

Spinibarbus hollandi

Ecological Risk Screening Summary

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1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2015):

“Asia: Taiwan”

From The Anh (2012):

“The species is found in Lao PDR, Viet Nam (Kottelat 2001), southern China (Dong Jiang and Bei Jiang, Guangdong Province and Hainan Island; Kadoori Farm 2001, Tang et al. 2005, Li 2009), and Taiwan, Province of China.”

“The Taiwan population may be a separate species (Tang et al. 2004)”

From Shao (2017):

“Endemic in Taiwan.”

Tuan (2016) lists *Spinibarbus hollandi* as native to the Phong Nha – Ke Bang National Park in Viet Nam.

Status in the United States

No records of *Spinibarbus hollandi* in the United States were found.

Means of Introductions in the United States

No records of *Spinibarbus hollandi* in the United States were found.

Remarks

Eschmeyer et al. (2017) lists *Spinibarbus hollandi* as the senior synonym for *Spinibarbus elongatus* and *Barbodes elongatus*. Froese and Pauly (2015) also use this organization. ITIS (2017a,b) lists both *Spinibarbus hollandi* and *Barbodes elongatus* as valid species names. For the purposes of this assessment, *Spinibarbus hollandi* was treated as the senior synonym and *Barbodes elongatus* as a junior synonym. Information searches were conducted using both *Spinibarbus hollandi* and *Barbodes elongatus*.

The species *Spinibarbus hollandi* is listed as present only on Taiwan (Eschmeyer et al. 2017), or present on Taiwan and mainland Asia (Froese and Pauly 2015; GBIF Secretariat 2017), or with the Taiwanese population potentially being a separate species (The Anh 2012). In following the taxonomic treatment the assessment uses, the distribution was considered to include both Taiwan and mainland Asia.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From Eschmeyer et al. (2017):

“*elongatus*, *Spinibarbus* Oshima [M.] 1920:127, Pl. 4 (fig. 2) [Proceedings of the Academy of Natural Sciences of Philadelphia v. 72] Buraku River, Ako, Taiwan. Holotype: ANSP 49949. Type catalog: Böhlke 1984:75, Ho & Shao 2011:30. •Valid as *Spinibarbus elongatus* Oshima 1919 -- (Zhu 1995:51). •Valid as *Barbodes elongatus* (Oshima 1919) -- (Wu et al. 1977:255). •Synonym of *Spinibarbus hollandi* Oshima 1919 -- (Ho & Shao 2011:30, Zhang et al. 2016:104 [not in China]). **Current status:** Synonym of *Spinibarbus hollandi* Oshima 1919. Cyprinidae: Cyprininae.”

From ITIS (2017a):

“Kingdom Animalia
Subkingdom Bilateria

Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Osteichthyes
Class Actinopterygii
Subclass Neopterygii
Infraclass Teleostei
Superorder Ostariophysi
Order Cypriniformes
Superfamily Cyprinoidea
Family Cyprinidae
Genus *Barbodes*
Species *Barbodes elongatus* (Oshima, 1920)”

“Taxonomic Status:
Current Standing: valid”

From ITIS (2017b):

“Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Osteichthyes
Class Actinopterygii
Subclass Neopterygii
Infraclass Teleostei
Superorder Ostariophysi
Order Cypriniformes
Superfamily Cyprinoidea
Family Cyprinidae
Genus *Spinibarbus*
Species *Spinibarbus hollandi* Oshima, 1919”

“Taxonomic Status:
Current Standing: valid”

Size, Weight, and Age Range

From Froese and Pauly (2015):

“Max length: 34.0 cm TL male/unsexed; [Ho and Shao 2011]”

Environment

From Froese and Pauly (2015):

“Freshwater; benthopelagic; depth range 2 - 30 m [Shao and Lim 1991].”

Climate/Range

From Froese and Pauly (2015):

“Subtropical”

Distribution Outside the United States

Native

From Froese and Pauly (2015):

“Asia: Taiwan”

From The Anh (2012):

“The species is found in Lao PDR, Viet Nam (Kottelat 2001), southern China (Dong Jiang and Bei Jiang, Guangdong Province and Hainan Island; Kadoori Farm 2001, Tang et al. 2005, Li 2009), and Taiwan, Province of China.”

“The Taiwan population may be a separate species (Tang et al. 2004)”

From Shao (2017):

“Endemic in Taiwan.”

Tuan (2016) lists *Spinibarbus hollandi* as native to the Phong Nha – Ke Bang National Park in Viet Nam.

Introduced

No records of *Spinibarbus hollandi* introductions were found.

Means of Introduction Outside the United States

No records of *Spinibarbus hollandi* introductions were found.

Short Description

From Shao (2017):

“Head moderately large, slightly pointed. Snout blunt, protractile. Eye small, on upper side of head. Mouth slightly oblique; posterior end of upper jaw reaches anterior margin of eye; two pairs of barbels, maxillary barbels longer than mandibular barbels at corner of mouth. Body elongated, cylindrical, posterior laterally compressed, belly rounded; dorsal profile slightly

arched. Scales large, cycloid; lateral line complete. L.1. : 26-28; dorsal fin rays : 3+8, with a forward directed spine in front of dorsal fin origin covered by scales; pelvic fin rays : 1+8; anal fin rays : 3+5. Dorsal fin origin in front of pelvic fin origin; pectoral fin end distant from pelvic fin origin; pectoral and pelvic fins at lower side of body; caudal fin forked. Olive grayish dorsally, side and belly silvery white. Paired fins orange in the young, and turn to grayish when grow up; dark margin on dorsal, caudal and anal fins.”

Biology

Froese and Pauly (2015) list aquatic insects, shrimps, and small fishes as food items for *Spinibarbus hollandi*.

From The Anh (2012):

“Lives in streams with fast flowing, clear, open water in larger rivers. They can also survive in reservoirs and ponds. They start developing in the third year and spawn in clear, open water, among gravel substrate.”

Human Uses

From The Anh (2012):

“The fishery harvest of the species was second to the common carp before the 1970’s in the Lijiang basin, but it decreased sharply in recent years due to over fishing (Li et al. 2009). In Hainan, the species is becoming rare due to overfishing (Kadoorie 2001). It is also declining in Viet Nam.”

“The species has a high economic value as a food fish and is the main commercial fish in the Lijiang River.”

From Shao (2017):

“Popular with angling and aquarium. Large in size, potential aquaculture species.”

Diseases

No records of OIE reportable diseases were found.

Poelen et al. (2014) list *Dactylogyrus simiae*, *D. longquaniensis*, *D. aciculus*, *Hexaspiron spinibarbi*, *Potamogenes schistorchis*, and *Rhadinorhynchus cyprinid* (Strona et al. 2013) as parasites of *Spinibarbus hollandi*.

Threat to Humans

From Froese and Pauly (2015):

“Harmless”

3 Impacts of Introductions

No records of *Spinibarbus hollandi* introductions were found.

4 Global Distribution

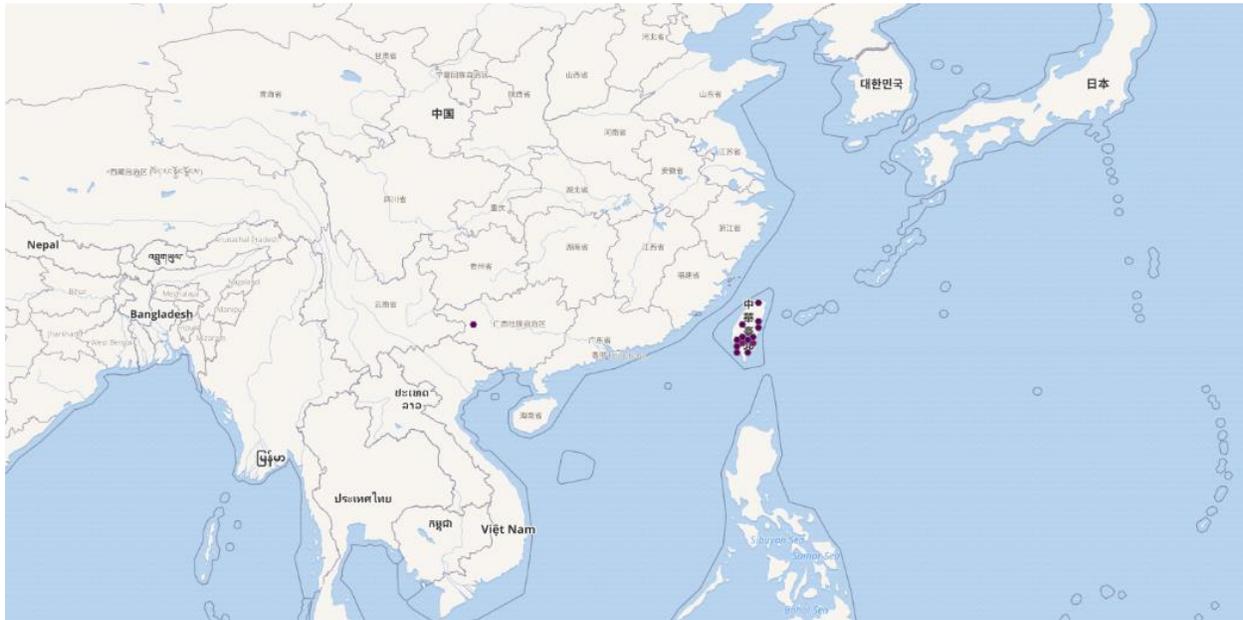


Figure 1. Known global distribution of *Spinibarbus hollandi*. Locations are in Taiwan and southern China. Map from GBIF Secretariat (2017).



Figure 2. Known global distribution of *Spinibarbus hollandi*. Locations are in Taiwan and southern China. Map from Froese and Pauly (2015).

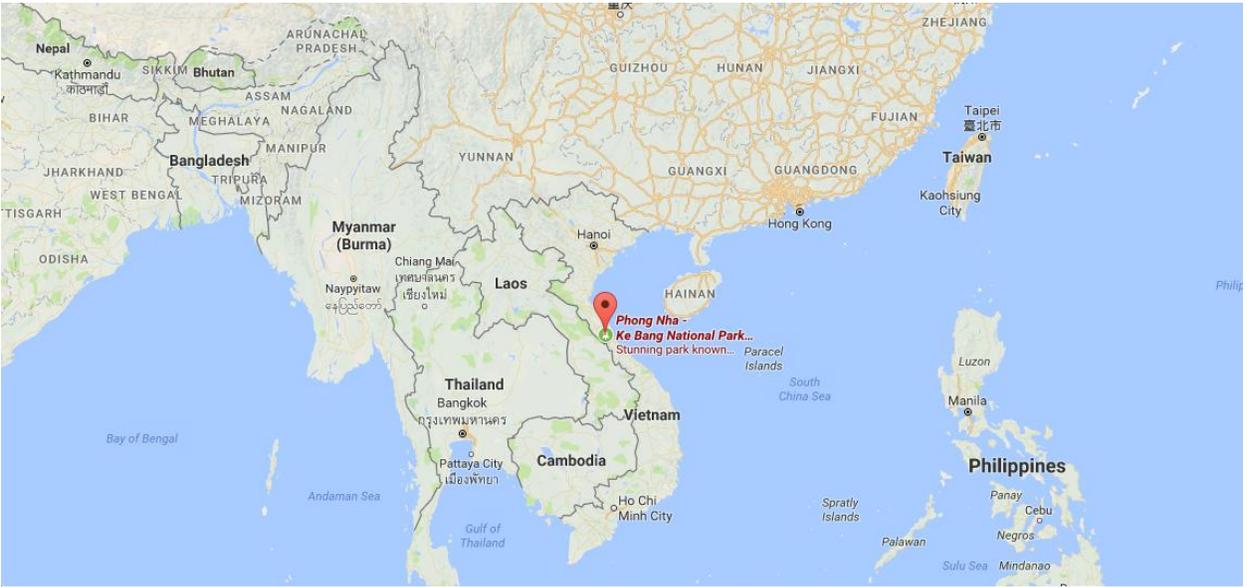


Figure 3. Location of Phong Nha – Ke Bang National Park. Tuan (2016) lists *Spinibarbus hollandi* as native to the Phong Nha – Ke Bang National Park in Viet Nam. Map from Google Maps (2017).

5 Distribution Within the United States

No records of *Spinibarbus hollandi* in the United States were found.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Spinibarbus hollandi* was high in southern Florida and medium for the rest of Florida, the Gulf Coast, and the coastal zones of the Southeast. The climate match was low everywhere else. The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous U.S. was 0.015, medium, and Florida had an individually high Climate 6 score.

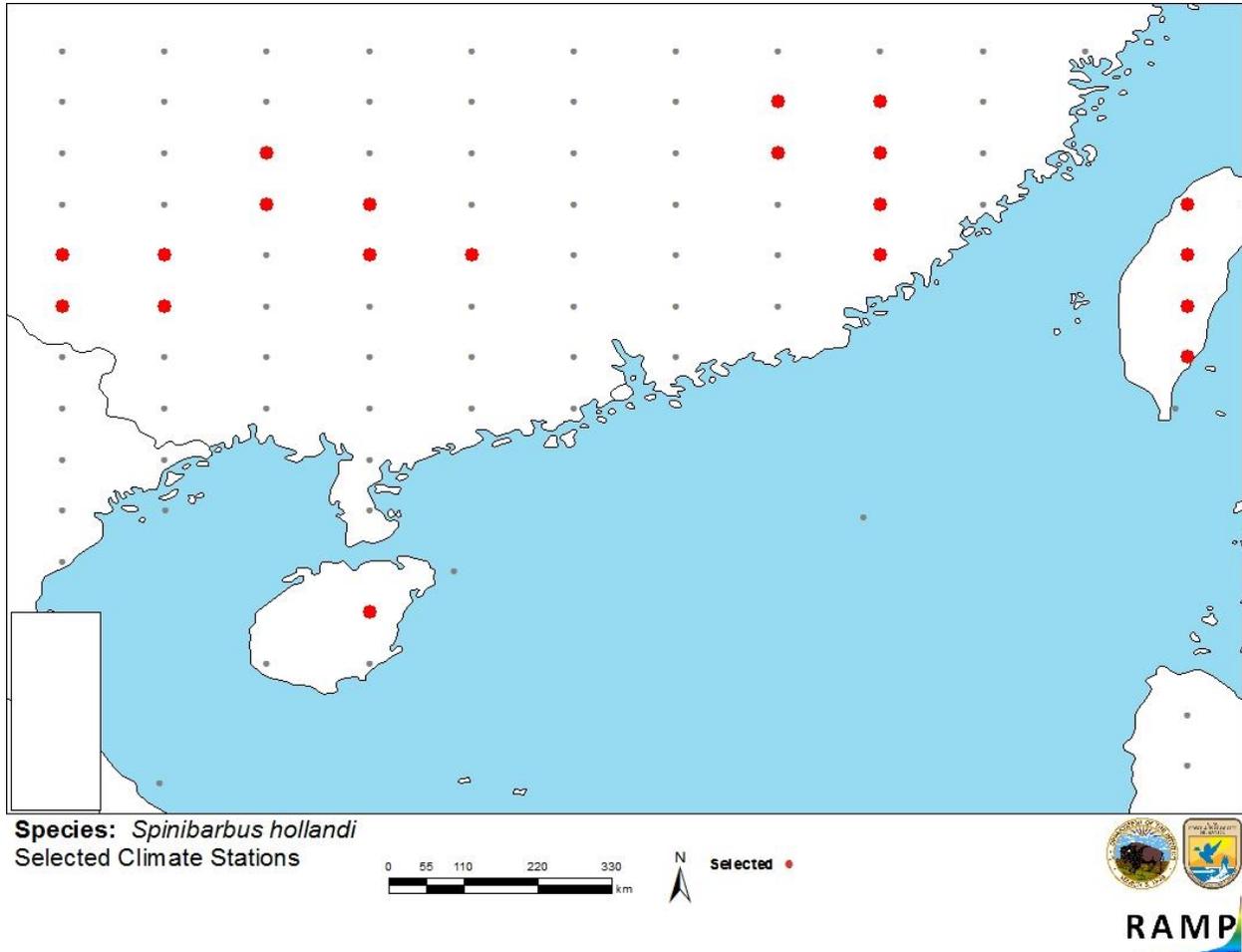


Figure 4. RAMP (Sanders et al. 2014) source map showing weather stations in southern China and Taiwan selected as source locations (red) and non-source locations (gray) for *Spinibarbus hollandi* climate matching. Source locations from Froese and Pauly (2015), Tuan (2016), and GBIF Secretariat (2017).

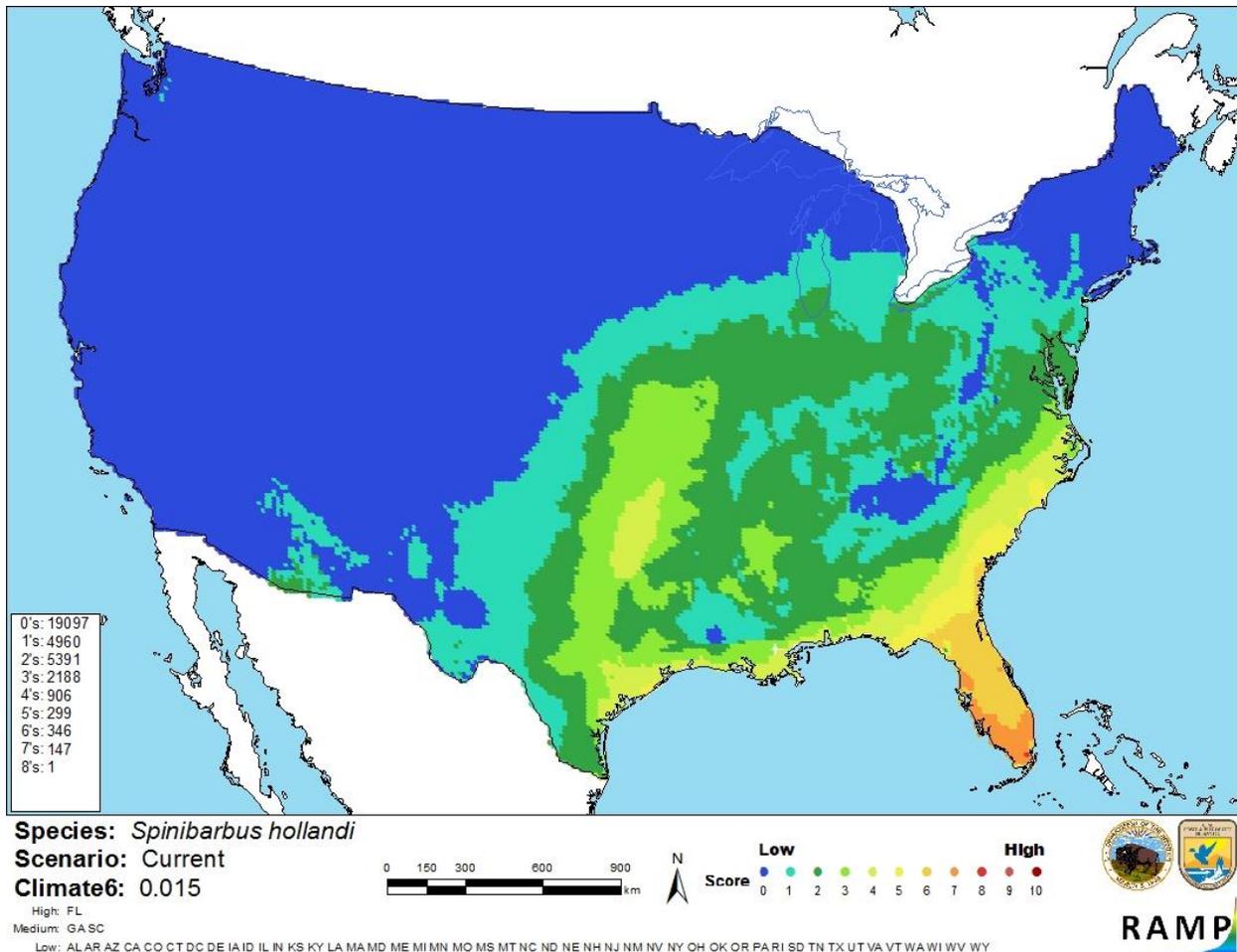


Figure 5. Map of RAMP (Sanders et al. 2014) climate matches for *Spinibarbus hollandi* in the contiguous United States based on source locations reported by Froese and Pauly (2015), Tuan (2016), and GBIF Secretariat (2017). 0 = Lowest match, 10 = Highest match.

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

The certainty of this assessment is low. There was adequate biological and ecological information available for *Spinibarbus hollandi*. No records of introductions were found. The primary factor in the low certainty of assessment is the conflicting information about the exact taxonomic status of the species and if there may be more than one species grouped under this name at the time of assessment.

8 Risk Assessment

Summary of Risk to the Contiguous United States

The history of invasiveness is uncertain. No records of *Spinibarbus hollandi* introductions were found. The climate match is medium; the Climate 6 score was 0.015. The certainty of assessment is low. There is conflicting information about the exact taxonomic status of the species and uncertainty if there may be more than one species grouped under this name at the time of assessment. The overall risk assessment category is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Medium**
- **Certainty of Assessment (Sec. 7): Low**
- **Remarks/Important additional information:** No additional remarks
- **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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