

# Spotted Bullhead (*Ameiurus serracanthus*)

## Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, July 2017

Revised, August 2017

Web Version, 11/16/2017



Photo: N. Burkhead. Licensed under Creative Commons BY-NC-SA. Available: [http://eol.org/data\\_objects/29206832](http://eol.org/data_objects/29206832). (August 2017).

## 1 Native Range and Status in the United States

---

### Native Range

From NatureServe (2013):

“Range includes the Gulf Coastal Plain below the Fall Line from the Suwannee River to the Yellow River, in northern Florida, southern Georgia, and southeastern Alabama, USA (Page and Burr 2011); occurs in the lower Chattahoochee River in Alabama; the lower Flint, Withlacoochee, and Alapaha Rivers in Georgia; and an isolated segment of the Yellow River, most of the Choctawhatchee River, the upper Chipola River, the lower Apalachicola River, most of the Ochlockonee River, and most of the Suwannee and Santa Fe Rivers in Florida (Evert and Gilbert 2006).”

## Status in the United States

From Freeman et al. (2009):

“The spotted bullhead is known from the Coastal Plain province in the Suwannee, Ochlockonee, Apalachicola and St. Andrews Bay drainages in Alabama, Florida and Georgia, associated with the limestone regions of these states.”

From NatureServe (2013):

“Although this bullhead appears to be rare in Alabama, its limited known distribution may be due to insufficient sampling of preferred habitats using large nets and boat electrofishing gear (Alabama Department of Conservation and Natural Resources).”

## Means of Introductions in the United States

No introductions have been reported in the United States outside the native range.

## Remarks

From Freeman et al. (2009):

“Previously Used Scientific Names: *Ictalurus serracanthus*”

“The spotted bullhead is often confused with the snail bullhead (*Ameiurus brunneus*); both species have a large eye, dorsal fin blotch, and a mottled coloration pattern. The snail bullhead has much smaller pectoral serrae, lighter colored chin barbels, less distinct spotting, and typically has fewer anal rays (17-20 vs. 19-23) than the spotted bullhead.”

“Bullhead catfishes are extremely vulnerable to predation by introduced species of large catfishes, such as flathead and blue catfish. Both of these species have been introduced into the Flint and Chattahoochee River systems. Population fragmentation is also a threat, particularly in heavily impounded Chattahoochee River.”

## 2 Biology and Ecology

---

### Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2017):

“Kingdom Animalia  
Subkingdom Bilateria  
Infrakingdom Deuterostomia  
Phylum Chordata  
Subphylum Vertebrata  
Infraphylum Gnathostomata  
Superclass Actinopterygii  
Class Teleostei  
Superorder Ostariophysi

Order Siluriformes  
Family Ictaluridae  
Genus *Ameiurus*  
Species *Ameiurus serracanthus* (Yerger and Relyea, 1968)”

“Taxonomic Status:  
Current Standing: valid”

### **Size, Weight, and Age Range**

From Froese and Pauly (2017):

“Max length : 28.0 cm TL male/unsexed; [Page and Burr 1991]; common length : 19.0 cm TL male/unsexed; [Hugg 1996]”

### **Environment**

From Froese and Pauly (2017):

“Freshwater; demersal.”

From Freeman et al. (2009):

“The spotted bullhead is known from mainstem and large tributaries. It prefers rocky substrates with moderate currents, and has been collected occasionally over mud near vegetation or other structures such as old stumps in impounded portions of rivers.”

### **Climate/Range**

From Froese and Pauly (2017):

“Subtropical, preferred ?; 33°N - 30°N”

### **Distribution Outside the United States**

Native

Native range occurs entirely within the United States.

Introduced

No introductions of this species have been reported.

### **Means of Introduction Outside the United States**

No introductions of this species have been reported.

## Short Description

From Freeman et al. (2009):

“The spotted bullhead is a small strikingly marked catfish that attains a maximum total length of 23 cm (9 in). It is a member of a group of bullhead species having a black blotch in the base of the dorsal fin and a relatively large eye. The spotted bullhead is distinguished by profuse, round light-colored spots of pupil-sized diameter on the dark body. The body and fins are suffused with yellow, and the spots thus appear to be yellow. Barbels are dusky to dark. The name *serracanthus* refers to the strongly serrated pectoral spine which has 6-20 large serrae, or tooth-like projections, on the posterior margin. All the fins are edged in black, and the caudal fin is moderately emarginate.”

## Biology

From Freeman et al. (2009):

“**Diet:** No detailed studies of diet and life history have been made. Residents of northern Florida often refer to the spotted bullhead as "snailcat," due to the large quantities of mollusks it consumes. The original description reported four different species of mollusks identified from stomach contents.”

“**Life History:** Little is known concerning the life history of the spotted bullhead. Gonad development data suggest that spawning may begin in late winter and extend through spring and early summer. Small individuals less than 30 mm (1.2 in) long have been collected from late June through November, suggesting a protracted spawning season.”

From NatureServe (2013):

“This bullhead prefers deep holes of small to medium rivers with slow to swift currents and rock substrates or sand bottoms; it also occurs over mud bottoms, typically near stumps, in impoundments (Lee et al. 1980, Boschung and Mayden 2004, Page and Burr 2011). This species thrives in [*sic*] various types of habitats (Boschung and Mayden 2004).”

## Human Uses

From Cailteux and Dobbins (2005):

“It is not sought after as a commercial species due to its small size, although this species has been reportedly caught by commercial fishermen in slat baskets in the Apalachicola River (Yerger and Relyea, 1968).”

From thenativetank (2015):

“Though not often sold, bullheads do sometimes make their way into stores, especially those specializing in ornamental pond stocking. The Black, Brown, and Yellow Bullheads seem to be more common sights than the others [Snail Bullhead, White Catfish, Flat Bullhead, Spotted Bullhead].”

## Diseases

From McAllister and Amin (2008):

“The type host of [acanthocephalan] *P[omphorhynchus] lucyi* is the lake chubsucker, *Erimyzon sucetta* from Florida (Williams and Rogers 1984). Other hosts include several species (and families) of fresh and brackish water fishes of the southeastern Gulf Coast of the United States (primarily Alabama and Florida), including [...] *Ameiurus serracanthus* (Williams and Rogers 1984).”

No OIE-reportable diseases have been documented for this species.

## Threat to Humans

From Froese and Pauly (2017):

“Harmless”

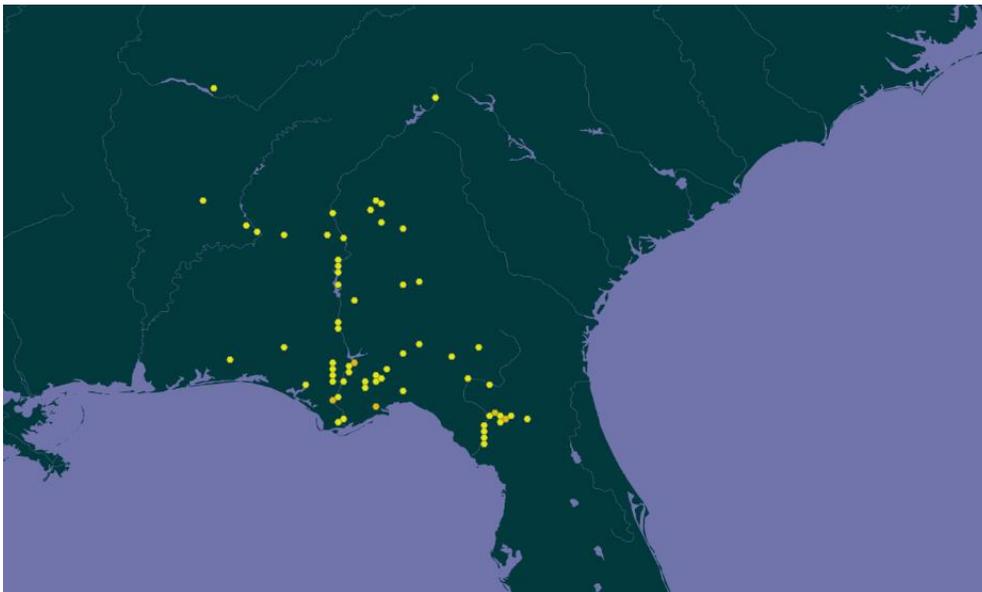
## 3 Impacts of Introductions

---

There have been no documented introductions of *Ameiurus serracanthus* so impacts of introductions remain unknown.

## 4 Global Distribution

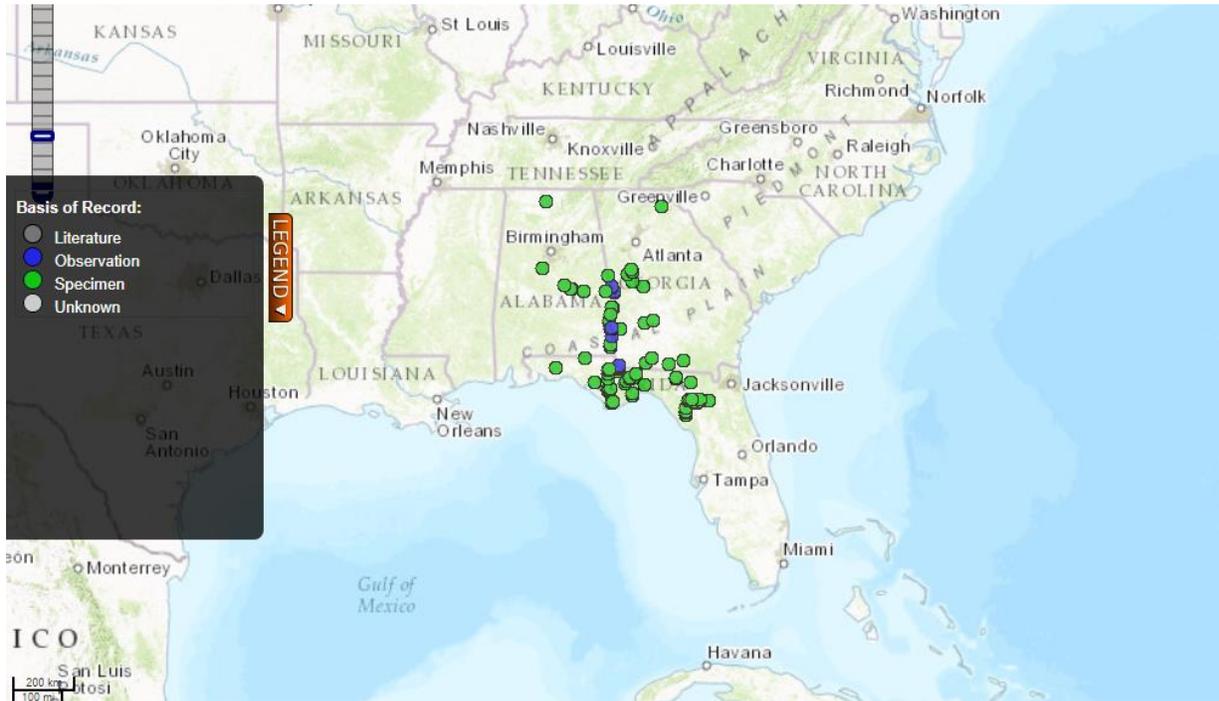
---



**Figure 1.** Known global distribution of *Ameiurus serracanthus*. Map from GBIF (2016). Location in Ohio was excluded from this map and the climate matching analysis because it does not represent a known established population.

## 5 Distribution Within the United States

---



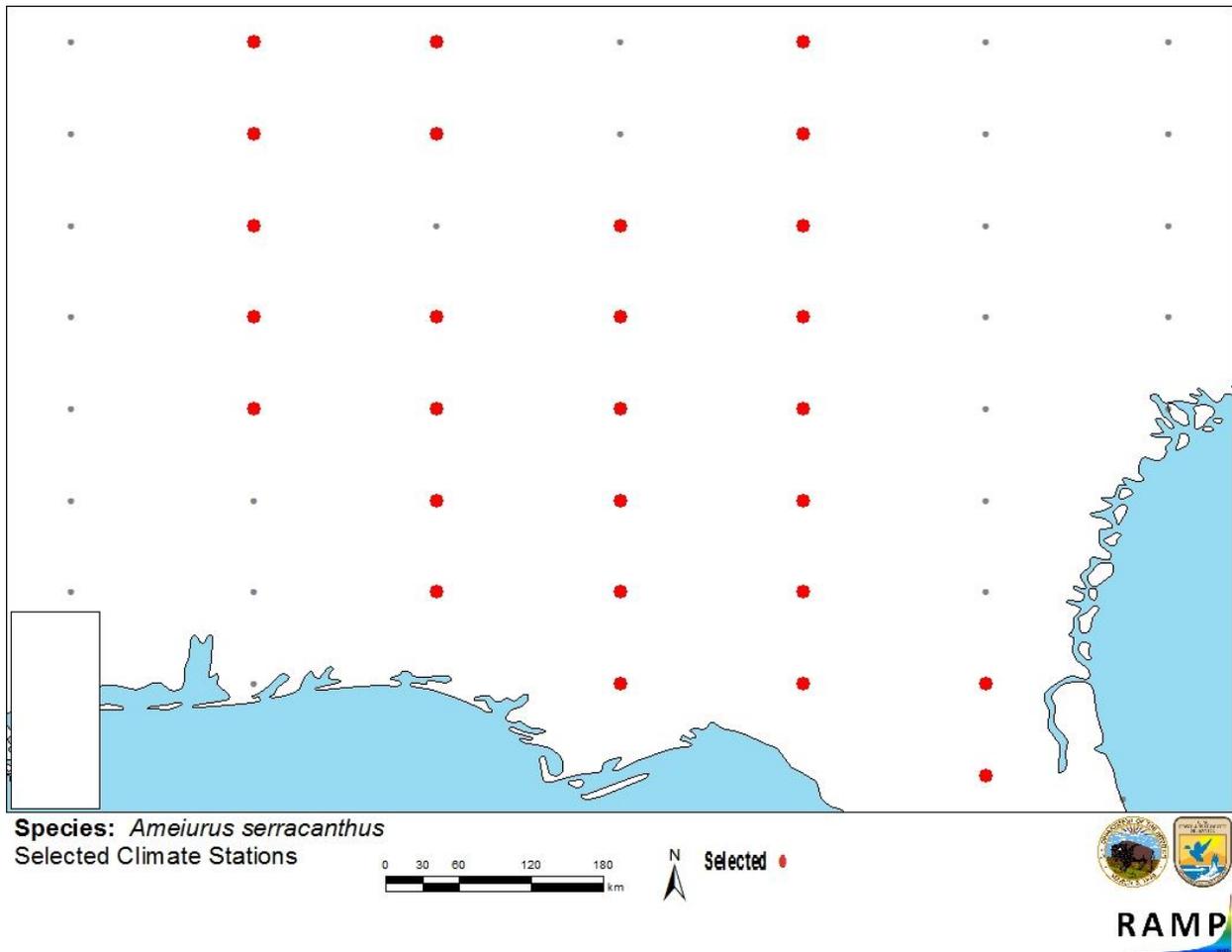
**Figure 2.** Known distribution of *A. serracanthus* in the United States. Map from BISON (2017).

## 6 Climate Matching

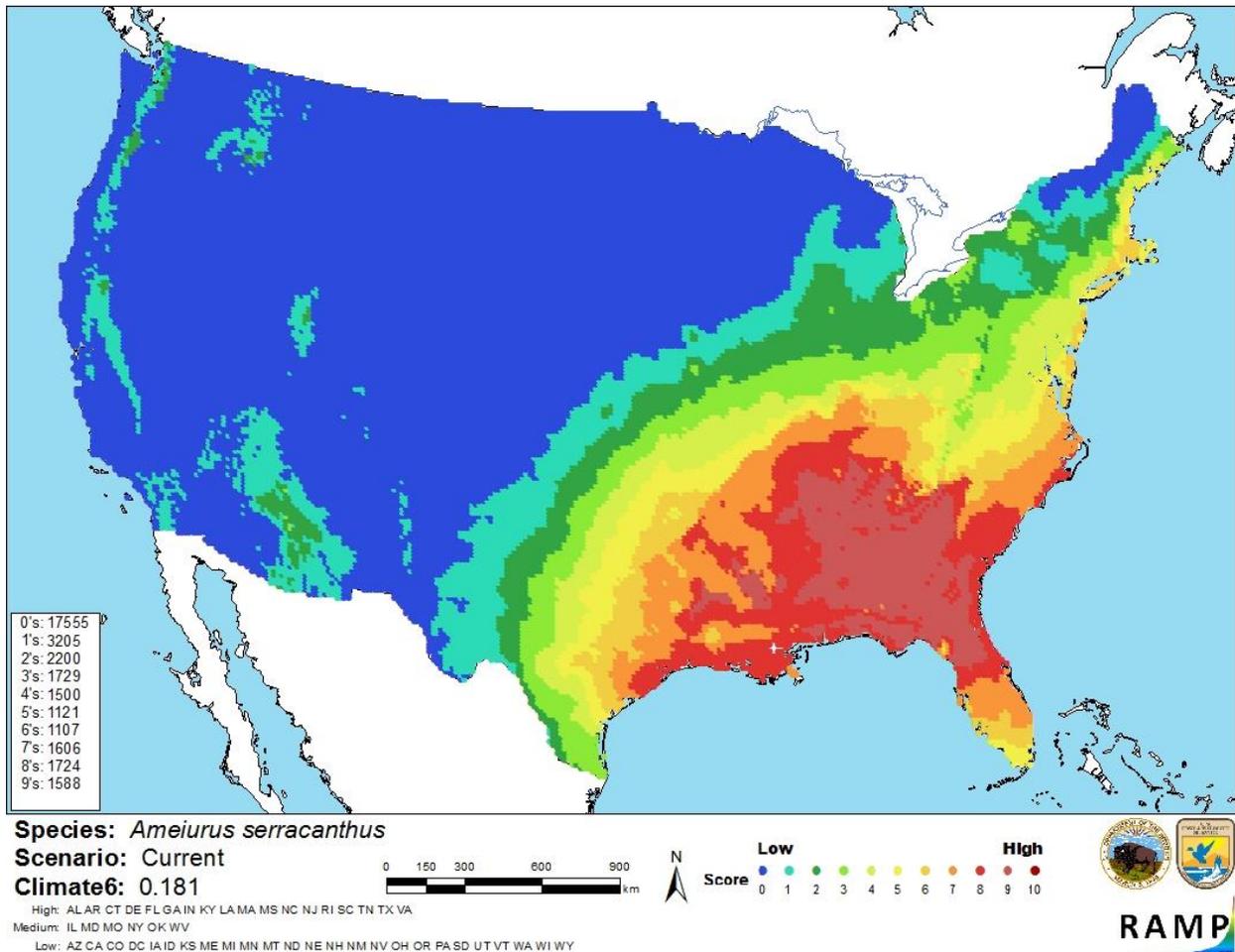
---

### Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables, Euclidean Distance) was high in the Southeastern U.S. except for southern Florida. Central Texas, the southern Midwest, and the Atlantic Coast from Virginia northward showed medium match. Low matches were found in the West, Upper Midwest, and northern New England. Climate 6 score indicated that contiguous U.S. has a high climate match overall. Scores of 0.103 and greater are classified as high match; Climate 6 score for *A. serracanthus* was 0.181.



**Figure 2.** RAMP (Sanders et al. 2014) source map showing weather stations in the southeastern U.S. selected as source locations (red) and non-source locations (gray) for *Ameiurus serracanthus* climate matching. Source locations from GBIF (2016).



**Figure 3.** Map of RAMP (Sanders et al. 2014) climate matches for *Ameiurus serracanthus* in the continental United States based on source locations reported by GBIF (2016). 0=Lowest match, 10=Highest match.

The “High”, “Medium”, and “Low” climate match categories are based on the following table:

Climate 6: Proportion of (Sum of Climate Scores 6-10) / (Sum of total Climate Scores)	Climate Match Category
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
$\geq 0.103$	High

## 7 Certainty of Assessment

Information on the biology and distribution of this species is readily available. However, no introductions have been documented so potential impacts of introduction remain unknown. Certainty of assessment for this species is low.

## 8 Risk Assessment

---

### Summary of Risk to the Contiguous United States

*Ameiurus serracanthus* is native to several river systems in the U.S. states of Florida, Georgia, and Alabama. The species has no history of introduction outside its native range, within the U.S. or internationally. Human use of *A. serracanthus* is relatively minor. Climate match to the contiguous U.S. is high overall, with the area of highest match centering on the native range of the species. Overall risk posed by this species is uncertain.

### Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): High**
- **Certainty of Assessment (Sec. 7): Low**
- **Overall Risk Assessment Category: Uncertain**

## 9 References

---

**Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 10.**

BISON (Biodiversity Information Serving Our Nation). 2017. Biodiversity Information Serving Our Nation (BISON). U.S. Geological Survey. Available: <https://bison.usgs.gov/#home>. (August 2017).

Cailteux, R. L., and D. A. Dobbins. 2005. Population status and distribution of spotted bullhead *Ameiurus serracanthus* in North Florida rivers. *Florida Scientist* 68(2):122-129.

Freeman, B. J., K. Owers, and B. Albanese. 2009. Spotted bullhead. Georgia Department of Natural Resources, Social Circle, Georgia. Available: [http://georgiawildlife.com/sites/default/files/wrd/pdf/fact-sheets/spotted\\_bullhead\\_2009.pdf](http://georgiawildlife.com/sites/default/files/wrd/pdf/fact-sheets/spotted_bullhead_2009.pdf). (July 2017).

Froese, R., and D. Pauly, editors. 2017. *Ameiurus serracanthus* (Yerger & Relyea, 1968). FishBase. Available: <http://www.fishbase.org/summary/3025>. (July 2017).

GBIF (Global Biodiversity Information Facility). 2016. *Ameiurus serracanthus* (Yerger & Relyea, 1968). Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/2340987>. (August 2017).

ITIS (Integrated Taxonomic Information System). 2017. *Ameiurus serracanthus* (Yerger and Relyea, 1968). Integrated Taxonomic Information System, Reston, Virginia. Available: [https://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=TSN&search\\_value=165656#null](https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=165656#null). (July 2017).

- McAllister, C. T., and O. Amin. 2008. Acanthocephalan parasites (Echinorhynchida: Heteracanthocephalidae; Pomphorhynchidae) from the pirate perch (Percopsiformes: Aphredoderidae), from the Caddo River, Arkansas. *Journal of the Arkansas Academy of Science* 62:26.
- NatureServe. 2013. *Ameiurus serracanthus*. The IUCN Red List of Threatened Species 2013: e.T202678A2746890. Available: <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T202678A2746890.en>. (July 2017).
- Sanders, S., C. Castiglione, and M. H. Hoff. 2014. Risk Assessment Mapping Program: RAMP. U.S. Fish and Wildlife Service.
- thenativetank. 2015. North American native fishtanks: bullhead catfish of the genus *Ameiurus*. Available: <http://thenativetank.tumblr.com/post/127891892549/bullhead-catfish-of-the-genus-ameiurus-in-between>. (August 2017).

## 10 References Quoted But Not Accessed

---

**Note: The following references are cited within quoted text within this ERSS, but were not accessed for its preparation. They are included here to provide the reader with more information.**

- Boschung, H. T., and R. L. Mayden. 2004. *Fishes of Alabama*. Smithsonian Institution Press, Washington, D. C.
- Evert, J. D., and C. R. Gilbert. 2006. Current distribution of spotted bullhead and snail bullhead in Florida. Final report. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida.
- Hugg, D. O. 1996. MAPFISH georeferenced mapping database. Freshwater and estuarine fishes of North America. Life Science Software, Edgewater, Maryland.
- Lee, D. S., C. R. Gilbert, C. H. Hocutt, R. E. Jenkins, D. E. McAllister, and J. R. Stauffer, Jr. 1980. *Atlas of North American freshwater fishes*. North Carolina State Museum of Natural History, Raleigh, North Carolina.
- Page, L. M., and B. M. Burr. 1991. *A field guide to freshwater fishes of North America north of Mexico*. Houghton Mifflin Company, Boston.
- Page, L. M., and B. M. Burr. 2011. *Peterson field guide to freshwater fishes of North America north of Mexico*. Houghton Mifflin Harcourt, Boston, Massachusetts.
- Williams, E. H., Jr., and W. A. Rogers. 1984. *Pomphorhynchus lucyi* sp. n. (Acanthocephala) from fresh and brackish water fishes of the southeastern U.S. Gulf Coast. *Journal of Parasitology* 70:580-583.

Yerger, R. W., and K. Relyea. 1968. The flat-headed bullheads (Pisces: Ictaluridae) of the southeastern United States, and a new species of *Ictalurus* from the Gulf Coast. *Copeia* 1968(2):361-384.