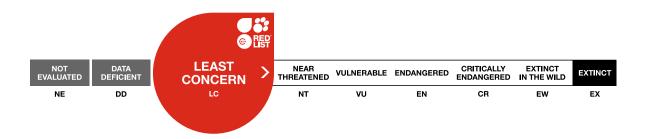


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Percichthys trucha, Perca

Assessment by: Cussac, V.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Actinopterygii	Perciformes	Percichthyidae

Scientific Name: Percichthys trucha (Valenciennes, 1833)

Synonym(s):

• Perca trucha Valenciennes, 1833

Common Name(s):

• Spanish; Castilian: Perca

Taxonomic Source(s):

Fricke, R., Eschmeyer, W.N. and Van der Laan, R. (eds). 2020. Eschmeyer's Catalog of Fishes: genera,species,references.Updated04May2020.Availableat:http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp.

Taxonomic Notes:

The issue of considering *P. colhuapiensis* and *P. laevis* as synonyms of *P. trucha* is carefully analyzed by Crichigno *et al.* (2014). The complete study of Arratia and Quezada (2019) did not resolve the question, and the recent work of Ruzzante *et al.* (2020) added new data reinforcing the view of *P. trucha* as the unique *Percichthys* species east of the Andes. Moreover, COI data registered in BOLDSystem also support the view of Ruzzante *et al.* (2006, 2011, 2020). Notwithstanding the discussions about the adopted concept of species, we should be in mind that the big Atlantic basins of Patagonia are isolated from each other since the last glaciation. This implies that populations of the same species in different basins could be considered each one highly relevant in terms of genetic conservation.

Assessment Information

Red List Category & Criteria:	Least Concern ver 3.1			
Year Published:	2022			
Date Assessed:	May 6, 2022			

Justification:

This species is native to Chile and Argentina. It is assessed as Least Concern given its widespread distribution.

Geographic Range

Range Description:

This species occurs in Chile and Argentina where it is found in lakes, rivers and reservoirs from Mendoza Province in the north to Santa Cruz Province in the south (Aigo *et al.* 2008, Ruzzante *et al.* 2011, Becker *et al.* 2018).

Country Occurrence:

Native, Extant (resident): Argentina (Chubut, Mendoza, Neuquén, Rio Negro, San Luis, Santa Cruz); Chile

Distribution Map



Legend EXTANT (RESIDENT) Compiled by: IUCN (International Union for Conservation of Nature) 2020





The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.

Population

Intra-specific polymorphism of *P. trucha* was linked with the use of different trophic resources (Cussac *et al.* 1998, Ruzzante *et al.* 1998, Logan *et al.* 2000). Morphological changes of *P. trucha* were also detectable after short periods, i.e., upstream and downstream of a hydroelectric dam, only a few years after it was built (Cussac *et al.* 1998), or after stocking in a fishless lake, where *P. trucha* was successively named as a different nominal species while the lake's trophic web changed (Ortubay *et al.* 2006). These records indicate an important phenotypic plasticity within the population (Crichigno *et al.* 2014). **Current Population Trend:** Decreasing

Habitat and Ecology (see Appendix for additional information)

Significant morphological variation in embryos, larvae and juveniles of *P. trucha* is recorded. Moreover, diet induced changes in head shape, outside the natural range of variation, have been experimentally demonstrated (Crichigno *et al.* 2014).

Systems: Freshwater (=Inland waters)

Use and Trade

This species is subjected to artisanal and recreational fisheries out of national park areas (Barletta *et al.* 2015).

Threats (see Appendix for additional information)

Subpopulations in reservoirs (Mendoza Province) where Common Carp was introduced are nearly absent (Crichino *et al.* 2016). Other invasive species, aquaculture and damming are also potential threats.

Conservation Actions (see Appendix for additional information)

Capture is forbidden in national parks of Argentina.

Credits

Assessor(s):	Cussac, V.
Reviewer(s):	Lyons, T.J.
Partner(s) and Institution(s):	ABQ BioPark

Bibliography

Aigo, J., Cussac, V., Peris, S., Ortubay, S., Gomez, S., Lopez, H. Gross, M., Juan Barriga, J. and Miguel Battini, M. 2008. Distribution of introduced and native fish in Patagonia (Argentina): patterns and changes in fish assemblages. *Rev Fish Biol Fisheries* 18: pages387–408.

Arratia, G. and Quezada-Romegialli, C. 2019. The South American and Australian percichthyids and perciliids. What is new about them? *Neotrop. Ichthyol.* 17: e180102.

Barletta, M., Cussac, V.E., Agostinho, A.A., Baigún, C., Okada, E.K., Carlos Catella, A., Fontoura, N.F., Pompeu, P.S., Jiménez-Segura, L.F., Batista, V.S., Lasso, C.A., Taphorn, D. and Fabré, N.N. 2015. Fisheries ecology in South American river basins. In: J.F. Craig (ed.), *Freshwater Fisheries Ecology*.

Becker, L.A., Crichigno, S.A. and Cussac, V.E. 2018. Climate change impacts on freshwaterfishes: a Patagonian perspective. *Hydrobiologia* 816(1): 21–38.

Crichigno, S.A., Battini, M.A. and Cussac, V.E. 2014. Diet induces phenotypic plasticity of *Percichthys trucha* (Valenciennes, 1833) (Perciformes, Percichthyidae) in Patagonia. *ZoologischerAnzeiger* 253: 192-202.

Crichigno, S., Cordero, P., Blasetti, G. and Cussac, V. 2016. Dispersion of the invasive common carp *Cyprinus carpio* in southern South America: changes and expectations, westward and southward. *Journal of Fish Biology* 89(1): 403-416.

Cussac, V.E., Ruzzante, D., Walde, S., Macchi, P.J., Ojeda, V., Alonso, M.F. and Denegri, M.A. 1998. Body shape variation of three species of Percichthys in relation to their coexistence in the Limay River basin, in northern Patagonia. *Environmental Biology of Fishes* 53: 143–153.

IUCN. 2022. The IUCN Red List of Threatened Species. Version 2022-2. Available at: <u>www.iucnredlist.org</u>. (Accessed: 08 December 2022).

Logan, M.S., Iverson, S.J., Ruzzante, D.E., Walde, S.J., Macchi, P.J., Alonso, M.F. and Cussac, V.E. 2000. Long term diet differences between morphs introphically polymorphic *Percichthys trucha* (Pisces: Percichthyidae) populations from the southern Andes. *Biological Journal of the Linnean Society* 69: 599-616.

Ruzzante, D.E., Simons, A.P., McCracken, G.R., Habit, E. and Walde, S.J. 2020. Multiple drainage reversal episodes and glacial refugia in a Patagonian fish revealed by sequenced microsatellites. *Proc. R. Soc. B* 287: 20200468.

Ruzzante, D.E., Walde, S.J., Cussac, V.E., Dalebout, M.L., Seibert, J., Ortubay, S. and Habit, E. 2006. Phylogeography of the Percichthyidae (Pisces) in Patagonia: roles of orogeny, glaciation, and volcanism. *Mol. Ecol.* 15: 2949–2968.

Ruzzante, D.E., Walde, S.J., Cussac, V.E., Macchi, P.J., Alonso, M.F. and Battini, M. 2003. Resource polymorphism in a Patagonian fish *Percichthys trucha* (Percichthyidae): phenotypic evidence for interlake pattern variation. *Biological Journal of the Linnean Society* 78: 497-515.

Ruzzante, D.E., Walde, S.J., Cussac, V.E., Macchi, P.J. and Alonso, M.F. 1998. Trophic polymorphism, habitat and diet segregation in *Percichthys trucha* (Pisces: Percichthyidae) in the Andes. *Biological Journal of the Linnean Society* 65: 191–214.

Ruzzante, D.E., Walde, S.J., Macchi, P.J., Alonso, M.F. and Barriga, J.P. 2011. Phylogeography and phenotypic diversification in the Patagonian fish *Percichthys trucha*: the roles of Quaternary glacial cycles and natural selection. *Biol. J. Linn. Soc.* 103: 514–529.

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External Resources

For <u>Supplementary Material</u>, and for <u>Images and External Links to Additional Information</u>, please see the Red List website.

Appendix

Habitats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Habitat	Season	Suitability	Major Importance?
5. Wetlands (inland) -> 5.1. Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)	Resident	Suitable	Yes
5. Wetlands (inland) -> 5.5. Wetlands (inland) - Permanent Freshwater Lakes (over 8ha)	Resident	Suitable	Yes

Use and Trade

(http://www.iucnredlist.org/technical-documents/classification-schemes)

End Use	Local	National	International
1. Food - human	Yes	No	No

Threats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Threat	Timing	Scope	Severity	Impact Score
2. Agriculture & aquaculture -> 2.4. Marine & freshwater aquaculture -> 2.4.2. Industrial aquaculture	Ongoing	Minority (<50%)	Slow, significant declines	Low impact: 5
	Stresses:	: 1. Ecosystem stresses -> 1.3. Indirect ecosyst		•
		•	esses -> 2.2. Species dis	s disturbance
		 Species Stresses -> 2.3. Indirect species effect 2.3.2. Competition -> 2.3.7. Reduced reproducti success 		
7. Natural system modifications -> 7.2. Dams & water management/use -> 7.2.10. Large dams	Ongoing	Minority (<50%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion		
		1. Ecosystem stresses -> 1.3. Indirect ecosystem effect		
		2. Species Stresses -> 2.2. Species disturbance		
		2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success		
8. Invasive and other problematic species, genes & diseases -> 8.2. Problematic native species/diseases -> 8.2.2. Named species (Cyprinus carpio)	Ongoing	-	-	Low impact: 3
8. Invasive and other problematic species, genes & diseases -> 8.2. Problematic native species/diseases -> 8.2.2. Named species (Salvelinus fontinalis)	Ongoing	-	-	Low impact: 3
8. Invasive and other problematic species, genes & diseases -> 8.2. Problematic native species/diseases -> 8.2.2. Named species (Salmo trutta)	Ongoing	-	-	Low impact: 3

8. Invasive and other problematic species, gene diseases -> 8.2. Problematic native species/dise -> 8.2.2. Named species (Oncorhynchus mykiss	ases	-	-	Low impact: 3
8. Invasive and other problematic species, gene diseases -> 8.2. Problematic native species/dise -> 8.2.2. Named species (Salvelinus namaycush	ases	-	-	Low impact: 3

Conservation Actions in Place

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Action in Place

In-place land/water protection

Occurs in at least one protected area: Yes

Additional Data Fields

Distribution Continuing decline in area of occupancy (AOO): Unknown Estimated extent of occurrence (EOO) (km²): 969208 Continuing decline in extent of occurrence (EOO): Unknown Lower elevation limit (m): 100 Upper elevation limit (m): 800 Habitats and Ecology Movement patterns: Altitudinal Migrant Congregatory: Congregatory (and dispersive)

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