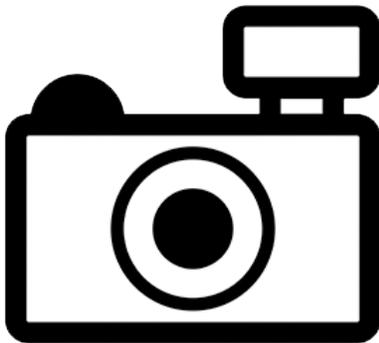


***Caridina rubropunctata* (freshwater atyid shrimp; no common name)**

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, August 2017
Web Version, 11/17/2017



No Photo Available

1 Native Range and Status in the United States

Native Range

From De Grave (2013):

“The species is only known from the type series, described in 2007, from springs in Van Lang, Don Hy District, Thai Nguyen Province, Vietnam (Dang and Do 2007).”

Status in the United States

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

From Elite Inverts Store (2017):

“Leopard Shrimp Qty 8
Price:\$59.00 [...]

These are a new shrimp being offered that came out of Vietnam. A little larger than tiger shrimp and care requirements are very similar. Seem to prefer cooler water in the low 70's Breeds like tiger shrimp and can be quite productive. *Caridina rubropunctata*”

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 rubropunctata*”

“TAXONOMIC STATUS
accepted species”

Size, Weight, and Age Range

No information available.

Environment

From De Grave (2013):

“Freshwater”

“The species is stated to have been collected in springs, no further ecological information is available.”

From Tuccinardi (2015):

“It is found in springs and spring-fed streams in the North of the country, where the water is generally soft and somewhat cool.”

Climate/Range

No information available.

Distribution Outside the United States

Native

From De Grave (2013):

“The species is only known from the type series, described in 2007, from springs in Van Lang, Don Hy District, Thai Nguyen Province, Vietnam (Dang and Do 2007).”

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 Dang and Do (2007):

“Body with characteristic red dots existing evenly in fixation status. Rostrum lanceolate in form, overreaching the 2nd segment to the middle of the 3rd [*sic*] segment of the antennular peduncle, bearing 12-16 teeth on the dorsal border, 5-7 teeth on the carapace, 2-4 teeth on the ventral. Stylocerit very long, extending to the distal extremity of the 2nd segment of antennular peduncle. Peraeropod I with movable finger longer than palm (1.27 time), long/wide ratio of the cheliped 2.08, cheliped longer than carpus (1.5), deeply excavated. Peraeopod II with movable finger longer than palm (1.05) carpus long/wide ratio 4.06. slightly longer than cheliped.”

“Endopod of pleopod I of the male pseudorectangular in form, excavated in outer border, extending to the middle of exopod. Pleopod II of the male with very long appendix interna nearly reaching the distal extremity of appendix masculina.”

Biology

No information available.

Human Uses

From Tuccinardi (2015):

“**Armadillo Shrimp (*Caridina rubropunctata*)**: With most of the buzz surrounding freshwater shrimps going to the ever-growing number of colorful line-bred forms, it’s easy to forget that there are still some pretty neat wild shrimps out there too. This colorful dwarf shrimp, sometimes called the leopard shrimp, is endemic to Vietnam and has only very rarely made its way into the trade.”

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

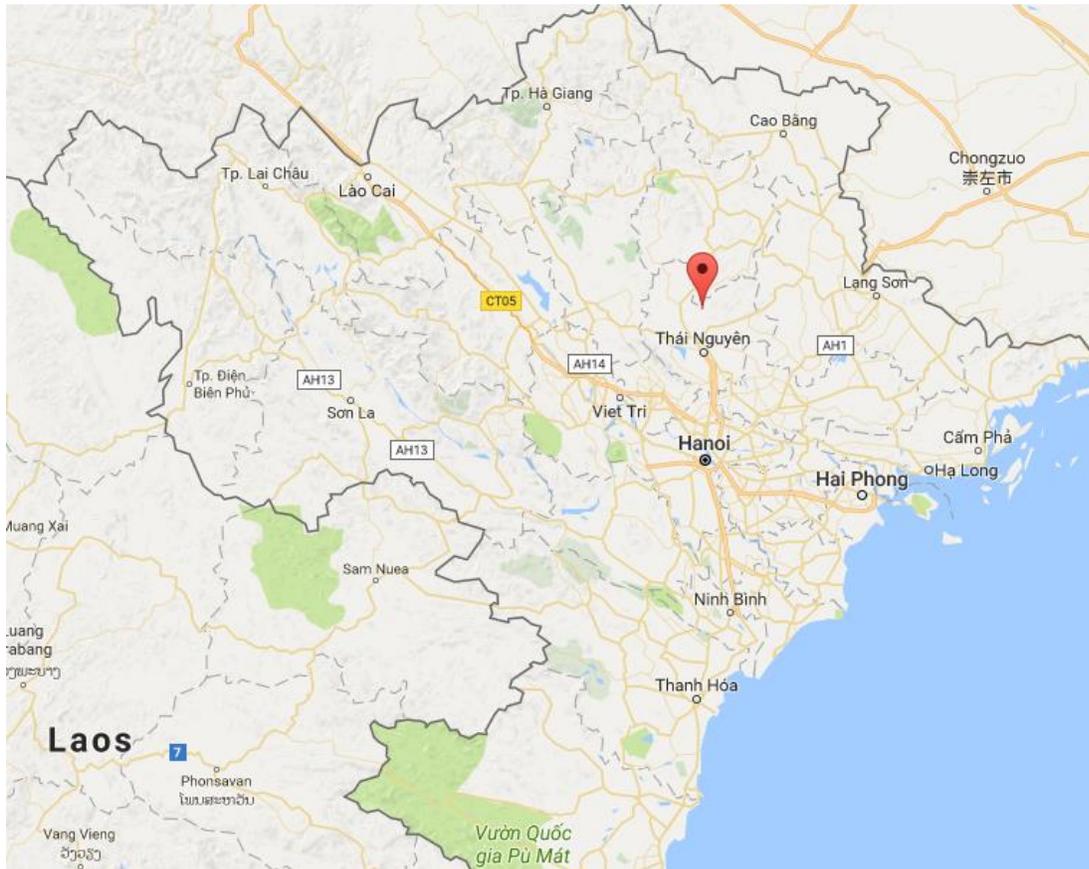


Figure 1. Location of Van Lang in Dong Hy District, Thai Nguyen Province, Vietnam. *C. rubropunctata* has been reported only from Van Lang (De Grave 2013). Map and data from Google (2017).

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. apart from a small area of medium match near Naples and Fort Myers, Florida. Climate 6 score indicated a low climate match for the contiguous U.S. Scores of 0.005 or less are classified as low match; Climate 6 score for *C. rubropunctata* was 0.000.

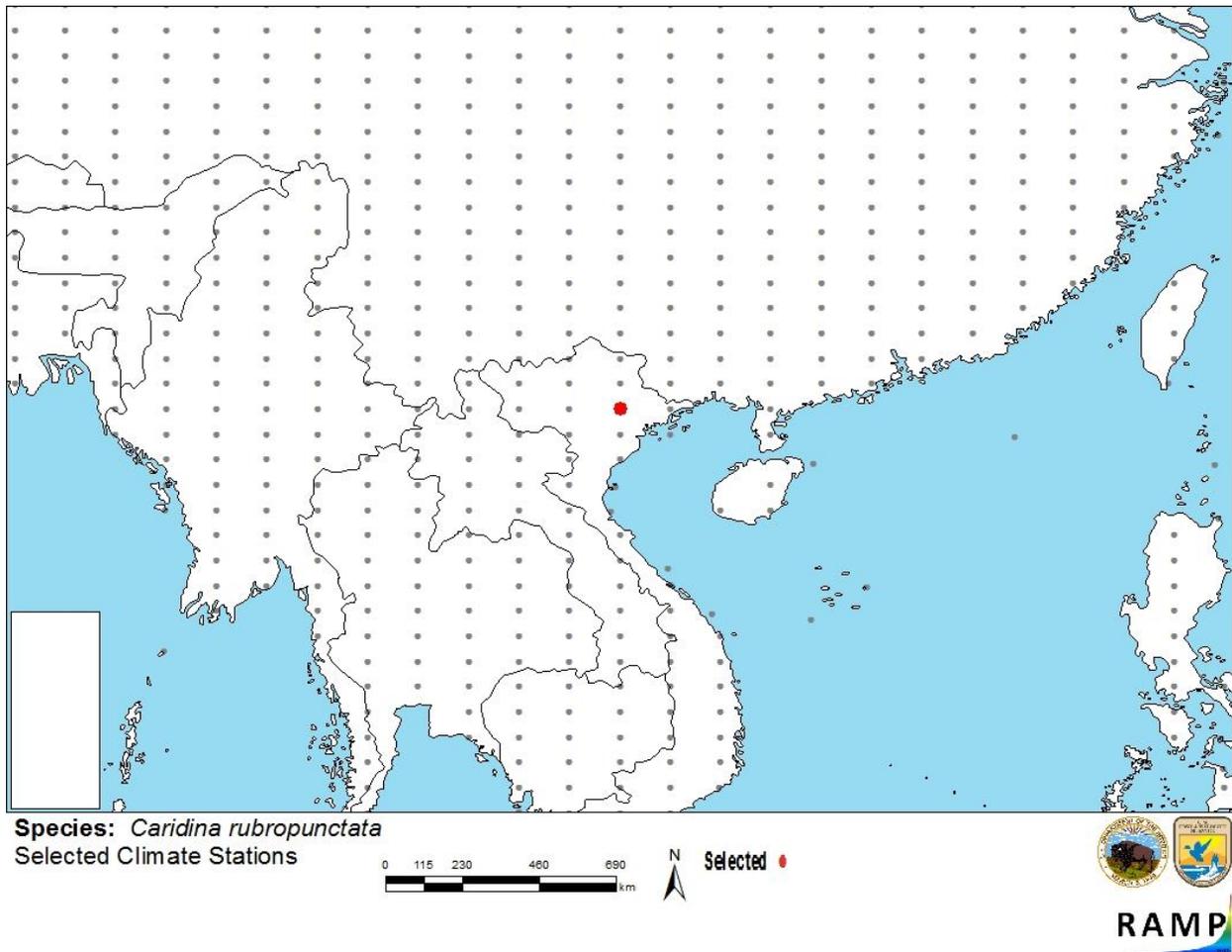


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red) and non-source locations (gray) for *Caridina rubropunctata* climate matching. Source location from De Grave (2013).

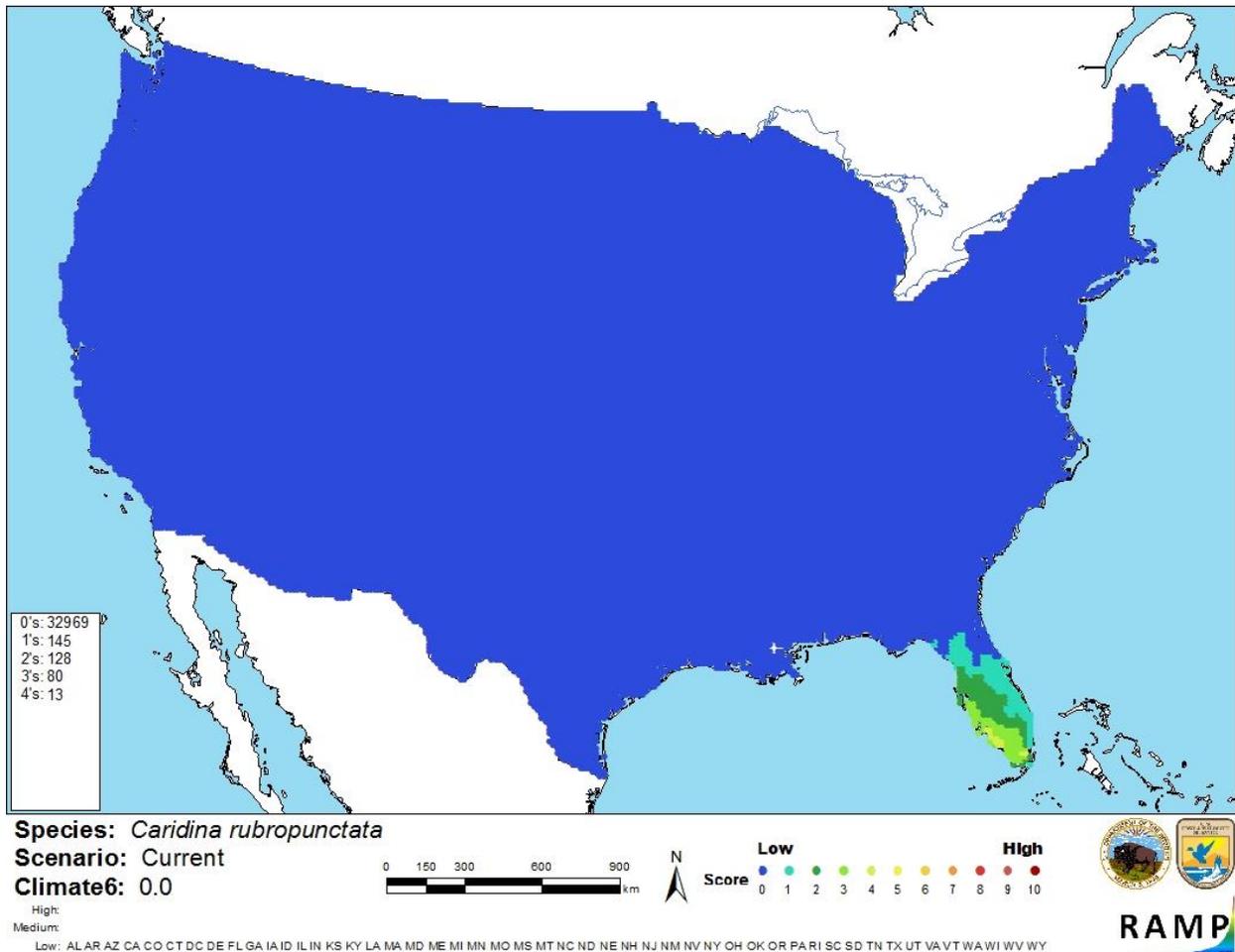


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Caridina rubropunctata* in the contiguous United States based on source location reported by De Grave (2013). 0=Lowest match, 10=Highest match.

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 very little information available on *Caridina rubropunctata*. The only information available comes from the original description of the species. Further information on every aspect of the biology, habitat, and distribution of *Caridina rubropunctata* is needed to adequately assess the risk this species poses if introduced to the U.S. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Caridina rubropunctata is a species of freshwater shrimp native to Thailand. This species has only been documented as occurring in freshwater springs in Van Lang, Don Hy District, Thai Nguyen Province, Vietnam. This species has no documented history of introduction, although it is beginning to appear in trade in the U.S. *C. rubropunctata* has a low climate match with the contiguous United States. Further information is needed to assess the risk this species poses, so certainty of this assessment is low. 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

Dang, N. T., and V. T. Do. 2007. New species of *Caridina* (Crustacea-Decapoda-Atyidae) from Vietnam. *Tap Chi Sinh Hoc* 29(4):1-2.

De Grave, S. 2013. *Caridina rubropunctata*. The IUCN Red List of Threatened Species 2013: e.T197756A2498666. Available: <http://www.iucnredlist.org/details/197756/0>. (August 2017).

Elite Inverts Store. 2017. Leopard shrimp qty 8. Elite Inverts Store. Available: <http://www.eliteinverts.com/leopard-shrimp-qty-8/>. (August 2017).

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Google. 2017. [Google Maps location for Văn Lãng, Đồng Hỷ District, Thai Nguyen, Vietnam]. Available: <https://www.google.com/maps/place/V%C4%83n+L%C4%83ng,+%C4%90%E1%BB%93ng+H%E1%BB%B7+District,+Thai+Nguyen,+Vietnam/@21.1767322,103.6826519,7z/data=!4m5!3m4!1s0x31352baa39c65439:0xec1ac3223c23605a!8m2!3d21.7873761!4d105.8172881>. (August 2017).

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

Tuccinardi, M. 2015. Coming soon: incredible new freshwater species from Vietnam. Reef to Rainforest Media. Available: <https://www.reef2rainforest.com/2015/01/20/coming-soon-incredible-new-freshwater-species-from-vietnam/>. (August 2017).