

***Coptodon thysi* (a tilapia, no common name)**

Ecological Risk Screening Summary

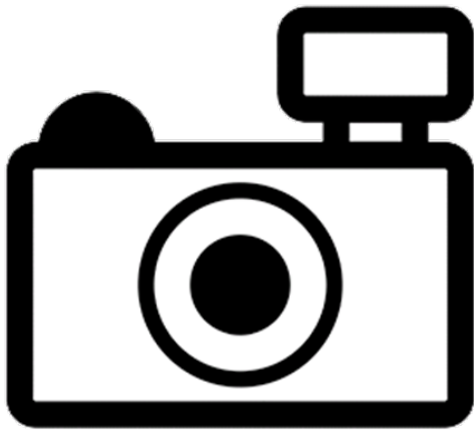
U.S. Fish and Wildlife Service, February 2024

Revised, March 2024

Web Version, 5/7/2026

Organism Type: Fish

Overall Risk Assessment Category: Uncertain



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2024a):

“Africa: endemic to Lake Bermin, Cameroon [Stiassny et al. 2008].”

Status in the United States

No records were found of *Coptodon thysi* in the wild or in live trade in the United States.

Regulations

Coptodon thysi is regulated under the genus name *Coptodon* in Texas (TPWD 2022). It is regulated under the common name “tilapia” in Louisiana (Louisiana Revised Statutes 2022) and Oklahoma (ODWC 2023). It may be regulated under the former genus name, *Tilapia*, in Florida (FFWCC 2022) and New Mexico (NMDGF 2023). Please refer back to state agency regulatory documents for details on the regulations, including restrictions on activities involving this

species. While effort was made to find all applicable regulations, this list may not be comprehensive. Notably, it does not include regulations that do not explicitly name this species or its genus or family, for example, when omitted from a list of authorized species with blanket regulation for all unnamed species.

Means of Introductions within the United States

No records of *Coptodon thyisi* in the wild in the United States were found.

Remarks

This ERSS was previously published in June 2015 under the scientific name *Tilapia thyisi*. Revisions were completed to incorporate new information and conform to updated standards.

According to Moelants (2010), *Coptodon thyisi* (referred to as *Tilapia thyisi*) is listed as a Critically Endangered species by the International Union for the Conservation of Nature (IUCN).

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From Froese and Pauly (2024b):

Biota > Animalia (Kingdom) > Chordata (Phylum) > Vertebrata (Subphylum) > Gnathostomata (Infraphylum) > Osteichthyes (Parvphylum) > Actinopterygii (Gigaclass) > Actinopteri (Superclass) > Teleostei (Class) > Cichliformes (Order) > Cichlidae (Family) > Pseudocrenilabrinae (Subfamily) > *Coptodon* (Genus) > *Coptodon thyisi* (Species)

According to Fricke et al. (2024), *Coptodon thyisi* (Stiassny, Schlieuwen & Dominey, 1992) is the current valid name for this species.

The following synonym of *Coptodon thyisi* from Fricke et al. (2024) was used to search for information for this report: *Tilapia thyisi*.

Size, Weight, and Age Range

From Froese and Pauly (2024a):

“Max length : 6.4 cm SL [standard length] male/unsexed; [Axelrod 1993]”

Environment

From Froese and Pauly (2024a):

“Freshwater; benthopelagic.”

Climate

From Froese and Pauly (2024a):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2024a):

“Africa: endemic to Lake Bermin, Cameroon [Stiassny et al. 2008].”

Introduced

No records were found for introduction of *Coptodon thysi* in the wild outside the United States.

Means of Introduction Outside the United States

No records were found for introduction of *Coptodon thysi* in the wild outside the United States.

Short Description

From Froese and Pauly (2024a):

“Dorsal spines (total): 16; Dorsal soft rays (total): 10-11; Anal spines: 3; Anal soft rays: 7 - 8. Diagnosis: lower pharyngeal jaw robust and of moderate size, with a large, heart-shaped dentigerous plate, covered with numerous fine, regularly arrayed teeth [Stiassny et al. 1992; Stiassny et al. 2008]. Mouth not squared or obtuse [Stiassny et al. 2008]. Ventral margin of lower lip smooth; ratio of lower jaw length to lower jaw width < 1 ; oral jaw teeth slender, movably implanted with spatulate crowns [Stiassny et al. 1992; Stiassny et al. 2008]. 11-13 gill rakers on first arch [Stiassny et al. 1992].”

From Froese and Pauly (2026):

“Description: straight to slightly rounded frontal profile; jaws short; lips not thickened [Lamboj 2004]. Head length 33.9-35.1% SL; lower pharyngeal jaw with curved tricuspid anterior teeth and bicuspid posterior teeth; ventral keel shorter than dentigerous plate; 3-4 rows of teeth in upper jaw, outer row teeth unicuspid or bicuspid [Stiassny et al. 2008].”

“Coloration: body brown to dark brown, with lower body parts reddish to red [Lamboj 2004]. In life, breeding individuals generally yellow with faint vertical barring [Lamboj 2004, Stiassny et al. 2008], chin [Stiassny et al. 2008], belly [Lamboj 2004; Stiassny et al. 2008], anal and pelvic fins [Lamboj 2004] black. Lower lobe of anal fin black [Stiassny et al. 2008].”

Biology

From Froese and Pauly (2024a):

“Feeds primarily upon plants (especially algae), diatoms and insects [Lamboj 2004]. Pair-bonding, open [Lamboj 2004] substrate brooder [Lamboj 2004; Stiassny et al. 2008], with both parents guarding the brood [Lamboj 2004].”

Human Uses

No information was found on human uses of *Coptodon thyisi*.

Diseases

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

Pariselle et al. (2013) list *Coptodon thyisi* as a host to the parasite *Cichlidogyrus berminensis*.

Threat to Humans

From Froese and Pauly (2024a):

“Harmless”

3 Impacts of Introductions

No records of introductions were found for *Coptodon thyisi*; therefore, there is no information on impacts of introduction.

C. thyisi is or may be regulated in Florida (FFWCC 2022), Louisiana (Louisiana Revised Statutes 2022), New Mexico (NMDGF 2023), Oklahoma (ODWC 2023), and Texas (TPWD 2022). See section 1.

4 History of Invasiveness

The History of Invasiveness for *Coptodon thyisi* is classified as No Known Nonnative Population. No evidence was found of the species having ever been transported (through intentional or unintentional mechanisms) outside its native range, so presumably the species has had no opportunity to become established and exhibit any negative impacts of introduction. There is also no substantial trade history available.

5 Global Distribution

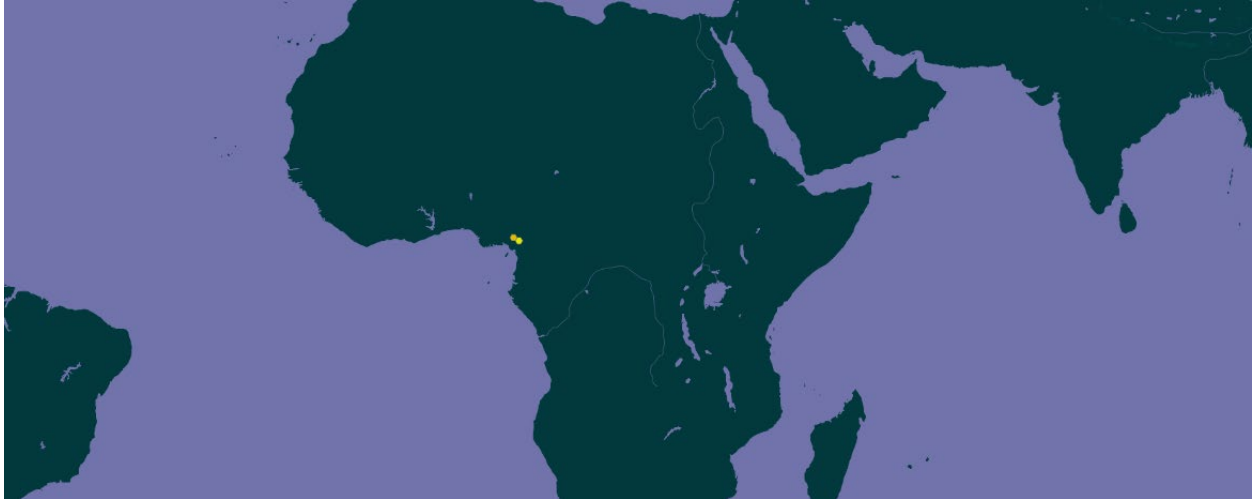


Figure 1. Reported global distribution of *Coptodon thyisi*. Map from GBIF Secretariat (2023). Observations are reported from Cameroon. Points east of Lake Bermin were excluded from the source points used for the climate matching analysis because they are not known to represent established populations.

6 Distribution Within the United States

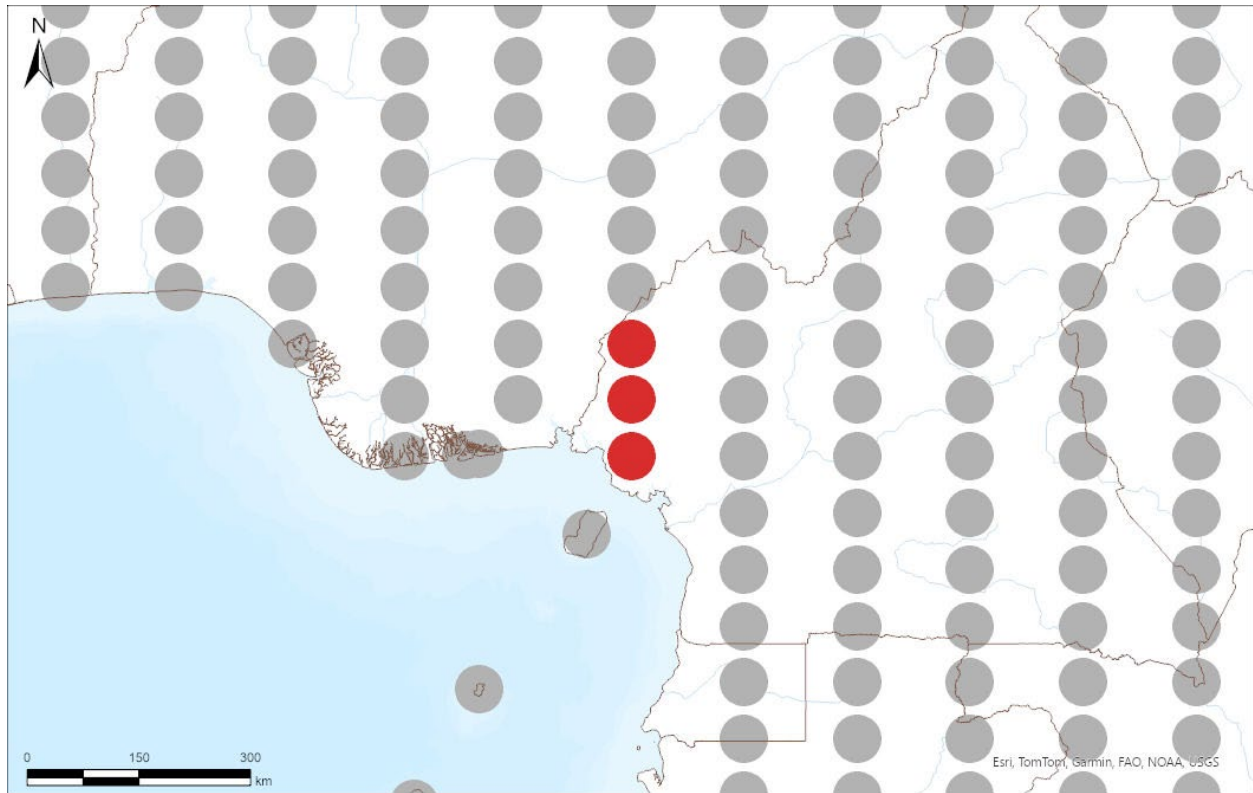
No records of *Coptodon thyisi* in the wild in the United States were found.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Coptodon thyisi* was low across the contiguous United States, although slightly higher, but still generally low, along the Northern Pacific Coast than elsewhere. The overall Climate 6 score (Sanders et al. 2023; 16 climate variables; Euclidean distance) for the contiguous United States was 0.000, indicating that establishment is doubtful. 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 *Coptodon thyisi* (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: *Coptodon thysi*

Selected Climate Stations ●



RAMP

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Figure 2. RAMP (Sanders et al. 2023) source map showing weather stations in west-central Africa selected as source locations (red; Cameroon) and non-source locations (gray) for *Coptodon thysi* 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.

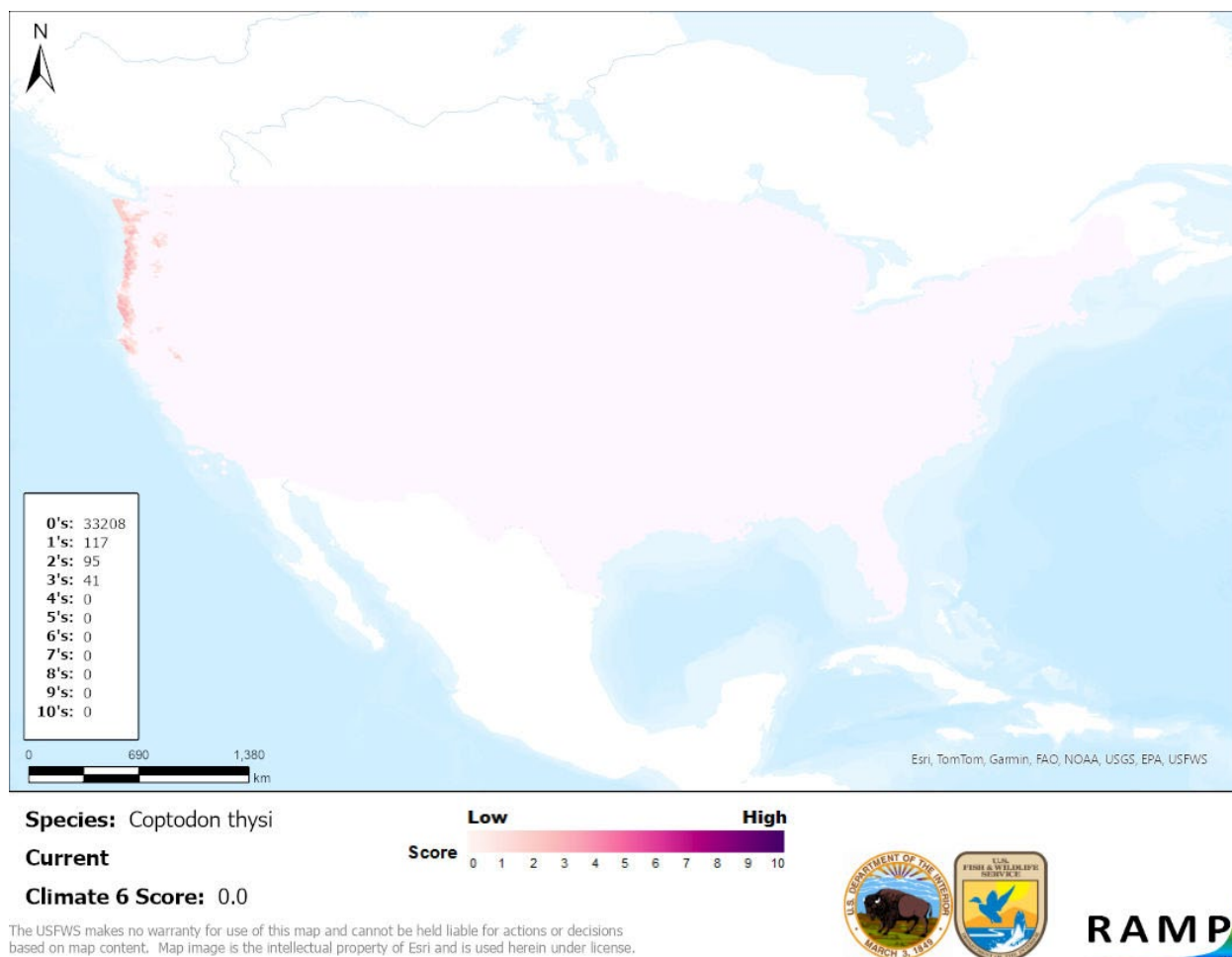


Figure 3. Map of RAMP (Sanders et al. 2023) climate matches for *Coptodon thysi* in the contiguous United States based on source locations reported by GBIF Secretariat (2023). Counts of climate match scores are tabulated on the left. 0/Pale Pink = Lowest match, 10/Dark Purple = Highest match.

8 Certainty of Assessment

The Certainty of Assessment for *Coptodon thysi* is classified as Low. Information on the biology and ecology of this species is limited, although its distribution is clear within the literature. There were no records of introductions found, so impacts of introduction are unknown.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Coptodon thysi is a species of tilapia endemic to Lake Bermin, Cameroon. It is a benthopelagic fish that exhibits pair-bonding and parental care of offspring. *C. thysi* is classified as “Critically Endangered” by the International Union for the Conservation of Nature (IUCN). Five U.S. States regulate possession, sale, or trade of this species along with other tilapia species. The History of Invasiveness for *C. thysi* is classified as No Known Nonnative Population due to the lack of evidence that *C. thysi* has been transported or established outside its native range. Because no

introductions outside the native range of *C. thysi* have been reported, impacts of introduction are unknown. The climate matching analysis for the contiguous United States indicates doubtful establishment for this species; the climate match was low in all regions. The Certainty of Assessment for this ERSS is classified as Low due to lack of information. The Overall Risk Assessment Category for *C. thysi* in the contiguous United States is Uncertain.

Assessment Elements

- **History of Invasiveness (see Section 4): No Known Nonnative Population**
- **Establishment Concern (see Section 7): Doubtful**
- **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.

[FFWCC] Florida Fish and Wildlife Conservation Commission. 2022. Prohibited nonnative species list. Tallahassee: Florida Fish and Wildlife Conservation Commission. Available: <https://myfwc.com/wildlifehabitats/nonnatives/prohibited-species-list/> (October 2022).

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

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Froese R, Pauly D, editors. 2024b. FishBase. *Coptodon thysi* (Stiassny, Schliewen & Dominey, 1992). Accessed through: World Register of Marine Species at: <https://www.marinespecies.org/aphia.php?p=taxdetails&id=1011202> (March 2024).

Froese R, Pauly D, editors. 2026. Morphology summary - *Coptodon thysi*. FishBase. Available: https://www.fishbase.se/physiology/Coptodon_thysi (April 2026).

GBIF Secretariat. 2023. GBIF backbone taxonomy: *Coptodon thysi* (Stiassny, Schliewen & Dominey, 1992). Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/8791043>. (February 2024).

Louisiana Revised Statutes. 2022. Exotic fish; importation, sale, and possession of certain exotic species prohibited; permit required; penalty. Title 56, section 319.

- Moelants T. 2010. *Tilapia thysi*. The IUCN Red List of Threatened Species 2010: e.T182501A7899000. Available: <https://www.iucnredlist.org/species/21896/9337065> (February 2024).
- [NMDGF] New Mexico Department of Game and Fish. 2023. Director's species importation list. Santa Fe: New Mexico Department of Game and Fish. Available: <https://www.wildlife.state.nm.us/download/enforcement/importation/information/Importation-Info-Directors-Species-Importation-List-1-3-2023.pdf> (October 2023).
- [ODWC] Oklahoma Department of Wildlife Conservation. 2023. Restriction on aquatic species introduction. 800 Oklahoma Administrative Code 20.
- Pariselle A, Bitja Nyom AR, Bilong Bilong CF. 2013. Checklist of the ancyrocephalids (Monogenea) parasitizing *Tilapia* species in Cameroon, with the description of three new species. *Zootaxa* 3599:78–86.
- Sanders S, Castiglione C, Hoff M. 2023. Risk Assessment Mapping Program: RAMP. Version 5.0. U.S. Fish and Wildlife Service.
- [TPWD] Texas Parks and Wildlife. 2022. Invasive, prohibited and exotic species. Austin: Texas Parks and Wildlife. Available: https://tpwd.texas.gov/huntwild/wild/species/exotic/prohibited_aquatic.phtml (October 2022).
- [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> (April 2026).
- 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.

- Axelrod HR. 1993. The most complete colored lexicon of cichlids. Neptune City, New Jersey: T.F.H. Publications.
- Lamboj A. 2004. The cichlid fishes of Western Africa. Bornheim, Germany: Birgit Schmettkamp Verlag.
- Stiassny MLJ, Lamboj A, De Weirtd D, Teugels GG. 2008. Cichlidae. Pages 269–403 in Stiassny MLJ, Teugels GG, Hopkins CD, editors. The fresh and brackish water fishes of

Lower Guinea, West-Central Africa. Volume 2. Collection faune et flore tropicales 42. Paris: Institut de recherche de développement; Tervuren, Belgium: Muséum national d'histoire naturelle; and Paris: Musée royal de l'Afrique Central.

Stiassny MLJ, Schlieven UK, Dominey WJ. 1992. A new species flock of cichlid fishes from Lake Bermin, Cameroon with a description of eight new species of *Tilapia* (Labroidei: Cichlidae). Ichthyological Exploration of Freshwaters 3:311–346.

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), the climate match remained low throughout the contiguous United States for *Coptodon thysi*. There was little difference between scenarios. The Climate 6 scores for the individual future scenario models (figure A2) were always equal to 0, regardless of model or scenario. No future scenario Climate 6 scores were above the Establishment Concern threshold, indicating that establishment for this species is doubtful under future scenarios. The Climate 6 score for the current climate match (0, figure 3) is equal to the 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 (figure A3). Primarily under the 2085 time step, coastal areas of Washington, Oregon, and northern California saw a moderate increase in the climate match relative to current conditions. No large increases were observed regardless of time step and climate scenarios. Because the current climate match was so low, only minor or no decreases in climate match were observed in the future climate match relative to the current match. Additional very small areas of large or moderate change may be visible on the maps (figure A3).

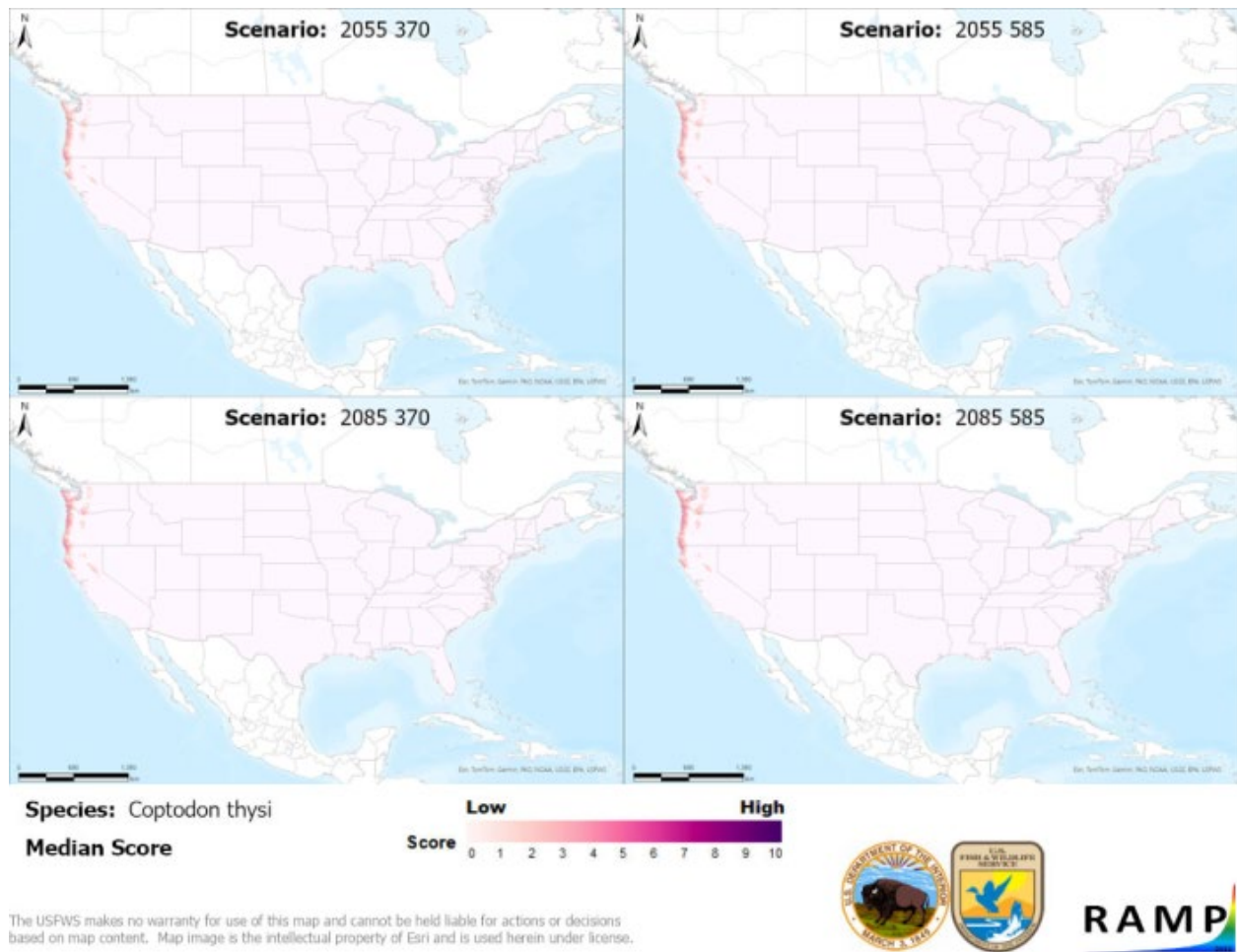


Figure A1. Maps of median RAMP (Sanders et al. 2023) climate matches projected under potential future climate conditions using five global climate models for *Coptodon thysi* in the contiguous United States. Climate matching is based on source locations reported by GBIF Secretariat (2023). Shared Socioeconomic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

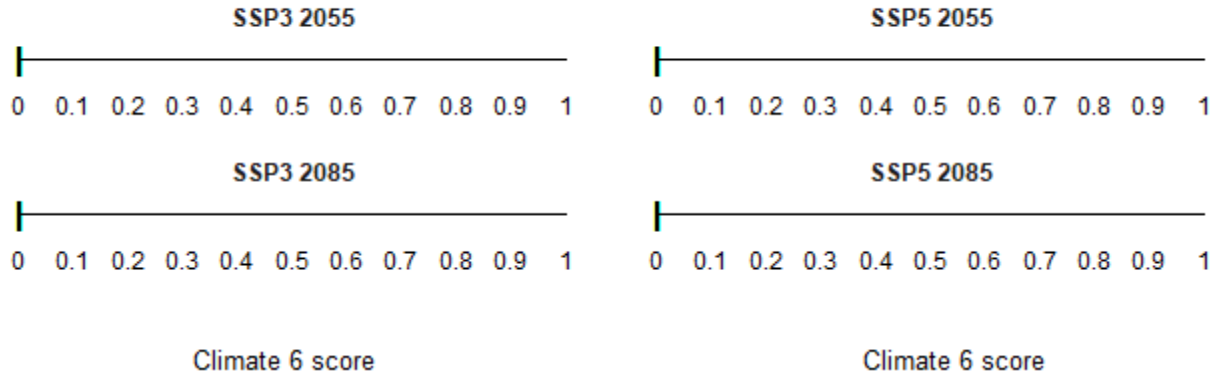


Figure A2. Comparison of projected future Climate 6 scores for *Coptodon thysi* in the contiguous United States for each of five global climate models under four combinations of Shared Socioeconomic Pathway (SSP) and time step. SSPs used (from left to right): SSP3, SSP5 (Karger et al. 2017, 2018; IPCC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

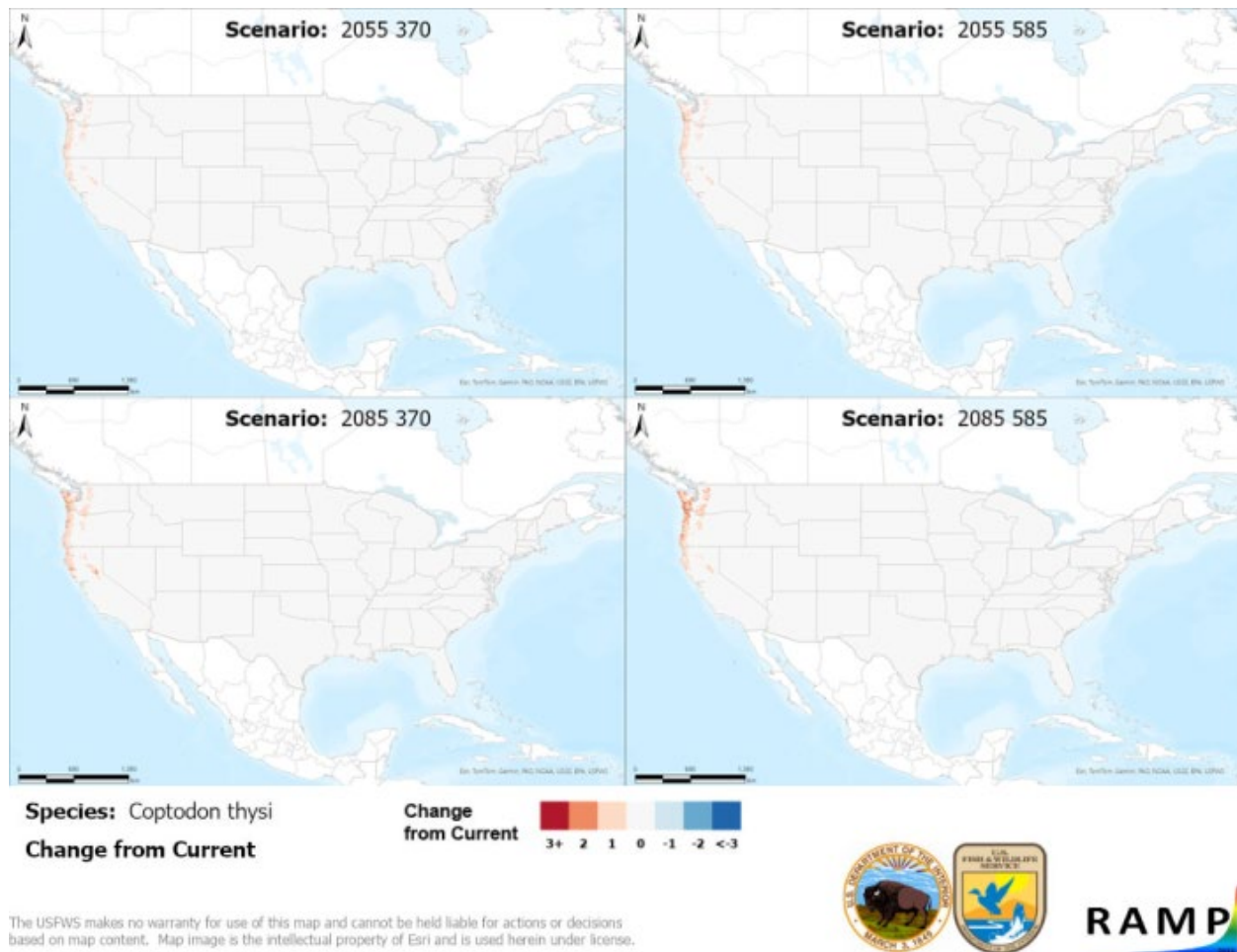


Figure A3. RAMP (Sanders et al. 2023) maps of the contiguous United States showing the difference between the current climate match target point score (figure 3) and the median target point score for future climate scenarios (figure A1) for *Coptodon thysi* based on source locations reported by GBIF 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: *Coptodon thysi* (Stiassny, Schliewen & Dominey, 1992). Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/8791043> (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.
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