

Logperch (*Percina caprodes*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, February 2024
Revised, December 2024
Web Version, 7/22/2025

Organism Type: Fish

Overall Risk Assessment Category: Uncertain



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<https://www.inaturalist.org/observations/79405427> (February 2024).

1 Native Range and Status in the United States

Native Range

From Fuller (2024):

“St. Lawrence-Great Lakes, Hudson Bay, and Mississippi River basins from eastern Quebec to Saskatchewan [Canada] and south to Gulf [United States]; Atlantic Slope drainages from Hudson River, New York, to Potomac River, Maryland; Gulf Slope drainages from Alabama to Mississippi River, Louisiana.”

From NatureServe (2024):

“This species recently was found in the Churchill River system in Labrador [Canada].”

Status in the United States

From Fuller (2024):

“Established in Utah (Sigler and Sigler 1996), and West Virginia.”

According to Fuller (2025), *Percina caprodes* is also reported as established in California and Colorado (but see Remarks) and established outside its native range in Mississippi, New York, and Texas.

From Utah DWR (2019):

“The logperch, *Percina caprodes*, is a darter that is not native to Utah, but has become established in Willard Bay Reservoir in Box Elder County.”

“Sigler and Sigler (1986), discussing this species in the Great Basin, wrote: "It was introduced in Willard Bay Reservoir, Utah in 1983." Since then they have continued to list the species as occurring in this state (Sigler and Sigler 1996), which suggests that the introduction was successful and that the species has become established in Utah.”

This species is present in trade in the United States (e.g., Torreano 2024).

Regulations

No species-specific regulations on possession or trade were found within the United States.

Means of Introductions within the United States

From Fuller (2019):

“The introduction in Utah was probably the result of stocking for forage.”

Remarks

From Fuller (2024):

“Reports in the literature of this species being introduced to California (Shapovalov et al. 1959; McKechnie [1966]; Farley 1972; and Moyle et al. [1974]), actually refer to *P. macrolepida*. Although this species was reportedly introduced into Colorado, the species was later re-identified as *P. macrolepida* (Behnke, personal communication via S. Flickinger). The Utah introduction may also be *P. macrolepida*; specimens should be re-examined.”

From Near (2008):

“The logperches are a clade that has seen a dynamic and increasingly informed concept of species diversity in the group. From the late 19th century to 1971, two species were recognized (*Percina caprodes* and *P. rex*), and the increase to 11 recognized species over the past 30 years

has come from both original species descriptions and taxonomic elevation of former synonyms or subspecies of *P. caprodes*.”

From NatureServe (2024):

“*Percina carbonaria* of central Texas formerly was included in *P. caprodes* (see Morris and Page 1981, Thompson 1985, Page 1983, Robins et al. 1991).”

“Populations that occurred historically in the lower Susquehanna River basin and the middle to lower Potomac River basin were recognized as a distinct species (*Percina bimaculata*) by Near (2008).”

“Populations in the Mobile basin formerly assigned to *P. caprodes* are now recognized as *P. kathae*.”

“*Percina caprodes* has hybridized with *Etheostoma spectabile* in Kansas; hybridization probably is related to flood-caused alteration of habitat (Hubbs et al. 1988). It also has hybridized in Texas with (apparently) *Etheostoma lepidum*; hybridization may be associated with abnormally high turbidity (Hubbs et al. 1988).”

“Subspecies *semifasciata*: Canada and northern states. Subspecies *caprodes*: remainder of range, including former subspecies *fulvitaenia* (Meramec River and southern tributaries of Missouri River in Missouri and Kansas and Arkansas River system in Missouri, Arkansas, Kansas, and Oklahoma, and Blue River, Oklahoma), which intergrades with *Percina caprodes caprodes* in the southern Ozarks (St. Francis, Black, and White rivers) and with *Percina caprodes semifasciata* in the Illinois River and Mississippi River and its tributaries from the Missouri River north to approximately 41 degrees north latitude.”

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2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2024):

Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Acanthopterygii
Order Perciformes

Suborder Percoidei
Family Percidae
Genus *Percina*
Species *Percina caprodes* (Rafinesque, 1818)

According to Fricke et al. (2024), *Percina caprodes* (Rafinesque 1818) is the current valid name for this species.

The following synonyms of *Percina caprodes* from Froese and Pauly (2024) were used to search for information for this report: *Percina caprodes zebra* (Agassiz) and *Sciaena caprodes* Rafinesque, 1818.

Size, Weight, and Age Range

From Spalding (2006):

“Logperch have a typical lifespan of 3 to 4 years for both males and females. (Page and Burr, 1991)”

“Logperch are not sexually dimorphic, and both males and females reach a maximum length of 15 to 18 centimeters.”

“Range mass 13 to 19 g”

Environment

From Froese and Pauly (2024):

“Freshwater; benthopelagic.”

From NatureServe (2024):

“Habitat ranges from small creeks to rivers, and also includes deep waters of lakes and reservoirs.”

Climate

From Froese and Pauly (2024):

“Temperate; [...]”

Distribution Outside the United States

Native

From Fuller (2024):

“St. Lawrence-Great Lakes, Hudson Bay, and Mississippi River basins from eastern Quebec to Saskatchewan [Canada] [...]”

From NatureServe (2024):

“This species recently was found in the Churchill River system in Labrador [Canada].”

Part of the native range for this species is within the United States, see section 1 for a complete description of the native range.

Introduced

No records were found for introduction of *Percina caprodes* in the wild outside the United States.

Means of Introduction Outside the United States

No records were found for introduction of *Percina caprodes* in the wild outside the United States.

Short Description

From Spalding (2006):

“Logperch have a unique tiger-like coloration which distinguishes them from other darters. Logperch have a pale-yellow base color, with narrow bars on the side and back. The head and snout are also uniquely conical for turning stones and sand. [...] During spawning males can develop alternate coloring to help attract females, but otherwise expression of dichromatism is low. (Hubbs, 1985) Like all members of the Percidae family, logperch have two, separate dorsal fins, the first is spiny and the second is soft. They also have one to two anal spines and an opercular spine. (Hubbs, 1985; Page, 1983)”

Biology

From NatureServe (2024):

“Spawning occurs mid-March to mid-May in the southern part of the range but not until mid-June to late July in northern Michigan. When spawning, a few to several hundred males gather in schools. Females enter the schools, and male and female pairs partially bury themselves in the sand and extrude and fertilize the eggs. Males are not territorial and do not guard the eggs. Eggs hatch in about 5-8 days, depending on water temperature. Individuals become sexually mature in 2 years, rarely in 1 year (Page 1983, Becker 1983). Maximum age of breeding females is generally 3 years (Bart and Page 1992).”

“In streams, this species prefers clean riffles and runs over substrates of mixed sand and gravel. It is often associated with bottom debris. In preparation for spawning, logperches move from deeper water to shallows. Eggs are laid in sand in lake shallows, or in gravel or sand in swift current, often in riffles, in streams (Page 1983). Young logperches may be found in dense beds of vegetation.”

From Spalding (2006):

“While foraging for food, marked logperch have been recorded traveling about 1.6 kilometers up and downstream from their original point of capture. Like most small fish, logperch do not stray too far from their original spawning point (Burkhead, 2005).”

Human Uses

Percina caprodes is present in trade in the United States (e.g., Torreano 2024).

Diseases

No information was found associating *Percina caprodes* with any diseases listed by the World Organisation for Animal Health (2024).

Poelen et al. (2024) list the following as potential parasites and diseases of *Percina caprodes*: *Acanthocephala*, *Acanthocephalus*, *Aethycteron malleus*, *Allopodocotyle*, *Bothriocephalus*, *Camallanus*, *Clinostomum marginatum*, *Crepidostomum isostomum*, *Cystidicola*, *Digenea*, *Diplostomulum scheuringi*, *Leptorhynchoides thecatus*, *Leucoruthrus micropteri*, *Nematoda*, *Pomphorhynchus*, *Posthodiplostomum minimum*, *Proteocephalus*, *Strigeidae*, *Tylodelphys scheuringi*.

Threat to Humans

From Froese and Pauly (2024):

“Harmless”

3 Impacts of Introductions

No information available on impacts of reported introductions.

4 History of Invasiveness

The History of Invasiveness for *Percina caprodes* is classified as Data Deficient. While there are records of nonnative introductions that have resulted in established populations, there is no information about impacts or lack of impacts from these nonnative populations.

5 Global Distribution

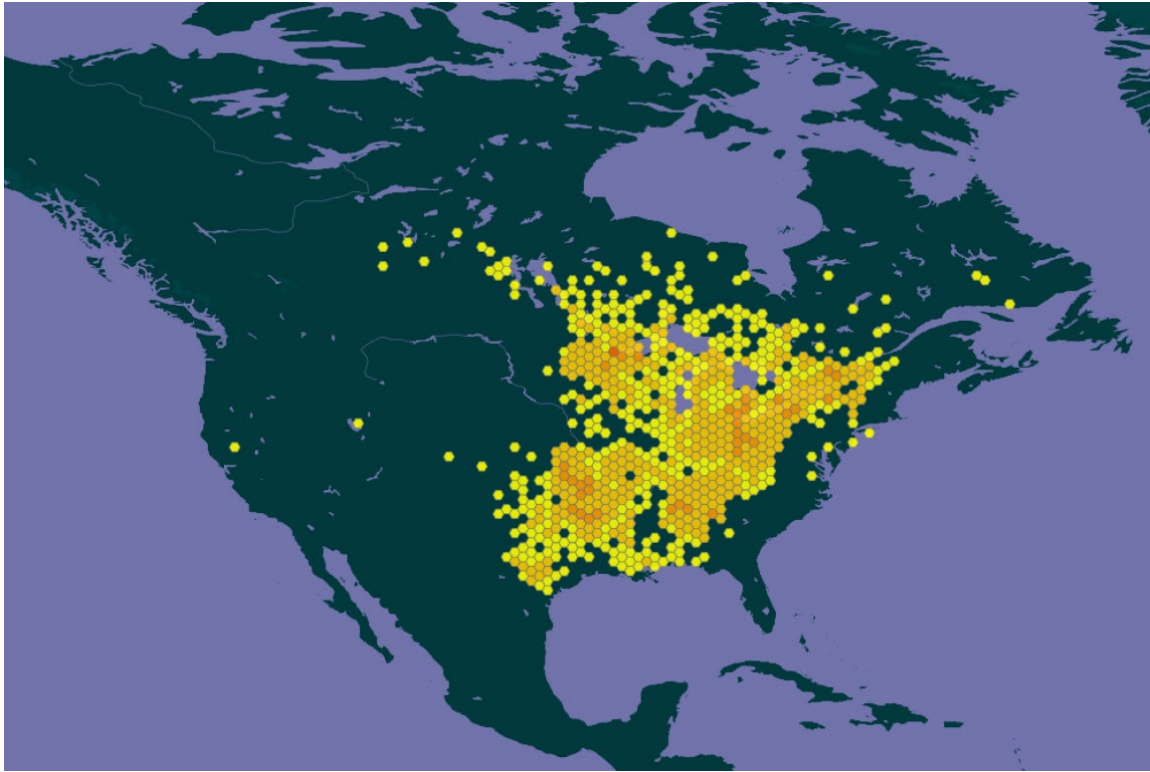


Figure 1. Reported global distribution of *Percina caprodes*. Map from GBIF Secretariat (2023). Observations are reported from the United States and Canada. Points in China were excluded from the extent of this map and from the climate matching analysis because they represent incorrect coordinates. Points in California and Colorado were excluded because they represent misidentifications of *Percina macrolepida* as *P. caprodes* (Fuller 2024). Points in central Texas, the Mobile River basin (Alabama, Georgia, Mississippi), and the Potomac and Susquehanna River basins (Pennsylvania, Maryland, Virginia) were excluded because the populations in those locations have recently been described as distinct, valid species (see Remarks; NatureServe 2024).

6 Distribution Within the United States

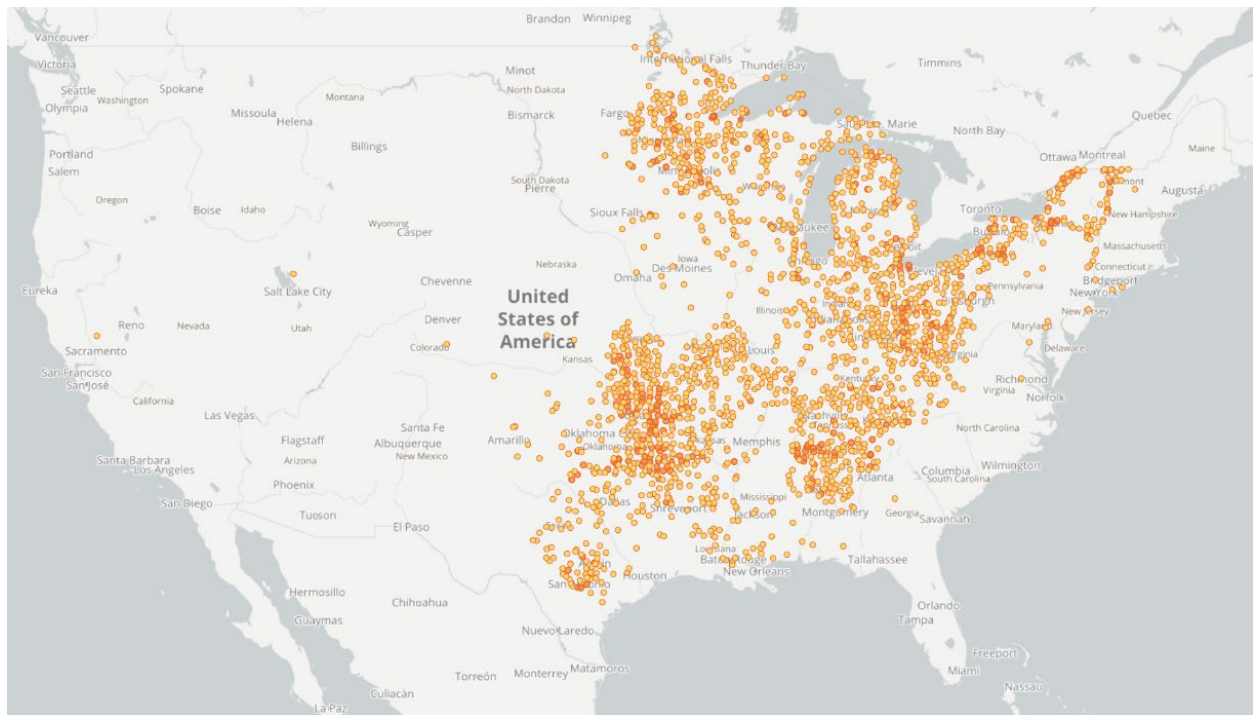


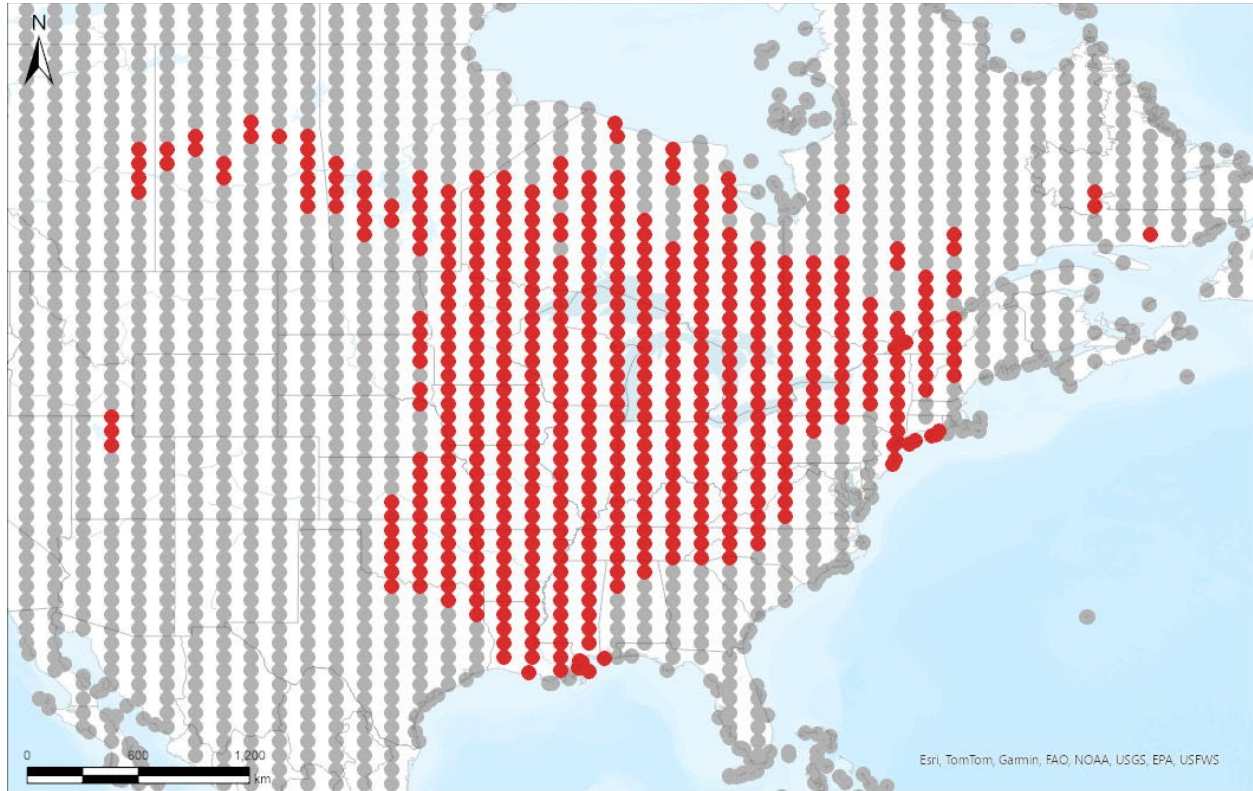
Figure 2. Reported distribution of *Percina caprodes* in the United States. Map from GBIF-US (2024). Points in California and Colorado were excluded from the climate matching analysis because they represent misidentifications of *Percina macrolepida* as *P. caprodes* (Fuller 2024). Points in central Texas, the Mobile River basin (Alabama, Georgia, Mississippi), and the Potomac and Susquehanna River basins (Pennsylvania, Maryland, Virginia) were excluded because the populations in those locations have recently been described as distinct, valid species (see Remarks; NatureServe 2024).

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Percina caprodes* to the contiguous United States was high throughout the eastern United States, except peninsular Florida, and as far west as the Great Plains. The native range of *P. caprodes* overlaps that area. In the western United States, the climate match was mostly medium, with some substantial areas of high match in the Great Basin. The climate match was low along the West Coast. The overall Climate 6 score (Sanders et al. 2023; 16 climate variables; Euclidean distance) for the contiguous United States was 0.905, indicating that Yes, there is establishment concern for this species outside its native range. The Climate 6 score is calculated as: $(\text{count of target points with scores} \geq 6) / (\text{count of all target points})$. Establishment concern is warranted for Climate 6 scores greater than or equal to 0.002 based on an analysis of the establishment success of 356 nonnative aquatic species introduced to the United States (USFWS 2024).

Projected climate matches in the contiguous United States under future climate scenarios are available for *Percina caprodes* (see Appendix). These projected climate matches are provided as additional context for the reader; future climate scenarios are not factored into the Overall Risk Assessment Category.



Species: *Percina caprodes*

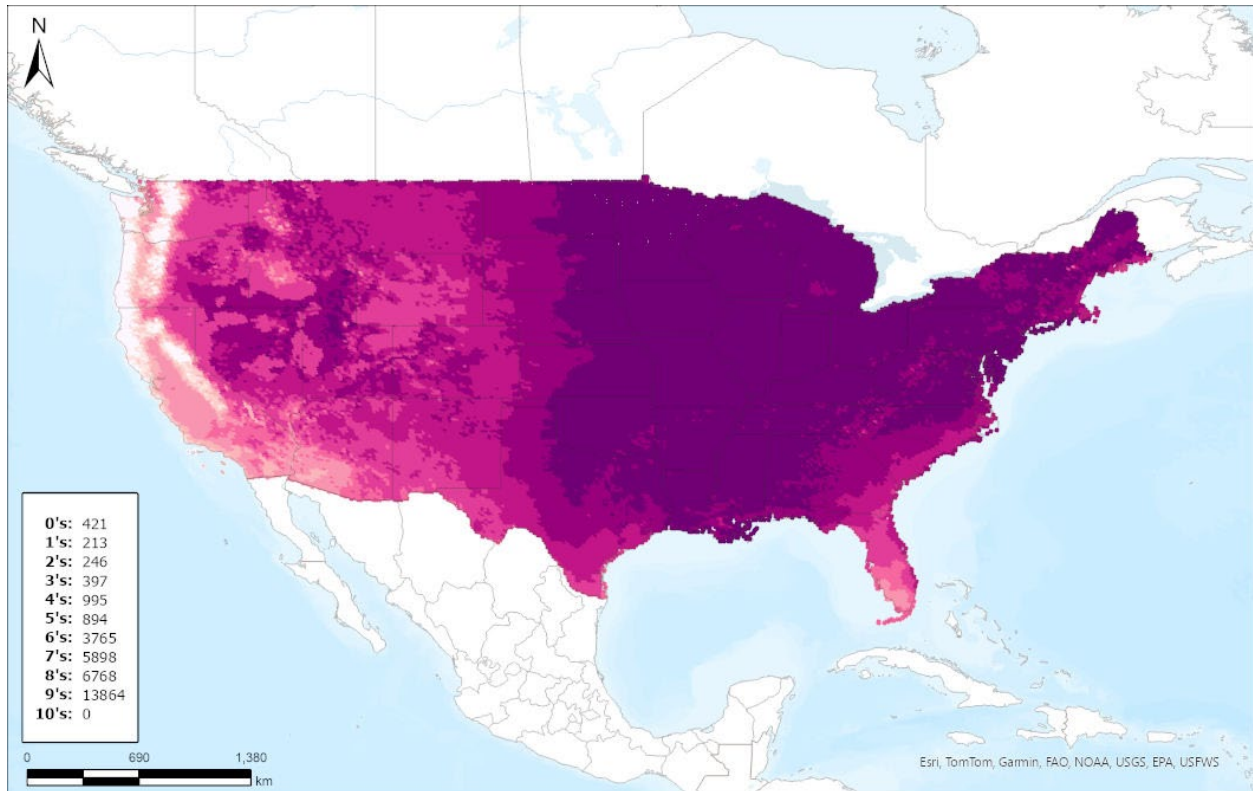
Selected Climate Stations ●

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RAMP

Figure 3. RAMP (Sanders et al. 2023) source map showing weather stations in North America selected as source locations (red; United States and Canada) and non-source locations (gray) for *Percina caprodes* climate matching. Source locations from GBIF Secretariat (2023). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.



Species: *Percina caprodes*

Current

Climate 6 Score: 0.905



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Figure 4. Map of RAMP (Sanders et al. 2023) climate matches for *Percina caprodes* in the contiguous United States based on source locations reported by GBIF Secretariat (2023). Counts of climate match scores are tabulated on the left. 0/Pale Pink = Lowest match, 10/Dark Purple = Highest match.

8 Certainty of Assessment

The Certainty of Assessment for *Percina caprodes* is classified as Low. While there is reasonably complete information on the species distribution and biology, there is no information available on impacts of its introduction. Additionally, there is a history of misidentification of introduced populations and cryptic species diversity in the genus, which both increase uncertainty in the introduction history and the quality of the distributional information used in the climate matching analysis.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Percina caprodes, Logperch, is a fish that is native to North America ranging as far north as Hudson Bay, to as far south as Gulf of America drainages, and from the Mississippi River basin eastward. This species has been introduced outside of its native range in Utah and on the

periphery of its native range in Mississippi, New York, Texas, and West Virginia. Other reported nonnative occurrences of *P. caprodes* in California and Colorado have been found to be misidentifications. The History of Invasiveness for *P. caprodes* is classified as Data Deficient due to there being a lack of information available on any impacts of introductions. The climate matching analysis for the contiguous United States indicates establishment concern for this species outside its native range. This species had a high climate match throughout much of the eastern and central contiguous United States, overlapping its native range. There were areas in the western United States where it is not native that also had a high climate match. The Certainty of Assessment for this ERSS is classified as Low due to a lack of information on impacts of *P. caprodes* introduction as well as cryptic species diversity in the genus and a history of misidentification. The Overall Risk Assessment Category for *Percina caprodes* in the contiguous United States is Uncertain.

Assessment Elements

- **History of Invasiveness (see Section 4): Data Deficient**
- **Establishment Concern (see Section 7): Yes**
- **Certainty of Assessment (see Section 8): Low**
- **Remarks, Important additional information: None**
- **Overall Risk Assessment Category: Uncertain**

10 Literature Cited

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in section 11.

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11 Literature Cited in Quoted Material

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.

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Appendix

Summary of Future Climate Matching Analysis

Future climate projections represent two Shared Socioeconomic Pathways (SSP) developed by the Intergovernmental Panel on Climate Change (IPCC 2021): SSP5, in which emissions triple by the end of the century; and SSP3, in which emissions double by the end of the century. Future climate matches were based on source locations reported by GBIF Secretariat (2023).

Under the future climate scenarios (figure A1), on average, high climate match for *Percina caprodes* was projected to occur in the Appalachian Range, Great Lakes, Mid-Atlantic, Northeast, Northern Plains, Southeast, and Southern Plains regions of the contiguous United States. Areas of low climate match were projected to occur in California and the Northern Pacific Coast regions. All future climate scenarios show a similar pattern of high and low match areas geographically. Areas of highest climate match became smaller in both 2055 scenarios, and even smaller in both 2085 scenarios, but the climate match remained high in the Upper Midwest and Great Lakes regions. The Climate 6 scores for the individual future scenario models (figure A2) ranged from a low of 0.783 (model: UKESM1-0-LL, SSP5, 2085) to a high of 0.899 (model: IPSL-CM6A-LR, SSP3, 2055). All future scenario Climate 6 scores were above the Establishment Concern threshold, indicating that Yes, there is establishment concern for this species under future scenarios. The Climate 6 score for the current climate match (0.905, figure 4) falls above the range of scores for future projections. The time step and climate scenario with the most change relative to current conditions was SSP5, 2085, the most extreme climate change scenario. Under all time step and climate scenarios only minor or no increases in the climate match relative to the current match were observed. Primarily at the 2085 time step, areas within the Appalachian Range, California, Colorado Plateau, Great Basin, Gulf Coast, Mid-Atlantic, Northeast, Northern Plains, Southeast, Southern Plains, and Southwest saw a moderate decrease in the climate match relative to current conditions. No large decreases were observed regardless of time step and climate scenarios. Additional, very small areas of large or moderate change may be visible on the maps (figure A3). The largest area of decrease in climate match was visible in the Southern Plains in the SSP5, 2085 scenario.

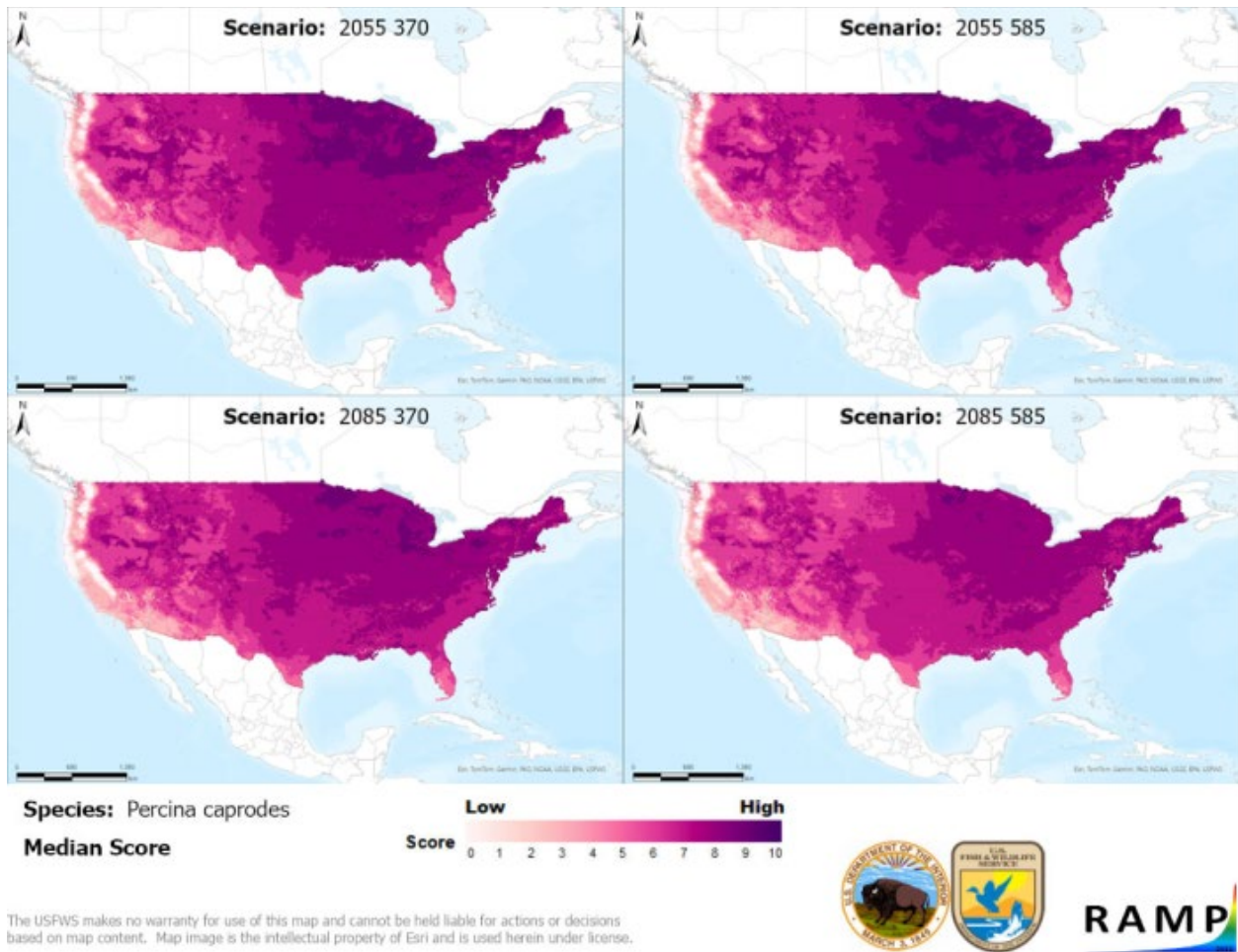
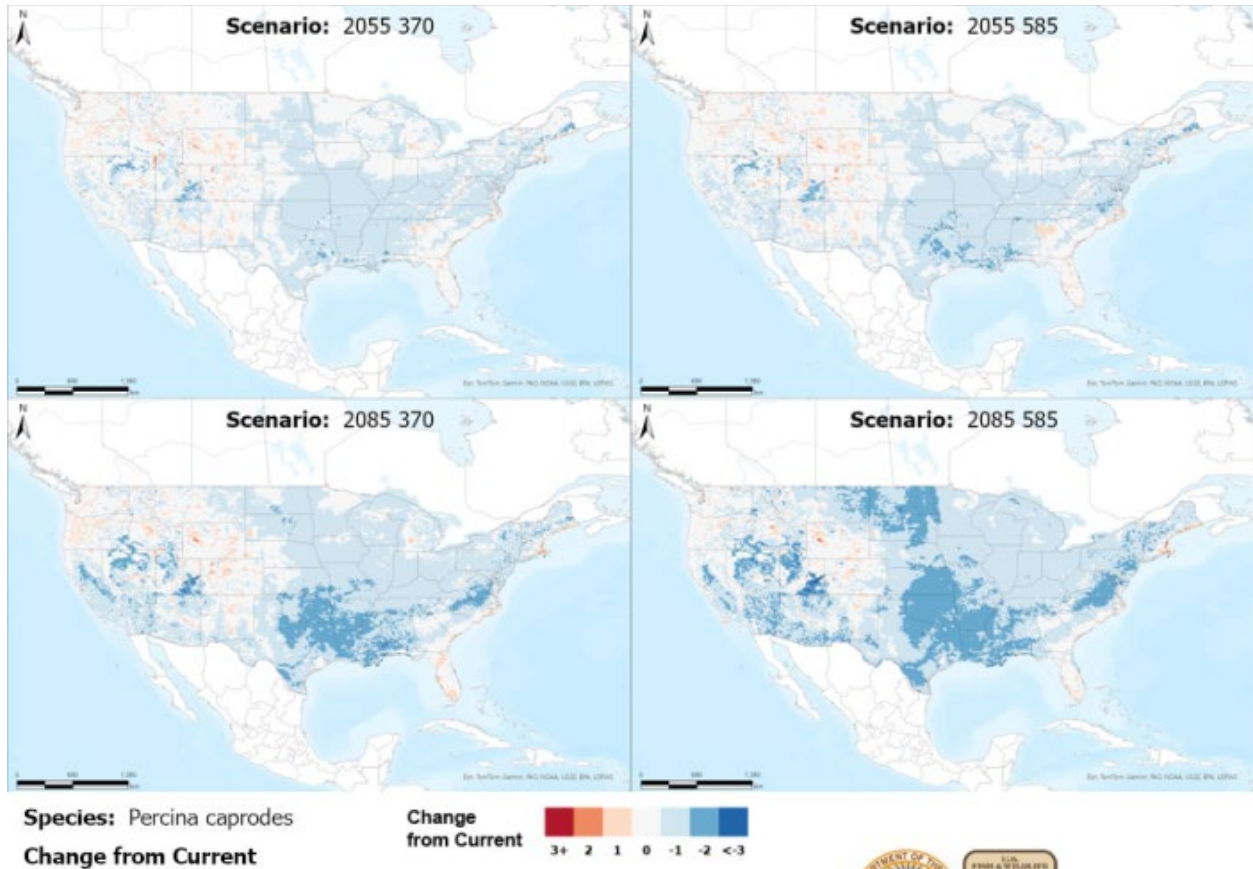


Figure A1. Maps of median RAMP (Sanders et al. 2023) climate matches projected under potential future climate conditions using five global climate models for *Percina caprodes* in the contiguous United States. Climate matching is based on source locations reported by GBIF Secretariat (2023). Shared Socioeconomic Pathways (SSPs) used (from left to right): SSP3, SSP5 (IPCC 2021). Time steps: 2055 (top row) and 2085 (bottom row). Climate source data from CHELSA (Karger et al. 2017, 2018); global climate models used: GFDL-ESM4, UKESM1-0-LL, MPI-ESM1-2-HR, IPSL-CM6A-LR, and MRI-ESM2-0. 0/Pale Pink = Lowest match, 10/Dark Purple = Highest match.



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Figure A3. RAMP (Sanders et al. 2023) maps of the contiguous United States showing the difference between the current climate match target point score (figure 4) and the median target point score for future climate scenarios (figure A1) for *Percina caprodes* based on source locations reported by GBIF Secretariat (2023). Shared Socioeconomic Pathways (SSPs) used (from left to right): SSP3, SSP5 (IPCC 2021). Time steps: 2055 (top row) and 2085 (bottom row). Climate source data from CHELSA (Karger et al. 2017, 2018); global models used: GFDL-ESM4, UKESM1-0-LL, MPI-ESM1-2-HR, IPSL-CM6A-LR, and MRI-ESM2-0. Shades of blue indicate a lower target point score under future scenarios than under current conditions. Shades of red indicate a higher target point score under future scenarios than under current conditions. Darker shades indicate greater change.

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