

Butterfly Loach (*Beaufortia leveretti*)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, June 2014

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Photo: Grégoire Germeau. Licensed under Creative Commons BY. Available:
<http://www.fishbase.org/photos/UploadedBy.php?autoctr=16981&win=uploaded>. (March 2016).

1 Native Range and Status in the United States

Native Range

From Huckstorf and Freyhof (2012):

“This species has an East Asia distribution. It is known from Red River and Pearl Rivers in China and Viet Nam (Chu et al. 1990; Kottelat 2001), and Hainan island (Zheng 1991).”

Status in the United States

There were no records of *Beaufortia leveretti* in the United States found.

Means of Introductions in the United States

There were no records of *Beaufortia leveretti* in the United States found.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Eschmeyer et al. (2016), *Beaufortia leveretti* (Nichols & Pope 1927) is the valid name for this species. *B. leveretti* was originally described as *Gastromyzon leveretti* Nichols & Pope 1927.

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 Cobitoidea
Family Balitoridae
Subfamily Balitorinae
Genus *Beaufortia*
Species *Beaufortia leveretti* (Nichols and Pope, 1927)”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length: 12.0 cm TL male/unsexed; (Baensch and Riehl 1995); common length: 5.0 cm SL male/unsexed; [Nichols 1943]”

Environment

From Huckstorf and Freyhof (2012):

“They live in fast flowing open water. Inhabits mountain streams with gravel bottom (Hwang et al. 1988).”

From Froese and Pauly (2016):

“Freshwater; demersal. [...]; 18°C - 24°C [assumed to be recommended aquarium temperature] [Baensch and Riehl 1995]”

Climate/Range

From Froese and Pauly (2016):

“Tropical; [...]”

Distribution Outside the United States

Native

From Huckstorf and Freyhof (2012):

“This species has an East Asia distribution. It is known from Red River and Pearl Rivers in China and Viet Nam (Chu et al. 1990; Kottelat 2001), and Hainan island (Zheng 1991).”

Introduced

No records of introductions of *Beaufortia leveretti* were found.

Means of Introduction Outside the United States

No records of introductions of *Beaufortia leveretti* were found.

Short Description

A short description of *Beaufortia leveretti* could not be found.

Biology

Information on the biology of *Beaufortia leveretti* could not be found.

Human Uses

From Huckstorf and Freyhof (2012):

“This species is utilized as part of local subsistence fisheries (M. Kottelat pers. comm. 2011). It is also harvested for the aquarium trade.”

Diseases

No records of OIE reportable diseases found.

From Froese and Pauly (2016):

“Sporozoa-infection (*Myxobolus* sp.), Parasitic infestations (protozoa, worms, etc.)
Metacercaria Infection (Flatworms), Parasitic infestations (protozoa, worms, etc.)
Bacterial Infections (general), Bacterial diseases
Velvet Disease 2 (*Piscinoodinium* sp.), Parasitic infestations (protozoa, worms, etc.)”

Threat to Humans

From Froese and Pauly (2016):

“Harmless”

3 Impacts of Introductions

No records of introductions of *Beaufortia leveretti* were found.

4 Global Distribution



Figure 1. Known global distribution of *Beaufortia leveretti*. Locations are in China. Map from GBIF Secretariat (2014).

5 Distribution Within the United States

There were no records of *Beaufortia leveretti* in the United States found.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Beaufortia leveretti* was medium in Florida and along the southern Atlantic Coast. The climate match was low to medium for most of the east and low for the west. The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous United States was 0.007, medium, and Florida had a high individual climate score.

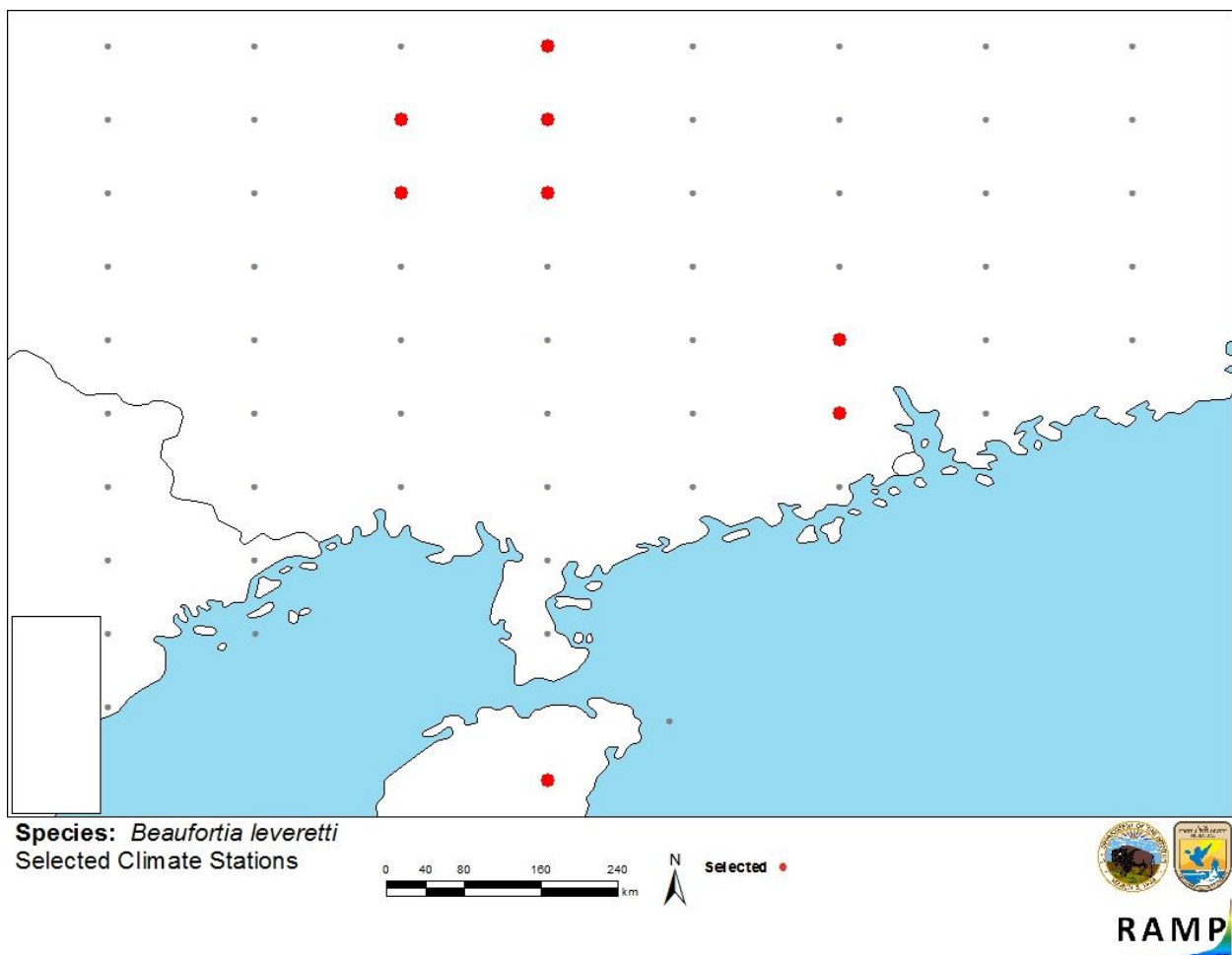


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; China) and non-source locations (gray) for *Beaufortia leveretti* climate matching. Source locations from GBIF Secretariat (2014).

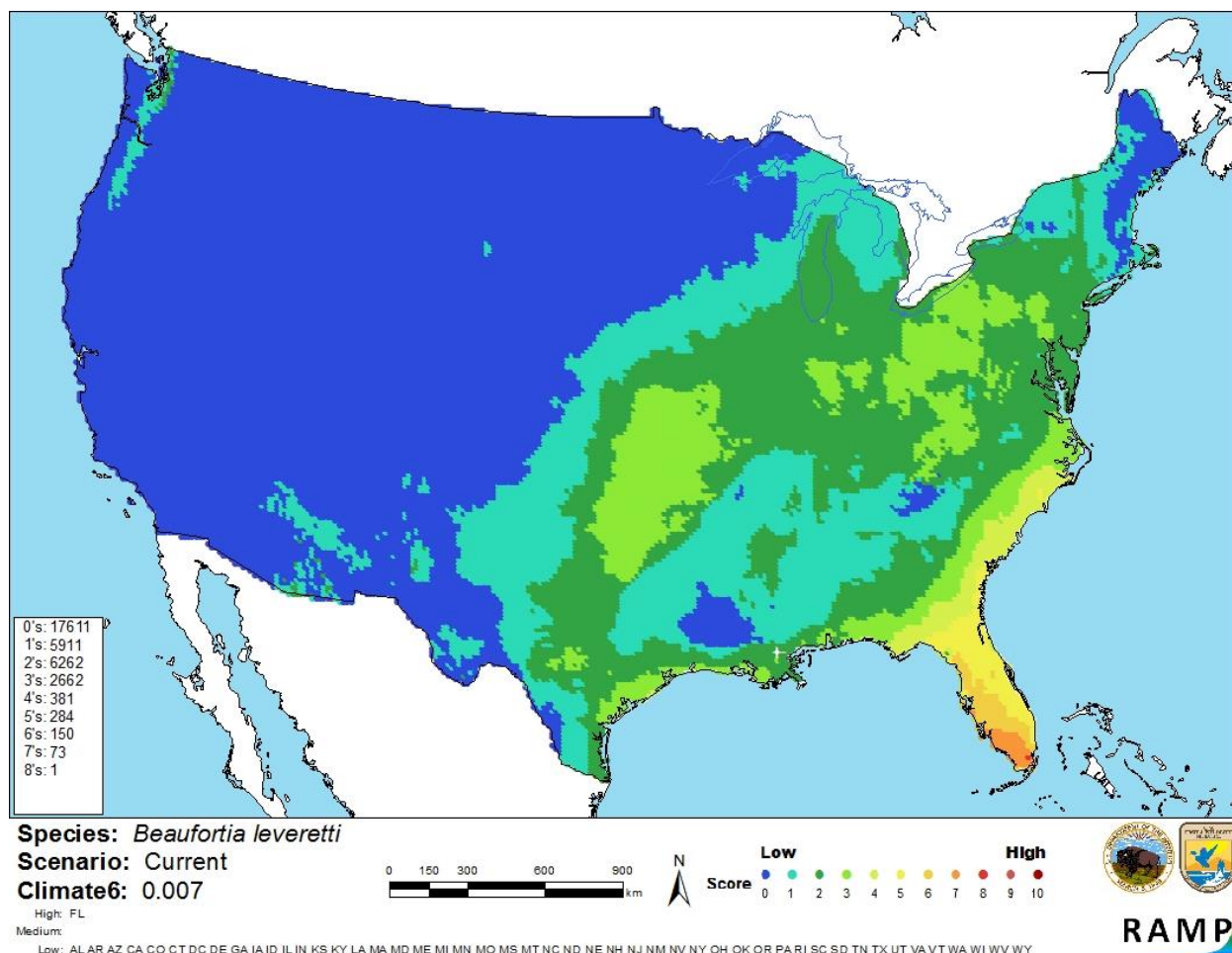


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Beaufortia leveretti* in the contiguous United States based on source locations reported by GBIF Secretariat (2014). 0 = Lowest match, 10 = Highest match. Counts of climate match scores are tabulated on the left side of the map.

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. Minimal information about *Beaufortia leveretti* was available. No records of introduction were found.

8 Risk Assessment

Summary of Risk to the Contiguous United States

The history of invasiveness for *Beaufortia leveretti* is uncertain. No records of introductions were found. The climate match is medium with a small patch of high match in southern Florida. The certainty of assessment is low. The overall risk assessment category is uncertain. There is no recorded history of invasiveness but according to the climate match there are areas in the country that could support a population of *Beaufortia leveretti*.

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.

- Eschmeyer, W. N., R. Fricke, and R. van der Laan, editors. 2016. Catalog of fishes: genera, species, references. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (March 2016).
- Froese, R., and D. Pauly, editors. 2016. *Beaufortia leveretti* (Nichols & Pope, 1927). FishBase. Available: <http://www.fishbase.us/summary/Beaufortia-leveretti.html>. (March 2016).
- GBIF Secretariat. 2014. GBIF backbone taxonomy: *Beaufortia leveretti* (Nichols & Pope, 1927). Global Biodiversity Information Facility, Copenhagen. Available: <http://www.gbif.org/species/5205365>. (June 2014).
- Huckstorf, V., and J. Freyhof. 2012. *Beaufortia leveretti*. The IUCN Red List of Threatened Species 2012: e.T166907A1150567. Available: <http://www.iucnredlist.org/details/full/166907/0>. (March 2016).
- ITIS (Integrated Taxonomic Information System). 2016. *Beaufortia leveretti* (Nichols & Pope, 1927). Integrated Taxonomic Information System, Reston, Virginia. Available: http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=639789. (March 2016).
- Sanders, S., C. Castiglione, and M. Hoff. 2014. Risk assessment mapping program: RAMP. U.S. Fish and Wildlife Service.

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.

Baensch, H. A., and R. Riehl. 1995. Aquarien atlas. Band 4. Mergus Verlag GmbH, Verlag für Natur-und Heimtierkunde, Melle, Germany.

Chu et al. 1990. [Source material did not give full citation for this reference.]

Hwang, H. C., I. Y. Chen, and P. C. Yueh. 1988. The freshwater fishes of China in colored illustrations, volume 2. Shanghai Sciences and Technology Press, Shanghai, China.

Kottelat, M. 2001. Freshwater fishes of northern Vietnam. A preliminary check-list of the fishes known or expected to occur in northern Vietnam with comments on systematics and nomenclature. The World Bank, Washington D.C.

Nichols, J. T. 1943. The freshwater fishes of China. Natural history of central Asia: volume IX. The American Museum of Natural History, New York.

Nichols, J. T., and C. H. Pope. 1927. The fishes of Hainan. Bulletin of the American Museum of Natural History 54(2):321–394.

Zheng, C.-Y. 1991. Gastromyzonidae. In J.-H. Pan, L. Zhong, C.-Y. Zheng, H.-L. Wu, and J. H. Liu, editors. The freshwater fishes of Guangdong Province. Guangdong Science and Technology Press, Guangzhou, China.