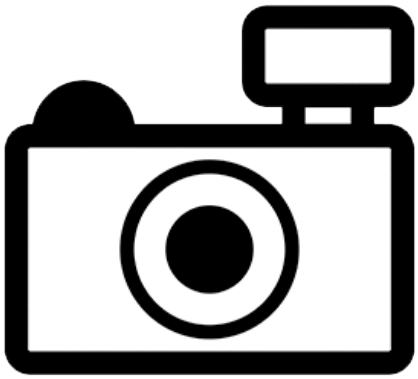
Striped Bystranka (*Alburnoides taeniatus*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, March 2011
Revised, May 2018
Web Version, 6/22/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2012):

"Former USSR [Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan; also Afghanistan]: Amu-Darya, Zeravshan, Syr-Darya and Chu River."

Status in the United States

This species has not been reported as introduced or established in the United States. No documentation was found of trade in this species in the United States.

Means of Introductions in the United States

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

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2012):

"Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Ostariophysi
Order Cypriniformes
Superfamily Cyprinoidea
Family Cyprinidae
Genus *Alburnoides*
Species *Alburnoides taeniatus* (Kessler, 1874)"

"Taxonomic current standing: Valid."

Size, Weight, and Age Range

From Froese and Pauly (2012):

"Max length : 9.0 cm TL male/unsexed; [Berg 1964]"

Environment

From Froese and Pauly (2012):

"Benthopelagic; freshwater; pH range: 7.0 - 7.7; dH range: 20 - ?. […] 10°C - 20°C [Baensch and Riehl 1985]" (presumed to be aquarium temperature)

Climate/Range

From Froese and Pauly (2010):

"Temperate; […]"

Distribution Outside the United States

Native

From Froese and Pauly (2012):

"Former USSR [Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan; also Afghanistan]: Amu-Darya, Zeravshan, Syr-Darya and Chu River."

Introduced

Froese and Pauly (2012) report that *A. taeniatus* is introduced and established in Kyrgyzstan. Mikkola (2012) also reports that *A. taeniatus* is established in Issyk-Kul Lake, Kyrgyzstan.

From Jouladeh-Roudbar et al. (2016):

"This species has been now found in the Iranian part of the Hari River basin during an expedition in July 2016 showing its presence in the Iranian freshwater that is reported for first time in this study."

Means of Introduction Outside the United States

From Froese and Pauly (2010):

"Unknown"

From Jouladeh-Roudbar et al. (2016):

"Aquaculture, control of malaria, and accidental introduction can be the main reasons for these introductions [Esmaeli et al. 2007; Esmaeli et al. 2010]."

Short Description

Jouladeh-Roudbar et al (2016) reports that the Total length ranges from 47-61mm, Anal fin branched rays (11), Dorsal fin branched rays (8-9), Pectoral fin branched rays (10-12), Pelvic fin branched rays (7) and Total lateral line scales (41-42).

Biology

From Froese and Pauly (2010):

"Feeds on insect larvae. Oviparous [Breder and Rosen 1966]."

Human Uses

From Froese and Pauly (2010):

"Aquarium: commercial"

Diseases

Scholz et al. (2004) report *A. taeniatus* as a host for the tapeworms *Neogryporhynchus cheilancristrotus* and *Valipora campylancristrota*.

No OIE reportable diseases have been documented in this species.

Threat to Humans

From Froese and Pauly (2010):

"Harmless."

3 Impacts of Introductions

From Sarieva et al. (2008):

"In Lake Issyk Kul [Kyrgyzstan], introduced trout and especially pikeperch have preyed heavily on populations of indigenous fish species and caused severe declines in stock sizes of several of them. Serious damage has also been caused through the accidental introduction of ide, striped riffle minnow (*Alburnoides taeniatus*) and other species of low commercial value that eat spawn and otherwise harm the endemic fishes."

4 Global Distribution

No georeferenced occurrences were found for this species (GBIF Secretariat 2017).

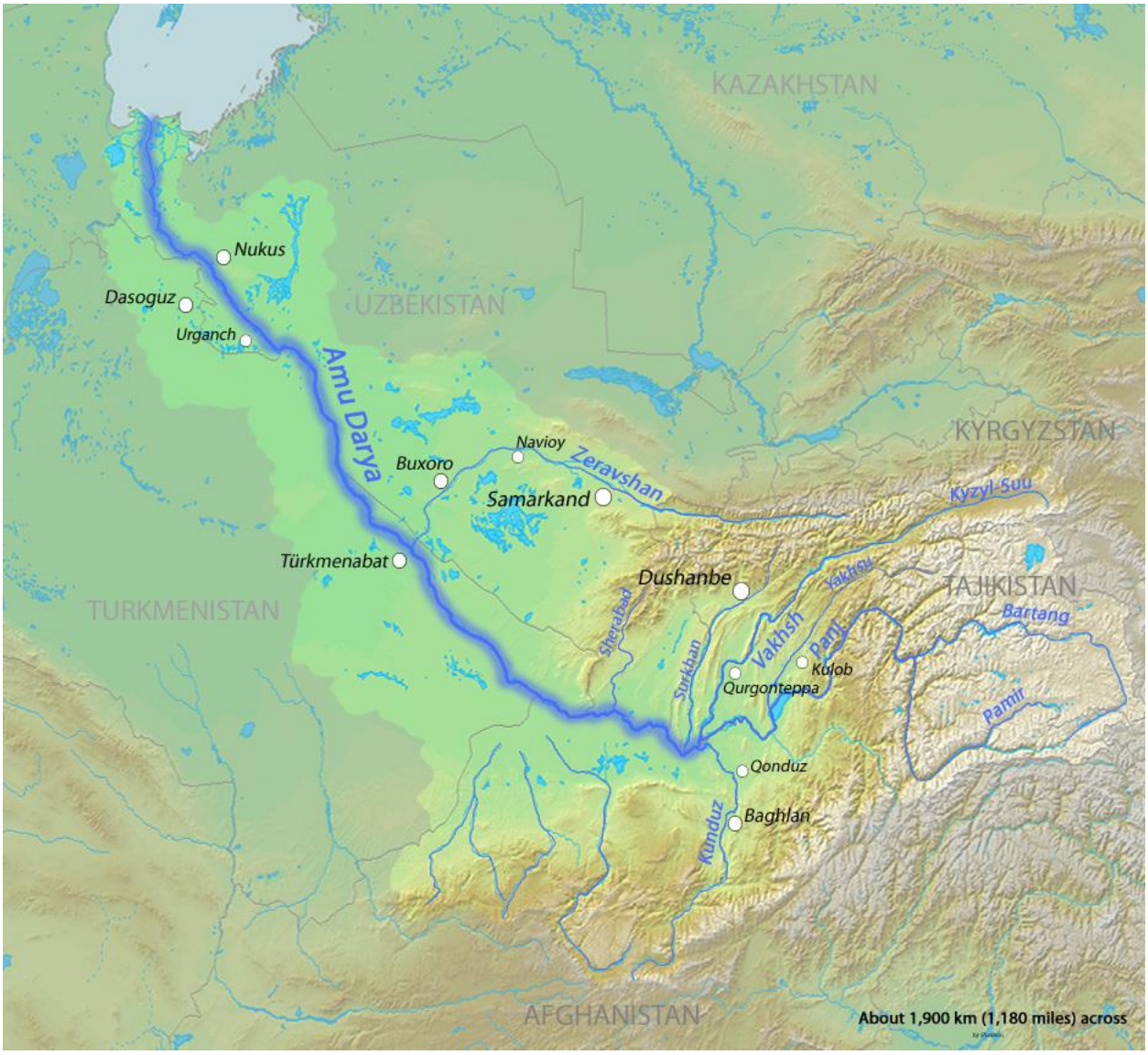


Figure 1. Map of the Amu-Darya River basin, also showing the location of the Zeravshan River. *Alburnoides taeniatus* is reported from both rivers (Froese and Pauly 2018). Map: DEMIS Mapserver (background layer), Shannon1. Licensed under Creative Commons CC BY-SA 4.0. Available: https://commons.wikimedia.org/w/index.php?curid=9405268. (June 2018).

Figure 2. Map of the Syr-Darya River basin, also showing the location of the Chu River. *Alburnoides taeniatus* is reported from both rivers (Froese and Pauly 2018). Map: DEMIS Mapserver (background layer), Shannon1. Licensed under Creative Commons CC BY-SA 4.0. Available: https://commons.wikimedia.org/w/index.php?curid=9416944. (June 2018).

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 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.188, which is classified as high match. Scores for a high climate match range from 0.103 to 1.000, inclusive. The climate match was high in central California, the northwestern Great Plains, and the region between Denver, Colorado, and Santa Fe, New Mexico. The Upper Midwest, central Great Plains, large portions of the Interior West, and parts of New York and Pennsylvania showed medium match. The climate match was low in the Southeast, along the Atlantic Coast, and along much of the Pacific Coast.

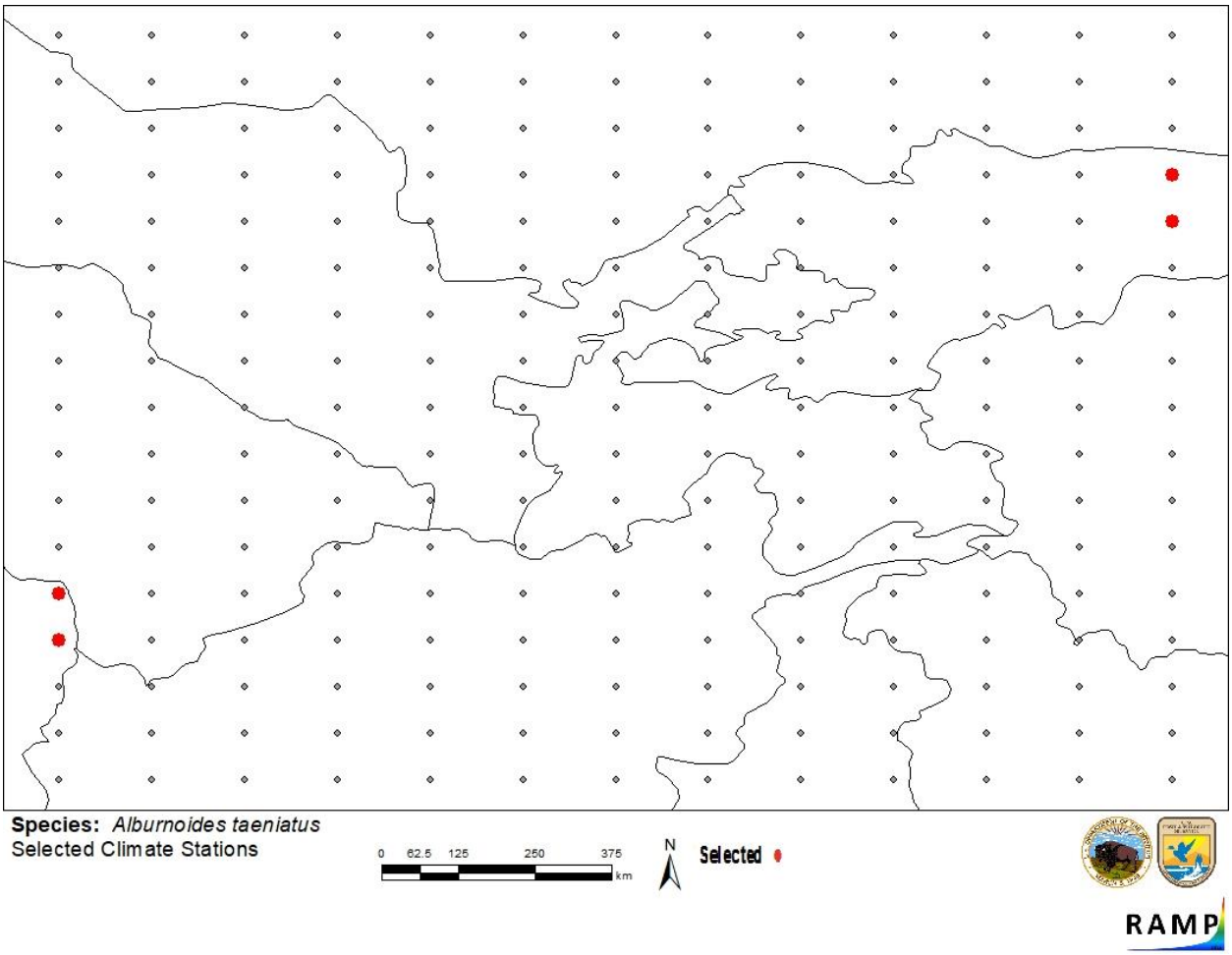


Figure 3. RAMP (Sanders et al. 2018) source map showing weather stations in Central Asia selected as source locations (red; Iran and Kyrgyzstan) and non-source locations (gray) for *Alburnoides taeniatus* climate matching. Source locations from Mikkola (2012) and Jouladeh-Roudbar et al. (2016). No specific occurrence information was available for parts of the species range in Kazakhstan, Uzbekistan, Turkmenistan, Tajikistan, or Afghanistan.

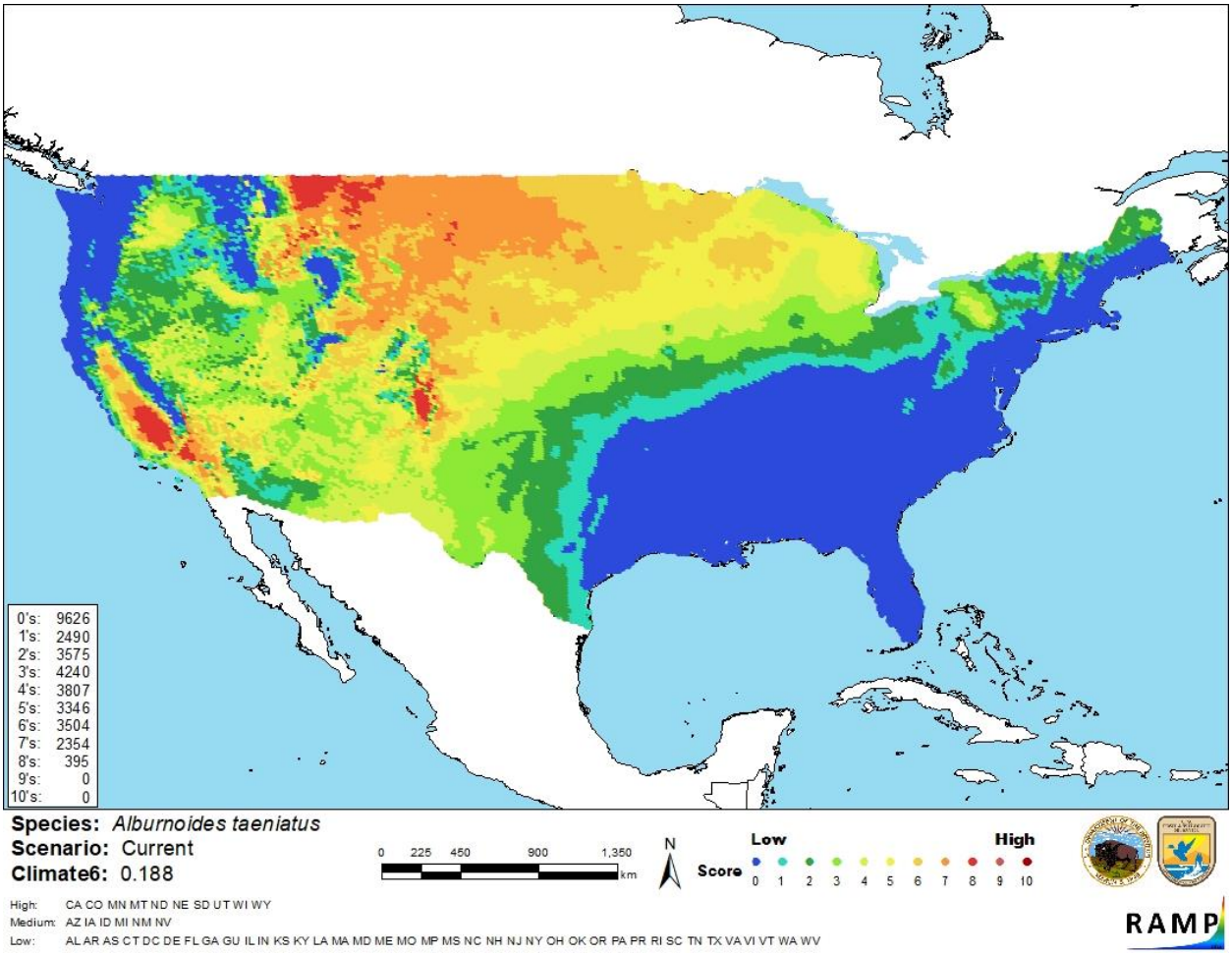


Figure 4. Map of RAMP (Sanders et al. 2018) climate matches for *Alburnoides taeniatus* in the contiguous United States based on source locations reported by Mikkola (2012) and Jouladeh-Roudbar et al. (2016). 0=Lowest match, 10=Highest match.

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≤X≤0.005	Low
0.005<X<0.103	Medium
≥0.103	High

7 Certainty of Assessment

Limited information is available on *Alburnoides taeniatus*. Few precise occurrence records were available for climate matching. This species was recently discovered in Iran and is also introduced in Kyrgyzstan; adverse impacts have been noted but not well described. Further

studies may shed light on impacts this species may have. Due to lack of knowledge, certainty of this assessment is low. Further information is needed to increase the certainty of this assessment.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Striped Bystranka (*Alburnoides taeniatus*) is a freshwater cyprinid fish native to Central Asia. There is little information available on this species in the wild, but it is utilized in the aquarium trade. This species has been reported as introduced in Iran and Kyrgyzstan. Introductions may have been from aquaculture, control of malaria, or aquarium releases. One author reports negative impacts of introduction in the form of predation on native species in Kyrgyzstan, but no further information is provided to support this claim. Further information would be required to reach an assessment of high history of invasiveness. *Alburnoides taeniatus* has a medium climate match with the contiguous United States. Certainty of the overall assessment is low and overall risk assessment category is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): None Documented**
- **Climate Match (Sec. 6): High**
- **Certainty of Assessment (Sec. 7): 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.

Froese, R., and D. Pauly, editors. 2012. *Alburnoides taeniatus* (Kessler, 1874). FishBase. Available: https://www.fishbase.us/summary/Alburnoides-taeniatus.html. (August 2012).

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Mikkola, H. 2012. Implication of alien species introduction to loss of fish biodiversity and livelihoods on Issyk-Kul Lake in Kyrgyzstan. *In* G. A. Lameed, editor. Biodiversity

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Sarieva, M., M. Alpiev, R. Van Anrooy, J. Jørgensen, A. Thorpe, A. Mena Millar. 2008. Capture fisheries and aquaculture in the Kyrgyz Republic: current status and planning. FAO Fisheries Circular no. 1030. Rome, FAO.

Scholz, T., R. A. Bray, R. Kuchta, and R. Řepová. 2004. Larvae of gryporhynchid cestodes (Cyclophyllidea) from fish: a review. Folia Parasitologica 51:131-152.

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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Berg, L. S. 1964. Freshwater fishes of the U.S.S.R. and adjacent countries, volume 2, 4th edition. Israel Program for Scientific Translations Ltd., Jerusalem.

Breder, C. M., and D. E. Rosen. 1966. Modes of reproduction in fishes. T. F. H. Publications, Neptune City, New Jersey.

Esmaeili, H. R., B. W. Coad, A. Gholamifard, N. Nazari, and A. Teimory. 2010. Annotated checklist of the freshwater fishes of Iran. Zoosystematica Rossica 19:361-386.

Esmaeili, H. R., A. Teimori, and G. Gholamhosseini. 2007. Freshwater ichthyodiversity and its conservation in Iran. XII European Congress on Ichthyology. Cavata (Dubrovnik), Croatia.