

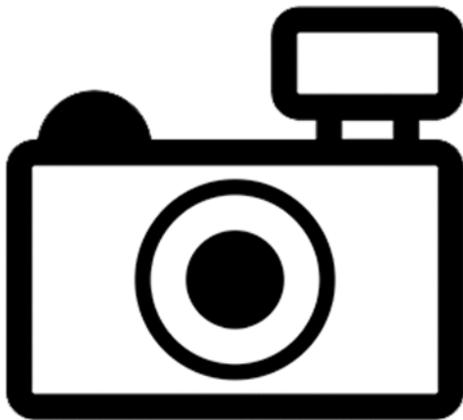
# Dwarf Hoplo (*Leptoplosternum pectorale*)

## Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, July 2017

Revised, January 2018

Web Version, 5/16/2018



No Photo Available

## 1 Native Range and Status in the United States

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### Native Range

From Froese and Pauly (2017):

“South America: Paraguay River basin. [The basin includes the countries of Argentina, Brazil, Bolivia, Paraguay and Uruguay]”

From Zarucki et al. (2010):

“We report the presence of *Leporinus lacustris*, *Leptoplosternum pectorale*, and *Apistogramma borellii* registered from the middle Paraná River (Casciotta et al. 2005) in the middle and lower Uruguay River [in Uruguay].”

### Status in the United States

This catfish species has not been reported in the United States. There is no indication that this species is in trade in the U.S.

## Means of Introductions in the United States

*Lepthoplosternum pectorale* has not been reported as introduced in the United States.

## Remarks

From ScotCat (2005):

“One look at the photograph of this species and you will realise that this [i.e., *Lepthoplosternum pectorale*] is, or used to be, *Hoplosternum pectorale*. The above has been moved into a new genus along with *Hoplosternum thoracatum* ( now *Megalechis thoracata*) with *Hoplosternum littorale* staying put. The Brazilian ichthyologist Roberto E.Reis [sic] completely revised this family in 1996 and erected a new genus for *pectorale*.”

## 2 Biology and Ecology

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### Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2017):

“Kingdom Animalia  
Subkingdom Bilateria  
Infrakingdom Deuterostomia  
Phylum Chordata  
Subphylum Vertebrata  
Infraphylum Gnathostomata  
Superclass Actinopterygii  
Class Teleostei  
Superorder Ostariophysii  
Order Siluriformes  
Family Callichthyidae  
Subfamily Callichthyinae  
Genus *Lepthoplosternum*  
Species *Lepthoplosternum pectorale* (Boulenger, 1895)”

“Current standing: valid”

### Size, Weight, and Age Range

From Froese and Pauly (2017):

“Max length : 6.0 cm [Reis 2003].”

### Environment

From Froese and Pauly (2017):

“Freshwater; demersal; pH range: 5.8 - 7.8”

“20°C - 22°C [Baensch and Riehl 1985; this temperature range is assumed to be aquarium water temperatures]”

From Esguícero and Arcifa (2017):

“[...] three species, all recognized as tolerant to environments with low concentrations of oxygen (Petry et al., 2013), two representatives of the Family Callichthyidae (*Leptoplosternum pectorale* and *Hoplosternum littorale*) and one of the Family Gymnotidae (*Gymnotus* aff. *carapo*).”

From Fernandes et al. (2010):

“[...] occur in shallow areas with a maximum depth of 25 cm.”

## **Climate/Range**

From Froese and Pauly (2017):

“Subtropical [Baensch and Riehl 1985].”

## **Distribution Outside the United States**

### **Native**

From Froese and Pauly (2017):

“South America: Paraguay River basin. [The basin includes the countries of Argentina, Brazil, Bolivia, Paraguay and Uruguay]”

From Zarucki et al. (2010):

“We report the presence of [...] *Leptoplosternum pectorale* [...] registered from the middle Paraná River (Casciotta et al. 2005) in the middle and lower Uruguay River [in Uruguay].”

### **Introduced**

From Júlio Júnior et al. (2009):

“[...] appeared in the upper Paraná [Brazil] catches just recently.”

## **Means of Introduction Outside the United States**

From Júlio Júnior et al. (2009):

“The functioning of a fish pass (Canal de Piracema) connecting the region just downstream from Itaipu Dam to the Itaipu Reservoir and concluded in late 2002 may be responsible for these introductions (Graça & Pavanelli, 2007).”

## Short Description

From ScotCat (2005):

“Body dark brown with small blackish spots. Fin rays dark brown, those in the caudal with black spots. On some specimens lighter bands are visible on the head.”

“The males can be identified as having a thicker leading ray to the pectoral fins and the rest of the fin can be a milky opaque colour while the females is clear. You can identify this species from *M.thoracata* and *H.littorale* by the shape of its caudal fin, it being slightly rounded while *M.thoracata* is truncate (square) and *H.littorale*'s caudal fin is forked.”

From Reis and Kaefer (2005):

“Body comparatively narrow (cleithral width 25.9-28.0% SL); maxillary barbel reaching lower series lateral plate 16-17; dorsal lateral series of plates 25-26”

## Biology

From Froese and Pauly (2017):

“Builds a bubble nest.”

From Ribeiro et al. (2016):

“[...] sedentary species associated with reduced flow in submerged grasses along stream banks [...]”

From ScotCat (2005):

“This is a bubble-nester, where the female deposits her eggs in floating plant material [...]”

## Human Uses

*Lepthoplosternum pectorale* is present in the aquarium trade.

From ScotCat (2005):

“[...] *L. pectorale* is a dwarf species (8.5cm.) and as such is a good addition to any community tank which doesn't house any aggressive species.”

From AngelFins (2018):

“DWARF HOPILOSTERNUM (*LEPTHOPILOSTERNUM PECTORALE*) [...] Price : \$6.00”

AngelFins is based in Guelph, Ontario, Canada.

## Diseases

No OIE-reportable diseases have been documented for this species.

Eiras et al. (2016) report that *L. pectorale* is a host to *Eustrongylides* sp. (larva), a fish-infecting nematode with zoonotic potential.

## Threat to Humans

From Froese and Pauly (2017):

“Harmless”

Eiras et al. (2016) report that *L. pectorale* is a host to *Eustrongylides* sp. (larva), a fish-infecting nematode with zoonotic potential.

## 3 Impacts of Introductions

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No information available.

## 4 Global Distribution

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**Figure 1.** Known global distribution of *Leptoplosternum pectorale*. Map from GBIF Secretariat (2017). Occurrences shown outside the Paraguay River basin do not represent established populations and were not included in the climate matching analysis. The Paraguay River Basin lies within the countries of Argentina, Brazil, Bolivia, Paraguay and Uruguay, but georeferenced occurrences were not available for all of these countries.

## 5 Distribution Within the United States

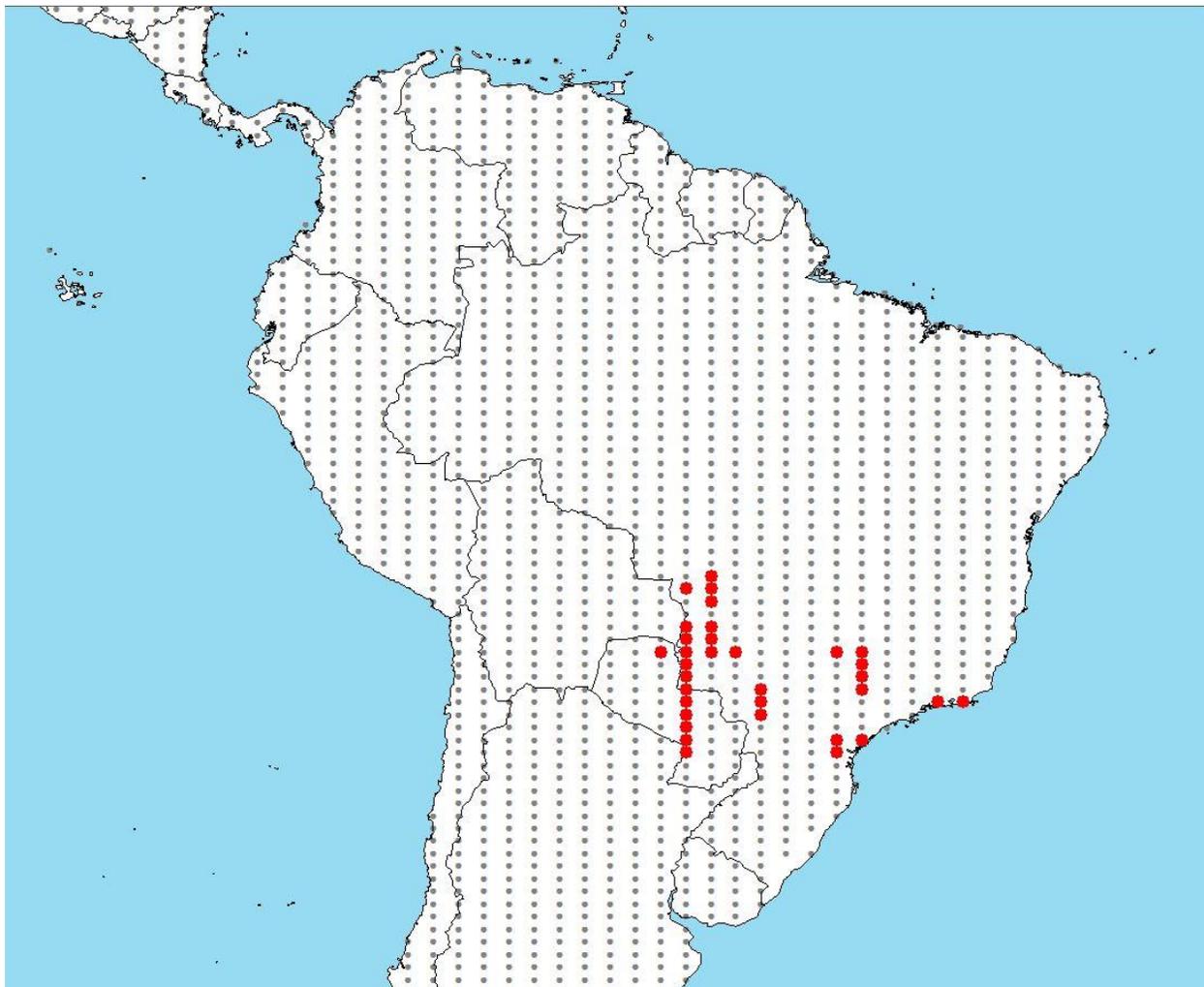
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This species has not been reported in the United States.

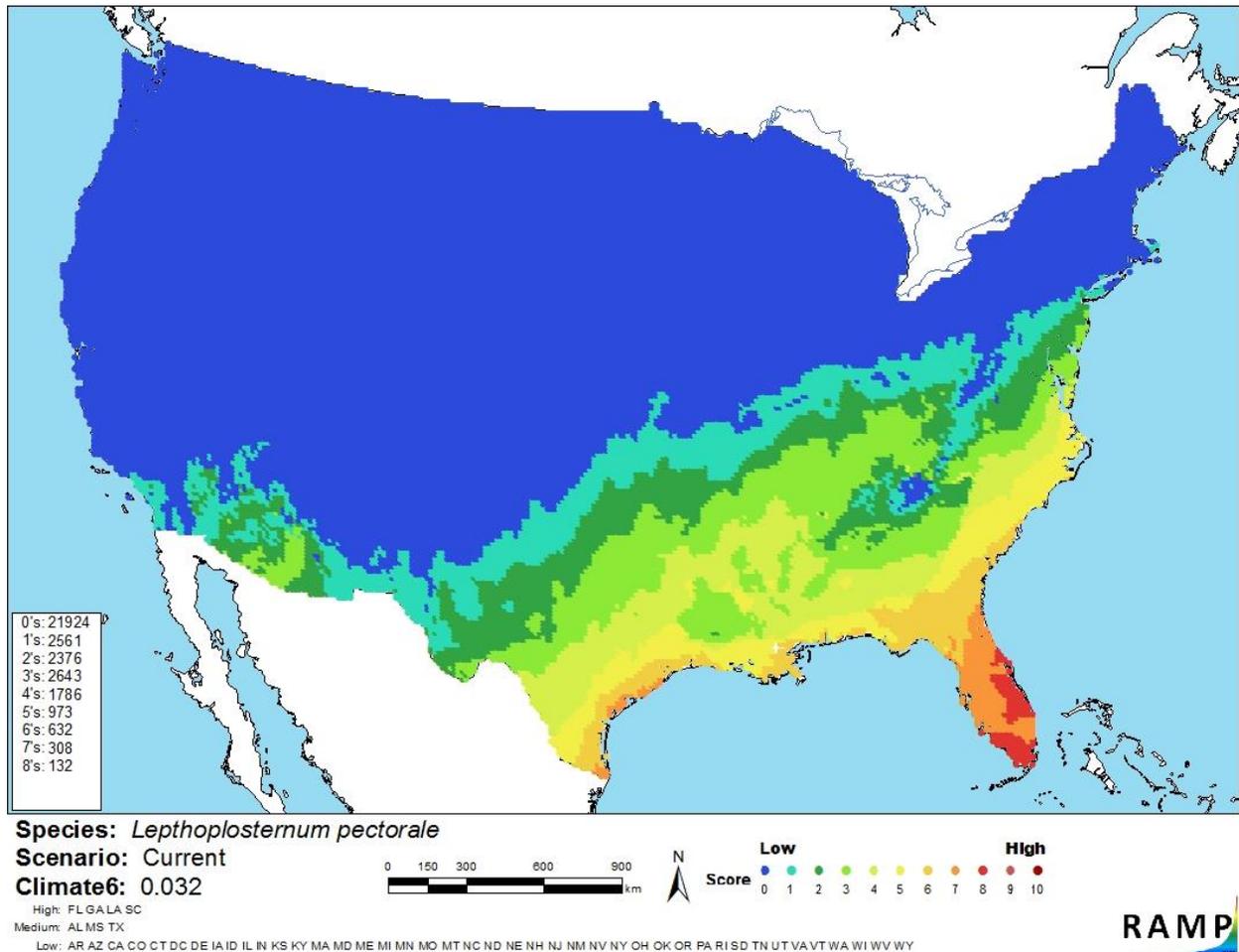
## 6 Climate Matching

### Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean distance) was medium to high within the state of Florida with scores dropping when distance from the coast increased. The majority of the contiguous U.S. was a low climate match, with the climate match increasing in the Southeast closer to the Gulf and Atlantic coasts. Climate 6 score indicated a medium climate match for the contiguous U.S. Scores between 0.005 and 0.103 are classified as medium match. Climate 6 score for *Lepthoplosternum* was 0.032, a medium match.



**Figure 2.** RAMP (Sanders et al. 2014) source map showing weather stations in South America as source locations (red; Brazil, Paraguay) and non-source locations (gray) for *Lepthoplosternum pectorale* climate matching. Source locations from GBIF Secretariat (2017).



**Figure 3.** Map of RAMP (Sanders et al. 2014) climate matches for *Leptoplosternum pectorale* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 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
$\geq 0.103$	High

## 7 Certainty of Assessment

Somewhat limited information on the biology and ecology of *Leptoplosternum pectorale* is available. There is only one mention of *Leptoplosternum pectorale* occurring outside its native range, with no information on impacts. Predicting the potential impacts on the U.S. environment is unachievable with the lack of information. Certainty of this assessment is low.

## 8 Risk Assessment

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### Summary of Risk to the Contiguous United States

*Leptoplosternum pectorale* is a small catfish native to the Paraguay River basin in Argentina, Uruguay, Paraguay, Brazil and Bolivia. It is used in the aquarium trade in North America and is reported to be a host to *Eustrongylides* sp. (larva), a fish-infecting nematode with zoonotic potential. *L. pectorale* has a medium climate match in the United States, with high matches in Florida and patches along the coast from South Carolina to Texas. Only one source reported occurrence of *L. pectorale* outside its native range; the species appears to have undergone a range expansion as a result of a fish passage construction project. No information concerning impacts of this range expansion have been reported. The potential impacts of *Leptoplosternum pectorale* in the contiguous U.S. are unknown. The overall risk of this species is uncertain.

### Assessment Elements

- **History of Invasiveness (Sec. 3): None Documented**
- **Climate Match (Sec. 6): Medium**
- **Certainty of Assessment (Sec. 7): Low**
- **Overall Risk Assessment Category: Uncertain**

## 9 References

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**Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 10.**

AngelFins. 2018. Dwarf hoplosternum (*Leptoplosternum pectorale*). AngelFins, Guelph, Ontario, Canada. Available: [https://angelfins.ca/index.php?main\\_page=product\\_info&cPath=28343\\_2&products\\_id=3693&zenid=8f61e6df78281de42b45b44634568c74](https://angelfins.ca/index.php?main_page=product_info&cPath=28343_2&products_id=3693&zenid=8f61e6df78281de42b45b44634568c74). (January 2018).

Eiras, J. C., G. C. Pavanelli, R. M. Takemoto, M. U. Yamaguchi, L. C. Karkling, and Y. Nawa. 2016. Potential risk of fish-borne nematode infections in humans in Brazil – current status based on a literature review. *Food and Waterborne Parasitology* 5:1-6.

Esguícero, A. L. H., and M. S. Arcifa. 2017. Effects of dredging and macrophyte management on the fish species composition in an old Neotropical reservoir. *Acta Limnologica Brasiliensia* 29:e4.

Fernandes, I. M., F. A. Machado, and J. Penha. 2010. Spatial pattern of a fish assemblage in a seasonal tropical wetland: effects of habitat, herbaceous plant biomass, water depth, and distance from species sources. *Neotropical Ichthyology* 8(2):289-298.

Froese, R., and D. Pauly, editors. 2017. *Leptoplosternum pectorale*, Boulenger, 1895. FishBase. Available: <http://www.fishbase.se/summary/Leptoplosternum-pectorale.html>. (July 2017).

GBIF Secretariat. 2017. GBIF backbone taxonomy: *Leptoplosternum pectorale*, Boulenger, 1895. Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/2342803>. (January 2018).

ITIS (Integrated Taxonomic Information System). 2017. *Leptoplosternum pectorale*, Boulenger, 1895. Integrated Taxonomic Information System, Reston, Virginia. Available: <https://www.itis.gov/servlet/SingleRpt/SingleRpt#null>. (July 2017).

Júlio Júnior, H. F., C. D. Tós, A. A. Agostinho, and C. S. Pavanelli. 2009. A massive invasion of fish species after eliminating a natural barrier in the upper rio Paraná basin. *Neotropical Ichthyology* 7(4):709-718.

Reis, R. E., and C. C. Kaefer. 2005. Two new species of the Neotropical catfish genus *Leptoplosternum* (Ostariophysi: Siluriformes: Callichthyidae). *Copeia* 2005(4):724-731.

Ribeiro, M. D., F. B. Teresa, and L. Casatti. 2016. Use of functional traits to assess changes in stream fish assemblages across a habitat gradient. *Neotropical Ichthyology* 14(1):e140185.

Sanders, S., C. Castiglione, and M. H. Hoff. 2014. Risk Assessment Mapping Program: RAMP. U.S. Fish and Wildlife Service.

ScotCat. 2005. *Leptoplosternum pectorale* (Boulenger, 1895). Available: [https://www.scotcat.com/factsheets/leptoplosternum\\_pectorale.html](https://www.scotcat.com/factsheets/leptoplosternum_pectorale.html) (January 2018).

Zarucki, M., I. González-Bergonzoni, F. Teixeira-de-Mello, A. Duarte, S. Serra, F. Quintans, and M. Loureiro. 2010. New records of freshwater fish for Uruguay. *Check List* 6(2):191-194.

## 10 References Quoted But Not Accessed

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**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. 1985. *Aquarien atlas, volume 2*. Mergus, Verlag für Natur-und Heimtierkunde GmbH, Melle, Germany.

Casciotta, J., A. Almirón, and J. Bechara. 2005. *Peces del Iberá-habitat y diversidad*. Corrientes: Fundación Ecos, Corrientes, Argentina.

Graça, W. J., and C. S. Pavanelli. 2007. *Peixes da planície de inundação do alto rio Paraná e áreas adjacentes*. Eduem, Maringá, Brazil.

Petry, A. C., F. Abujanra, L. C. Gomes, J. R. Julio Junior, and A. A. Agostinho. 2013. Effects of the interannual variations in the flood pulse mediated by hypoxia tolerance: the case of the fish assemblages in the upper Parana River floodplain. *Neotropical Ichthyology* 11(2):413-424.

Reis, R. E., S. O. Kullander, and C. J. Ferraris Jr., editors. 2003. Checklist of the freshwater fishes of South and Central America. Pontifical Catholic University of Rio Grande do Sul, Porto Alegre, Brazil.