

Zope (*Abramis ballerus*)

Ecological Risk Screening Summary

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1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2014):

“Eurasia: large rivers draining to Baltic Sea (absent in northern Sweden and Finland north of 62°N), North Sea (Weser, Elbe), Black Sea, Sea of Azov (Don) and Caspian Sea, where it is abundant in Volga, rare in Ural.”

Status in the United States

No records of *Abramis ballerus* introductions in the United States were found.

Means of Introductions in the United States

No records of *Abramis ballerus* introductions in the United States were found.

Remarks

From Froese and Pauly (2014):

“Appendix III of the Bern Convention (protected fauna).”

Abramis ballerus is also referred to as *Ballerus ballerus*, a previously valid name (Eschmeyer et al. 2018), in the literature. Information searches were conducted using both names.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From Eschmeyer et al. (2018):

“***ballerus*, *Cyprinus*** Linnaeus [C.] 1758:326 [Systema Naturae, Ed. X v. 1; [...]] Lakes of Sweden. No types known. Neotype designated by Fricke 1999:21 [...], but withdrawn in Fricke 2000:639 [...]. Spelled *balerus* by Bloch & Schneider 1801:437 [...]. •Valid as *Ballerus ballerus* (Linnaeus 1758) -- (Bogutskaya & Naseka 2004:76 [...], Kottelat & Freyhof 2007:179 [...], Perea et al. 2010:15 [...]). •Valid as *Abramis ballerus* (Linnaeus 1758) -- (Berg 1949:785 [...], Lelek 1987:136 [...], Kottelat 1997:42 [...], Reshetnikov et al. 1997:734 [...], Bogutskaya 1998:54 [...], Fricke 1999:20 [...], Bogutskaya et al. 2001:43 [...], Hanel 2003:52 [...], Vassilev & Pehlivanov 2005:166 [...], Hanel & Lusk 2005:248 [...], Fricke 2007:28 [...], Parin et al. 2014:63 [...]). **Current status:** Valid as *Abramis ballerus* (Linnaeus 1758). Cyprinidae: Leuciscinae.”

From ITIS (2014):

“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 Cyprinoidae
Family Cyprinidae

Genus *Abramis*
Species *Abramis ballerus* (Linnaeus, 1758)”

Size, Weight, and Age Range

From Froese and Pauly (2014):

“Max length: 40.0 cm SL male/unsexed; [Kottelat and Freyhof 2007]; common length: 20.0 cm TL male/unsexed; [Muus and Dahlström 1968]; max. published weight: 940.00 g [Koli 1990]”

From Freyhof (2013):

“Lives more than 10 years.”

Environment

From Froese and Pauly (2014):

“Freshwater; brackish; [...] [Riede 2004]. [...]; 5°C - 25°C [assumed to be recommended aquarium temperature range] [Baensch and Riedl 1995]; [...]”

Climate and Range

From Froese and Pauly (2014):

“Temperate; [...]; 63°N - 43°N, 4°E - 56°E”

Distribution Outside the United States

Native

From Froese and Pauly (2014):

“Eurasia: large rivers draining to Baltic Sea (absent in northern Sweden and Finland north of 62°N), North Sea (Weser, Elbe), Black Sea, Sea of Azov (Don) and Caspian Sea, where it is abundant in Volga, rare in Ural.”

Introduced

According to Froese and Pauly (2014), *Abramis ballerus* is introduced and established in Afghanistan, Kazakhstan, and the Russian Federation.

Means of Introduction Outside the United States

No means of introduction were recorded for the records found.

Short Description

From Froese and Pauly (2014):

“Differs from *Ballerus sapa* by having superior mouth, 62-77 scales on lateral line, and small eye with diameter about 2/3 of snout length in individuals larger than 10 cm SL [Kottelat and Freyhof 2007].”

Biology

From Froese and Pauly (2014):

“Occur in large lowland rivers with backwaters and also in eutrophic lowland lakes. Feed mainly on zooplankton in open water of backwaters and other still water bodies. Spawn along shores of rivers or in backwaters on submerged vegetation and also on gravel in moderate current. Migrate upriver in long distances to suitable spawning sites. Juveniles stay in backwaters and flooded zones along rivers. Enter freshened parts of seas to forage. Life span reaches more than 10 years. Locally threatened by habitat alterations along river banks [Kottelat and Freyhof 2007].”

From Freyhof (2013):

“Spawns for the first time at 3-4 years and about 150 mm SL. Most individuals spawn several times during their life. Spawns in spring (March-April in lower Danube, April-early May in Baltic, May-June in Volga delta), when temperature reaches 10°C (8-12°C in lower Danube). Spawning period short, usually only 1-2 weeks. Females spawn once a year. Males often defend spawning territories along shoreline. In mature males, sides of body above anal with nuptial tubercles. May undertake long migrations upriver to suitable spawning sites. Juveniles in backwaters and flooded zones along rivers. Enters freshened parts of seas to forage. Feeds predominantly on zooplankton in open water of backwaters and other still water bodies.”

“Large lowland rivers with backwaters; also in eutrophic lowland lakes. Spawns on submerged vegetation along shores of rivers or in backwaters. Also reported to spawn on gravel in moderate current.”

Human Uses

From Froese and Pauly (2014):

“Fisheries: minor commercial”

From Freyhof (2013):

“It is harvested for human consumption.”

Diseases

No records of OIE reportable diseases found.

Bailly (2008) lists the following as parasites of *Abramis ballerus*: *Argulus foliaceus*, *Caligus lacustris*, *Ergasilus briani*, *Ergasilus sieboldi*, *Paracoenogonimus ovatus*, *Paraergasilus rylovi*, *Proteocephalus torulosus*, *Tracheliastes fecundus*, *Tracheliastes maculatus*, and *Tracheliastes polycolpus*.

Threat to Humans

From Froese and Pauly (2014):

“Harmless”

3 Impacts of Introductions

No records of impacts of introductions were found.

4 Global Distribution



Figure 1. Global distribution of *Abramis ballerus*. Map from GBIF Secretariat (2017).

The locations given off the coasts of Africa were found to be erroneous and were not included in the source locations for the climate match. All other locations from GBIF Secretariat (2017) were determined to represent an actual population.

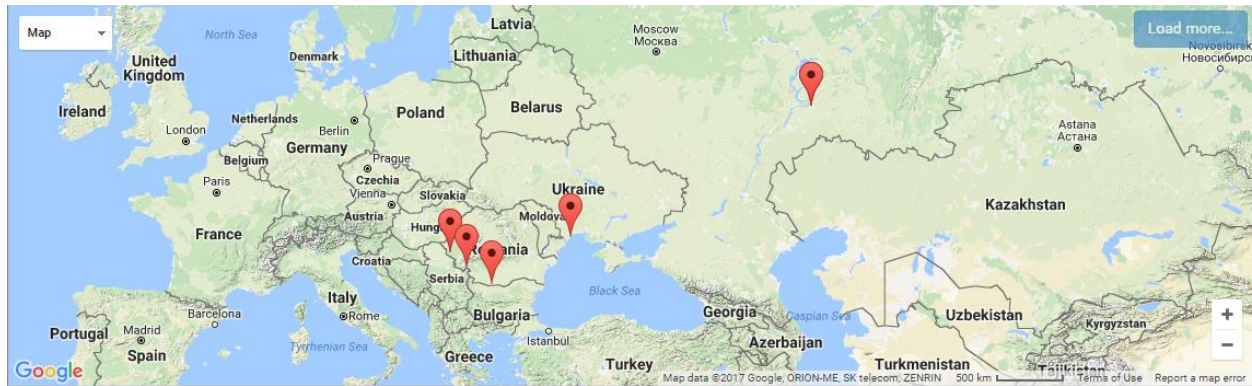


Figure 2. Global distribution of *Abramis ballerus*. Map from VertNet (2017).

5 Distribution Within the United States

No records of *Abramis ballerus* introductions in the United States were found.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match was high in the Great Lakes, and parts of the Midwest and Southwest regions. It was low everywhere else. The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean Distance) for the contiguous United States was 0.254, high.

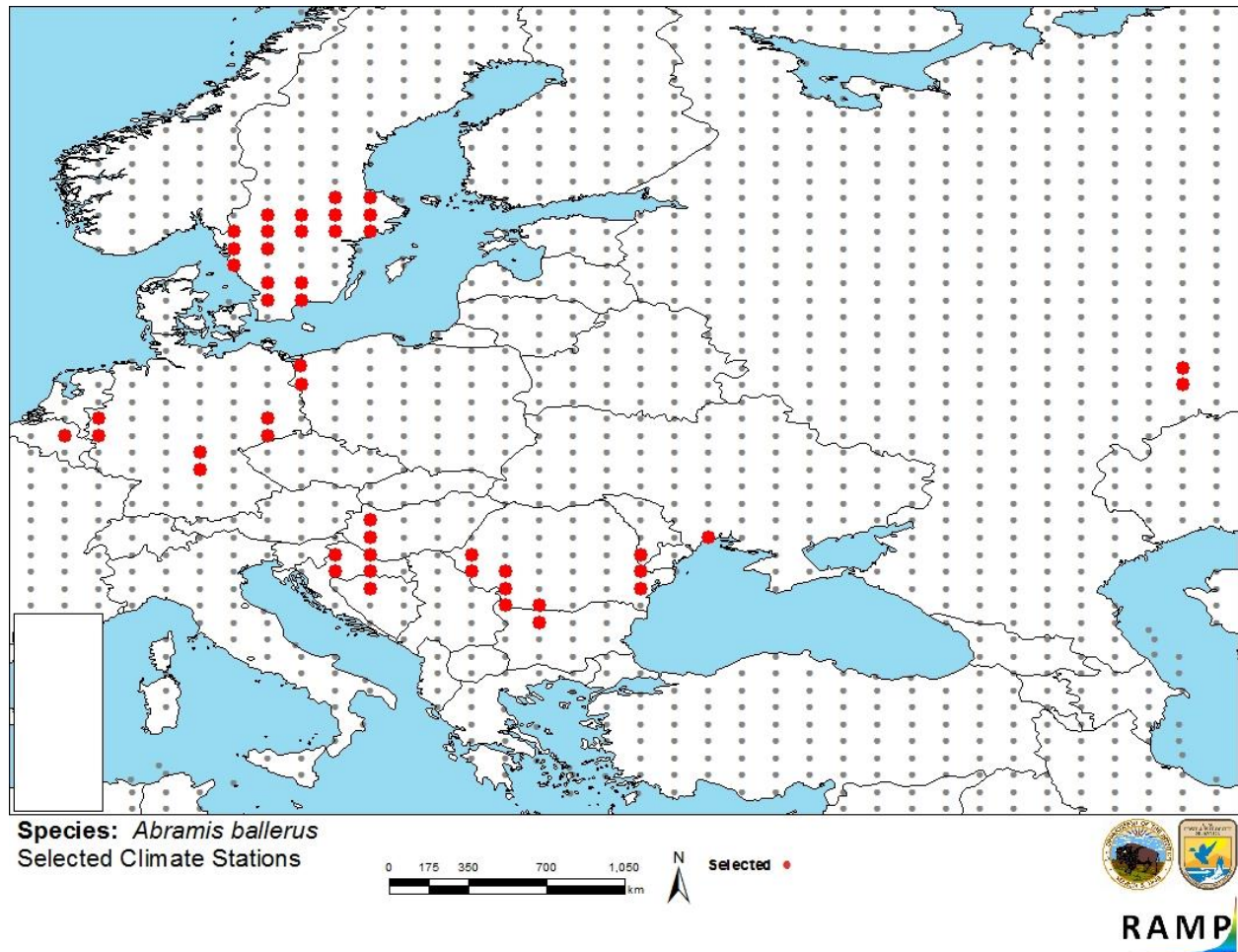


Figure 3. RAMP (Sanders et al. 2014) source map showing weather stations in Belgium, Germany, Sweden, Poland, Hungary, Croatia, Bosnia and Herzegovina, Romania, Bulgaria, Moldova, Ukraine, and Russia selected as source locations (red) and non-source locations (gray) for *Abramis ballerus* climate matching. Source locations from GBIF Secretariat (2017).

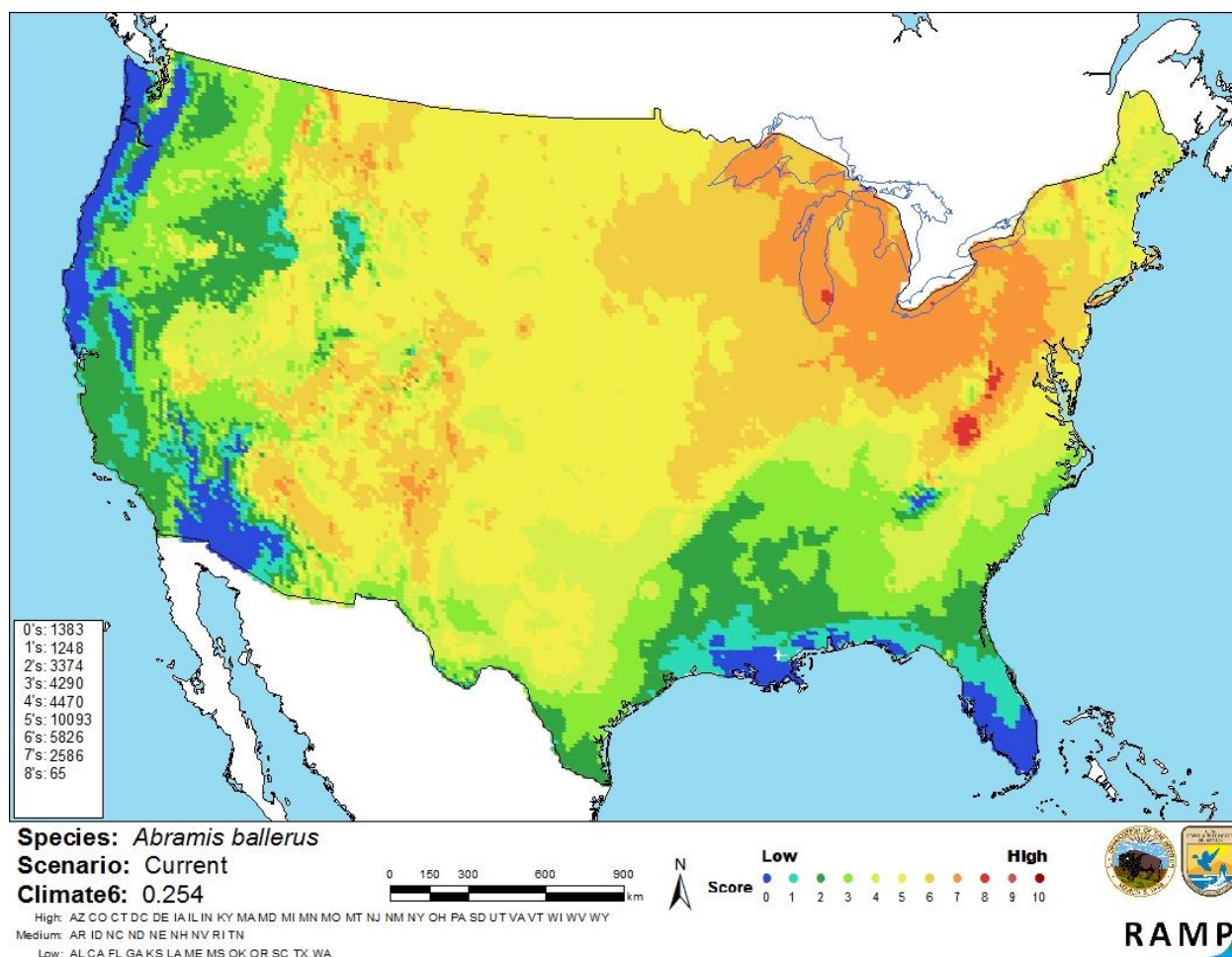


Figure 4. Map of RAMP (Sanders et al. 2014) climate matches for *Abramis ballerus* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0= Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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
$0.000 \leq X < 0.005$	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 information about *Abramis ballerus* available. Records of introductions were found but no records of the impacts of those introductions were found. The text based distribution information implies that the geo-referenced data in GBIF Secretariat (2017) is not complete; there should be more observations in

Eurasia, especially in the Volga River drainage (Froese and Pauly 2014). A more complete geo-referenced distribution dataset could alter the climate match.

8 Risk Assessment

Summary of Risk to the Contiguous United States

The history of invasiveness for *Abramis ballerus* is not documented; records of introductions were found but no records of impacts. The climate match for *A. ballerus* was high, especially in the West and Great Lakes regions. The certainty of this assessment is low. The overall category is uncertain due to lack of documented history of invasiveness and the potentially incomplete climate match.

Assessment Elements

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

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