Guadalupe Bass (*Micropterus treculii*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, March 2024
Revised, March 2025
Web Version, 8/22/2025

Organism Type: Fish
Overall Risk Assessment Category: Uncertain

Photo: Nick Loveland. Public domain. Available: https://www.inaturalist.org/photos/153726353 (March 2024).

1 Native Range and Status in the United States

Native Range

From Curtis et al. (2015):

"Guadalupe Bass are historically distributed among streams originating on the Edwards Plateau in central Texas, including subbasins of the Brazos, Colorado, Guadalupe, and San Antonio rivers (Hurst et al. 1975; Conner and Suttkus 1986; Thomas et al. 2007; Hubbs et al. 2008)."

Status in the United States

From Curtis et al (2015):

"Guadalupe Bass are historically distributed among streams originating on the Edwards Plateau in central Texas, including subbasins of the Brazos, Colorado, Guadalupe, and San Antonio rivers (Hurst et al. 1975; Conner and Suttkus 1986; Thomas et al. 2007; Hubbs et al. 2008). Several populations are introgressed with Smallmouth Bass *M. dolomieu* (Bean et al. 2013), resulting in possible extirpation from historical ranges. Pure Guadalupe Bass are extirpated from the South Concho River (Bean et al. 2013) and the Blanco River (Littrell et al. 2007) based on genetic analyses. In addition, an introduced population is established in the Nueces River basin (Hubbs et al. 2008)."

According to Fuller (2025), *Micropterus treculii* has been introduced and is established beyond its native range in Texas in the Nueces, Frio, and Sabinal rivers.

No records of *Micropterus treculii* 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 Garrett (2015):

"In 1973, before the natural range of Guadalupe bass was well understood, the Texas Parks and Wildlife Department (TPWD) introduced them into the headwaters of the Nueces River."

"Because the fish had become established in the Nueces River system, in 1988 TPWD developed a Guadalupe bass refuge in the Sabinal River at Lost Maples State Natural Area. This location offers habitat similar to the natural environment of the bass and provides security for protection of the species."

Remarks

From Curtis et al. (2015):

"Guadalupe Bass are considered a species of special concern (Hubbs et al. 2008) primarily due to introgression with introduced Smallmouth Bass (Edwards 1979; Whitmore and Butler 1982; Whitmore 1983; Garrett 1991; Morizot et al. 1991; Koppelman and Garrett 2002; Bean et al. 2013). In the 1950s, the Texas Parks and Wildlife Department began stocking Smallmouth Bass [not native to Texas] in streams and rivers of the Edwards Plateau in an effort to increase fishing opportunities for anglers of central Texas (Dietz and Lowman 1958). Smallmouth Bass took very well but began hybridizing with Guadalupe Bass."

"The Texas Parks and Wildlife Department produces Guadalupe Bass in hatcheries for supplemental stocking within their native range (Carmichael and Williamson 1986)."

From NatureServe (2025):

“Included in the Spotted Bass (*Micropterus punctulatus*) species complex (Kim et al. 2022).”

Micropterus treculii 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 (2025):

Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Acanthopterygii
Order Perciformes
Suborder Percoidei
Family Centrarchidae
Genus *Micropterus*
Species *Micropterus treculii* (Vaillant and Bocourt, 1874)

According to Fricke et al. (2025) *Micropterus treculii* (Vaillant & Bocourt 1874) is the current valid name for this species.

The following synonyms of *Micropterus treculii* from Fricke et al. (2025) were used to search for information for this report: *Micropterus treculi.*

Size, Weight, and Age Range

From Fuller (2025):

“Size 40cm”

From Froese and Pauly (2024):

“Max length : 46.4 cm TL [total length] male/unsexed; [IGFA 2001]; max. published weight: 1.7 kg [IGFA 1991]”

Environment
From Froese and Pauly (2024):

“Freshwater; demersal.”

From NatureServe (2025):

“Habitat includes gravel riffles, runs, and flowing pools of creeks and small to medium rivers (Page and Burr 2011), and is established in a few reservoirs (Tomelleri and Eberle 1990). This bass prefers lentic habitats. It is abundant in downstream sections of small streams, in shallow swift waters, often in riffles or at the head of pools, and is absent from extreme headwaters. It prefers fast currents along the lower ends of riffles and runs (Tomelleri and Eberle 1990). It is moderately tolerant of high turbidity and variable temperatures.”

Climate
From Froese and Pauly (2024)

“Temperate; 33°N - 31°N”

Distribution Outside the United States
Native
The native range of *Micropterus treculii* is located wholly within the United States; see section 1 for a complete description of the native range.

Introduced
No records were found of introduction of *Micropterus treculii* in the wild outside the United States.

Means of Introduction Outside the United States
No records were found of introduction of *Micropterus treculii* in the wild outside the United States.

Short Description
From Curtis et al. (2015):

“Guadalupe Bass are elongate and slightly compressed with a body depth usually contained three to five times in their standard length (Hubbs et al. 2008). The mouth is terminal and oblique with a maxilla extending past the center of the eye. Guadalupe Bass possess a tooth patch on their tongue (glossohyal). The shortest dorsal fin spine is contained 1.1–2.5 times in the longest dorsal spine (Hubbs et al. 2008), resulting in the first and second dorsal fin broadly joined by a shallow notch (Thomas et al. 2007). Bases of the soft dorsal fin and anal fin are scaled. Similar to Smallmouth Bass and Spotted Bass, pyloric cecae are not branched (Hubbs et al. 2008). Like other black bass species, the dorsal region of Guadalupe Bass is olive-green and the ventral

region is white. The lower dorsal and lateral region scales are covered with dark pigments that form horizontal rows along their body. They have a dark mid-lateral stripe obscured by 10–12 diamond-shaped vertical bars, most notable in juveniles (Page and Burr 1991; Thomas et al. 2007). Maximum depth of the bars is contained 1.5–2 times in their maximum body depth (Hubbs et al. 2008). Guadalupe Bass have the following counts: 6–13 dorsal fin spines, 11–13 dorsal soft fin rays, 15–16 pectoral fin rays, 3 anal fin spines, 9–11 anal soft fin rays, 55–71 lateral line scales, 7–10 scales above lateral line, 14–20 scales below lateral line, 22–29 scales around caudal peduncle, 10–18 cheek scales, 6–7 branchiostegals, and 8 gill rakers (Edwards 1980; Thomas et al. 2007)."

Biology

From NatureServe (2025):

"Eggs are laid in nests made on the bottom by males in relatively slow moving pool areas close to a source of current in water greater than one meter in depth (Edwards 1997)."

"Feeds on crustaceans, minnows, and larval insects that wash downstream (Tomelleri and Eberle 1990)."

From Curtis et al. (2015):

"Guadalupe Bass likely spawn from early spring to late summer (Hurst et al. 1975; Boyer et al. 1977), possibly extending into autumn (Edwards 1980)."

"Guadalupe Bass are polyphilic or lithophilic nest spawners that construct oval-shaped nests (surface area: 0.5 × 0.4 m; depth: 0.1 m) near shore in moderate current velocities (up to 0.3 m/s) and depths (1 m) within run and pool mesohabitats (Boyer et al. 1977; Edwards 1980, 1997). Nests are lined with cobble and detritus with eggs primarily adhered to sticks and leaf litter and guarded by one of the parents (Boyer et al. 1977). Females produce 400–9,300 eggs per clutch with an average diameter of 1.5–2.3 mm (Boyer et al. 1977; Edwards 1980)."

Human Uses

From Froese and Pauly (2024):

"Gamefish"

From Garrett (2015):

"The Guadalupe bass has long provided a popular sport fishery in the Texas Hill Country, particularly for those anglers who emphasize quality of the experience over quantity of the catch. The agile, fast-water Guadalupe bass provides hours of fun for people who enjoy fishing in one of the most beautiful parts of Texas."

Diseases

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

From Curtis et al. (2015):

"Several types of parasites are reported in Guadalupe Bass. *Acolpenteron ureteroecetes* is a monogenetic trematode residing in the urinary bladder and ureter that usually causes little to no damage to the fish and is limited to streams with rocky substrate (Bunkley-Williams and Williams 1994). Edwards (1980) detected black grub *Uvulifer ambloplites*, an ectoparasitic larval trematode, in 23% of individuals collected throughout their range. *Contracaecum*, endoparasitic nematodes that encyst upon the liver, spleen, and mesentery, usually having little effect on health, were found in 95% of Guadalupe Bass sampled in Lake Bastrop and in 35% of individuals collected throughout their range (Edwards 1980; Day 1981). *Lernia* sp., a parasitic copepod, occurs in low frequency (Edwards 1980)."

Threat to Humans

From Froese and Pauly (2024):

"Harmless"

3 Impacts of Introductions

From Fuller (2025):

"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."

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

4 History of Invasiveness

The History of Invasiveness for *Micropterus treculii* is classified as Data Deficient. This species has been introduced in Texas beyond its native range. These introductions have led to established populations in the Nueces, Frio, and Sabinal rivers, but any impacts of these introductions, or any lack of impact, have not been documented.

5 Global Distribution

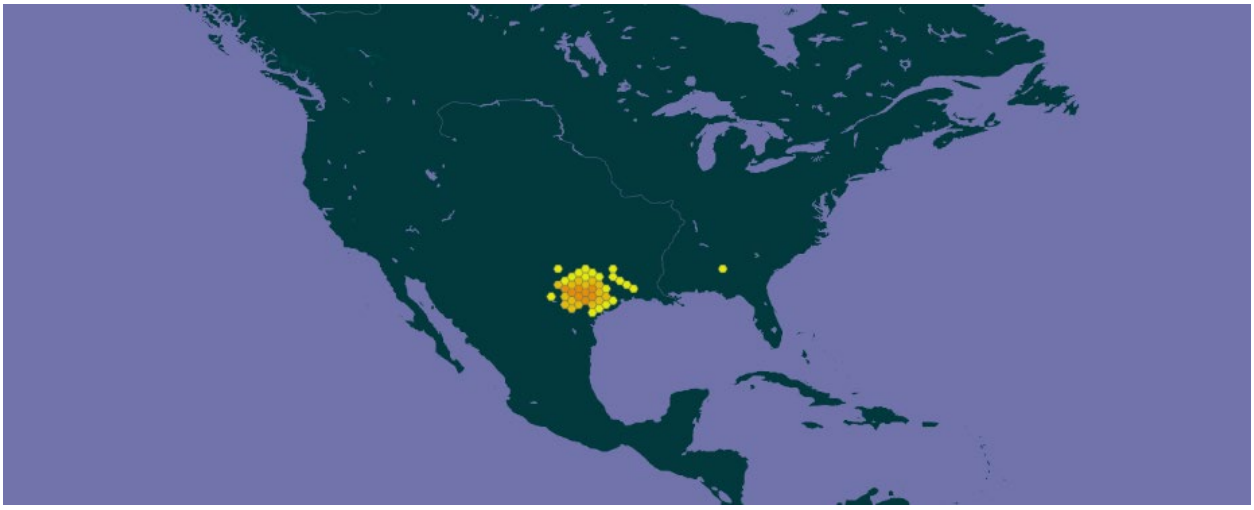

Figure 1. Reported global distribution of *Micropterus treculii*. Map from GBIF Secretariat (2023). Observations are reported from central and southeastern Texas. The single observation in Alabama was excluded from the climate matching analysis as it does not represent an established population.

6 Distribution Within the United States

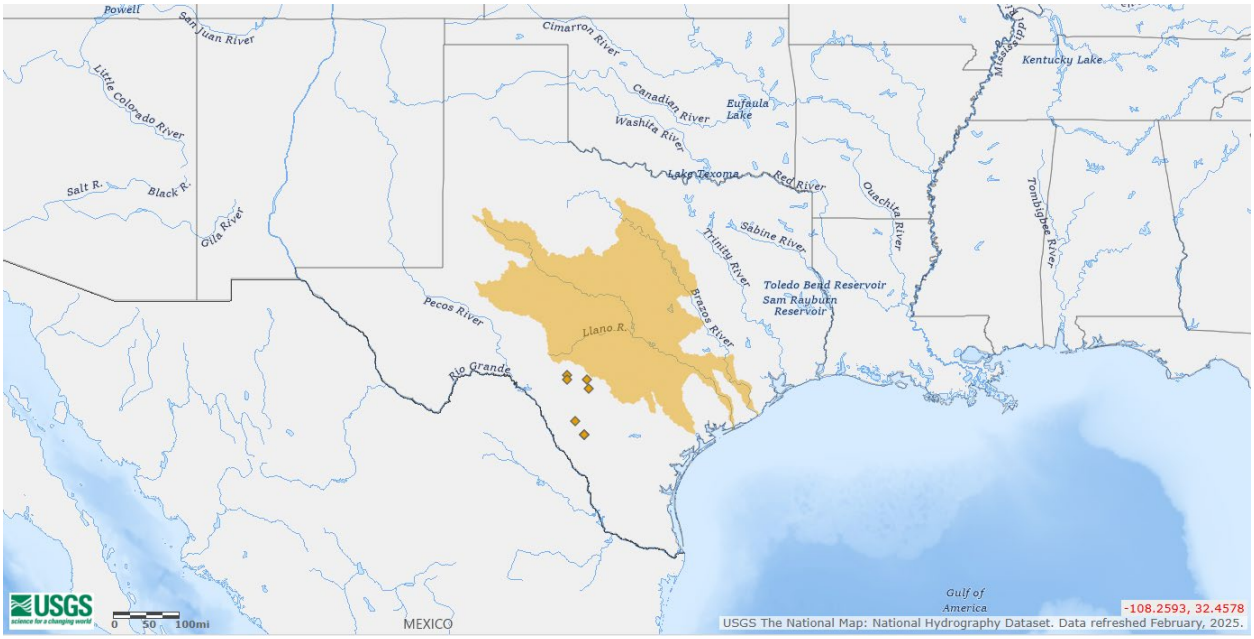

Figure 2. Reported distribution of *Micropterus treculii* in the United States. Map from Fuller (2025). Light orange shading depicts the native range in Texas, while orange diamonds indicate introductions.

7 Climate Matching

Summary of Climate Matching Analysis

The highest climate match for *Micropterus treculii* in the contiguous United States was in Texas where this species is native. High climate match also extended northward through the Southern Plains, eastward into portions of the Southeast region, and westward into portions of the Southwest region. Most of the contiguous United States had medium matches. Low matches were restricted to portions of the Northeast, Colorado Plateau, Western Mountains, Great Basin, California, and Northern Pacific Coast. The overall Climate 6 score (Sanders et al. 2023; 16 climate variables; Euclidean distance) for the contiguous United States was 0.464, indicating that Yes, there is establishment concern for this species 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 *Micropterus treculii* (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.

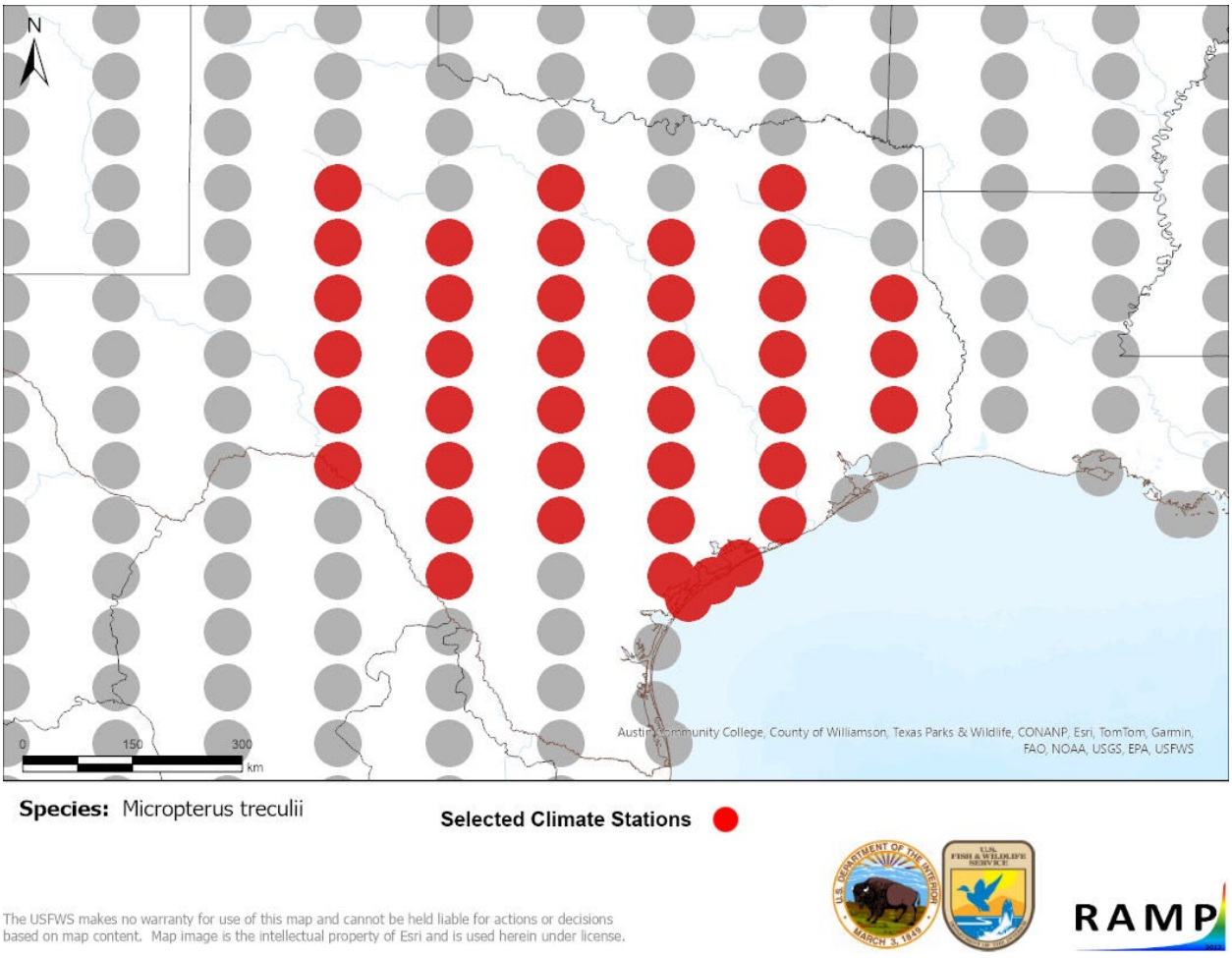

Figure 3. RAMP (Sanders et al. 2023) source map showing weather stations in Texas selected as source locations (red) and non-source locations (gray) for *Micropterus treculii* climate matching. Source locations from GBIF Secretariat (2023). Selected source locations are within 100 km of one or more species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

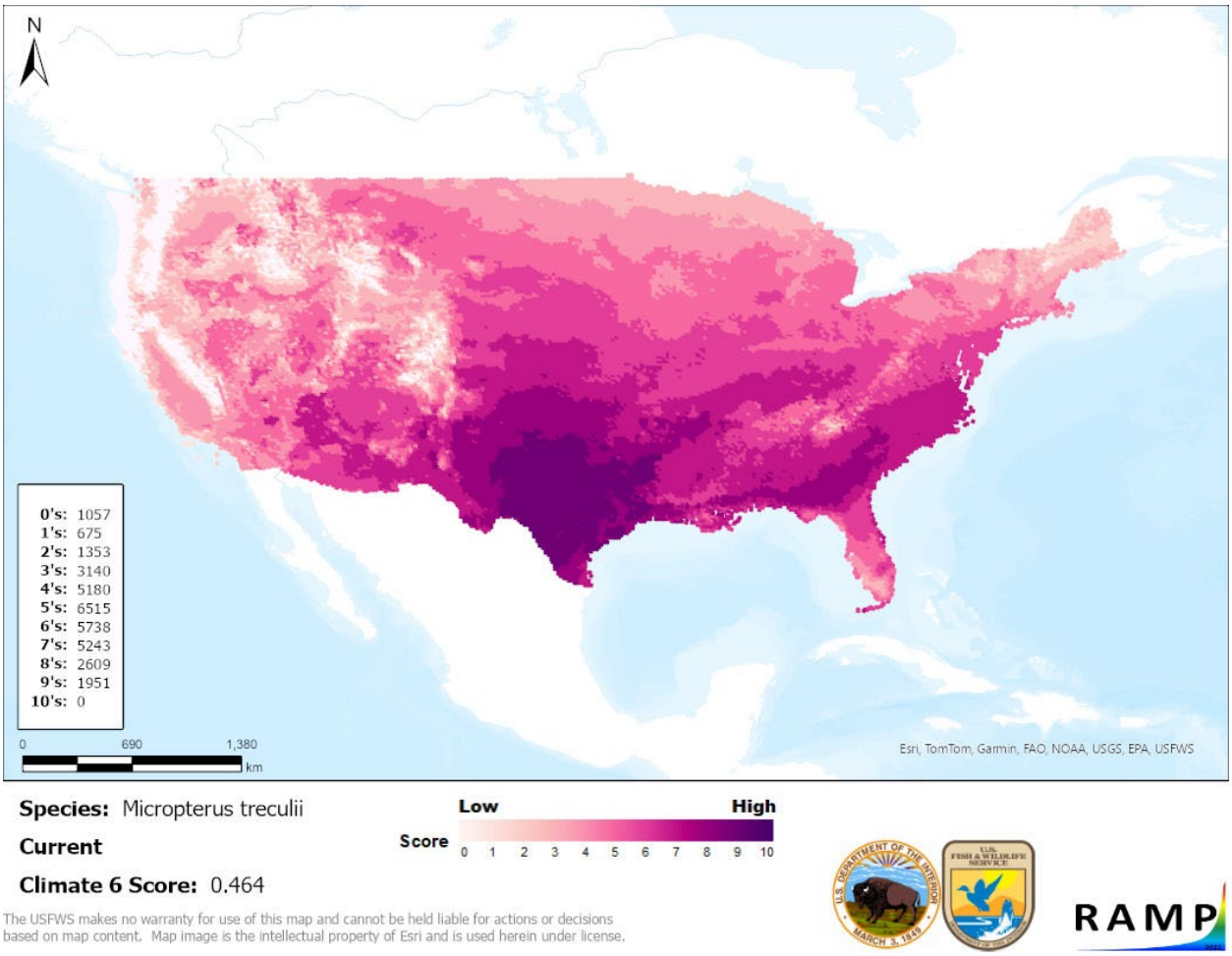

Figure 4. Map of RAMP (Sanders et al. 2023) climate matches for *Micropterus treculii* in the contiguous United States based on source locations reported by GBIF Secretariat (2023). Counts of climate match scores are tabulated on the left. 0/Pale Pink = Lowest match, 10/Dark Purple = Highest match. A text description of the results was provided at the beginning of section 7.

8 Certainty of Assessment

The Certainty of Assessment for *Micropterus treculii* is classified as Low. Although there is adequate information on the distribution and biology of this species, there is no information on any impacts of introductions beyond its native range in Texas.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Micropterus treculii, Guadalupe Bass, is a fish native to streams originating in central Texas, including subbasins of the Brazos, Colorado, Guadalupe, and San Antonio rivers. *M. treculii* is a popular sportfish in Texas and has been intentionally stocked beyond its native range for conservation purposes. Hybridization with Smallmouth Bass (*Micropterus dolomieu*) has resulted in disappearance of pure *M. treculii* from parts of its native range. The History of Invasiveness for *M. treculii* is classified as Data Deficient. Although introductions have resulted

in established populations in the Nueces River basin, any impacts or lack of impacts of these introductions has not been documented. The climate matching analysis for the contiguous United States indicates establishment concern for this species outside its native range. The highest climate matches were found in Texas where this species is native, extending through the Southern Plains and into portions of the Southeast and Southwest regions. The Certainty of Assessment for this ERSS is classified as Low because of the absence of information on any impacts of introduction or lack of impacts. The Overall Risk Assessment Category for *M. treculii* 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 *Micropterus treculii* was projected to occur in the Mid-Atlantic and Southern Plains regions of the contiguous United States. From SSP3 to SSP5 and from time step 2055 to 2085, there were fewer areas of extremely high match, but the medium-high matches expanded northward in extent. Areas of low climate match were projected to occur in California, the Northern Pacific Coast, and the Western Mountains. The Climate 6 scores for the individual future scenario models (figure A2) ranged from a low of 0.569 (model: MPI-ESM1-2-HR, SSP5, 2085) to a high of 0.741 (model: UKESM1-0-LL, SSP3, 2085). 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 (0.464, figure 4) falls below 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 the 2085 time step, areas within the Colorado Plateau, Great Basin, Great Lakes, Northeast, Northern Plains, and Western Mountains saw a large increase in the climate match relative to current conditions. The extent of these areas of large increase was much greater under SSP5 than under SSP3. Additionally, areas within the Appalachian Range, Mid-Atlantic, and Southern Plains saw a moderate increase in the climate match relative to current conditions. Under one or more time step and climate scenarios, areas within the Gulf Coast, Southeast, Southern Plains, and Southwest saw a moderate decrease in the climate match relative to current conditions, particularly within this species' native range during the 2085 timestep scenarios. 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).

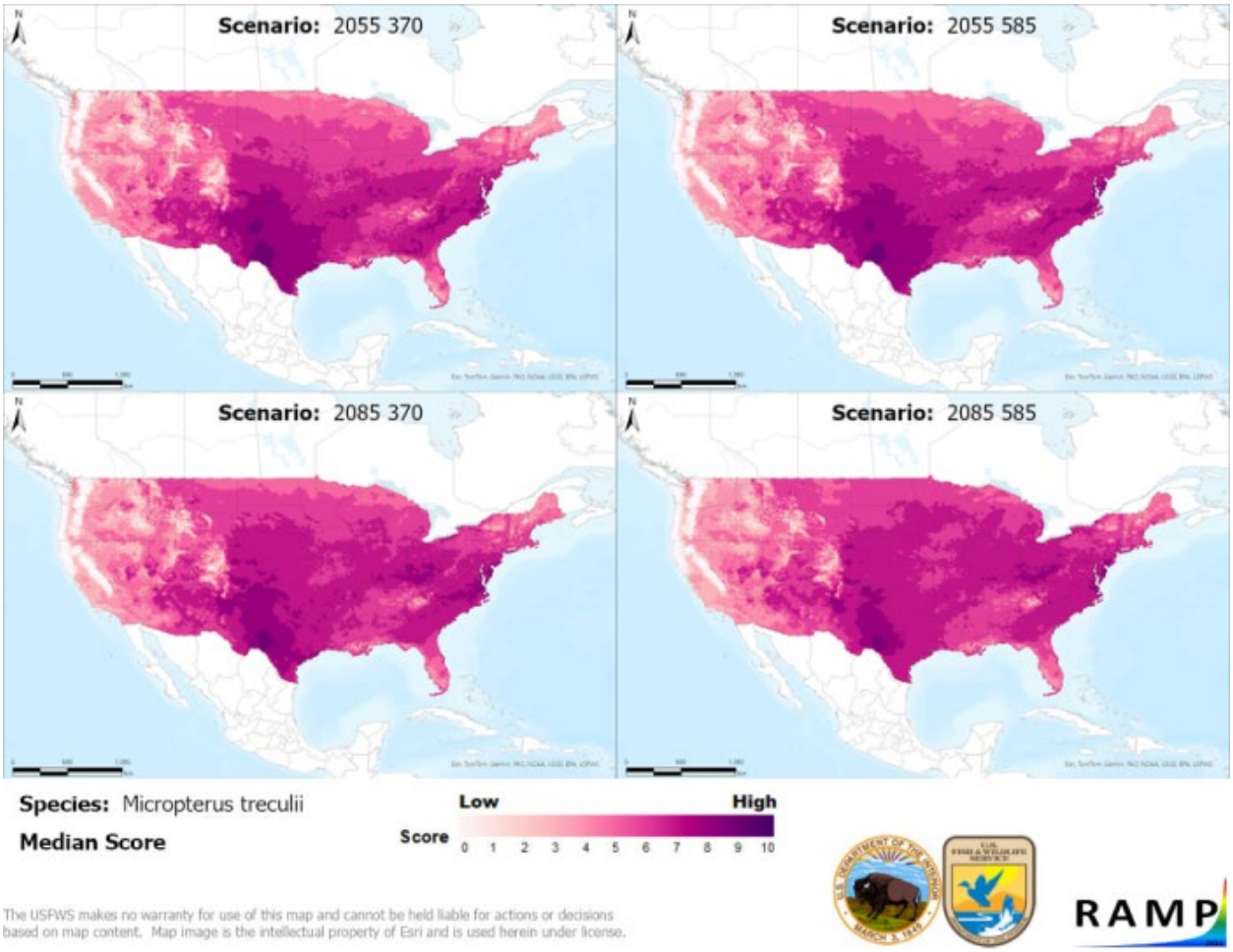

Figure A1. Maps of median RAMP (Sanders et al. 2023) climate matches projected under potential future climate conditions using five global climate models for *Micropterus treculii* in the contiguous United States. Climate matching is based on source locations reported by GBIF Secretariat (2023). Shared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

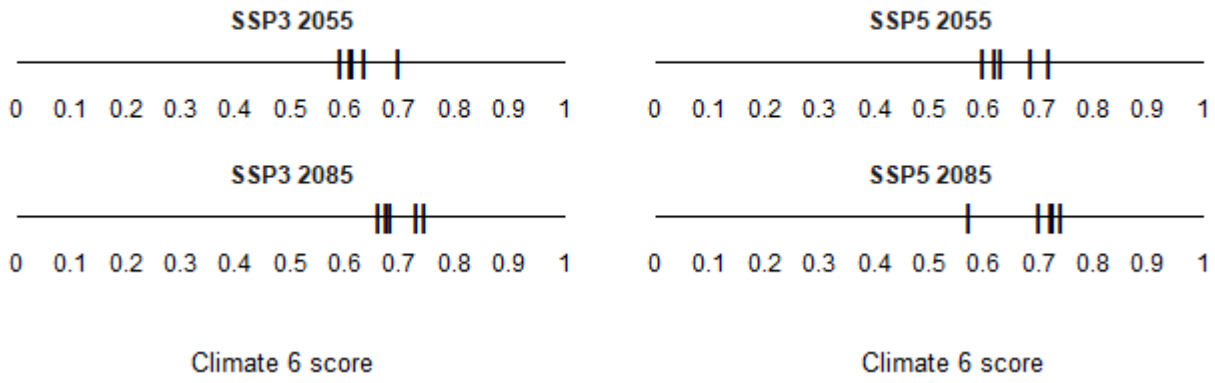

Figure A2. Comparison of projected future Climate 6 scores for *Micropterus treculii* in the contiguous United States for each of five global climate models under four combinations of Shared Socioeconomic Pathway (SSP) and time step. SSPs used (from left to right): SSP3, SSP5 (Karger et al. 2017, 2018;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

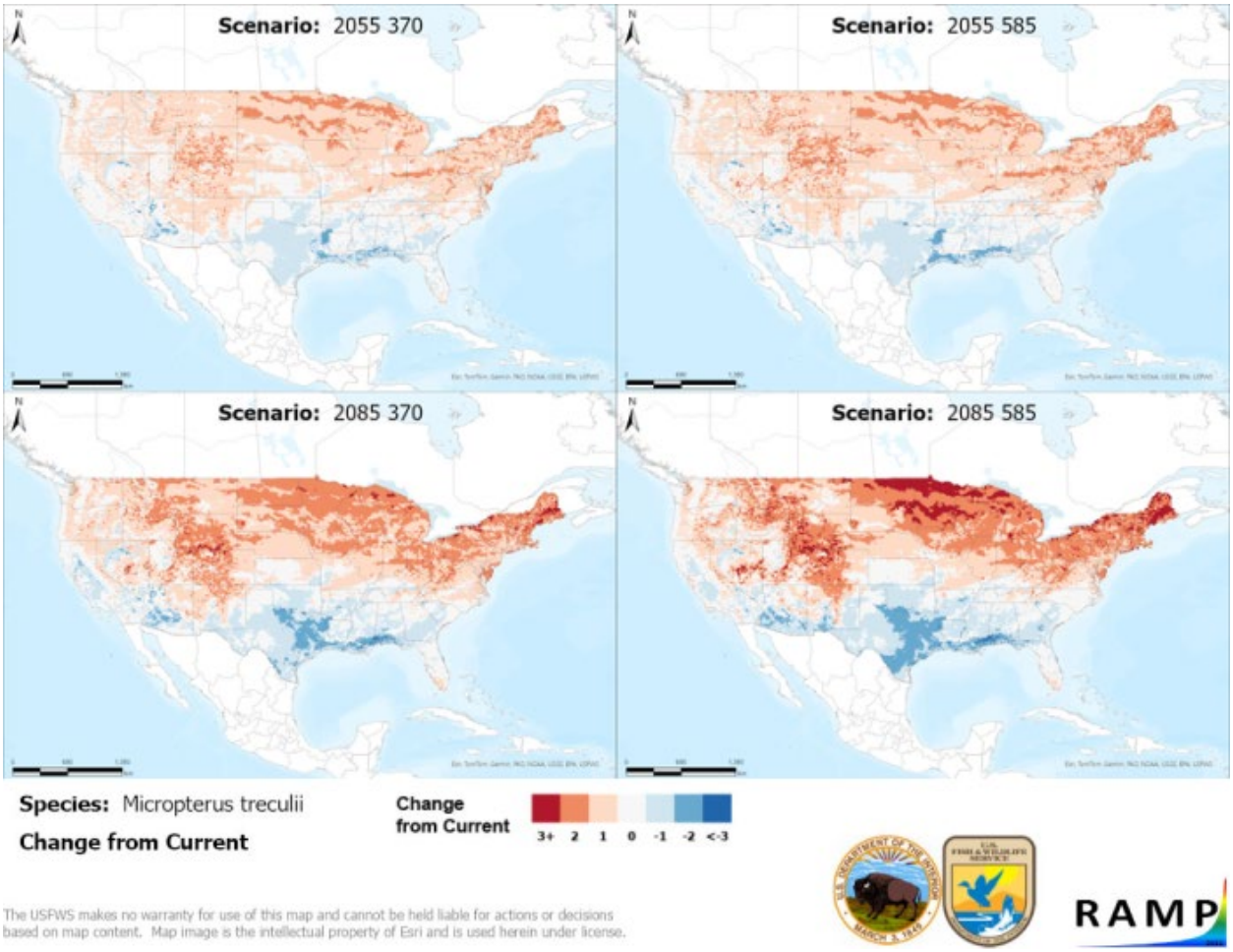

Figure A3. RAMP (Sanders et al. 2023) maps of the contiguous United States showing the difference between the current climate match target point score (figure 4) and the median target point score for future climate scenarios (figure A1) for *Micropterus treculii* based on source locations reported by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