

Flying Fox (*Epalzeorhynchos kalopterus*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, June 2012

Revised, November 2016

Web Version, 2/4/2019



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<http://fishbase.org/photos/UploadedBy.php?autoctr=22725&win=uploaded>.

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

“Asia: lower half of the Malayan/Thailand peninsula, Borneo, Java and Sumatra in Indonesia.”

Status in the United States

This species has not been reported as introduced or established in the United States. However, it is available for sale from U.S.-based aquarium retailers. For example, Arizona Aquatic Gardens

(2019) lists the species for sale for \$5.88 per individual, and World Wide Fish and Pets (2018) lists the species for sale for \$3.49 per individual.

Means of Introduction into the United States

This species has not been reported as introduced or established in the United States.

Remarks

From NatureWatchNZ (2016):

“The flying fox is similar to the Siamese algae eater (*Crossocheilus oblongus*) and the false flying fox (*Garra cambodgiensis*) when young. [Anonymous 2008]”

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 Ostariophysi
Order Cypriniformes
Superfamily Cyprinoidea
Family Cyprinidae
Genus *Epalzeorhynchus* Bleeker, 1855
Species *Epalzeorhynchus kalopterus* (Bleeker, 1851)”

“Current Standing: valid”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length : 16.0 cm TL male/unsexed; [Kottelat et al. 1993]”

Environment

From Froese and Pauly (2016):

“Freshwater; demersal; pH range 6.5 – 7.0; dH range: 5 – 8.”

Climate/Range

From Froese and Pauly (2016):

“Tropical; 24°C - 26°C [Riehl and Baensch 1991; assumed to represent recommended aquarium water temperature]”

Distribution Outside the United States

Native

From Froese and Pauly (2016):

“Asia: lower half of the Malayan/Thailand peninsula, Borneo, Java and Sumatra in Indonesia.”

Introduced

From Froese and Pauly (2016):

“To: Philippines

From: Unknown

Established in the wild: unknown”

According to Xiong et al. (2015), *E. kalopterus* has been introduced to China through the aquarium trade, but its current status in China is unknown (Mu et al. 2008).

Means of Introduction Outside the United States

From Froese and Pauly (2016):

“Reason: ornamental”

Short Description

From NatureWatchNZ (2016):

“The flying fox fish has a characteristic long body with a flat abdominal area. Its dorsal area has a coloration ranging from olive to dark brown. The lower half of its body has a yellowish white hue. A brownish-black line is apparent from its mouth, eye and the caudal fins. On top of this brownish-black line is a gold-colored stripe. The eyes of a flying fox may have a reddish iris. Its dorsal, anal and ventral finnage consisting [sic] of a black band and a white edge. [Butler 2006; Froese and Pauly 2014]”

Biology

From Froese and Pauly (2016):

“Commonly collected from the lower surface of floating objects such as boats and floating houses [Kottelat and Widjanarti 2005]. Feeds on worms, crustaceans, insects and plant matter [Mills and Vevers 1989].”

From Vidthayanon (2012):

“Habitat and Ecology: Rivers and hill streams. Has most often been observed grazing sandy or rocky substrates in streams and rivers and is known to move into seasonally inundated floodplains or forested areas during the wet season. It is these migratory patterns that are thought to have been disrupted by human development (Seriously Fish 2011).”

Human Uses

From Froese and Pauly (2016):

“Aquarium: highly commercial.”

E. kalopterus is available for sale from U.S.-based aquarium retailers. For example, Arizona Aquatic Gardens (2019) lists the species for sale for \$5.88 per individual, and World Wide Fish and Pets (2018) lists the species for sale for \$3.49 per individual.

Diseases

No information available.

Threat to Humans

From Froese and Pauly (2016):

“Harmless.”

3 Impacts of Introductions

No information available.

4 Global Distribution



Figure 1. Known global established locations of *Epalzeorhynchus kalopterus*. Map from GBIF (2016). Location in Australia does not represent an established population and was not included in climate matching analysis.

5 Distribution within the United States

This species has not been reported in the United States.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was low throughout the contiguous United States. Highest match was located in southern Florida and coastal Louisiana. Climate 6 match indicated that the contiguous United States has a low climate match. The scores indicating a low climate match are those less than or equal to 0.005; climate match of *Epalzeorhynchus kalopterus* was 0.0.

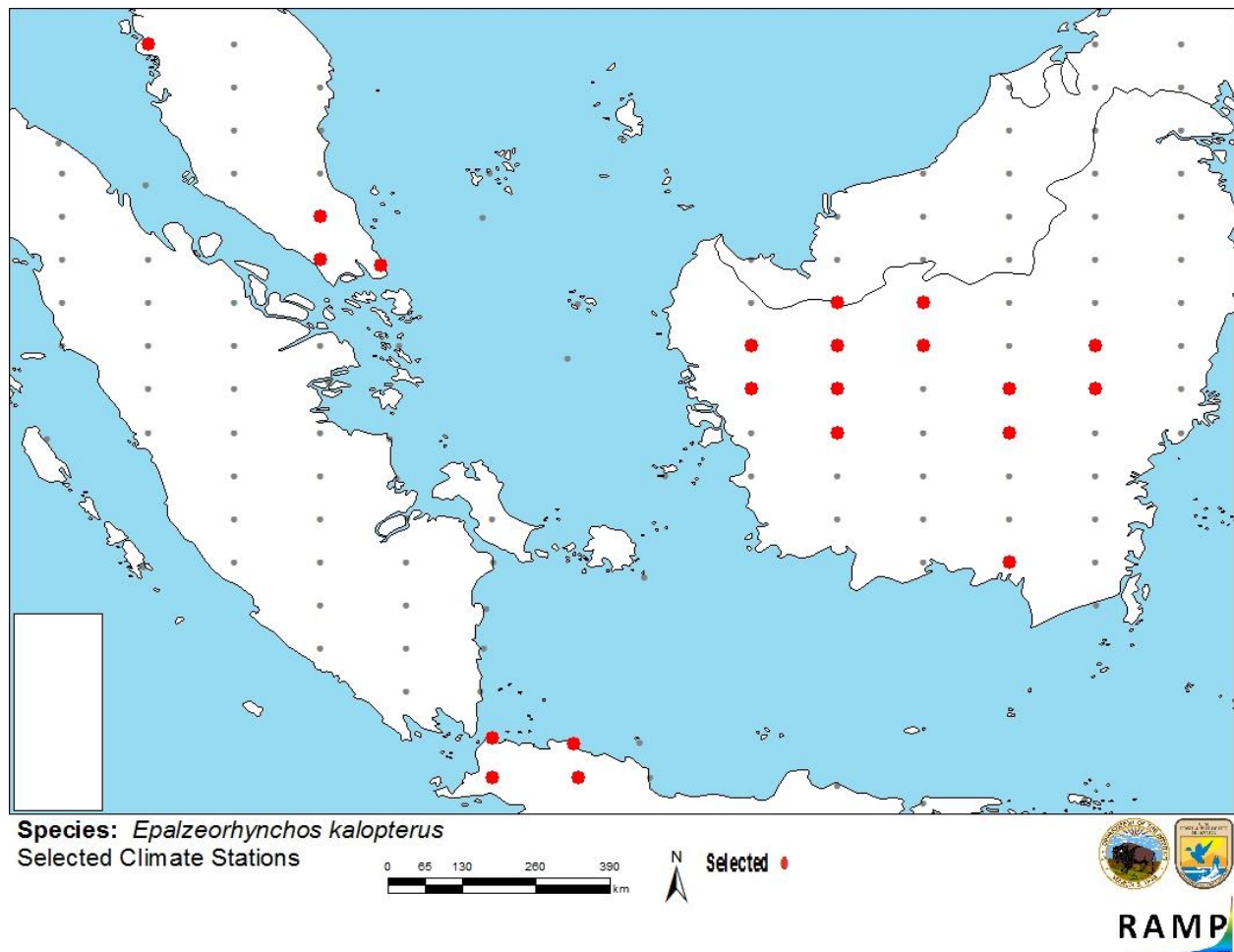


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; southern Malaysia, western Indonesia—Borneo and Java) and non-source locations (gray) for *Epalzeorhynchus kalopterus* climate matching. Source locations from GBIF (2016); location in Australia was excluded from climate matching because it does not represent an established population.

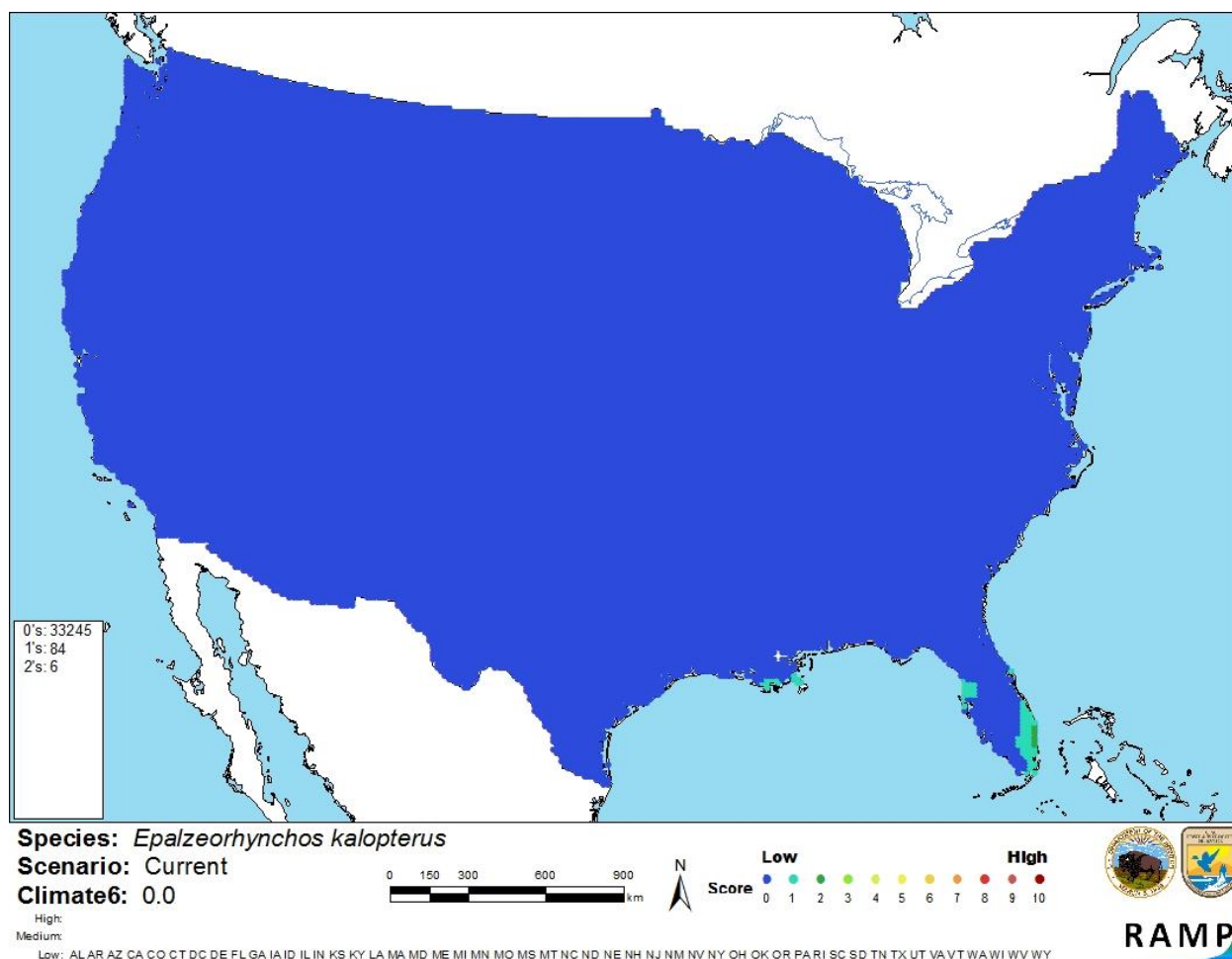


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Epalzeorhynchus kalopterus* in the contiguous United States based on source locations reported by GBIF (2016). 0=Lowest match, 10=Highest match.

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

Little information is available on the biology, ecology, and distribution of *E. kalopterus*. The species has been introduced to two countries outside the native range, but establishment has not been verified. No information is available on impacts of introduction. Certainty of assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Epalzeorhynchus kalopterus is a cyprinid fish native to Southeast Asia. It is popular in the aquarium trade, including in the United States. No establishment outside its native range has been confirmed, so the history of invasiveness is uncertain. Very little information is available on the biology and ecology of this species. Climate match to the contiguous United States is low. Overall risk posed by *E. kalopterus* 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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