

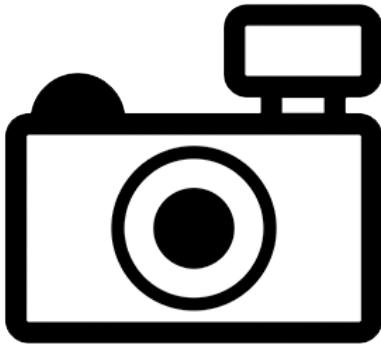
***Caridina longidigita* (freshwater atyid shrimp; no common name)**

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, July 2017

Revised, August 2017

Web Version, 11/17/2017



No Photo Available

1 Native Range and Status in the United States

Native Range

From Wowor et al. (2013):

“The species is endemic to Lake Poso (Sulawesi), a small lake (323.2 km²). Despite extensive fieldwork in the area for a number of years, no other populations have been found.”

“Indonesia (Sulawesi)”

Status in the United States

This species has not been reported as introduced or established in the United States. This species is in trade in the U.S. For example:

From Arizona Aquatic Gardens (2017):

“FRESHWATER FILTER FEEDING POSO BLUE SHRIMP \$28.00”

“aka: Sulawesi Fan Shrimp, Lake Poso Blue Shrimp, Pink Boxer Shrimp [...] *Caridina longidigita* is a lacustrine species native to Lake Poso, Sulawesi, Indonesia.”

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 GBIF (2016):

“KINGDOM Animalia
PHYLUM Arthropoda
CLASS Malacostraca
ORDER Decapoda
FAMILY Atyidae
GENUS *Caridina*
SPECIES *Caridina longidigita*”

“TAXONOMIC STATUS accepted species”

Size, Weight, and Age Range

From von Rintelen and Cai (2009):

“Carapace length 2.9-4.1 mm [...]”

Environment

From Wowor et al. (2013):

“*Caridina longidigita* lives exclusively on hard substrates, gravel in shallow water and on boulders below 3 m depth.”

“Freshwater”

Climate/Range

From Wowor et al. (2013):

“The species is endemic to Lake Poso (Sulawesi), a small lake (323.2 km²). Despite extensive fieldwork in the area for a number of years, no other populations have been found.”

Distribution Outside the United States

Native

From Wowor et al. (2013):

“The species is endemic to Lake Poso (Sulawesi), a small lake (323.2 km²). Despite extensive fieldwork in the area for a number of years, no other populations have been found.”

“Indonesia (Sulawesi)”

Introduced

This species has not been reported as introduced or established outside of its native range.

Means of Introduction Outside the United States

This species has not been reported as introduced or established outside of its native range.

Short Description

From von Rintelen and Cai (2009):

“Body appearing transparently brownish to greenish (sometimes darker), with small dots covering the whole body. Fingers of chelae orange, but without a particular pattern [...]. Eggs dark brown.”

“[...] can easily be distinguished by its extremely long fingers on the chela of the first and second pereopod (vs. short in *C. sarasinorum*) and by more slender pereopods. It differs further by a higher number of ventral rostral teeth (13-23, median 16 vs. 8-14, median 13 in *C. sarasinorum*).”

Biology

From von Rintelen and Cai (2009):

“[...] *C. longidigita* shows a unique feeding behaviour that has not been reported from any species of *Caridina* so far. Instead of the common feeding behaviour described by Fryer (1960), *C. longidigita* makes lateral sweeping movements with its extremely long fingers (M. Glaubrecht & T. von Rintelen, pers. field observation 2007), while all other species lack this lateral component.”

From Wowor et al. (2013):

“It is less abundant than other *Caridina* species in the lake.”

Human Uses

From Wowor et al. (2013):

“It has occurred only occasionally in the aquarium trade (wild harvested).”

Diseases

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

Threat to Humans

No information available.

3 Impacts of Introductions

This species has not been reported as introduced or established outside of its native range.

4 Global Distribution



Figure 1. Known global distribution of *Caridina longidigita*. Points in the sea south of Sulawesi were removed from this map due to incorrect coordinates. Map from GBIF (2016).

5 Distribution Within the United States

This species has not been reported as introduced or established 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 low throughout the contiguous U.S., except for a small area of medium match in southeastern Florida. Climate 6 score indicated a low climate match for the contiguous U.S. overall. Scores of 0.005 and less are classified as low match; Climate 6 score for *C. longidigita* was 0.000.

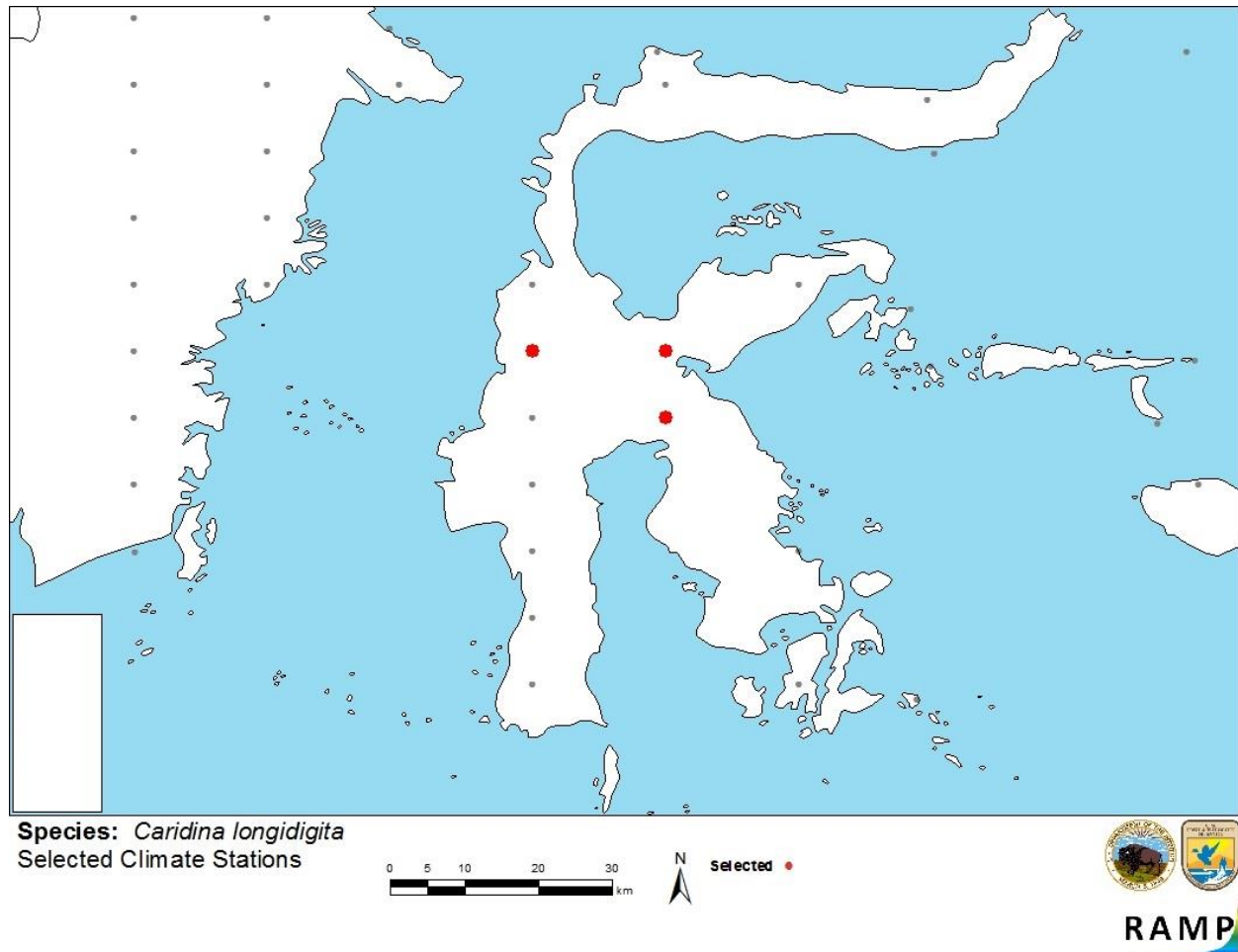


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red) and non-source locations (gray) for *Caridina longidigita* climate matching. Source locations from GBIF (2016).

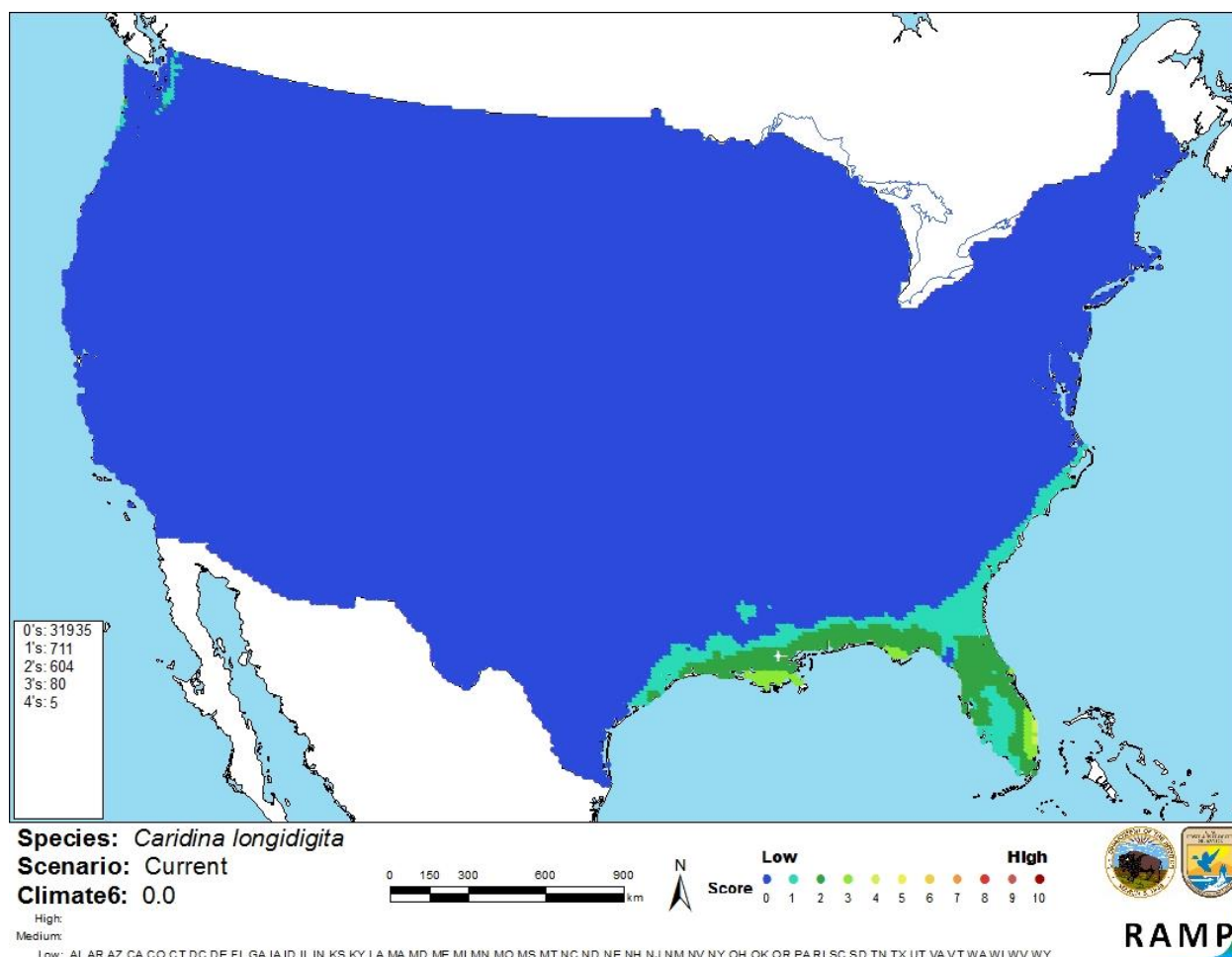


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Caridina longidigita* in the contiguous United States based on source locations reported by GBIF (2016). 0=Lowest match, 10=Highest match.

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
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

7 Certainty of Assessment

There is little information available on *Caridina longidigita*. This species has a very restricted range and has never been reported as introduced or established outside of its native range, so potential impacts of introduction are unknown. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Caridina longidigita is a freshwater shrimp native to Lake Poso in Sulawesi, Indonesia. Although it is in the aquarium trade in the U.S., this species has not been documented as established anywhere outside its native range. Very little is known about the biology or ecology of the species. *C. longidigita* has a low climate match with the contiguous U.S., with an area of slightly higher match in Florida. Certainty of this assessment is low; further information is needed to adequately assess the risk this species poses. Overall risk assessment category is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Low**
- **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.

- Arizona Aquatic Gardens. 2017. Freshwater filter feeding Poso blue shrimp. Available: <https://www.azgardens.com/product/freshwater-filter-feeding-poso-blue-shrimp/>. (July 2017).
- GBIF (Global Biodiversity Information Facility). 2016. GBIF backbone taxonomy: *Caridina longidigita* Cai & Wowor, 2007. Global Biodiversity Information Facility, Copenhagen. Available: <http://www.gbif.org/species/5863063>. (July 2017).
- Sanders, S., C. Castiglione, and M. H. Hoff. 2014. Risk Assessment Mapping Program: RAMP. U.S. Fish and Wildlife Service.
- von Rintelen, K., and Y. Cai. 2009. Radiation of endemic species flocks in ancient lakes: systematic revision of the freshwater shrimp *Caridina* H. Milne Edwards, 1837 (Crustacea: Decapoda: Atyidae) from the ancient lakes of Sulawesi, Indonesia, with the description of eight new species. *The Raffles Bulletin of Zoology* 57(2):343-452.
- Wowor, D., S. De Grave, and W. Klotz. 2013. *Caridina longidigita*. The IUCN Red List of Threatened Species 2013: e.T197820A2501422. Available: <http://www.iucnredlist.org/details/197820/0>. (July 2017).

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.

Fryer, G. 1960. The feeding mechanisms of some atyid prawns of the genus *Caridina*.
Transactions of the Royal Society of Edinburgh 64:217-244.