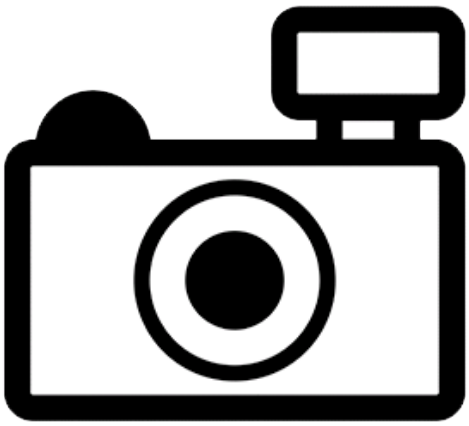
U.S. Fish & Wildlife Service

Pangasius kremfi (a catfish, no common name)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, March 2012
Revised, August 2018
Web Version, 5/1/2020

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 (2018):

"Asia [Cambodia, China, Laos, Thailand, Viet Nam]."

From Baird (2011):

"An anadromous species that is found in the South China Sea, coastal China (Guangdong, Guangxi) and Viet Nam and the Mekong River (Viet Nam, Lao PDR, Cambodia and Thailand)."

Status in the United States

No records of *Pangasius krempfi* in the wild or in trade in the United States were found.

Means of Introductions in the United States

No records of *Pangasius krempfi* in the wild in the United States were found.

Remarks

Pangasius krempfi can be found in marine waters. Only the freshwater range of this species was used for the climate match source locations.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Eschmeyer et al. (2018), *Pangasius krempfi* Chaux and Fang 1949 is the current valid name and the original name for this species.

From ITIS (2018):

Kingdom Animalia
  Subkingdom Bilateria
    Infrakingdom Deuterostomia
      Phylum Chordata
        Subphylum Vertebrata
          Infraphylum Gnathostomata
            Superclass Actinopterygii
              Class Teleostei
                Superorder Ostariophysi
                Order Siluriformes
                Family Pangasiidae
                Genus *Pangasius*
                Species *Pangasius krempfi* Fang and Chaux in Chaux and Fang, 1949

Size, Weight, and Age Range

From Froese and Pauly (2018):

"Max length : 120 cm SL male/unsexed; [Baird et al. 1999]; max. published weight: 14.0 kg [Roberts 1993]"

From Baird et al. (2004):

"The largest individual landed in the li traps was 8.7 kg, the smallest was 1 kg, and the mean weight was 3.4 kg."

Environment

From Froese and Pauly (2018):

"Marine; freshwater; brackish; benthopelagic; potamodromous [Riede 2004]."

Climate
From Froese and Pauly (2018):

"Tropical"

Distribution Outside the United States
Native
From Froese and Pauly (2018):

"Asia [Cambodia, China, Laos, Thailand, Viet Nam]."

From Baird (2011):

"An anadromous species that is found in the South China Sea, coastal China (Guangdong, Guangxi) and Viet Nam and the Mekong River (Viet Nam, Lao PDR, Cambodia and Thailand)."

Introduced
No records of introductions of *Pangasius krempfi* were found.

Means of Introduction Outside the United States
No records of introductions of *Pangasius krempfi* were found.

Short Description
From Froese and Pauly (2018):

"Dorsal spines (total): 1; Dorsal soft rays (total): 6-7; Anal spines: 4; Anal soft rays: 31 - 34. Body depth 4.5-5.0 times in SL [Kottelat 2001]. Dorsum sky blue; submarginal caudal-fin stripes absent; no humeral spot; vomerine teeth separate at midline, joined to palatine teeth on each side forming long crescentic patches; 18-22 gill rakers in first arch [Rainboth 1996]. Body dark blackish gray on top and sides, silver gray on abdomen and fins lightly yellow [Wang 1998]."

Biology
From Froese and Pauly (2018):

"Migrating but the direction is unknown. Dietary habits have not been studied. Taxonomy of this species may be problematic [Rainboth 1996]. Unique among pangasiid species in the Mekong in spending a major part of its life in marine coastal waters. Migrates into the Mekong River (but not into any other rivers) in order to breed [Roberts and Baird 1995]. Regarded to be anadromous [Roberts and Baird 1995]. It was hypothesized that at least two populations in the Mekong undertake migration [Sokheng 1999]. One population migrates during May-September from just south of Khone Falls upstream to spawning grounds along the mainstream Mekong all the way to Chiang Khong near the Lao-Thai-Myanmar border. The other population migrates downstream from around Stung Treng to unknown spawning grounds somewhere between Stung Treng and Kompong Cham in Cambodia during the spawning season between May and August. When

water level starts to fall in October, the fish moves back to the main river to initiate an upstream dispersal migration, reaching the stretch just below the Khone Falls. Stays in deep pools within the mainstream during the dry season [Sokheng 1999]. Only two specimens of the fish were collected on April 5, 1956 and September 10, 1957 in Beihai City, Guangxi [Wang 1998]. Another on November 22, 1963 at Shanwei City of Guangdong Province [Wang 1998]."

From Baird (2011):

"The species breeds every year, once they reach 1.5 to 2 kg (around one year). The average generation length is thought to be seven years."

Human Uses

From Baird (2011):

"This species is the fifth most common species in the wet season wing trap fishery at the Khone Falls in southern Lao PDR; it represents 5% of the catch by weight (Baird et al. 2004)"

"The species is an important food fish. Fresh and salted."

Diseases

No records of OIE-reportable diseases (OIE 2020) were found for *Pangasius krempfi*.

From Pariselle et al. (2002):

"The examination of gill parasites from *Pangasius krempfi* Roberts & Vidthayanon, 1991 ; […] (Siluriformes, Pangasiidae) in Southeast Asia revealed the presence of six species of Monogenea, all belonging to the genus *Thaparocleidus* Jain, 1952 (Monogenea, Ancylodiscoididae) as defined by Lim (1996) and Lim et al. (2001). One has been previously described (*T. vietnamensis* Pariselle et al., 2002), five are considered as new species: *T. humerus* n. sp. and *T. culter* n. sp. on *P. kunyit*; *T. mehurus* n. sp. and *J. culteroides* n. sp. on *P. sabahensis*; and *T. phuongi* n. sp. on the four studied host species."

Threat to Humans

From Froese and Pauly (2018):

"Harmless"

3 Impacts of Introductions

No records of introductions of *Pangasius krempfi* were found; therefore, there is no information on impacts of introductions.

4 History of Invasiveness

No records of introductions of *Pangasius krempfi* were found; therefore, the history of invasiveness is no known nonnative population.

5 Global Distribution

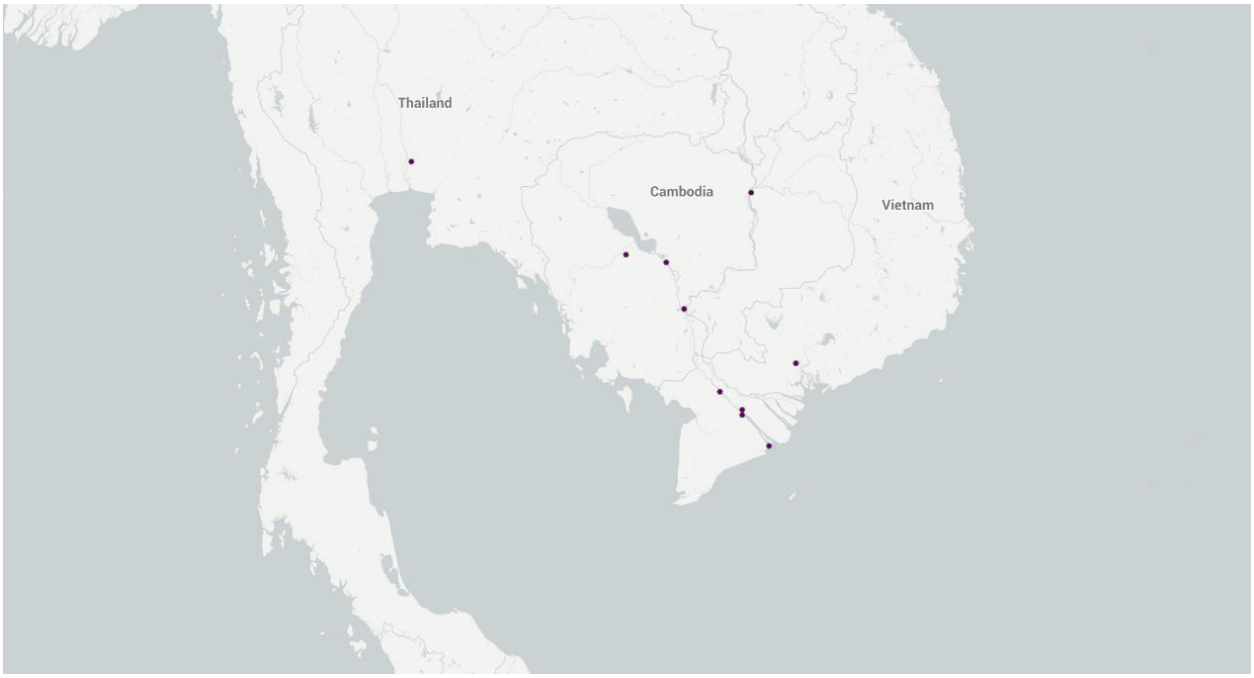


Figure 1. Known global distribution of *Pangasius krempfi*. Locations are in Thailand, Cambodia, and Vietnam. Map from GBIF Secretariat (2018). Only the freshwater range of this species was used to select the climate match source locations.

6 Distribution Within the United States

No records of *Pangasius krempfi* in the wild in the United States were found.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Pangasius krempfi* was generally low across the contiguous United States. There were areas of medium match in southern Florida and Texas. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for contiguous United States was 0.000, low (scores below 0.005 are considered low). All States had a low individual climate score. The climate match presented here refers only to where the species can survive in freshwater and brackish environments and not in marine environments.

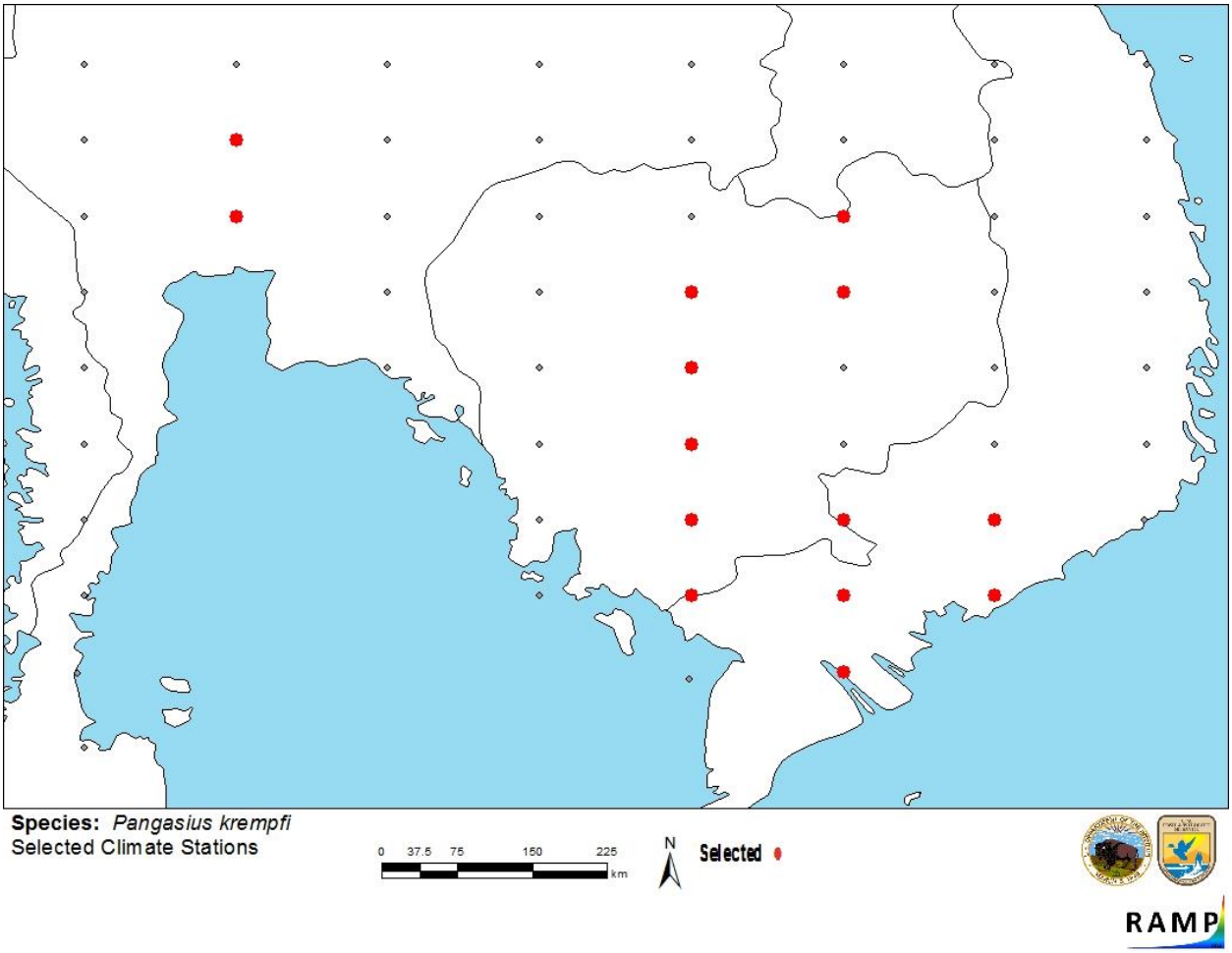


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in southeastern Asia selected as source locations (red; Thailand, Cambodia, Vietnam) and non-source locations (gray) for *Pangasius krempfi* climate matching. Source locations from GBIF Secretariat (2018). Selected source locations are within 100 km of one or more species occurrences and do not necessarily represent the locations of occurrences themselves.

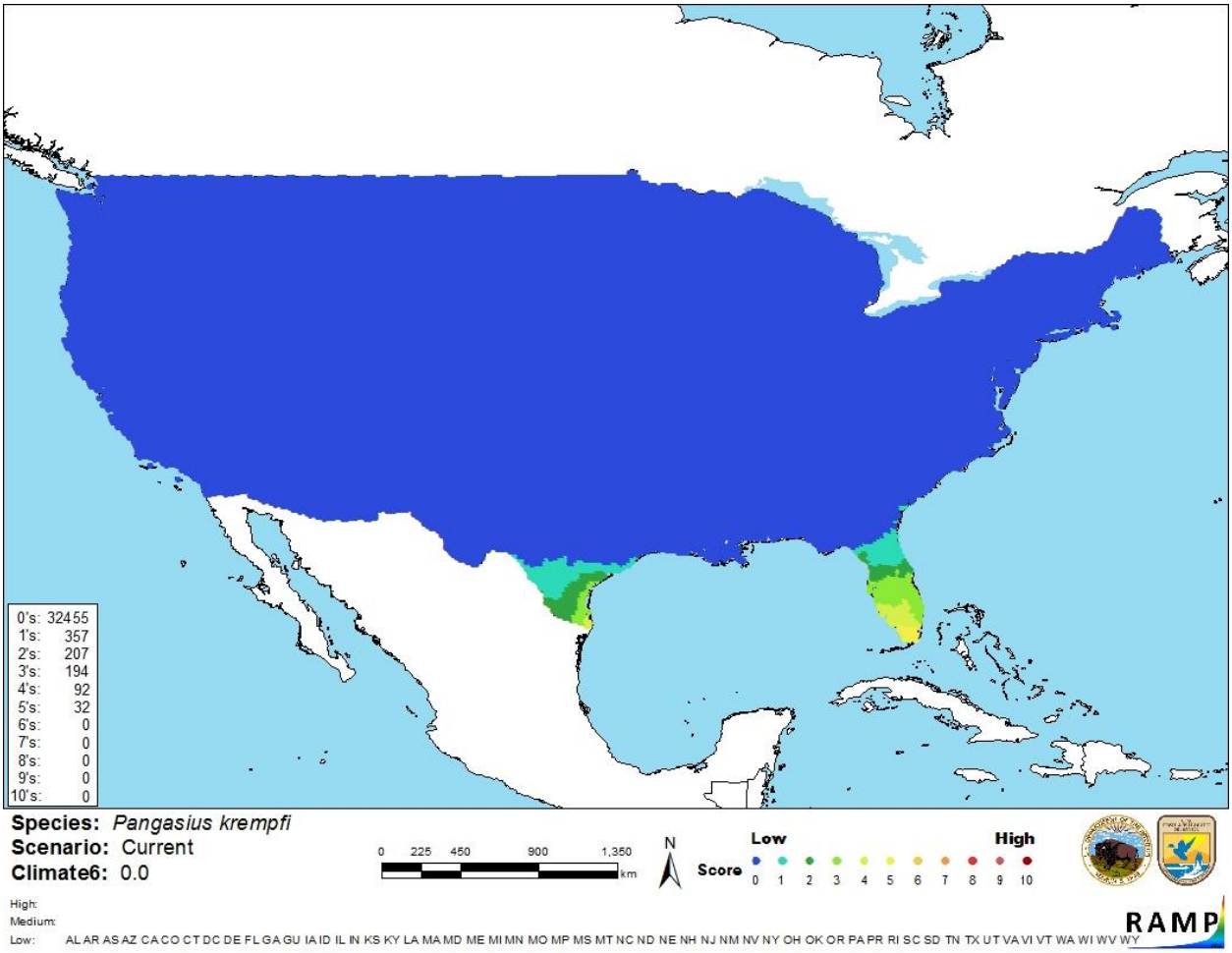


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Pangasius krempfi* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

The High, Medium, and Low Climate match Categories are based on the following table:

Climate 6: (Count of target points with climate scores 6-10)/ (Count of all target points)	Overall Climate Match Category
0.000≤X≤0.005	Low
0.005<X<0.103	Medium
≥0.103	High

8 Certainty of Assessment

The certainty of assessment is low. There was some general information about the species available from peer-reviewed sources. There were no records of introductions found and, therefore, there is no information on impacts available to evaluate.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Pangasius krempfi is a species of catfish native to southeastern China, Thailand, Cambodia, Laos, and Vietnam. This species is found in the Mekong River and coastal areas of the South China Sea. Only the freshwater range of this species was used for the climate match source locations. This species is used as a food fishery. There were no records of introductions to the wild found. Therefore, the history of invasiveness is no known nonnative population. The climate match was low. There were small areas of medium match in Florida and Texas. The certainty of assessment is low. The overall risk assessment is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Overall Climate Match Category (Sec. 7): Low**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks/Important additional information: No additional information**
- **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.

Baird I. 2011. *Pangasius krempfi*. The IUCN Red List of Threatened Species 2011: e.T181328A7668262. Available: http://www.iucnredlist.org/details/181328/0 (August 2018).

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[OIE] World Organisation for Animal Health. 2020. OIE-listed diseases, infections and infestations in force in 2020. Available: http://www.oie.int/animal-health-in-the-world/oie-listed-diseases-2020/ (April 2020).

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Sanders S, Castiglione C, Hoff M. 2018. Risk Assessment Mapping Program: RAMP. Version 3.1. U.S. Fish and Wildlife Service.

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.

Baird IG, Inthaphaisy V, Kisouvannalath P, Phylavanh B, Mounsouphom B. 1999. The fishes of southern Lao. Lao PDR: Ministry of Agriculture and Forestry. Lao Community Fisheries and Dolphin Protection Project.

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