from west to east:

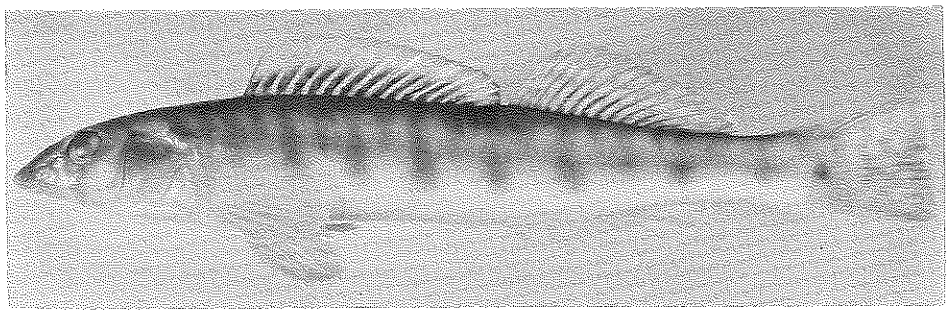

Figure 1. *Percina kathae*, n. sp., TU 121416, 112.4 mm SL, holotype, Cahaba River, AL.

Cahaba River drainage (n=37): Alabama: Bibb Co: Cahaba R, off AL Hwy 5, 6.4 km N Centreville: UAIC 1297.02 (1, 111.3) 24 Apr 1964. Cahaba R, Co Hwy 27, 10 km NE Centreville, T24N, R10E, Sec. 33: TU 19425 (1, 77.2) 8 Sept 1958, TU 40805 (2, 104.9-115.2) 19 Apr 1966, TU 69114 (9, 68.3-130.9) 9 Apr 1971, NLU 63929 (2, 38.7-40.2) 12 June 1972, TU 82150 (3, 75.4-80.1) 15 May 1973, UMMZ 231991, formerly MSU 7528 (1, 94.3 mm) 15 Apr 1978, UT 91.1564 (2, 61.8-136.7) 15 Apr 1978, CU 72752 (2, 72.9-81.5 mm) 18 Mar 1991. Cahaba R, 1.1 km S of Hwy 82, Centreville, T23N, R9E, Sec 35: UAIC 9118.10 (2, 125.2-133.3) 28 Apr 1989. Copperas Cr 4.2 km SE of Sixmile, T23N, R11E, Sec 16: TU 152162 (2, 64.0-86.7) 12 May 1988. Little Cahaba R, AL Hwy 25, 8 km SW Montevallo: INHS 83386 (2, 103.7-111.3) 17 Aug 1978. Little Cahaba R , Co Hwy 10: UAIC 2591.07 (3, 39.0-103.3) 12 June 1967. Little Cahaba R, Co Hwy 65, T24N, R10E, Sec 13: TU 106783 (3, 113.7-132.9) 14 Apr 1978, TU 106809 (2, 77.2-134.6) 15 Apr 1978, UMMZ 231992, formerly MSU 7556 (1, 92.8) 15 Apr 1978. Schultz Cr, Hwy 5, 6.4 km NNW of Centreville, T23N, R9E, Sec 29: TU 18857 (1, 129.6) 8 July 1958, TU 30481 (1, 122.3) 15 Apr 1963. Six Mile Cr, downstream AL Hwy 25: UAIC 2629.20 (3, 60.9-102.8) 22 Aug 1967. Sixmile Cr, Hwy 139, T23N, R12W, Sec 19: TU 152139 (1, 85.4) 12 May 1988. Six Mile Cr, 1.6 km SSE AL Hwy 25: UAIC 4929.22 (1, 106.4) 13 Mar 1974. Jefferson Co: Cahaba R at Trussville: GSA 4547.14 (1, 106.4) 1 June 1993. Shelby Co: Cahaba R at Booth's Ford, T21S, R4W, NW 1/4 Sec 30: CU 54599 (1, 105.8) 6 Sept 1966.

Coosa River drainage (n=153): Alabama: Calhoun Co: Aker Creek, trib to Coosa R on Hwy 73, 10.6 km N Lincoln: TU 66425 (4, 89.6-105.5) 16 Dec 1970, TU 68213 (13, 62.3-136.2) 18 Mar 1971, TU 68511 (4, 53.6-105.7) 23 Sept 1970, TU 70380 (20, 68.3-116.5) 1 June 1971, TU 71536 (5, 75.8-118.4) 15 Sept 1971, TU 74390 (3, 91.1-98.9) 8 Dec 1971, TU 76443 (11, 83.1-121.5) 15 Mar 1972, TU 78217 (19, 70.6-118.2) 31 May 1972, TU 78980 (2, 88.2-103.9) 13 Sept 1972, TU 88265 (4, 72.1-119.8) 12 June 1974. Cane Creek, trib to Coosa R on Hwy 73, 13.8 km N Lincoln: TU 66412 (2, 100.2-113.0) 16 Dec 1970, TU 68225 (8, 93.8-114.8) 18 Mar 1971, TU 68543 (3, 87.0-106.9) 23 Sept 1970, TU 70338 (16, 74.6-110.8) 1 June 1971, TU 71914 (3, 84.8-106.6) 15 Sept 1971, TU 74360 (1, 104.2) 8 Dec 1971, TU

76471 (4, 89.3-110.9) 15 Mar 1972, TU 78438 (2, 107.0-113.0) 31 May 1972, TU 88277 (5, 73.4-106.3) 12 June 1974. Cleburne Co: Shoal Cr on Forest Service Rd 500 in Pine Glen Recreational Area: UF 91966 (1, 135.4) 7 Apr 1992. Georgia: Cherokee Co: Etowah R, 1.9 km E Long Swamp Cr: UF 86296 (3, 113.1-123.1) 20 Sept 1990. Little R, 12.8 km WNW Woodstock: UF 91408 (5, 99.1-124.3) 20 Jan 1992. Dawson Co: Etowah R, downstream from Shoal Cr: UF 86214 (2, 117.2-134.7) 18 Sept 1990. Etowah R , 1 km SE Shoal Cr: UF 86191 (2, 135.0-143.7) 13 Sept 1990. Gilmore Co: Ellijay R at Ellijay, Ga Hwy 52: UF 94173 (9, 79.3-136.0) 24 July 1992. Pickens Co: Padgett Cr at Town Cr, 4.3 km SSW Jasper: UF 90771 (1, 95.4) 23 Jan 1992. Sharp Mountain Cr, Co Hwy 307, 5.9 km SSW Jasper: UF 91437 (1, 108.6) 21 Jan 1992.

ADDITIONAL MATERIAL EXAMINED, NOT DESIGNATED AS TYPES.--A total of 363 specimens. The drainages below are listed from west to east:

Tombigbee River drainage (n=83): Alabama: Clark Co: Bashi Cr, T11N, R1E, Sec. 9: GSA 7439.22 (1, 66.5) 23 Aug 1984. Choctaw Co: Mill Cr, T10N, R3W, Sec. 4: GSA 6942.24 (1, 74.3) 24 Apr 1984. Surveyor's Cr, T11N, R3W, Sec. 24: GSA 6985.19 (1, 78.5) 30 Mar 1984, GSA 6936.22 (1, 76.5) 25 Apr 1984, GSA 7405.20 (2, 77.5-115.8) 29 May 1984, GSA 7417.24 (2, 80.8-93.6) 28 June 1984, GSA 7433.20 (1, 79.0) 22 Aug 1984. Fayette Co: Boxes Cr, trib to Sipsey R, AL Hwy 13, 12.8 km S Eldridge: UAIC 1581.08 (1, 77.5) 15 Apr 1965. Greene Co: Sipsey R off Co Hwy 2, T22S, R13W, Sec. 21: UAIC 2849.17 (1, 96.6) 15 Mar 1968. Marion Co: Buttahatchee R, US Hwy 43: UNOVC 1161 (1, 118.6) 29 Oct 1978. Pickens Co: Tombigbee R (Gainesville L) 4.8 km NE Warsaw: part of AUM 21029 (1, 43.1) 25 July 1980. Coal Fire Cr US Hwy 82: UAIC 7089.17 (1, 105.3) 17 Aug 1983. Sumter Co: Tombigbee R, 4.8 km N Gainesville: TU 181952 (1, 88.7) 26 Oct 1977. Tuscaloosa Co: Sipsey R, US Hwy 82: UT 91.2189 (1, 92.6) 21 May 1981, UAIC 4120.08 (1, 105.4) 3 July 1973. Washington Co: Tombigbee R overflow pool, US Hwy 43: GSA 5301.14 (1, 63.9) 16 Aug 1990. Mississippi: Itawamba Co: Bull Mountain Cr at mouth: MMNS 7157 (1, 84.0) 7 July 1980. Bull Mountain Cr, 0.4 km upstream MS Hwy 25: MSU 896 (1, 98.8) 6 Aug 1968. Bull Mountain Cr, 0.5 km below MS Hwy 25: MMNS 16968 (2, 98.8-124.1) 5 Sept 1980. Bull Mountain Cr, 11.2 km upstream MS Hwy 25: MMNS 7471 (1, 123.1) 3 Sept 1980. Tombigbee R, mouth of Bull Mountain Cr, : MMNS 8256 (1, 80.1) 7 May 1980. Lowndes Co: Buttahatchee R at jct with Tombigbee R: UAIC 4425.32 (1, 38.0) 24 July 1972, from MMNS 8331 (4, 62.8-96.5) 21 Aug 1980. Buttahatchee R, 0.8 km downstream US Hwy 45: NLU 71646 (3, 64.8-76.1) 16 Feb 1988. Buttahatchee R, 0.4 km downstream US Hwy 45: UAIC 8587.02 (1, 84.4) 13 Dec 1988. Buttahatchee R, 0.8 km below MS Hwy 373: MSU 4879 (1, 35.9) 16 July 1974. Buttahatchee R, 6.9 km N Caledonia: AUM 5212 (1, 62.1) 2 Oct 1968. Buttahatchee R, 8 km downstream US Hwy 45: NLU 60970 (1, 98.7) 28 May 1987. Luxapalila R at Steens: MSU 7558 (1, 96.9) 20 July 1978. Luxapalila R, Steen's Branch, 6.4 km NE Columbus: NLU 63296 (1, 98.1) 19 July 1982. Luxapalila R, 0.4 km W US Hwy 50: MSU 2913 (1, 64.5) 5 June 1973, MSU 3046 (1, 90.5) 17 July 1973, MSU

3213 (1, 85.4) 26 Aug 1973, MSU 3263 (2, 87.6-89.8) 26 Aug 1973, MSU 3372 (4, 97.2-124.9) 30 Sept 1973, MSU 3595 (1, 66.9) 24 Oct 1973, MSU 3658 (1, 103.3) 25 Oct 1973, MSU 4990 (2, 84.1-112.9) 30 May 1974, out of MSU 5129 (1, 34.9) 17 June 1974, MSU 5283 (2, 112.2-112.5) 26 Aug 1974, MSU 5424 (2, 62.9-71.7) 26 Sept 1974, MSU 5867 (2, 71.9-72.1) 25 Oct 1974, MSU 5936 (1, 70.8) 26 Nov 1974, NLU 62596 (2, 36.3-98.5) 26 June 1975. Luxapalila R, 1.6 km above mouth: MSU 5383 (1, 62.0) 26 Aug 1974; MSU 5263 (1, 53.2) 30 July 1974; Luxapalila R, 3.4 km above mouth: MSU 7449 (2, 114.7-117.3) 23 Aug 1976. Tombigbee R above mouth Oak Slush Cr, RM 333. UAIC 4750.30 (1, 43.3) 21 July 1972. Tombigbee R at Buzzards Island: TU 83703 (1, 55.6) 8 Sept 1973. Tombigbee R between Waverly and Burton's Landing: MMNS 14529 (1, 28.0) 5 June 1980. Tombigbee R, 0.8 km below Luxapalila Cr: UAIC 4418.20 (1, 37.5) 12 July 1972. Tombigbee R, 1.2 km S Columbus: UAIC 7031.09 (1, 70.8) 10 June 1983. Tombigbee R, 1.6 km above Luxapalila R: TU 83660 (1, 57.4) 8 Sept 1973. Tombigbee R, 6.4 km S US Hwy 82: UAIC 4389.33 (2, 94.1-104.7) 30/31 May 1972. Yellow Cr, 3.2 km NE Steens: UAIC 4357.30 (2, 98.1-110.5) 19 Aug 1971. Monroe Co: Sipsey Cr, 1.3 km E Splunge: MMNS 7236 (2, 88.9-94.2) 20 Aug 1980. Sipsey Cr, 3.2 km above MS Hwy 278: NLU 63250 (2, 71.8-73.7) 27 Sept 1971. Sipsey Cr, 7.2 km NNW Gattman: MMNS 14507 (1, 113.2) 16 Aug 1979. Tombigbee R between MS Hwy 6 and RR bridge: UAIC 4441.25 (1, 98.6) 3 Aug 1972. Tombigbee R, Smithville Landing: MMNS 17208 (1, 57.0) 19 Aug 1980. Noxubee Co: Hashugua Cr, 3.2 km above MS Hwy 14, 11.2 km W Macon: NLU 69832 (1, 95.7) 13 July 1971.

Black Warrior drainage (n=83): Alabama: Blount Co: Blackburn Fk AL Hwy 75: AUM 27100 (13, 69.9-114.8) 10 June 1991. Blackburn Fk AL Hwy 79: TU 125470 (1, 89.9) 16 km SSW Cleveland, 16 May 1982. Kelly Cr at confluence of Locust Fk: AUM 27055 (1, 83.9) 16 Feb 1991. Locust Fork R, AL Hwy 79, 1.6 km N Locust Fork: TU 60060 (4, 93.7-111.1) 19 Oct 1969. Trib to Locust Fork, AL Hwy 75, 4.8 km NE Oneonta: TU 26053 (1, 100.7) 18 Apr 1962. Cullman Co: Brindle Cr AL Hwy 91, 3.8 km E Hanceville: TU 127789 (3, 71.7-115.4) 9 Oct 1982. Walker Co: Wolf Cr, AL Hwy 69: TU 26920 (1, 81.6) 29 May 1962. Winston Co: Capsey Cr, Forest Rd 266, NW Inmanfield: TU 176373 (3, 77.9-98.8) 18 Aug 1994. Capsey Cr, NW Inmanfield: TU 168347 (2, 74.6-81.7) 13 Sept 1993. Capsey Cr, 8.0 km NNW Addison: AUM 27187 (1, 79.8) 29 Aug 1991. Clear Cr, 6.2 km W Double Springs: TU 40598 (1, 72.6) 11 Apr 1966. Hubbard Cr, T9S, R8W, Sec. 8: UAIC 4962.19 (9, 57.0-105.9) 19 Aug 1973. Inman Cr, 3.7 km NW Addison: UAIC 3874.05 (5, 71.4-95.5) 26 May 1971. Lewis-Smith Reservoir: AUM 5342 (2, 101.9-106.8) 28 July 1964. Sandy Cr, AL Hwy 33, 6.4 km NE Double Springs: MSU 3800 (3, 57.3-80.7) 27 Feb 1972. Sipsey Fork R, 8.8 km NNE Double Springs: AUM 18784 (3, 51.1-81.7) 3 June 1979. Sipsey R, 8 km W Grayson: INHS 76311 (3, 50.2-88.0) 8 Jan 1965. Tuscaloosa Co: Black Warrior R, Oliver Lock and Dam: UAIC 1935.07 (1, 81.9) 12 Apr 1966, UAIC 2032.07 (1, 76.2) 31 May 1966. Carroll Cr, AL Hwy 69, 6.2 km N Northport: TU 77069 (4, 82.1-120.0) 4 Apr 1972, GSA 7687.12 (2, 100.4-121.3) 23 Mar 1988, GSA 7781.03 (4, 80.6-89.8) 4 May 1989, GSA 7770 (4,

74.6-91.2) 9 Mar 1989, GSA 4313.07 (1, 81.9) 15 May 1992. Cripple Cr, T18S, R10W, NW1/4 Sec. 22: CU 74769 (1, 78.6) 17 Mar 1991. Turkey Cr, AL Hwy 69: UF 12262 (1, 87.9) 11 Apr 1964. Tyro Cr, T17S, R10W, Sec. 3: GSA 6585.13 (3, 83.7-106.2) 18 Mar 1982. Tyro Cr, T17S, R10W, Sec. 15: GSA 6584.17 (5, 52.9-101.4) 19 Mar 1982.

Alabama River drainage (n=22): Alabama: Autauga Co: Swift Cr, AL Hwy 14 at Autaugaville: LSUMZ 10346 (4, 82.4-95.1) 28 Mar 1986. Dallas Co: Alabama R across from Cahaba R mouth: TU 168978 (1, 47.1) 29 June 1964. Marengo Co: Dry Cr, AL Hwy 10: TU 157755 (1, 109.9) 11 Apr 1990. Wilcox Co: Alabama R at Evans Lower Bar RM 133: TU 168976 (1, 78.5) 24 Sept 1970, TU 168977 (3, 60.0-78.0) 28 Aug 1970. Alabama R at Lower Canton Bar RM 156.7: TU 47773 (1, 52.1) 18 Aug 1967. Alabama R at Yellow Jacket Bar RM 129.8: TU 168974 (2, 69.4-81.4) 25 Sept 1970, TU 168975 (2, 48.8-55.8) 23 June 1970. Pursley Cr, 4.8 km W Rosebud: GSA 7757.23 (7, 66.8-98.6) 3 May 1988.

Coosa River drainage (n=107): Alabama: Calhoun Co: Choccolocco Cr AL Hwy 9: TU 59622 (5, 53.3-102.3) 14 Oct 1969. Shoal Cr, 3.2 km E White Plains: TU 129229 (2, 93.7-95.4) 18 May 1983. Chilton Co: Unnamed creek, I-65, 5.4 km S Chilton Co line: NLU 33142 (1, 81.4) 27 Sept 1975. Cleburne Co: Terrapin Cr Co Hwy 55: TU 154791 (1, 78.1) 10 May 1989. Coosa Co: Swamp Cr at jct Proctor Cr: INHS 57863 (1, 87.7) 12 Mar 1989. Swamp Cr, AL Hwy 22, 8.3 km WSW Rockford: UNOVC 7656 (1, 67.2) 26 Apr 1986. Elmore Co: Coosa R at Tallapoosa R, 6.4 km SW Wetumpka: MSU 4116 (1, 85.7) 2 June 1974. Sofkahatchee Cr, 5.6 km NE Jordan Dam: AUM 23871 (2, 84.8-96.5) 20 Feb 1983. Trib to Weoka Cr, 5.3 km NE Titus: AUM 23844 (1, 99.4) 30 Jan 1983. Shelby Co: Camp Branch, AL Hwy 25, 9.6 km SW Columbiana: INHS 87716 (1, 103.2) 5 Apr 1982. Kelly Cr US Hwy 231: UT 91.631 (1, 135.0) 6 Apr 1972. Unnamed creek, 0.8 km S Calera, off I-65: NLU 25707 (1, 104.4) 23 Dec 1972. St. Clair Co: Trib to Big Canoe Cr, US Hwy 231, 6.4 km NW Ashville: TU 26033 (1, 99.8) 18 Apr 1962. Trib to Coosa R (prob. Little Canoe Cr), US Hwy 11, 10.3 km SW Attala: USNM 162324 (1, 110.0) 13 Sept 1947. Talladega Co: Cheaha Cr, Co Hwy 105 at McElderry: TU 72241 (3, 99.7-104.4) 15 Sept 1971, TU 76485 (2, 96.9-110.9) 15 Mar 1972. Cheaha Cr, T17S, R6E, Sec. 19: TU 152202 (2, 99.1-110.4) 13 May 1988. Cheaha Cr (label reads Talladega Cr), Co Hwy 93, 11.2 km NE Talladega: NLU 35786 (1, 118.6) 16 Apr 1977. Clear Cr, Co Hwy 42: TU 74487 (2, 66.7-115.3) 8 Dec 1971, TU 79007 (1, 77.8) 13 Sept 1972. Coosa R, AL Hwy 34: TU 79108 (1, 85.1) 13 Sept 1972. Georgia: Bartow Co: Pumpkinvine Cr ,US Hwy 41: UT 91.2826 (1, 125.5) 2 Apr 1985. Stamp Cr, 6.4 km SE White: INHS 75086 (2, 69.2-69.7) 9 June 1976. Trib to Altoona L, GA Hwy 20, 9.6 km E Centersville: NLU 9640 (28, 60.9-133.0) 18 Apr 1968. Trib to Pine Log Cr, GA Hwy 140, 0.5 km W Folsum: TU 12072 (1, 118.6) 9 Oct 1955. Chattooga Co: East Armuchee Cr, 3.8 km E Subligna: AUM 10550 (2, 93.0-104.3) 24 June 1975. Trib to Chattooga R, GA Hwy 114, 8 km SW Lyerly: TU 26083 (1, 91.3) 19 Apr 1962. Trib to Chattooga R, GA Hwy 337, 16.8 km W Menlo: TU 33366 (5, 73.3-86.4) 22 June 1964. Cherokee Co: Etowah R, Co Hwy 51018: UT 91.1945 (2, 88.8-93.4) 26 Oct 1969, UT 91.2102 (1, 116.0) 23 Sept 1980.

Etowah R, Co Hwy 861: UT 91.2048 (1, 89.0) 17 May 1980. Etowah R, L&N RR bridge, 3.2 km S GA Hwy 5: UT 91.1892 (2, 80.0-88.0) 26 Oct 1979. Floyd Co: Dykes Cr GA Hwy 20: TU 30463 (1, 125.1) 14 Apr 1963. Gilmer Co: Carters L, 0.5 km up from dam: AUM 19010 (2, 99.3-109.9) 15 Sept 1978. Murray Co: Conasauga R, Co Hwy 225, 1.4 km W Gregory: TU 121094 (1, 118.6) 11 Apr 1981. Conasauga R, Co Hwy 286: TU 59428 (1, 46.1) 19 Oct 1969. Holly Cr at Chatsworth: TU 29157 (1, 118.4) 18 July 1962. Pickens Co: Talking Rock Cr GA Hwy 5: TU 40723 (2, 102.7-116.1) 15 Apr 1966. Whitfield Co: Coahulla Cr, 0.3 km S TN/GA state line: AUM 9170 (1, 73.2) 2 Aug 1974. Conasauga R, GA Hwy 2: AUM 9109 (1, 72.7) 1 Aug 1974. Conasauga R, 2.4 km S GA Hwy 2: UT 91.1652 (2, 44.5-53.1) 30 Aug 1978. Tennessee: Bradley Co: Conasauga R TN Hwy 74: UT 91.1003 (1, 111.0) Apr 1967, TU 58936 (1, 98.3) 17 Oct 1969, TU 58964 (3, 59.6-108.1) 19 Oct 1969, UT 91.475 (2, 112.4-115.0) 9/10 Apr 1970, TU 65938 (3, 72.2-81.5) 29 June 1970, TU 78369 (3, 80.5-100.5) 1 July 1972, UT 91.2550 (1, 97.4) 28 Aug 1978, UT 91.2620 (1, 79.0) 19 June 1983. Mill Cr TN Hwy 74: TU 68490 (1, 75.3) 29 June 1970, UT 91.1485 (1, 96.5) 16 Dec 1976. Polk Co: Conasauga R, ford above US Hwy 411: UT 91.347 (1, 97.6) 11 Oct 1969. Conasauga R 5.9 km SE US Hwy 411: UF 22794 (3, 101.0-115.1) 25 June 1976.

Tallapoosa River drainage (n=68): Alabama: Clay Co: Wesobulga Cr, S Cragford, T21S, R9E, Sec. 21: TU 168176 (1, 108.1) 27 Aug 1993, TU 168197 (1, 106.4) 27 Aug 1993. Wesobulga Cr, SSE Cragford, T21S, R9E, Sec. 1: TU 180486 (1, 115.5) 9 Sept 1995. Coosa Co: Oakachoy Cr AL Hwy 259: TU 158250 (1, 64.0) 9 Aug 1988. Elmore Co: Channahatchee Cr, old AL Hwy 229: TU 168120 (1, 88.4) 27 Aug 1993, TU 168144 (1, 100.8) 27 Aug 1993, TU 176533 (1, 100.5) 6 Sept 1994, TU 180132 (1, 104.9) 10 Sept 1995. Channahatchee Cr, 2.7 km NE Kent: TU 167106 (1, 104.0) 5 Apr 1988. Tallapoosa R, T18N, R22E, Sec. 19: GSA 4333.03 (1, 123.1) 3 Oct 1992. Tallapoosa R, 7.7 km S Wetumpka: TU 171114 (1, 111.2) 6 Nov 1990. Trib to Kowalign Cr, 2.9 km S Seman: UAIC 1363.11 (1, 94.8) 9 Aug 1964. Lee Co: Chewacla Cr, Co Hwy 43, 8 km SE Auburn: AUM 15096 (1, 101.4) 13 May 1977. Chewacla Cr (L Ogletree), 6.4 km SE Auburn: AUM 14500 (1, 141.8) 18 May 1973. Saugahatchee Cr Co Hwy 11, 2.7 km NNE Loachapoka: AUM 20905 (1, 93.3) 2 Oct 1980. Randolph Co: Cornhouse Cr, US Hwy 431: UNOVC 4835 (1, 104.0) 17 Nov 1985. Crooked Cr, 7.4 km NW Malone: TU 167172 (1, 118.1) 3 Apr 1986. Little Tallapoosa R, 6.9 km WNW Wedowee: AUM 13126 (1, 76.5) 24 June 1976. Tallapoosa R, 6.4 km NNW Wadley: AUM 23360 (2, 104.8-130.9) 24 June 1982, AUM 23905 (1, 106.6) 1 Nov 1982. Tallapoosa Co: Emuckfaw Cr, 4.8 km W Daviston: TU 168021 (1, 71.2) 10 July 1993, TU 168036 (1, 76.2) 10 July 1993, TU 168050 (1, 74.8) 10 July 1993, TU 176483 (1, 86.5) 5 Sept 1994, TU 180451 (1, 106.9) 9 Sept 1995. Hillabee Cr AL Hwy 22: NLU 22324 (23, 57.2-123.7) 3/4 Apr 1972, NLU 35391 (5, 105.7-129.6) 16 Apr 1977, UT 91.2147 (2, 76.9-91.0) 16 May 1981, INHS 63774 (2, 88.3-94.9) 28 Feb 1988, TU 167291 (5, 70.1-97.8) 23 Mar 1988, INHS 57834 (3, 85.6-118.6) 12 Mar 1989. Josie Leg Cr AL Hwy 22: TU 157619 (1, 81.5) 23 Mar 1990. Tallapoosa R at rapids 3.2 km E Horseshoe Bend Natl.

Park: AUM 5165 (1, 131.7) 26 Nov 1969. Wind Cr AL Hwy 50: AUM 16943 (1, 77.9) 23 Apr 1978.

DIAGNOSIS: *Percina kathae* (Fig. 1) is distinguished from all other members of the subgenus *Percina* Haldeman by the following combination of characters: 1) nape always entirely scaled; 2) scales usually absent from top and side of head, anterior breast, prepectoral area, and interopercle; 3) very wide red sub-marginal band in first dorsal fin (Thompson, 1995); 4) prepectoral blotch absent in juveniles and adults of both sexes; 5) lateral body pattern dominated by wide vertical whole and half bars, with quarter bars absent or poorly developed; 6) nine whole bars widened into lateral blotches near lateral line; 7) tuberculate ridges present on anal fin, lower caudal fin, and both surfaces of pectoral and pelvic fins, and scale tubercles well developed along belly and lower sides of the body from pectoral fin to caudal fin; 8) no dark black breeding colors on head and fins; 9) well-developed subocular bar; and 10) high meristic counts.

Percina kathae is separable from *P. caprodes semifasciata*, *P. c. caprodes*, *P. jenkinsi*, and *P. macrolepida* by the presence of a red band in the spinous dorsal fin. *Percina austroperca* and *P. suttkusi* also have a red band in the spinous dorsal fin, but they differ from *P. kathae* in that the band in the latter species is usually much wider (Thompson, 1995, Table 1). *Percina kathae* also differs from *P. austroperca* and *P. suttkusi* in possessing wider body bars. In addition to the dorsal fin band, *P. kathae* also differs from *P. jenkinsi* in having only a single row of P2 scutes, nine whole body bars, and more complete scalation on the cheek and preopercle. *Percina kathae* always has a fully scaled nape and the red band on the first dorsal fin is distinctly submarginal, distinguishing it from *P. burtoni*, which has a partially scaled nape and a marginal red band on the first dorsal fin. The fully scaled nape also distinguishes *P. kathae* from *P. caprodes semifasciata*. *Percina kathae* differs from *P. rex* in lacking a prepectoral blotch, having a more scaled cheek with scales covering the preopercle bone, having wide whole body bars connected to its lateral blotches, and lacking pectoral and anal fin flecking in spawning males. *Percina kathae* is most similar to *P. carbonaria* and *P. fulvitaenia*. It differs from *P. carbonaria* in not developing the extensive black on the head, body, and fins found in spawning males of that species. *Percina kathae* also differs from both *P. carbonaria* and *P. fulvitaenia* in possessing higher meristic counts (Tables 1-6).

DESCRIPTION: *Percina kathae* is a large logperch, commonly exceeding 130 mm SL and reaching a maximum size of 140 mm SL. It is a robust species, being more heavy-bodied than *P. jenkinsi* and *P. suttkusi*, the other two logperch in its geographic range.

Frequency distributions of fin-ray, scale, and vertebral counts are presented in Tables 1 through 6, which also include data for the probable closest relatives of *P. kathae*: *P. fulvitaenia* and *P. carbonaria* (see discussion below). *Percina kathae* has high fin ray and scale counts relative to other

Table 1. Frequency distribution of fin-ray counts in *Percina kathae, P. fulvitaenia,* and *P. carbonaria.*

DORSAL SPINES

Species/Drainage	13	14	15	16	17	N	MEAN	SD	CV
P. kathae									
Tombigbee		5	41	33	2	81	15.40	0.65	4.2
Black Warrior		2	57	24		83	15.27	0.50	3.3
Alabama		1	7	13	1	22	15.64	0.66	4.2
Cahaba		4	27	40	2	73	15.55	0.65	4.2
Coosa		1	98	92	4	195	15.51	0.55	3.5
Tallapoosa		3	31	33	1	68	15.47	0.61	3.9
P. fulvitaenia		6	45	7	1	59	15.05	0.54	3.6
P. carbonaria	2	37	13	1		53	14.26	0.56	3.9

DORSAL RAYS

Species/Drainage	14	15	16	17	18	N	MEAN	SD	CV
P. kathae									
Tombigbee	1	18	47	13	1	80	15.94	0.70	4.4
Black Warrior	2	37	39	5		83	15.57	0.65	4.2
Alabama		6	9	7		22	16.05	0.79	4.9
Cahaba	1	15	48	9		73	15.89	0.61	3.8
Coosa		51	104	37	2	194	15.95	0.70	4.4
Tallapoosa	5	23	36	3	1	68	15.59	0.76	4.9
P. fulvitaenia	3	22	25	3		60	16.00	0.80	5.0
P. carbonaria	1	14	31	12	2	53	15.51	0.72	4.7

TOTAL DORSAL ELEMENTS

Species/Drainage	28	29	30	31	32	33	34	N	MEAN	SD	CV
P. kathae											
Tombigbee		4	9	35	22	9	1	80	31.33	1.03	3.3
Black Warrior		1	28	39	14	1		83	30.83	0.76	2.5
Alabama			3	6	8	5		22	31.68	0.99	3.1
Cahaba		3	7	26	29	8		73	31.44	0.96	3.1
Coosa			19	90	63	20	1	193	31.45	0.83	2.6
Tallapoosa		1	18	28	18	3		68	31.06	0.88	2.8
P. fulvitaenia		2	14	24	16	3		59	31.07	0.93	3.0
P. carbonaria	3	18	21	10	1			53	29.77	0.89	3.0

Table 1. Continued.

ANAL RAYS

Species/Drainage	10	11	12	13	N	MEAN	SD	CV
P. kathae								
Tombigbee	9	58	14		81	11.06	0.54	4.9
Black Warrior	12	57	14		83	11.02	0.56	5.1
Alabama	1	12	8		21	11.33	0.58	5.1
Cahaba	3	41	28		72	11.35	0.56	4.9
Coosa	12	123	55	2	192	11.24	0.58	5.1
Tallapoosa	18	38	12		68	10.91	0.66	6.0
P. fulvitaenia	20	32	8		60	10.80	0.66	6.1
P. carbonaria	21	32			53	10.60	0.49	4.7

TOTAL PECTORAL RAYS

Species/Drainage	26	27	28	29	30	31	32	N	MEAN	SD	CV
P. kathae											
Tombigbee		1	23	13	41	2		80	29.25	0.95	3.2
Black Warrior	1	1	46	6	27	1		82	28.73	1.02	3.5
Alabama			13	4	5			22	28.64	0.85	3.0
Cahaba		2	30	10	26		1	69	28.93	1.03	3.6
Coosa	1	2	56	32	92	8	3	194	29.28	1.04	3.6
Tallapoosa	6	9	33	4	16			68	28.22	1.21	4.3
P. fulvitaenia		2	15	7	34	1	1	60	29.33	1.04	3.5
P. carbonaria	4	5	34	6	3			52	27.98	0.87	3.1

logperches. Dorsal spines usually number 15 or 16, rarely 14 or 17. Dorsal rays range from 14 to 18, with 15 or 16 being the dominant counts. There are usually 30 or more dorsal fin elements. *Percina kathae* usually has more rays than spines, or equal number of rays and spines. There are usually two anal spines, the first being about twice as thick as the second; rarely there is only a single anal spine. Anal rays number from ten to 13, usually 11 or 12. Pectoral rays number 14 or 15, with total pectoral ray count ranging from 26 to 32, 28 to 30 being the usual counts. Principal caudal fin rays number 17 (1/8-7/1), as noted by Regan (1913) and Etnier and Starnes (1994). There is little geographic variation in fin ray counts among the five drainage systems inhabited by this species. Thompson (1995) noted some sexual dimorphism in median fin proportions, with male *P. kathae* possessing longer second dorsal and anal fins and having a greater anal fin base than females, but there is little sexual dimorphism in most body proportions (Table 7).

Table 2. Frequency distribution of pored lateral-line scales in *Percina kathae*, *P. fulvitaenia*, and *P. carbonaria*.

	NUMBER OF SCALES																				
Species/Drainage	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	N	MEAN	SD	CV
P. kathae																					
Tombigbee						3	14	13	19	13	6	8	4					80	90.19	1.84	2.0
Black Warrior[1]						2	5	10	13	19	6	9	4	7	3	3		83	91.70	2.72	3.0
Alabama[2]							1	3	6	2	3	2	1	1	2			22	91.91	3.21	3.5
Cahaba							1	3	14	14	17	13	5	2	1	-	2	72	91.86	1.88	2.0
Coosa[3]						3	3	13	34	41	44	25	13	6	3	7		194	91.77	2.11	2.3
Tallapoosa						7	10	7	16	11	6	6	5					68	90.19	2.03	2.3
P. fulvitaenia	1	7	8	6	13	14	7	4										60	85.88	1.81	2.1
P. carbonaria	1	-	9	9	13	8	6	4	3									53	86.25	1.83	2.1

[1]Lateral-line counts of 99 and 100 not listed.; [2]Lateral-line count of 102 not listed.; [3]Two lateral-line counts of 99 not listed.

Table 3. Frequency distribution of diagonal (tranverse) scale counts of *Percina kathae, P. fulvitaenia,* and *P. carbonaria.*

ANAL FIN TO SPINOUS DORSAL

Species/Drainage	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	N	MEAN	SD	CV
P. kathae																			
Tombigbee							2	6	7	23	15	15	6	5	1	80	32.79	1.72	5.2
Black Warrior									6	8	20	22	13	9	5	83	33.90	1.56	4.6
Alabama							2	2	3	2	4	4	2	2	1	22	32.82	2.28	6.9
Cahaba								2	3	9	10	20	15	14		73	33.97	1.56	4.6
Coosa								3	9	24	37	44	45	27	5	194	33.95	1.54	4.5
Tallapoosa							3	7	10	10	16	12	5	4	1	68	32.63	1.88	8.0
P. fulvitaenia	2	6	12	7	15	11	7									60	26.47	1.66	6.3
P. carbonaria			1		3	9	19	11	9	1						53	29.25	1.31	4.5

SECOND DORSAL TO ANAL FIN

Species/Drainage	19	20	21	22	23	24	25	26	27	28	29	30	31	32	N	MEAN	SD	CV
P. kathae																		
Tombigbee						7	17	17	20	11	4	3			79	26.44	1.51	5.7
Black Warrior							4	12	22	17	17	8	1	2	83	27.83	1.54	5.5
Alabama						1	8	2	1	1	5		4		22	27.27	2.45	9.0
Cahaba						1	5	10	17	26	12	2			73	27.45	1.26	4.6
Coosa						3	17	29	54	60	25	7			195	27.30	1.30	4.8
Tallapoosa					2	4	14	15	19	10	3	1			68	26.35	1.45	5.5
P. fulvitaenia	5	14	9	18	13	1									60	21.38	1.33	6.2
P. carbonaria			3	7	14	20	9								53	23.47	1.10	4.7

Table 3. Continued.

ABOVE LATERAL LINE

Species/Drainage	8	9	10	11	12	13	14	15	N	MEAN	SD	CV
P. kathae												
Tombigbee			1	41	24	11	4		81	11.70	0.90	7.7
Black Warrior			2	20	38	17	5	1	83	12.07	0.95	7.8
Alabama				5	11	5	1		22	12.09	0.81	6.7
Cahaba				11	28	28	4	2	73	12.42	0.91	7.3
Coosa			2	34	87	64	8		195	12.22	0.82	6.7
Tallapoosa			9	39	17	3			68	11.21	0.72	6.4
P. fulvitaenia	3	30	24	3					60	9.45	0.67	7.1
P. carbonaria	1	12	32	8					53	9.89	0.67	6.8

Percina kathae is a small-scaled species. Pored lateral-line scales vary from 87 to 102 with 90 to 94 being the typical range (Table 2). There are usually one to four pored scales posterior to the hypural plate, with few specimens having no pored scales. *Percina kathae* has high diagonal scale counts, with the anal fin to spinous dorsal count being 29 to 37, usually 31 to 36 (Table 3), the second dorsal to anal fin count being 24 to 32, usually 25 to 29 (Table 3), and scales above lateral line being 11 to 15, usually 12 or 13 (Table 3). These high diagonal scale counts gives *P. kathae* a very high "diagonal sum" (Thompson, 1985), ranging from 65 to 82, primarily being 69 to 78 (Table 4). The caudal peduncle circumferential scale count is also high, ranging from 31 to 37, usually 33 to 37 (Table 5).

The opercle and nape are entirely scaled with exposed ctenoid scales (Roberts, 1993). There are no ctenoid scales just posterior to the eyes, and the interopercle is usually naked. Scales do not extend forward on the cheeks to the posterior end of the jaw. Most *P. kathae* have a naked prepectoral and breast. As do all other logperch, *P. kathae* 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 are highly modified. Those on the pelvic arch number two to ten in males, and one or two in females, always in a single row. A few females lack pelvic scutes. The modified midventral row of scutes is usually complete, separating into two or three rows posteriorly, forming a cluster of scutes immediately anterior to the vent. This midventral row numbers 30-42 scales in males (mean 34.5). Very few female *P. kathae* possess midventral scutes, with five or six scutes being the maximum number observed.

Total vertebral number is 43-46, usually 44 or 45 (mean 44.6, range 44.2-44.9), based on specimens (n=193) from all six river systems inhabited by *P. kathae* (Table 6).

Table 4. Frequency distribution of "diagonal sum"[1] in *Percina kathae*, *P. fulvitaenia*, and *P. carbonaria*.

NUMBER OF SCALES																						
Species/Drainage	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	N	MEAN	SD	CV
P. kathae																						
Tombigbee	2	8	2	5	9	9	8	10	8	5	3	2	2	4					77	71.01	3.34	4.7
Black Warrior			1	1	7	6	7	4	12	11	10	9	4	4	1	2	1	2	82	73.79	3.26	4.4
Alabama	2	-	4	1	1	2	-	1	1	1	2	2	-	3	2				22	72.18	4.84	6.7
Cahaba	1	1	1	-	2	3	6	6	9	13	9	8	10	2	2				73	73.84	2.86	3.9
Coosa		1	3	1	11	15	22	15	23	31	23	22	13	9	4				193	73.45	2.75	3.7
Tallapoosa		3	5	6	10	8	5	7	8	5	5	1	4	-	1				68	70.21	3.12	4.4

NUMBER OF SCALES																					
Species/Drainage	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	N	MEAN	SD	CV
P. fulvitaenia	1	4	3	5	9	4	4	3	6	11	4	6						60	57.32	3.20	5.6
P. carbonaria				1	-	-	-	1	4	5	4	6	10	11	8	1	2	53	62.60	2.45	3.9

[1]Thompson (1985).

Table 5. Frequency distribution of caudal peduncle circumference scale count of *Percina kathae, P. fulvitaenia,* and *P. carbonaria.*

TOTAL SCALES

Species/Drainage	28	29	30	31	32	33	34	35	36	37	N	MEAN	SD	CV
P. kathae														
Tombigbee				3	8	22	14	22	5	6	80	34.04	1.50	4.4
Black Warrior						14	8	54	3	4	83	34.70	0.96	2.8
Alabama				1	1	4	1	9	1	5	22	34.77	1.72	4.9
Cahaba					1	8	12	26	15	11	73	35.08	1.24	3.5
Coosa				1	2	9	16	101	14	50	193	35.36	1.20	3.4
Tallapoosa				1	2	8	7	39	4	7	68	34.78	1.23	3.5
P. fulvitaenia	6	6	6	35	5	2					60	30.55	1.20	3.9
P. carbonaria		2	5	6	29	11					53	31.81	0.98	3.1

Table 6. Frequency distribution of vertebrae in *Percina kathae* and other selected logperch species.

NUMBER OF SCALES											
Species/Drainage	41	42	43	44	45	46	47	N	MEAN	SD	CV
P. kathae											
L. Tombigbee			2	7	3	1		13	44.23	0.83	1.88
U. Tombigbee				15	13			28	44.46	0.51	1.15
Black Warrior[1]			2	25	9	1		37	44.24	0.60	1.36
Alabama				6	12	1		19	44.77	0.56	1.25
Cahaba				9	15	3		27	44.78	0.64	1.43
Coosa				15	22	10		47	44.89	0.73	1.63
Tallapoosa			3	11	8			22	44.23	0.69	1.56
P. fulvitaenia		1	13	2				16	43.06	0.44	1.02
P. carbonaria		10	26	9				45	42.97	0.65	1.51
P. austroperca											
Escambia			3	50	3			56	44.00	0.33	0.75
Choctawhatchie			1	11	2			14	44.07	0.47	1.07
P. suttkusi											
Lake Pontchartrain			15	8				23	43.35	0.48	1.11
Pearl		5	27	3				35	42.92	0.48	1.12
Pascagoula		5	30					35	42.86	0.36	0.84
Tombigbee		27	67	11	3			108	42.91	0.68	1.58
Alabama		4	20	1				25	42.88	0.44	1.03
P. macrolepida		3	17	2				22	42.95	0.49	1.14
P. jenkinsi					16	12	1	29	45.48	0.57	1.25
P. caprodes											
caprodes (Miss. R.)		3	23	9	2			37	43.27	0.69	1.59
semifasciata											
St. Lawrence	4	12	17	4				37	42.57	0.83	1.95
Hudson Bay	5	15						20	41.75	0.44	1.05

[1]Includes 12 specimens (UMMZ 160878: Duck Cr, Cullman Co, AL) in Bailey and Gosline (1955).

Branchiostegal membranes vary from being separate to slightly conjoined in large adults. The broad frenum and conical overhanging "logperch" snout is well developed (becoming almost bulbous), particularly in the largest males. There is little variation in the cephalic sensory canal system with canals normally uninterrupted. As typical for most members of the subgenus *Percina* (Page, 1977, 1983; Thompson, 1985, 1995): one coronal pore, three supratemporal canal pores, four supraorbital canal pores, eight infraorbital canal pores, and ten preoperculomandibular canal pores are present.

Gill rakers on the first arch range from two to four on the upper arm and 11 to 13 on the lower arm, with the total raker count of 14 to 17.

Table 7. Proportional measurements of *Percina kathae*. All values except standard length expressed as thousandths of standard length.

Measurement	Holotype	Males (n=12)		Females (n=10)	
		Mean	Range	Mean	Range
Standard length (SL)	112.4	130.8	117.5-143.7	120.9	111.7-133.6
Head length (HL)	246	252.9	241-271	240.8	233-253
Snout length	86	90.5	84-99	83.6	79-89
Eye diameter	46	41.9	37-46	43.0	40-47
Upper jaw length	68	73.4	63-93	67.3	61-76
Post-orbit HL	124	124.3	116-132	117.7	113-126
Snout to D_1 origin	306	305.3	296-322	302.3	293-314
Snout to D_2 origin	631	625.9	615-635	633.1	623-639
Snout to A fin origin	617	613.9	604-627	622.7	602-641
Snout to P_1 fin	234	240.3	229-250	232.7	220-242
Snout to P_2 fin	270	283.5	269-297	275.5	261-289
Body depth	161	170.3	158-182	176.1	162-221
Body width	119	136.7	129-147	139.5	125-156
Head depth	130	136.3	123-151	131.4	125-141
Head width	130	141.1	135-150	132.8	121-142
Interorbital width	55	58.4	54-65	54.4	52-56
P_2 - P_2 width	76	80.1	77-83	74.0	71-81
P_1 length	176	186.3	167-210	181.2	170-207
P_2 length	174	173.3	164-184	167.5	160-185
Snout depth	69	70.8	63-77	63.8	59-68
Snout width	58	59.4	56-67	55.4	50-60
Gape width	45	53.5	47-60	47.7	40-54
Caudal peduncle depth	82	81.3	75-85	80.2	75-84
Caudal peduncle length	207	221.2	209-238	217.9	205-230
D_1 base	323	323.0	313-334	330.6	315-349
D_2 base	222	221.4	208-238	214.2	205-227
D_2 length	289	300.0	283-332	262.7	245-293
A base	178	172.3	162-185	164.4	156-182
A length	264	265.8	255-285	240.1	227-251

As in most logperch, *P. kathae* usually has six pyloric caeca. These are of uniform size, in a 3 + 3 arrangement, on either side of the stomach; occasional specimens possess an extra rudiment or only five large caeca plus a rudiment.

COMPARISONS.--There is considerable overlap in counts of both dorsal spines and rays for the four species of logperch occurring east of the Mississippi River and south of the Tennessee River in the southeastern United States, but *Percina kathae* has, on the average, the highest number of total dorsal fin elements, usually 31 or more. It also has the highest anal fin ray count, and the highest scale counts, except for *P. jenkinsi* (Thompson,

1985). *Percina kathae* averages more vertebrae than the other three logperches in question, except for *P. jenkinsi* (45-47, mean 45.5; Table 6). *Percina kathae* possesses more vertebrae than either of its probable closest relatives (see below), *P. carbonaria* and *P. fulvitaenia*, having 42-44 vertebrae (Table 6). *Percina kathae* has more gill rakers than southern *P. caprodes*, *P. macrolepida*, or *P. suttkusi*, fewer than *P. jenkinsi*, and overlapping counts with *P. austroperca*.

Compared to *P. austroperca*, *P. kathae* has a deeper but more compressed body. It has a longer anal fin and fin base, but shorter second dorsal fin base. It has a shorter snout and smaller eyes, shorter snout to first dorsal fin distance and shorter anal fin length. It has a shorter and more slender caudal peduncle. Females have a shorter head, upper jaw, snout-pectoral and snout-pelvic lengths, and pelvic fin, and a narrower interorbital and gape widths. Female *P. kathae* also have a longer first dorsal fin. Male *P. kathae* have longer pectoral and second dorsal fins.

Compared to *P. suttkusi*, *P. kathae* has a longer second dorsal fin and fin base, and longer anal fin and fin base, and females have a longer first dorsal fin base. *Percina kathae* has a deeper but shorter caudal peduncle. It also has a deeper and wider body, and greater interorbital, transpelvic, and gape widths. It has a longer upper jaw. Male *P. kathae* have longer, deeper snouts and deeper , wider heads. *Percina kathae* possesses smaller eyes, shorter snout to second dorsal fin origin length, shorter pectoral and pelvic fins, and much shorter snout to anal fin origin length. Female *P. kathae* has a shorter head and snout to pelvic fin insertion length.

Compared to *P. jenkinsi*, *P. kathae* has a shorter snout to first dorsal fin origin length, and a shorter head, pectoral, and pelvic fins. Female *P. kathae* also have shorter snouts. *Percina kathae* has a deeper and wider body, deeper and longer caudal peduncle, and longer first and second dorsal fin bases.

PIGMENTATION PATTERN.--The body pattern of *P. kathae* consists of very wide vertical bars, a "typical" logperch pattern, which includes a dark brown, contrasting with the tan-yellow background color on the upper half of the body. The entire body pattern is usually very bold. The lower body is light cream-colored with few melanophores. There are nine whole body bars that are broadly expanded into lateral blotches just below the lateral line. Moenkhaus (1894) noted the broad bars of *P. kathae* (as *Etheostoma caprodes*), reporting that "the bars are considerably broader and more intense [in comparison to logperches from other regions of the United States], and the whole bars have their ventral extremities much broadened ..." The posterior blotches are slightly more rounded compared to the anterior ones. *Percina kathae* possesses half and sometimes quarter bars that never end in blotches. The half bars are distinctly shorter than the whole bars, and when present, the quarter bars are always much shorter than either the whole or half bars. Quarter bars and some half bars are absent from smaller specimens resulting in a pattern of only 10-12 bars on the body. Anterior to the spinous dorsal fin

there are usually two or three wide bars crossing the dorsal midline. *Percina kathae* lacks a prepectoral blotch, but a few melanophores at the base of the fin rays may be present. Head pigment is usually distinctive, with specimens possessing a strong subocular bar and vermiculations on the top of head and snout. Cheeks and opercles lack distinctive markings but have a scattering of melanophores. Upper and lower jaws are covered with large melanophores. *Percina kathae* lacks the intense blackening on the head, anterior body, and fins similar to that found in *P. carbonaria* and certain other logperches. Some large males may have both the cheeks and opercles with a dense wash of melanophores but, at most, breeding males develop some secondary duskiness on the anterior body and fins.

The spinous dorsal fin of *P. kathae* has a very wide red band, just submarginal to a faint black marginal band. Proximal to the red band there is a small clear region in the fin and a jet-black basal band, particularly intense in males during the spawning season. The second dorsal fin has a series of dashes on the rays that form three to five irregular lines across the fin. The cross-hatching is often not apparent on large spawning males whose second dorsal becomes black on the interradial membranes. The edge of the second dorsal fin is sometimes 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 five or six irregular vertical lines across the fin. The anal fin is usually clear, but some specimens during the breeding season become dusky on both the membranes and rays of the fin. The pelvic fins are usually clear, but again there can be a wash of interradial dusky pigment in spawning males. The pectoral fins are also clear with a slight yellow color during life. A large prominent basicaudal spot is present in *P. kathae* but is somewhat faded in large reproductive males.

Percina kathae commonly possesses "night saddles", three or four 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. These markings are called "night saddles" because they are usually seen on specimens collected from clear water, after dark, but *P. kathae* can possess these saddles also during the daytime.

Photographs of *P. kathae* showing body and fin patterns are shown in Smith-Vaniz (1968), as *P. caprodes*; Robison and Buchanan (1988), as *P. caprodes* (H. Robison, pers. comm.); and Mettee *et al.* (1996), as *Percina* sp.

SIZE.--The largest known specimen of *P. kathae* is a 143.7 mm SL male (UF 86191). The species commonly reaches 125-130 mm SL, particularly in the Cahaba and Coosa rivers, and is among the largest of the logperches. There is no sexual dimorphism in maximum size.

BIOLOGY.--Gale and Deutsch (1985) summarized many of the reproductive studies on darters, and concluded that most individual females spawn more than once during the breeding season. Page (1983) dismissed these studies and concluded instead that darters spawn only once each spawning season (=isochronal, see Render *et al.*, 1995). Hubbs (1983)

disagreed with Page and, noting that data "are in accord with multiple spawning by females ...", arrived at the same conclusion as Williams (1959) who stated that "all darter life-history accounts indicate that females spawn repeatedly during the breeding season." More recent studies (Heins and Baker, 1989, 1993; Heins *et al.*, 1992) have presented strong evidence that darters are multiple (also called fractional or batch) spawners. Thompson (1997) presented evidence that the logperch *P. suttkusi* is a batch spawner. Burt *et al.* (1988) discussed the advantages of batch spawning in small-bodied fish (such as darters) as a way of increasing total fecundity in cases in which body size limits the number of mature oocytes that a female can contain at any one time.

Figure 2 shows the maturation of oocytes during the reproductive season of *P. kathae*. Ovaries from July through early October possess only resting primary growth (PG) oocytes and gonadosomatic indexes of less than 0.5. Commencing in late October, batches of oocytes mature through the cortical alveoli (CA) stages (Fig. 2A) and by mid-December most ovaries contain several batches of vitellogenic oocytes (V) containing yolk protein (Fig. 2B) in preparation for spawning. Maturation of oocytes continues, with late-stage vitellogenic (LV) oocytes filled with coalesced yolk protein (Fig. 2C), indicative that these oocytes will soon be ovulated and spawned. These oocytes were found in *P. kathae* from late February through mid-May, a spawning season of nearly three months. During this period the ovaries always possess multiple stages (PG, CA, V) of oocytes, a sign of batch-spawning mode (Hunter *et al.*, 1985). Very few *P. kathae* were found with ovulated oocytes with coalesced yolk, agreeing with the conclusions of Heins and Baker (1988) that "random field samples are not likely to contain many, if any, females with ripe eggs." *Percina kathae* ovaries that possess these ovulated oocytes also have large numbers of post-ovulatory follicles and are similar in appearance to the ovaries of *Etheostoma lynceum* shown by Heins, *et al.* (1992, Fig. 1C). By late May ovaries are dominated (Fig. 2D) by stages of oocytes undergoing atresia (A), evidence that spawning has ceased. Ovaries in late May through June possess few mature oocytes as the females return to the long non-reproductive portion of their life cycle, absorbing all but primary growth oocytes (Fig. 2E).

Ovaries with recently ovulated, coalesced-yolk oocytes and fresh post-ovulatory follicles (POF) have been found in *P. kathae* (Fig. 2F) collected at night, suggesting that it might be a nocturnal spawner, although additional observations are needed for confirmation. The smallest female *P. kathae* examined with coalesced yolk oocytes (ripe) was 84.5 mm. No specimens less than 75 mm SL possessed any ovarian development, so maturity in this darter probably occurs between 75 and 85 mm.

Hunter *et al.* (1989) discussed the criteria for distinguishing determinate vs. indeterminate fecundity in fishes. Some of the histological observations in *P. kathae* (e.g., the standing stock of advanced oocytes declining over the spawning season) suggest that it has determinate fecundity.

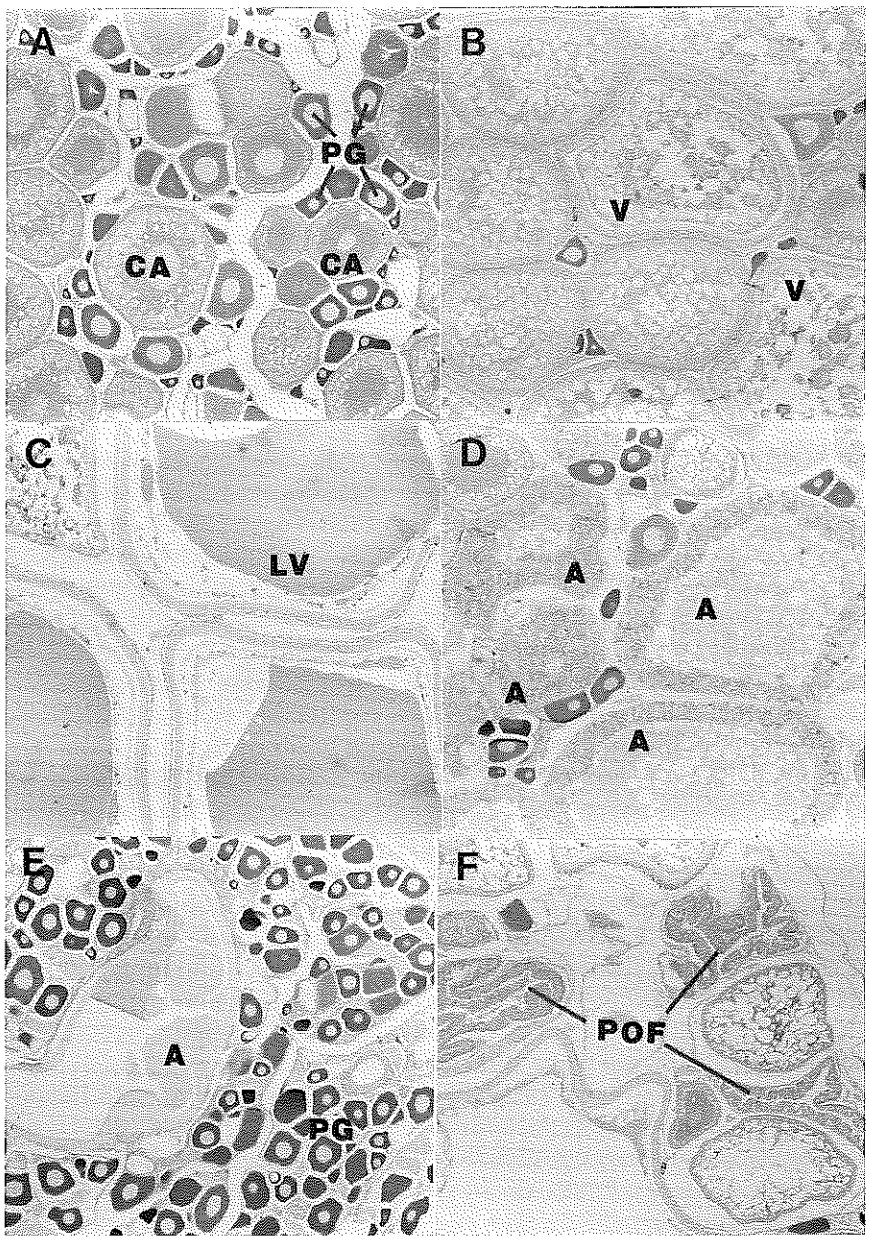

Figure 2. Light micrographs of *P. kathae* ovary sections: A) Early oocyte maturation showing resting primary growth (PG) and more mature cortical alveoli (CA) stage oocytes, B) continued oocyte maturation showing two batches of vitellogenic (V) stage oocytes, C) Late vitellogenic (LV) oocytes with coalesced yolk protein, D) regressing ovary with atretic (A) oocytes, E) ovary with mostly primary growth oocytes and few remaining non-viable oocytes from previous spawning season, F) ovary with post-ovulatory follicle (POF) from recently ovulated oocyte.

Male *P. kathae* examined during March and April possessed breeding tubercles on the lower sides of the body from near the pectoral fins to the scales at the base of the caudal fin (along either side of the anal fin and over much of the ventral portion of the caudal peduncle). Tuberculate ridges were found on both surfaces of the pelvic spine and rays and both surfaces of the lower five or six pectoral rays. Both spines and all branches of the anal rays had strong tuberculate ridges. There are tuberculate ridges on the lower one to four caudal fin rays. This pattern is similar to that found in *P. carbonaria, P. fulvitaenia,* and *P. rex,* and to that reported for *P. palmaris* by Denoncourt (1976). Female *P. kathae* lack both breeding tubercles and tuberculate ridges. Collette (1965) reported that *P. fulvitaenia* (as *P. caprodes carbonaria*) possesses tubercles on the modified mid-ventral scutes, but I have not found these on *P. kathae* or either of its immediate relatives, *P. fulvitaenia* or *P. carbonaria.*

ECOLOGY AND HABITAT.--Suttkus *et al.* (1994) described the Cahaba River at the type locality of *P. kathae* (same as type locality of *P. brevicauda*) as a small river with habitats ranging from deep areas with moderate to swift currents to more shallow gravel bars and riffles. *Percina kathae* has been taken in a variety of these habitats. Mettee *et al.* (1996) reported it (as *P.* sp.) from small tributaries, large rivers, and impoundments, Pierson *et al.* (1989) reported it (as *P.* (*Percina*) sp.) from the Tallapoosa River around rock ledges or other cover in moderate to fast current, Ballard and Pierson (1996) found it (as *P.* sp. cf. *caprodes*) in slow to moderate current over cobble, gravel, and sand in the Little River of the Coosa drainage, and Travnichek and Maceina (1994) found it (as *P. caprodes*) in the main channel of the lower Tallapoosa River. The largest collections have been taken from tributary creeks of large rivers and impoundments, although not from the smallest tributaries and headwater streams. During the late winter and spring, *P. kathae* is particularly common in gravel-bottomed runs 0.5 to 1.0 m deep. Mettee (1978) reported a spawning season for *P. kathae* (as *P. caprodes*) as Apr and May, and O'Neil *et al.* (1981) noted that it (as *P. caprodes*) prefers gravel areas below riffles having moderate current during this time. Mettee *et al.* (1996) described spawning "runs" of *P. kathae* (as *P.* sp.) moving from reservoirs in the Black Warrior drainage into small tributary streams in large numbers. *Percina kathae* largely disperses from this habitat after spawning is completed in the spring.

Suttkus and Ramsey (1967) reported 42 species of fish taken with *P. kathae* (as *P. caprodes carbonaria*) from the Cahaba River and Suttkus *et al.* (1994) listed 40 species of fish occurring with it (as *P.* sp. cf. *caprodes*) at what was to become its type locality. Species associates collected from Cane and Aker creeks, tributaries of the Coosa River (Calhoun Co, AL) based on 19 collections made between 1970 and 1974 are: *Dorosoma cepedianum, Esox niger, Campostoma oligolepis, Cyprinella lutrensa* (introduced), *C. trichroistia, C. venusta, C. venusta* x *C. lutrensa, Luxilus chrysocephalus, Notropis stilbius, N. xaenocephalus, Phenacobius catostomus, Pimephales*

promelas (introduced), *P. vigilax, Semotilus atromaculatus, Hypentelium etowanum, Minytrema melanops, Moxostoma poecilurum, M. duquesnei, Ameiurus melas, Ictalurus punctatus, Pylodictis olivaris, Fundulus olivaceus, Gambusia affinis, Morone chrysops, Lepomis auritus, L. cyanellus, L. gulosus, L. macrochirus, L. megalotis, L. microlophus, L. punctatus, Micropterus coosae, M. punctulatus, M. salmoides, Pomoxis nigromaculatus, Etheostoma coosae, E. stigmaeum, Percina nigrofasciata, P. shumardi,* and *Cottus carolinae.*

Habitat of young-of-the-year *P. kathae* has not been well documented, since specimens are rare. Specimens 35-40 mm have been occasionally taken in habitats slightly shallower, with slower flow, than that preferred by adults.

DISTRIBUTION.--*Percina kathae* is endemic to the Mobile Bay system (Fig. 3), occurring in all major rivers in the system primarily above the Fall Line. It occurs nearly the entire length of the Tombigbee River and is present in both eastern and western tributaries, although Cook (1959) did not report logperches from the Tombigbee River in her study of Mississippi fishes. Likewise, Hubbard (1987) did not report logperches from the Noxubee River, a major western tributary to the Tombigbee (see Fig. 3), but Hubbard *et al.* (1991) reported them from the Sucarnoochee River, just south of the Noxubee River outside the boundaries of the Black Belt region (Mettee *et al.*, 1996). *Percina kathae* is particularly abundant in the Black Warrior River and its tributaries above the Fall Line. It is uncommon in the Alabama River, where it is found in several tributaries both above and below the Black Belt formation (Mettee *et al.*, 1996). In the Cahaba River it is common above the Fall Line. The species reaches its maximum abundance in the Coosa River and its upland major tributaries such as the Etowah and Conasauga rivers. It is widely scattered, but seldom abundant in the Tallapoosa River. The species exists in impoundments in several of these river systems. Previous literature reports that discuss logperch habitats, life history, and distribution from the Tombigbee and Alabama Rivers in Alabama and Mississippi (Timmons 1982; Pierson *et al.*, 1986a, 1989; Boschung, 1987, 1989; and Mettee *et al.*, 1987, 1989a, b, 1996) were based, for the most part, on both *P. kathae* and *P. suttkusi.* Pierson and Schultz's (1984) logperch records in Bull Mountain Creek were actually based only on *P. kathae,* since this stream appears to be the only upper Tombigbee tributary to contain only this species. *Percina suttkusi* is (or was) syntopic with *P. kathae* (Thompson, 1997) in the Tombigbee, Black Warrior, Cahaba, and Alabama river systems in Alabama and Mississippi with the main area of overlap in distribution occurring in the middle region of the Tombigbee River in eastern Mississippi and western Alabama (Fig. 3). *Percina kathae* is, by far, the most abundant logperch in the Tallapoosa River drainage. There are, however, a few records of *P. suttkusi* in this drainage and the ecological and genetic relationships between the two species are unclear. In Hillabee Creek, an impounded arm of Lake Martin, there are collections of *P. kathae* with typical color pattern

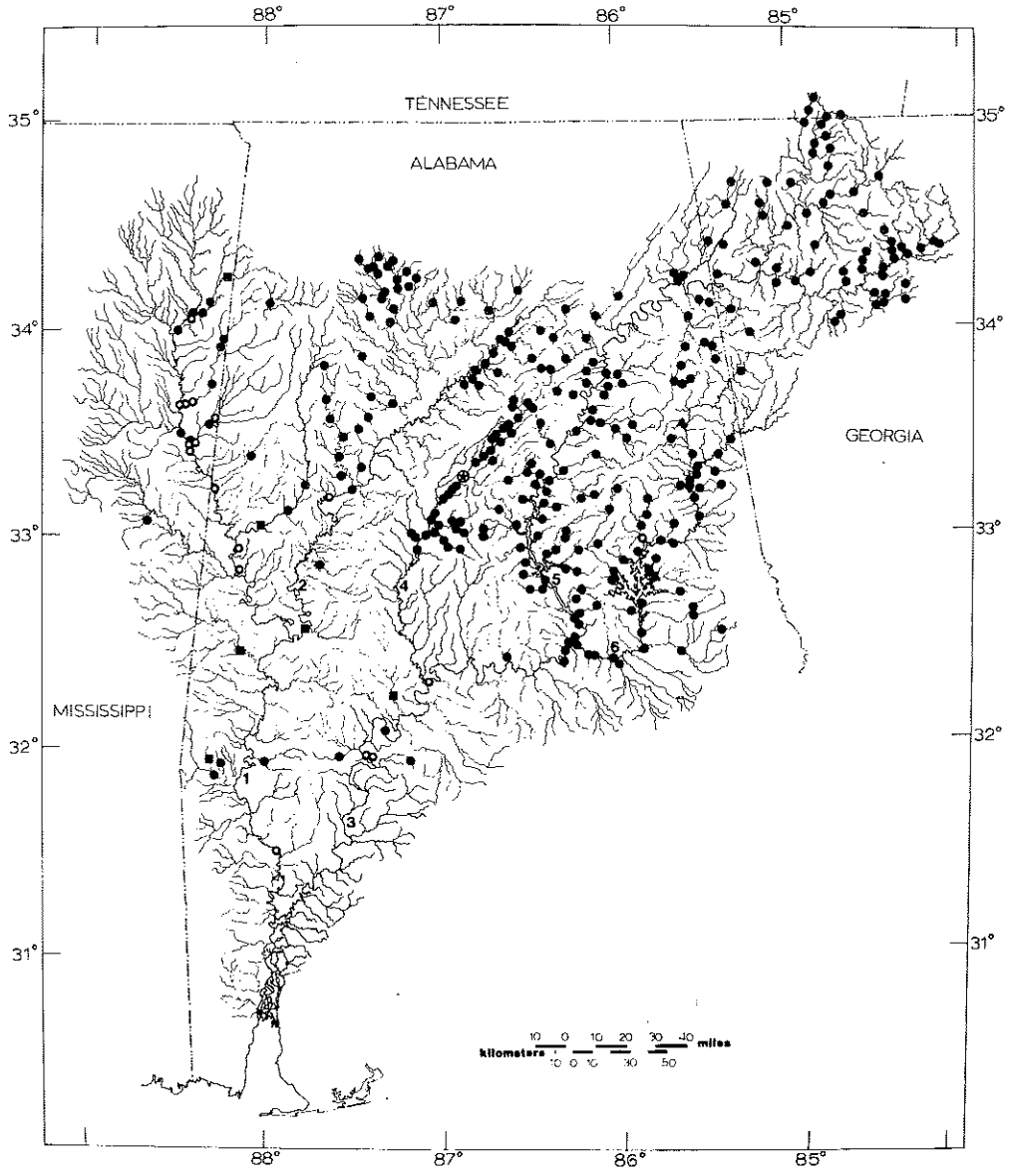

Figure 3. Distribution of *P. kathae* in Mobile Basin: 1) Tombigbee R, 2) Black Warrior R, 3) Alabama R, 4) Cahaba R, 5) Coosa R, and 6) Tallapoosa R. The type locality is marked with a circled star. Localities with both *P. kathae* and *P. suttkusi* are marked with hollow circles. Literature records of undetermined logperch are marked with squares and records of *P. suttkusi* not reported in Thompson (1997) are marked with triangles.

and meristics. Other collections contain a mix of *P. kathae* and *P. suttkusi* and specimens of intermediate squamation, color pattern and meristics, suggesting possible hybridization. This is the only known locality showing this phenomenon, and the possibility of introduction of *P. suttkusi* into the Tallapoosa River drainage is being examined.

STATUS.--*Percina kathae* has no special conservation status, either federally or at the state level. At the present time it probably needs no conservation designation because it is widespread in all of the major rivers of the Mobile system.

RELATIONSHIPS.--Bailey and Etnier (1988) listed primitive vs. derived conditions for 33 characters commonly used in darter classification studies. Using these character polarities, *Percina carbonaria*, *P. fulvitaenia*, and *P. kathae* appear to form a clade on the basis of several synapomorphies: broad body bars, few half and quarter body bars, and a wide red submarginal band in the first dorsal fin. Hence *P. kathae* does not appear to be immediately related to either *P. suttkusi* or *P. jenkinsi*, the other logperches found in the Mobile system. I recognize *P. kathae* as basal within *carbonaria/fulvitaenia/kathae* clade because it is the largest of the three species and possesses the highest meristic counts (Tables 1-6). This leaves the two western species (*P. carbonaria* and *P. fulvitaenia*) as sister species which together form the sister group to *P. kathae*. Morris and Page (1981) described *P. fulvitaenia* as a subspecies of *P. caprodes*, recognizing intergrade areas both north and south of the range of *P. fulvitaenia*. They considered all logperch from the White River in Arkansas and Missouri to be intergrades between *P. c. caprodes* and *P. c. fulvitaenia*, but I interpret logperches from both the upper and lower White River as *P. c. caprodes* possessing black or dusky membranes in the first dorsal fin, with no evidence of a red band in the dorsal fin of live or fresh specimens. Present evidence strongly suggests that *P. c. caprodes* and *P. fulvitaenia* are separate, allopatric species.

ETYMOLOGY.--This logperch is named for Kathy S. Thompson, my friend, my wife and life-long seining partner who has shared many riffles with me in my pursuit of studying darters. The common name, Mobile Logperch, refers to the Mobile Basin to which it is endemic.

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