

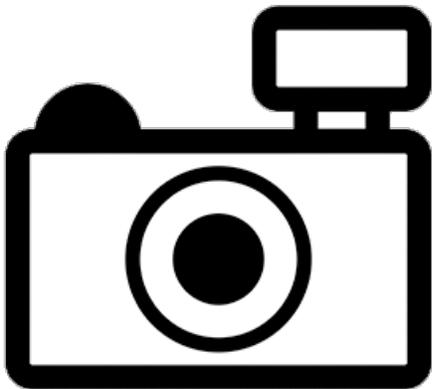
***Heteropneustes kemratensis* (a catfish, no common name)**

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, October 2016

Revised, December 2016

Web Version, 1/14/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

“Asia: Mekong, Chao Phraya and Tapi basins [Myanmar, Laos, and Thailand].”

Status in the United States

This species has not been reported as introduced or established in the U.S.

From FFWCC (2016):

“Prohibited nonnative species are considered to be dangerous to the ecology and/or the health and welfare of the people of Florida. These species are not allowed to be personally possessed or used for commercial activities. [...]

Freshwater Aquatic Species [...]

Airsac catfishes- Family Heteropneustidae [...]

Heteropneustes kemratensis”

Means of Introductions in the United States

This species has not been reported as introduced or established in the U.S.

Remarks

From Ratmuangkhwang et al. (2014):

“*H. kemratensis* (Fowler, 1937) was described based on specimens collected from Kemrat (=Khemarat) (the Mekong basin) of northeastern Thailand. The species was recognized as a synonym of *H. fossilis* by Smith (1945) and more recently followed by Menon (1999). Thus, the single widely distributed species *H. fossilis* has been conventionally used by many authors (e.g., Suvatti, 1950; Thiemmedh, 1968; Rainboth, 1996; Monkolprasit et al., 1997; Menon, 1999) until Kottelat (2001) reused both *H. fossilis* (for populations distributed from Myanmar to Pakistan and Sri Lanka) and *H. kemratensis* (for populations distributed in Thailand and Laos) without showing clear morphological evidence. However, although no study clearly diagnosing *H. kemratensis* from *H. fossilis* has been published so far, recently, *H. kemratensis* was recognized as valid by several workers (e.g., Ferraris, 2007; Kottelat, 2013; Hossain et al., 2013).”

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2016):

“Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Osteichthyes
Class Actinopterygii
Subclass Neopterygii
Infraclass Teleostei
Superorder Ostariophysii
Order Siluriformes
Family Heteropneustidae
Genus *Heteropneustes* Müller, 1840
Species *Heteropneustes kemratensis* (Fowler, 1937)”

“Current Standing: valid”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length: 27.0 cm SL male/unsexed; [Kottelat 2001]”

Environment

From Froese and Pauly (2016):

“Freshwater; demersal.”

From Termvidchakorn and Hortle (2013):

“It can tolerate slightly brackish water and is adapted to survive in oxygen-poor water.”

Climate/Range

From Froese and Pauly (2016):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2016):

“Asia: Mekong, Chao Phraya and Tapi basins [Myanmar, Laos, and Thailand].”

Introduced

This species has not been reported as introduced outside its native range.

Means of Introduction Outside the United States

This species has not been reported as introduced outside its native range.

Short Description

From Talwar and Jhingran (1992):

“In side-view torpedo-shaped. Mouth small, lips fleshy and papillated; teeth in villiform broad bands on jaws, in two oval patches on vomer. Dorsal fin short, inserted above tip of pectoral fins, without any spine. Anal fin long-based. Caudal fin almost rounded. Airbladder greatly reduced, consisting of two thin-walled pyriform sacs enclosed in incomplete bony capsules.”

From Fowler (1939):

“*H. kemratensis* appears to differ from *H. fossilis* (Bloch) chiefly in more anal rays (75 to 84).”

Biology

From Froese and Pauly (2016):

“Oviparous, distinct pairing possibly like other members of the same family [Breder and Rosen 1966]”

From Vidthayanon (2012):

“Found in marshland, floodplain and flooded forest swamps, including lower reach of the mainstreams rivers.”

From Termvidchakorn and Hortle (2013):

“A medium-sized carnivore which mainly occurs in stagnant water and swamp forest habitats; found mainly in ponds, ditches, swamps and marshes and sometimes in muddy rivers. [...] It is a predator of small fishes and insects. It breeds in small standing water bodies during the flood season, including ponds, derelict ponds and ditches.”

“Ovoid yolk-sac with homogenous yolk.”

“Starts feeding on zooplankton at 4.4–6.4 mm in length.”

Human Uses

From Vidthayanon (2012):

“Commonly consumed in Myanmar, locally consumed in southern Thailand, and have few cultured in ponds from wild collected fries. Frequently seen in aquarium trade, mostly exported from Myanmar.”

From Termvidchakorn and Hortle (2013):

“It can be caught with cast-nets and by dry pumping, but is rarely seen in markets. It can be kept alive out of water for long periods of time as long if the skin is kept damp. The demand of this species is great due to its medicinal value.”

Diseases

No information available.

Threat to Humans

From Froese and Pauly (2016):

“Harmless.”

3 Impacts of Introductions

No introductions of this species have been reported.

From FFWCC (2016):

“Prohibited nonnative species are considered to be dangerous to the ecology and/or the health and welfare of the people of Florida. These species are not allowed to be personally possessed or used for commercial activities. [...]

Freshwater Aquatic Species [...]

Airsac catfishes- Family Heteropneustidae [...]

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4 Global Distribution



Figure 1. Known global established location of *Heteropneustes kemratensis* in Thailand. Map from GBIF (2016). No georeferenced locations were available for other portions of the species global distribution.

5 Distribution Within the United States

This species has not been reported as introduced or established in the U.S.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was medium in small areas of southern Florida and southern Texas and low throughout the rest of the country. Climate 6 score indicated that the contiguous U.S. has a low climate match for *Heteropneustes kemratensis* with a score of 0.000. The range of scores indicating a low climate match is 0.000 to 0.005.



Figure 2. RAMP (Sanders et al. 2014) source map of Southeast Asia showing weather stations selected as source locations (red) in Thailand and non-source locations (gray) for *Heteropneustes kemratensis* climate matching. Source locations from GBIF (2016) and Fowler (1939).

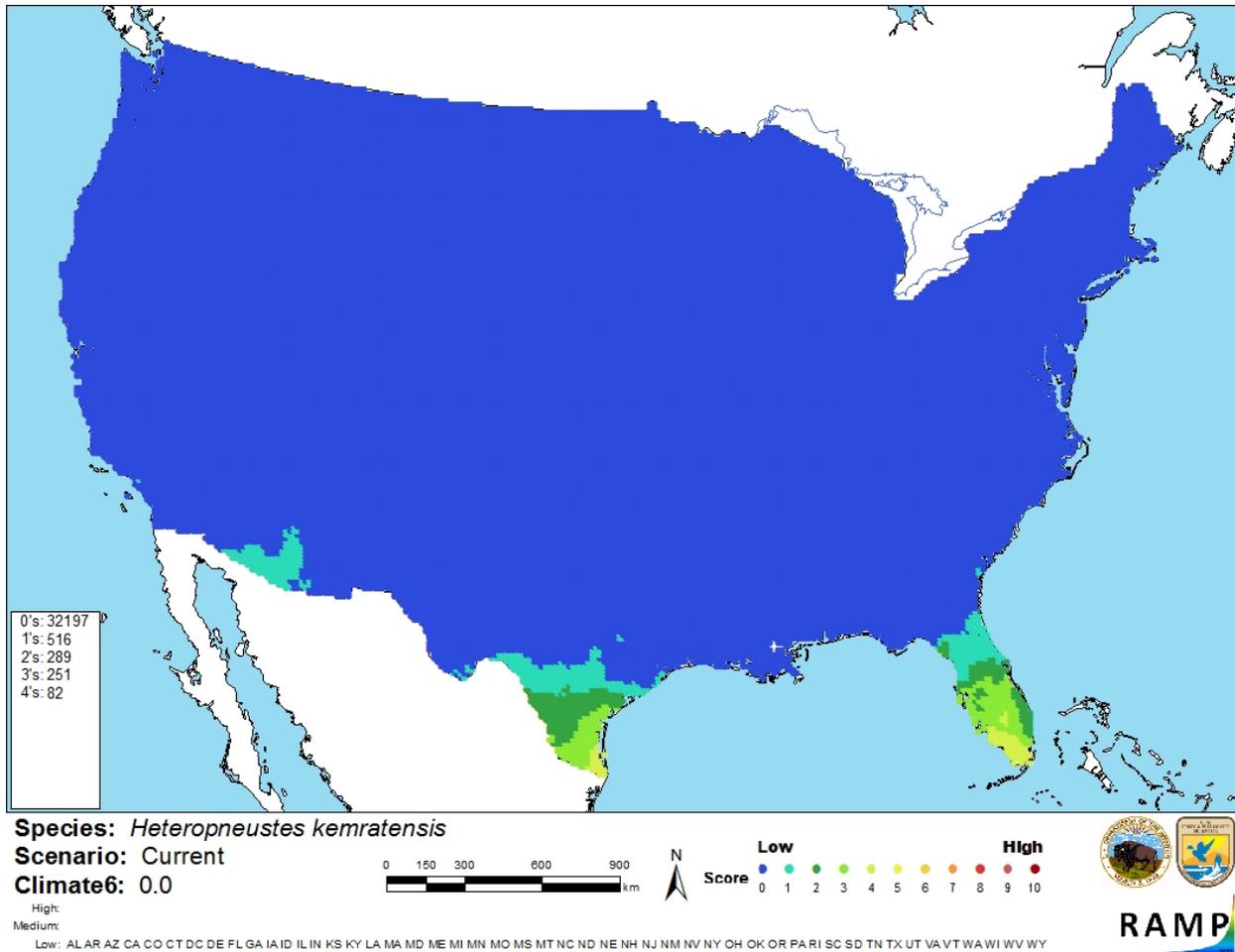


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Heteropneustes kemratensis* in the contiguous United States based on source locations reported by GBIF (2016) and Fowler (1939). 0= Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

The “High”, “Medium”, and “Low” climate match categories are based on the following table:

Climate 6: Proportion of (Sum of Climate Scores 6-10) / (Sum of total Climate Scores)	Climate Match Category
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

7 Certainty of Assessment

Little information is available on the biology and distribution of *H. kemratensis*, and the species has a history of taxonomic uncertainty. *H. kemratensis* has not been introduced outside its native range. Given the lack of information, the certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Heteropneustes kemratensis is a species of air sac catfish native to Thailand, Laos, and Myanmar. By virtue of its family affiliation, this species is included in the State of Florida's list of Prohibited Nonnative Wildlife. It has not been reported as introduced outside its native range, so the history of invasiveness is uncertain. Climate match to the contiguous United States is low. Overall risk posed by *H. kemratensis* is uncertain.

Assessment Elements

- **History of Invasiveness: Uncertain**
- **Climate Match: Low**
- **Certainty of Assessment: Low**
- **Overall Risk Assessment Category: Uncertain**

9 References

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 10.

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10 References Quoted But Not Accessed

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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