

Lake Chubsucker (*Erimyzon sucetta*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, February 2024

Revised, April 2024

Web Version, 9/25/2025

Organism Type: Fish

Overall Risk Assessment Category: Uncertain



Photo: chrosomusenthusiast. Licensed under Creative Commons ([CC BY-NC 4.0 DEED](https://creativecommons.org/licenses/by-nc/4.0/)).
Available: <https://www.inaturalist.org/observations/115263382> (February 2024).

1 Native Range and Status in the United States

Native Range

From NatureServe (2024):

“Range includes the North American Atlantic Slope from southeastern Virginia to southern Florida, and Gulf Slope drainages from southern Florida (Charlotte Harbor) to the Brazos River, Texas; Great Lakes and Mississippi River basin lowlands from southern Ontario to Wisconsin

and south to the Gulf; sporadic in the north, common on the lower Coastal Plain (Page and Burr 2011).”

Status in the United States

From NatureServe (2024):

“Range includes the North American Atlantic Slope from southeastern Virginia to southern Florida, and Gulf Slope drainages from southern Florida (Charlotte Harbor) to the Brazos River, Texas; Great Lakes and Mississippi River basin lowlands from [Canadian border] south to the Gulf; sporadic in the north, common on the lower Coastal Plain (Page and Burr 2011).”

From Carlson et al. (2016):

“The last New York records are from 1939 in Lake Ontario, despite the fact that this species continues to be caught near the lake just west of Niagara Falls in Canada (Mandrak and Crossman 1996). The Lake Chubsucker is, at best, extremely rare in New York and is classified as a Threatened Species in the state.”

From Fuller (2019):

“Establishment [of nonnative populations] in Illinois and Nebraska. The population in Gallatin County, Illinois, was known to be reproducing in 1988 (Burr et al. 1988).”

Fuller (2019) reports a failed introduction in Hords Creek Reservoir, Texas, in 1981.

No records of *Erimyzon sucetta* in live trade in the United States were found.

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):

“Intentionally stocked as a forage fish in Nebraska. Unknown means in Illinois.”

Remarks

From Fuller (2019):

“Earlier records of this species in southern Illinois are based on creek chubsuckers *Erimyzon oblongus* (Burr et al. 1988).”

From NatureServe (2019):

“Committee on the Status of Endangered Wildlife in Canada (COSEWIC): Endangered (5/1/2021)”

Erimyzon sucetta has been intentionally stocked outside its native range within the United States by State fishery managers to achieve fishery management objectives. State fish and wildlife management agencies are responsible for balancing multiple fish and wildlife management objectives. The potential for a species to become invasive is now one important consideration when balancing multiple management objectives and advancing sound, science-based management of fish and wildlife and their habitat in the public interest.

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 Ostariophysi
Order Cypriniformes
Superfamily Cobitoidea
Family Catostomidae
Subfamily Catostominae
Tribe Erimyzonini
Genus *Erimyzon*
Species *Erimyzon sucetta* (Lacepède, 1803)

According to Fricke et al. (2024), *Erimyzon sucetta* (Lacepède 1803) is the current valid name for this species.

Size, Weight, and Age Range

From Froese and Pauly (2024):

“Max length : 41.0 cm TL [total length] male/unsexed; [Page and Burr 1991]; common length : 25.8 cm TL male/unsexed; [Hugg 1996]; max. reported age: 8 years [Altman and Dittmer 1962]”

From NatureServe (2019):

“Lives up to 5-6 years (Etnier and Starnes 1993).”

Environment

From Froese and Pauly (2024):

“Freshwater; demersal; pH range: 7.0 - 7.5; dH range: ? - 15. [...]; 4°C - 20°C [Baensch and Riehl 1985; assumed to be recommended aquarium temperature]; [...]

From NatureServe (2019):

“Habitat includes ponds, lakes, oxbows, sloughs, swamps, impoundments, quiet pools of creeks and small rivers, and similar waters of little or no flow that are clear and have bottoms of sand or silt mixed with organic debris; aquatic vegetation usually is present (Lee et al. 1980, Page and Burr 1991).”

Climate

From Froese and Pauly (2024):

“Temperate [...]; 44°N - 26°N”

Distribution Outside the United States

Native

A portion of the species’ native range is within the United States, see section 1.

From NatureServe (2019):

“This small sucker species is restricted in Canada to wetlands in southwestern Ontario.”

Introduced

No records were found for introduction of *Erimyzon sucetta* in the wild outside the United States.

Means of Introduction Outside the United States

No records were found of introduction of *Erimyzon sucetta* in the wild outside the United States.

Short Description

From Illinois Department of Natural Resources (2020):

“The lake chubsucker grows to 16 inches in length. Its distinguishing features include no dark blotches along the side, a single, rounded dorsal fin and 34- 39 lateral scales. As with all suckers, it has thick lips. There are no spines in the fins. The pelvic fins are in the abdominal region, and the anal fin is far back on the body. There is a dark stripe along the mid-side.”

Biology

From NatureServe (2024):

“Spawns in spring and early summer; eggs hatch in about a week; sexually mature at age III (Becker 1983).”

“Eggs are broadcast over beds of vegetation or in gravelly area cleared by male (Scott and Crossman 1973). Spawning occurs usually over gravel in streams or in still water over vegetation (Etnier and Starnes 1993).”

From Illinois Department of Natural Resources (2020):

“Spawning occurs from May into June. It eat small invertebrates that it finds on the bottom of the water body.”

Human Uses

No information was found on human uses of *Erimyzon sucetta*.

Diseases

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

Poelen et al. (2014) lists the following as parasites of *Erimyzon sucetta*: *Acanthocephalus dirus*, *Ergasilus megaceros*, *Gyrodactylus lacustricolae*, *Hedurus tiara*, *Isoglaridacris agminis*, *Isoglaridacris multivitellaria*, *Leptorhynchoides thecatus*, *Lissorchis mutabile*, *Neoechinorhynchus*, *Neoechinorhynchus cylindricus*, *Neoechinorhynchus prolixoides*, *Neoechinorhynchus robertbaueri*, *Octomacrum lanceatum*, *Penarchigetes fessus*, *Penarchigetes macrorchis*, *Pomphorhynchus*, *Pomphorhynchus lucyi*, *Proteocephalus ambloplitis* and *Triganodistomum mutabile*.

Threat to Humans

From Froese and Pauly (2024):

“Harmless”

3 Impacts of Introductions

From Fuller (2019):

“The impacts of this species are currently unknown, as no studies have been done to determine how it has affected ecosystems in the invaded range. The absence of data does not equate to lack of effects. It does, however, mean that research is required to evaluate effects before conclusions can be made.”

4 History of Invasiveness

The History of Invasiveness for *Erimyzon sucetta* is classified as Data Deficient. Although there are records of nonnative introductions that have resulted in established populations in Illinois and Nebraska, there was no information found about impacts from these introductions.

5 Global Distribution

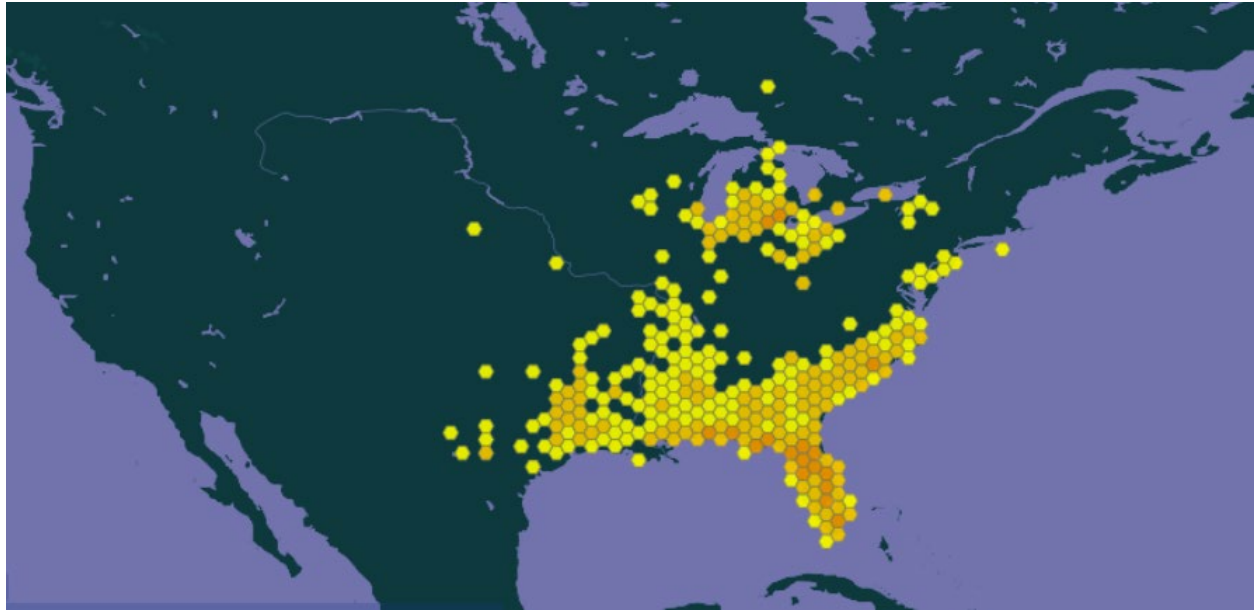


Figure 1. Reported global distribution of *Erimyzon sucetta*. Map from GBIF Secretariat (2023). Observations are reported from the Eastern half of the United States and Southern Canada. There are points in New York and along the Atlantic Slope north of Virginia that do not represent an extant population of *Erimyzon sucetta*. The points in Nebraska and western Texas also do not represent a known established population. The northernmost point in Canada is a province centroid and does not represent the location of an established population. These locations were not included in climate matching.

6 Distribution Within the United States



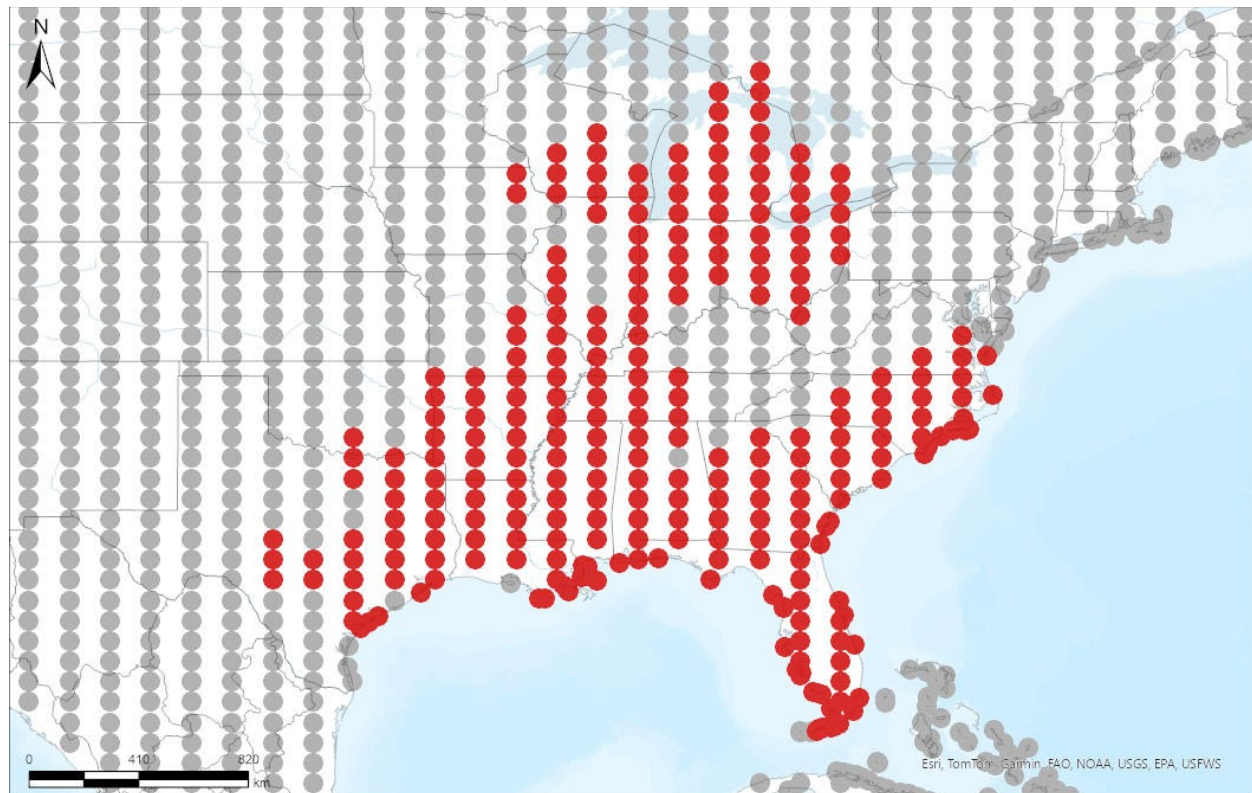
Figure 2. Reported distribution of *Erimyzon sucetta* in the United States. Map from USGS (2025). The native range of the species is indicated by orange shading. Yellow diamonds indicate nonnative introductions of *E. sucetta* where *E. sucetta* has become established; orange diamonds indicate nonnative introduction records that failed, have an unknown status, or are a state centroid and do not represent a specific occurrence location. Only native and established nonnative occurrences were used to select source points in the climate matching analysis.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match analysis for *Erimyzon sucetta* to the contiguous United States found areas of high climate match around the Great Lakes, Southeast, Gulf Coast, Southern Florida, and Southern Atlantic Coast. Area of medium climate match included the Colorado Plateau, Southwest, Northern Plains, New England, and parts of the Great Basin and Western Mountains. The remaining United States, namely most of the Western Mountains, the Northern Pacific Coast, and California, had low climate matches. The overall Climate 6 score (Sanders et al. 2023; 16 climate variables; Euclidean distance) for the contiguous United States was 0.783, indicating that Yes, there is establishment concern outside its native range. The Climate 6 score is calculated as: (count of target points with scores ≥ 6)/(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 *Erimyzon sucetta* (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: *Erimyzon sucetta*

Selected Climate Stations ●

The USFWS makes no warranty for use of this map and cannot be held liable for actions or decisions based on map content. Map image is the intellectual property of Esri and is used herein under license.



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 *Erimyzon sucetta* 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.

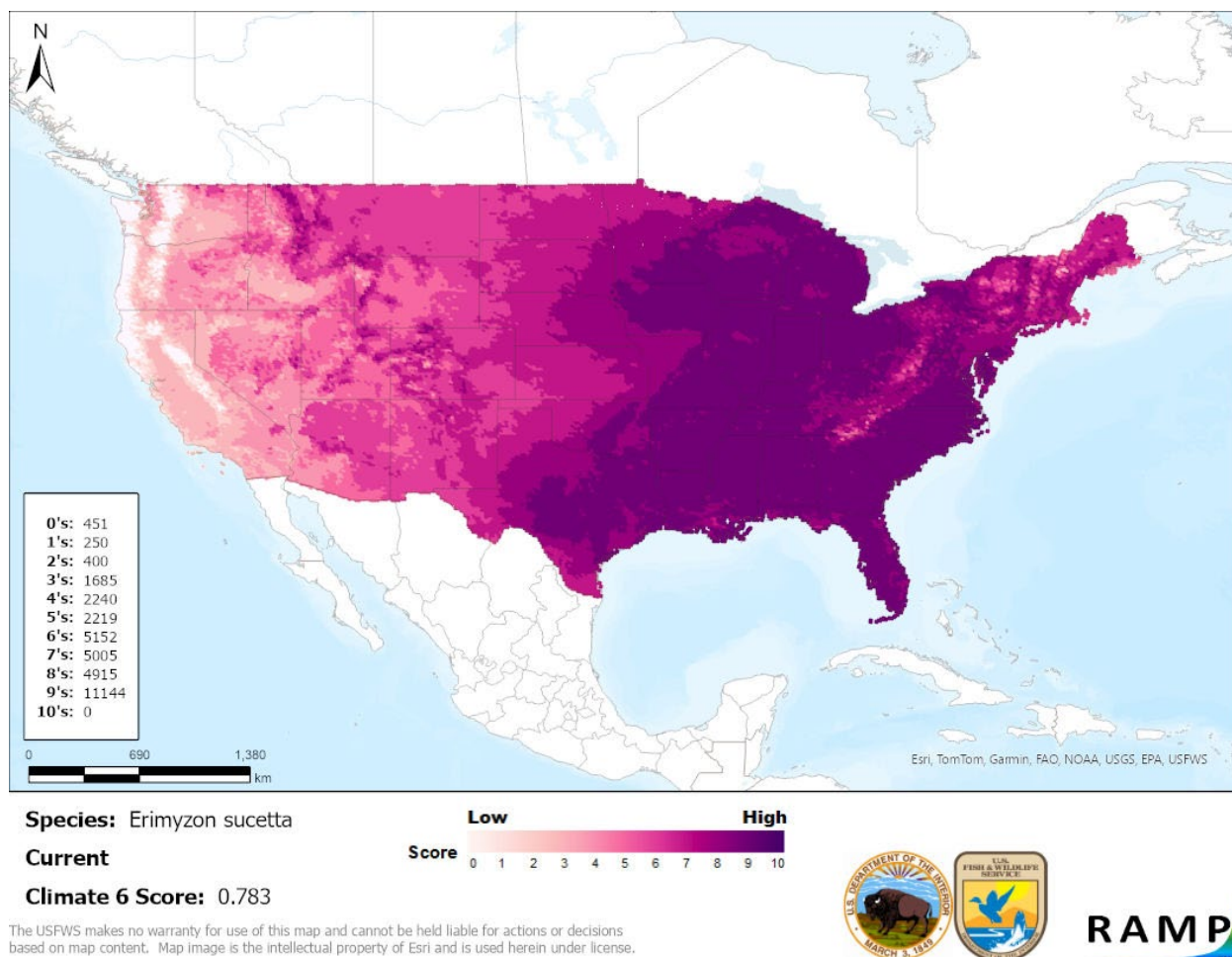


Figure 4. Map of RAMP (Sanders et al. 2023) climate matches for *Erimyzon sucetta* in the contiguous United States based on source locations reported by GBIF Secretariat (2024). Counts of climate match scores are tabulated on the left. 0/Pale Pink = Lowest match, 10/Dark Purple = Highest match.

8 Certainty of Assessment

The Certainty of Assessment for *Erimyzon sucetta* is classified as Low. There is information available regarding the species' biology and reasonably complete information on the species distribution. However, there was no information found on impacts of introduction and little information on trade.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Erimyzon sucetta, Lake Chubsucker, is a fish native to North America from the Great Lakes to Gulf Coast and along the southern Atlantic Coast. Nonnative populations have been established in some parts of the United States, possibly due to intentional stocking. The History of Invasiveness for *E. sucetta* is classified as Data Deficient due to the lack of information available on any impacts of nonnative establishment of this species. The climate matching analysis for the

contiguous United States indicates establishment concern for this species outside its native range. Areas of high climate match occurred within this species' native range, but there were some areas of high match in the northeast and eastern Great Plains that were outside of the native range. The Certainty of Assessment for this ERSS is classified as Low due to the lack of information on the impacts of nonnative establishment for this species. The Overall Risk Assessment Category for *Erimyzon sucetta* 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.

Carlson DM, Daniels RA, Wright JJ. 2016. Atlas of inland fishes of New York. Albany: The New York State Education Department and Department of Environmental Conservation. New York State Museum Record 7.

Fricke R., Eschmeyer WN, van der Laan R, editors. 2024. Eschmeyer's catalog of fishes: genera, species, references. California Academy of Science. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (February 2024).

Froese R, Pauly D, editors. 2024. *Erimyzon sucetta* (Lacepède, 1803) Lake chubsucker. FishBase. Available: <https://www.fishbase.us/summary/SpeciesSummary.php?ID=2987&AT=lake+chubsucker> (February 2024)

Fuller P. 2019. *Erimyzon sucetta* (Lacepède, 1803). Nonindigenous Aquatic Species Database. Gainesville, Florida: U.S. Geological Survey. Available: <https://nas.er.usgs.gov/queries/FactSheet.aspx?speciesID=358> (February 2024).

GBIF Secretariat. 2023. GBIF backbone taxonomy: *Erimyzon sucetta* (Lacepède, 1803). Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/2358939> (February 2024).

GBIF-US. 2024. Species occurrences: *Erimyzon sucetta*. Available: <https://doi.org/10.15468/dl.qgysdz>

- Illinois Department of Natural Resources. 2020. Lake chubsucker *Erimyzon sucetta*. Biodiversity of Illinois. Available:
<https://dnr.illinois.gov/education/wildaboutpages/wildaboutfishes/wafsucker/waflakechubsucker.html> (February 2024).
- [ITIS] Integrated Taxonomic Information System. 2024. *Erimyzon sucetta* (Lacepède, 1803). Reston, Virginia: Integrated Taxonomic Information System. Available:
https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=163922#null (February 2024).
- NatureServe. 2024. *Erimyzon sucetta*. NatureServe Explorer: an online encyclopedia of life. Arlington, Virginia: NatureServe. Available:
https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.104017/Erimyzon_sucetta (February 2024).
- Poelen JH, Simons JD, Mungall CJ. 2014. Global Biotic Interactions: an open infrastructure to share and analyze species-interaction datasets. *Ecological Informatics* 24:148–159.
- Sanders S, Castiglione C, Hoff M. 2023. Risk Assessment Mapping Program: RAMP. Version 5.0. U.S. Fish and Wildlife Service.
- [USFWS] U.S. Fish and Wildlife Service. 2024. Standard operating procedure: how to prepare an “Ecological Risk Screening Summary.” Version 3. Available:
<https://www.fws.gov/media/standard-operating-procedures-how-prepare-ecological-risk-screening-summary-2024> (August 2025).
- World Organisation for Animal Health. 2024. Animal diseases. Paris: World Organisation for Animal Health. Available: <https://www.woah.org/en/what-we-do/animal-health-and-welfare/animal-diseases/> (February 2024).

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.

- Altman PL, Dittmer DS. 1962. Growth, including reproduction and morphological development. Federation of American Societies for Experimental Biology.
- Baensch HA, Riehl R. 1985. Aquarien Atlas. Volume 2. Melle, Germany: Mergus, Verlag für Natur-und Heimtierkunde GmbH.
- Becker GC. 1983. Fishes of Wisconsin. Madison: University of Wisconsin Press.
- Burr BM, Warren ML Jr, Cummings KS. 1988. New distributional records of Illinois fishes with additions to the known fauna. *Transactions of the Illinois Academy of Science* 81(1&2):163–170.

- Etnier DA, Starnes WC. 1993. The fishes of Tennessee. Knoxville: University of Tennessee Press.
- Hugg DO, 1996. MAPFISH georeferenced mapping database. Freshwater and estuarine fishes of North America. Edgewater, Maryland: Life Science Software.
- Lee DS, Gilbert CR, Hocutt CH, Jenkins RE, McAllister DE, Stauffer JR Jr. 1980. Atlas of North American freshwater fishes. Raleigh: North Carolina State Museum of Natural History.
- Mandrak NE, Crossman EJ. 1996. The status of the Lake Chubsucker, *Erimyzon succeta*, in Canada. Canadian Field Naturalist 110:478-482.
- Page LM, Burr BM. 1991. A field guide to freshwater fishes of North America north of Mexico. The Peterson Field Guide Series volume 42. Boston: Houghton Mifflin Company.
- Page LM, Burr BM. 2011. Peterson field guide to freshwater fishes of North America north of Mexico. Second edition. Boston: Houghton Mifflin Company.
- Scott WB, Crossman EJ. 1973. Freshwater fishes of Canada. Fisheries Research Board of Canada. Bulletin 184.

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 *Erimyzon sucetta* was projected to occur in the Appalachian Range, Great Lakes, Gulf Coast, Mid-Atlantic, Northeast, Southeast, Southern Atlantic Coast, and Southern Florida regions of the contiguous United States. Areas of high match contracted northward with time. Areas of low climate match were projected to occur in California and the Northern Pacific Coast regions. The Climate 6 scores for the individual future scenario models (figure A2) ranged from a low of 0.682 (model: IPSL-CM6A-LR, SSP5, 2085) to a high of 0.795 (model: IPSL-CM6A-LR, SSP5, 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 (0.783, figure 4) falls within 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. Primarily under time step 2085, areas within the Northeast saw a moderate increase in the climate match relative to current conditions. No large increases were observed regardless of time step and climate scenarios. Primarily under SSP5, 2085, areas within the Gulf Coast and Northern Plains saw a large decrease in the climate match relative to current conditions. Under one or more time step and climate scenarios, areas within the Appalachian Range, Great Basin, Great Lakes, Mid-Atlantic, Southeast, Southern Atlantic Coast, Southern Florida, Southern Plains, and Southwest saw a moderate decrease in the climate match relative to current conditions. The magnitude of change from current conditions was more pronounced in time step 2085 than in time step 2055 under both scenarios, SSP3 and SSP5. Additional, very small areas of large or moderate change may be visible on the maps (figure A3).

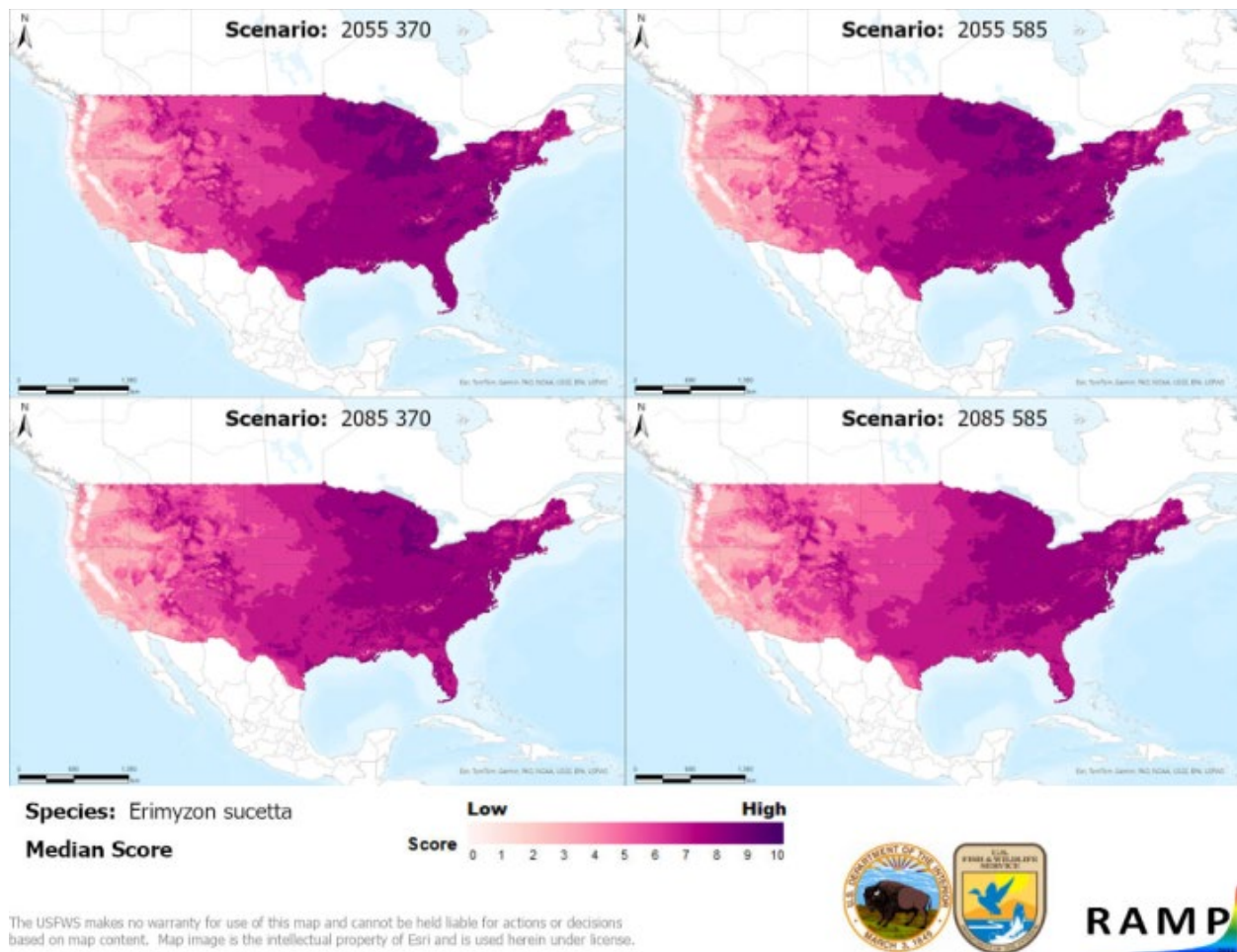


Figure A1. Maps of median RAMP (Sanders et al. 2023) climate matches projected under potential future climate conditions using five global climate models for *Erimyzon sucetta* in the contiguous United States. Climate matching is based on source locations reported by GBIF Secretariat (2023). Shared Socioeconomic 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.

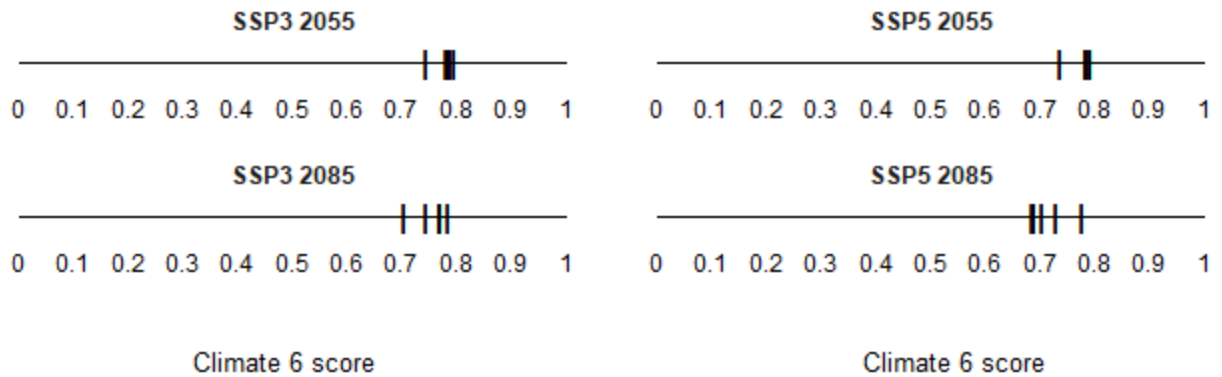


Figure A2. Comparison of projected future Climate 6 scores for *Erimyzon sucetta* in the contiguous United States for each of five global climate models under four combinations of Shared Socioeconomic Pathway (SSP) and time step. SSPs used (from left to right): SSP3, SSP5 (Karger et al. 2017, 2018; IPCC 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.

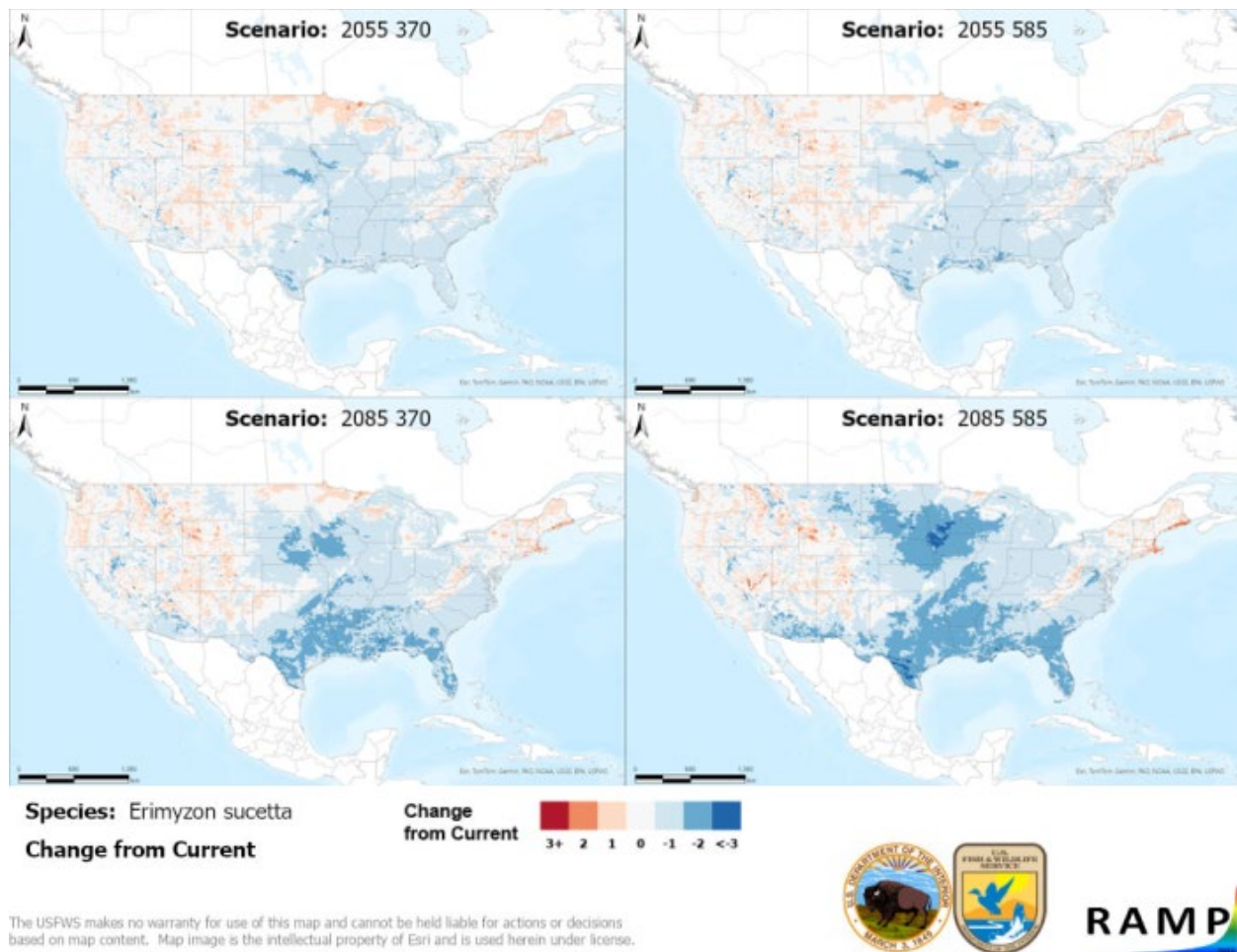


Figure A3. RAMP (Sanders et al. 2023) maps of the contiguous United States showing the difference between the current climate match target point score (figure 4) and the median target point score for future climate scenarios (figure A1) for *Erimyzon sucetta* based on source locations reported by GBIF 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.

Literature Cited

- GBIF Secretariat. 2023. GBIF backbone taxonomy: *Erimyzon sucetta* (Lacepède, 1803). Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/2358939> (February 2024).
- [IPCC] Intergovernmental Panel on Climate Change. 2021. Climate change 2021: the physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press.
- Karger DN, Conrad O, Böhner J, Kawohl T, Kreft H, Soria-Auza RW, Zimmermann NE, Linder HP, Kessler M. 2018. Data from: Climatologies at high resolution for the earth's land surface areas. EnviDat. Available: <https://doi.org/10.16904/envodat.228.v2.1>.
- Karger DN, Conrad O, Böhner J, Kawohl T, Kreft H, Soria-Auza RW, Zimmermann NE, Linder P, Kessler M. 2017. Climatologies at high resolution for the Earth land surface areas. Scientific Data 4:170122.
- Sanders S, Castiglione C, Hoff M. 2023. Risk Assessment Mapping Program: RAMP. Version 5.0. U.S. Fish and Wildlife Service.