

Longfin Tetra (*Bryconalestes longipinnis*)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, April 2013
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1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2017):

“Africa: Atlantic border of the African continent from Gambia to Democratic Republic of the Congo”

“Found in the Chiloango River [Paugy and Schaefer 2007] in Cabinda [Angola].”

“Occurs in the Ouémé River [in Benin] [Paugy 1990; Paugy et al. 1994; Paugy 2003].”

“Found in Sanaga and in the coastal rivers of the West [Cameroon] [Vivien 1991; Paugy and Schaefer 2007]. Present in Cross [Paugy 1990; Paugy and Schaefer 2007; Paugy 2003], Wouri, Nyong, Lokoundje, Kienké, Lobé and Ntem [Paugy and Schaefer 2007] basins [in Cameroon].”

“Found in the Kouilou and Loémé basins [in Congo] [Paugy and Schaefer 2007].”

“Occurs in the Ntem, Benito (Mbini), Muni and Bioko basins [in Equatorial Guinea] [Paugy and Schaefer 2007].”

“Known from Komo, Ogowe, Nkomi, Nyanga and Banio basins [in Gabon] [Paugy and Schaefer 2007].”

“Occurs in the Gambia River [in Gambia] [Paugy 1990; Diouf 1996; Paugy 2003].”

“Found in Pra, Tano, Bia [Paugy 1990; Teugels and Thys van den Audenaerde 1990; Paugy 2003] and Volta basin [in Ghana] [Paugy 2003]. Also [Trewavas and Irvine 1947; Vaderpuyse 1982].”

“Occurs in the Great Scarcies, Little Scarcies, Lofa, Kogon, Fatala, and Konkouré rivers [in Guinea] [Paugy et al. 1994; Paugy 2003]. Also found in Corubal basin [in Guinea] [Paugy et al. 1994; Paugy 2003; Paugy and Schaefer 2007]. Also [Paugy 1990].”

“Occurs in the Corubal and Géba rivers [in Guinea-Bissau] [Paugy et al. 1994; Paugy 2003]. Also [Paugy 1990]”

“Occurs in the Farmington Lake, Du [Paugy et al. 1994], Mano, Loffa, St. Paul, Cess, Cavally and St. John rivers [in Liberia] [Paugy et al. 1994; Paugy 2003]. Also [Paugy 1990].”

“Found in Niger delta [Paugy 2003] at Mbiama and in the Orashi River [Teugels and Thys van den Audenaerde 1990]. Occurs at Jamieson River throughout the year with peak abundance during rainy season [Ikomi and Sikoki 2003]. Also occurs in Ogun, Cross [Olaosebikan and Raji 1998, Paugy 2003] and Rio del Rey [in Nigeria] [Paugy and Schaefer 2007]. Also [Paugy 1990; Ikomi and Sikoki 2003].”

“Occurs in the Little Scarcies, Great Scarcies (Kolenté), Rokel, Jong, Sewa and Moa rivers [in Sierra Leone] [Paugy et al. 1994; Paugy 2003]. Also [Paugy 1990].”

“Occurs in Lake Togo [Paugy et al. 1994], Mono and Volta River [in Togo] [Paugy et al. 1994; Paugy 2003]. Also [Paugy 1990].”

Status in the United States

No records of *Bryconalestes longipinnis* in the wild in the United States were found. *B. longipinnis* is in trade in the United States.

From Aquarium Fish (2018):

“Premium Wild *Brycinus Longipinnis* [sic] [...] 7.99”

Means of Introductions in the United States

No records of *Bryconalestes longipinnis* in the United States were found.

Remarks

The valid name of this species is *Bryconalestes longipinnis* (Eschmeyer et al. 2017), not all databases have incorporated this change and instead still use *Brycinus longipinnis* as the valid name. Information searches were conducted using both names.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Eschmeyer et al. (2017), *Bryconalestes longipinnis* (Günther 1864) is the valid name for this species. It was originally described as *Brachyalestes longipinnis* and has also been previously known as *Alestes longipinnis* and *Brycinus longipinnis*.

From ITIS (2013):

“Kingdom Animalia
Phylum Chordata
Subphylum Vertebrata
Superclass Osteichthyes
Class Actinopterygii
Subclass Neopterygii
Infraclass Teleostei
Superorder Ostariophysi
Order Characiformes
Family Alestiidae
Genus *Brycinus*
Species *Brycinus longipinnis* (Günther, 1864)”

Size, Weight, and Age Range

From Froese and Pauly (2017):

“Maturity: L_m 4.5 range ? - ? cm

Max length: 12.0 cm SL male/unsexed; [Olaosebikan and Raji 1998]”

Environment

From Froese and Pauly (2017):

“Freshwater; brackish; pelagic; pH range: 6.0 - 8.0; dH range: 5 - 19; potamodromous [Riede 2004]. [...]; 22°C - 26°C [assumed to be recommended aquarium temperature] [Riehl and Baensch 1991]”

Climate/Range

From Froese and Pauly (2017):

“Tropical; [...]”

Distribution Outside the United States

Native

From Froese and Pauly (2010):

“Africa: Atlantic border of the African continent from Gambia to Democratic Republic of the Congo”

See Section 1, above, for a detailed description of the distribution.

Introduced

No records of *Bryconalestes longipinnis* introductions into the wild were found.

Bryconalestes longipinnis is listed as *Brycinus longipinnis* on Australia’s “List of Specimens taken to be Suitable for Live Import – s303EB” (Environment Protection and Biodiversity Conservation Act 1999).

Yi (2014) lists *Bryconalestes longipinnis*, as *Brycinus longipinnis*, as present in Singapore’s ornamental trade.

Xiong et al. (2015) list *Bryconalestes longipinnis*, as *Brycinus longipinnis*, as present in China but no further details are given.

Means of Introduction Outside the United States

No records of *Bryconalestes longipinnis* introductions into the wild were found.

Short Description

From Froese and Pauly (2017):

“Anal spines: 0; Anal soft rays: 18 - 26. Diagnosis: fronto-parietal fontanel narrow, but always present; 25-34 lateral line scales; 5.5 scales between lateral line and dorsal fin; 15-23 anal fin branched rays; 13-15 gill rakers on lower limb of first gill arch; 6 teeth in outer premaxillary row [Paugy 1990; Paugy 2003; Paugy and Schaefer 2007]. Head length/snout length 3.3-4.4; 8.5-11.5

predorsal scales [Paugy and Schaefer 2007]. Precaudal spot elongate, extending to end of caudal fin [Paugy 2003].”

“Sexual dimorphism affecting anal-fin shape in adult males which have first rays of dorsal and pelvic fins rays prolonged, the dorsal filament extending beyond the adipose fin, and pelvic filament reaching to anal fin, when pressed to body; in sexually mature males body depth increases with growth at faster rate than females [Paugy and Schaefer 2007].”

“Diagnosis: fronto-parietal fontanel narrow, but always present; 25-34 lateral line scales; 5.5 scales between lateral line and dorsal fin; 15-23 anal fin branched rays; 13-15 gill rakers on lower limb of first gill arch; 6 teeth in outer premaxillary row [Paugy 1990; Paugy 2003; Paugy and Schaefer 2007]. Head length/snout length 3.3-4.4; 8.5-11.5 predorsal scales [Paugy and Schaefer 2007]. Precaudal spot elongate, extending to end of caudal fin [Paugy 2003].

Description: dorsal-fin origin at about same level as pelvic-fin insertions; anal fin with 3 branched and 15-23 unbranched rays; jaws equal, six outer premaxillary teeth aligned in one row; sexual dimorphism affecting anal-fin shape in adult males which have first rays of dorsal and pelvic fins rays prolonged, the dorsal filament extending beyond the adipose fin, and pelvic filament reaching to anal fin, when pressed to body; in sexually mature males body depth increases with growth at faster rate than females [Paugy 1990; Paugy 2003; Paugy and Schaefer 2007].

Coloration: humeral spot; broad precaudal band extending over entire length of caudal peduncle and continuing backwards on median caudal-fin rays to hind margin of caudal fork; body color silvery, back greenish and belly white; adult males with unpaired fins and sometimes also terminal filaments of pelvic fins red-violet, bright red spot above eye; females with pale orange fins, yellow blotch on each caudal-fin lobe, orange spot above eye [Paugy 1990; Paugy 2003; Paugy and Schaefer 2007].”

Biology

From Lalèye and Moelants (2010):

“It is the only *Brycinus* species known to penetrate small rivers and streams (Paugy 1990). Such specimens are always smaller than those found in large rivers (Stiassny et al. 2007).”

From Froese and Pauly (2017):

“Generally found in the upper and lower reaches of big rivers and also in estuarine zones of mixohaline waters [Paugy 1990]. The only *Brycinus* species to penetrate small rivers and streams [Paugy 1990], but such specimens are always smaller than those in large rivers [Paugy and Schaefer 2007].”

“Spawns in pairs or schools.”

“open water/substratum egg scatterers”

From Ikomi and Sikoki (2003):

“*B. longipinnis* in the Jamieson River was basically a mesopredator whose important food items were allochthonous surface insects mainly Hymenoptera (*Oecophylla* spp. and *Dorylus* spp.) and beetles. Algae, aquatic macrophytes, and others were minor diets. This dietary observation conforms to that of Planquette and Lemasson (1975) on the species in rivers in Cote d’Ivoire but differs from the dietary observations of the species in the Ikpoba Stream, Nigeria (Victor and Brown 1990). In the Ikpoba Stream, a variety of algal inclusions, constituted the primary diet of the species. Apparent dietary variation of this nature indicates the eurytrophic status of the species and hence its ability to utilise available food items. *B. longipinnis* in this study was essentially a day feeding fish, feeding mostly on the water surface. In the perturbed Ikpoba Stream, it fed mainly on substratum (Victor and Brown 1990).”

“Breeding activities of *B. longipinnis* in the Jamieson River occurred throughout the year. The ovaries were in all stages of development at any one particular time. This is an attribute of multiple spawners. The number of ripe eggs in the ovaries varied between 268 and 1113. In the Cavally and Bandama Rivers of Cote d’Ivoire, the ranges were 560–2450 and 420–2800 eggs, respectively (Paugy 1982). Fecundity of *B. longipinnis* in the present study was comparatively low. According to Gerking (1978), fecundity of a fish depend on the fertility of the river and rivers rich in nutrients produce more fecund fishes. Jamieson River being oligotrophic, expectedly produced fish of lower fecundity.”

Human Uses

From Froese and Pauly (2017):

“Fisheries: ; aquarium: commercial”

From Lalèyè and Moelants (2010):

“This species is harvested for human consumption, and for the aquarium trade.”

From Ikomi and Sikoki (2003):

“*B. longipinnis* is a beautiful species currently finding its way into fish hobbyists’ collections world wide.”

Diseases

No records of OIE reportable diseases were found.

From Froese and Pauly (2017):

“Fin Rot (early stage), Bacterial diseases
Aeromonosis, Bacterial diseases
Bacterial Infections (general), Bacterial diseases”

Poelen et al. (2014) lists *Annulotrema kribiensis*, *A. moanka*, and *A. tamberti* as parasites of *Bryconalestes longipinnis*. Database uses the name *Brycinus longipinnis*.

Threat to Humans

From Froese and Pauly (2017):

“Harmless”

3 Impacts of Introductions

No records of *Bryconalestes longipinnis* introductions into the wild were found.

4 Global Distribution

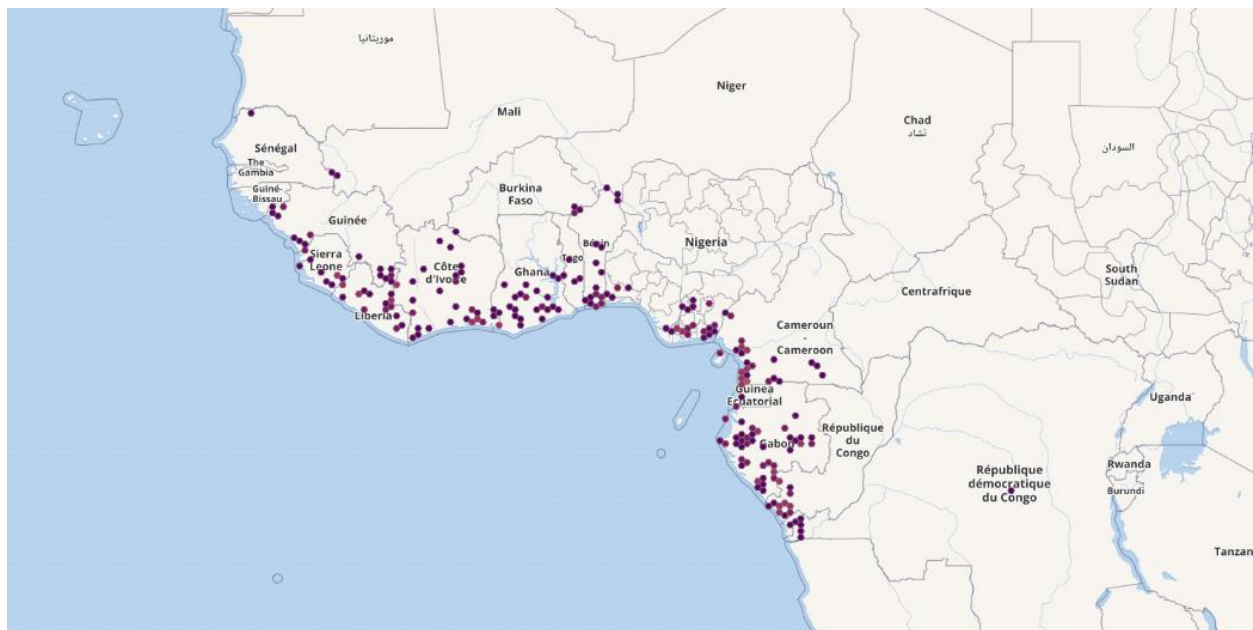


Figure 1. Known global distribution of *Bryconalestes longipinnis*. Locations are in Senegal, Mali, Guinea-Bissau, Guinea, Sierra Leone, Liberia, Burkina Faso, Ivory Coast, Ghana, Togo, Benin, Nigeria, Niger, Cameroon, Equatorial Guinea, Gabon, Republic of the Congo, and Democratic Republic of the Congo. Map from GBIF Secretariat (2016).

The location furthest to the east in the Democratic Republic of the Congo is far outside any documented range for this species. It is from a museum record that may contain errors (GBIF Secretariat 2016, Froese and Pauly 2017). This location was not used as a source point in the climate match.

5 Distribution Within the United States

No records of *Bryconalestes longipinnis* in the United States were found.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Bryconalestes longipinnis* was medium in Florida and southern Texas, it was low everywhere else. The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous United States was 0.002, low, and Florida had an individually high climate match.

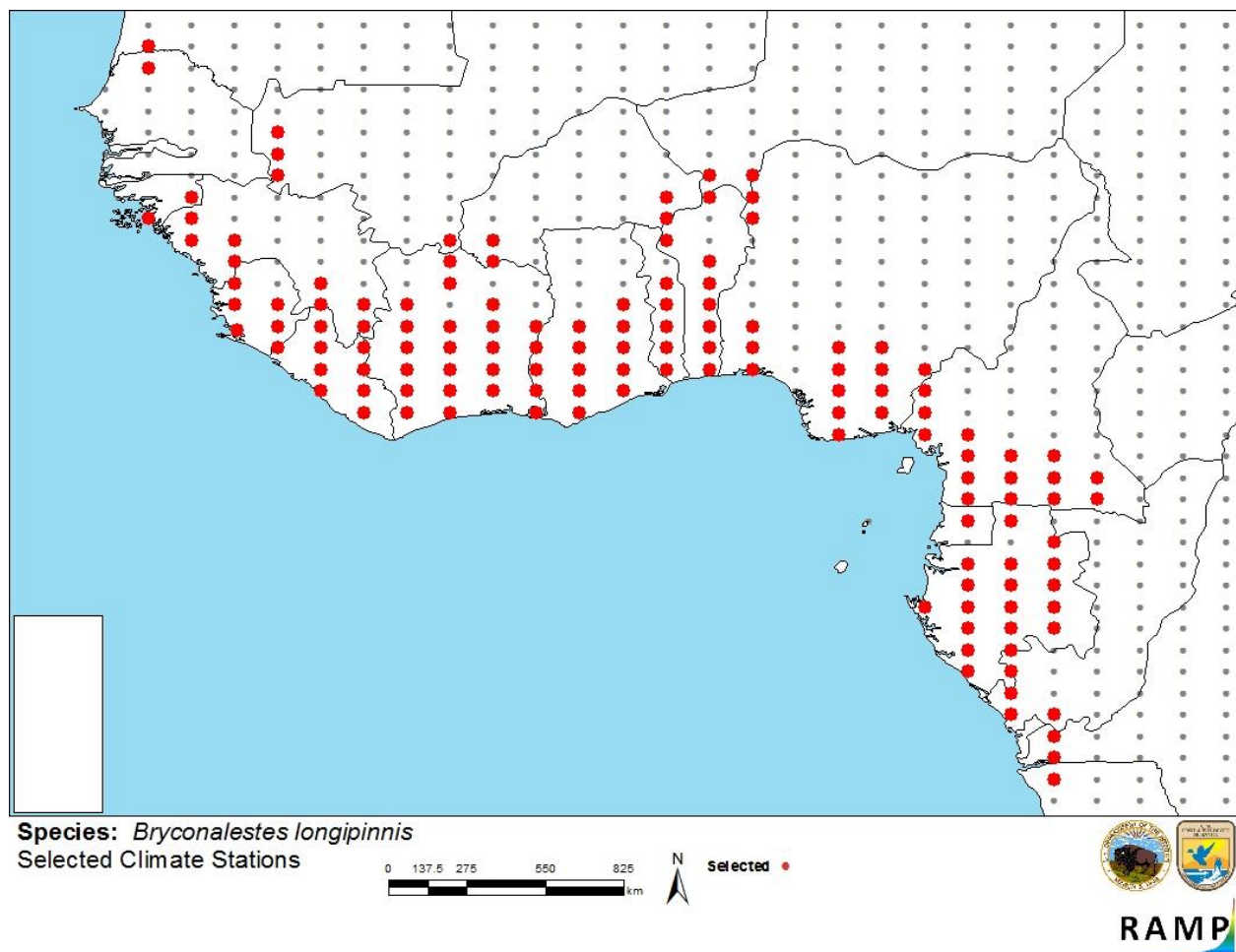


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in western Africa selected as source locations (red; Mauritania, Senegal, Mali, Guinea-Bissau, Guinea, Sierra Leone, Liberia, Ivory Coast, Burkina Fasso, Ghana, Togo, Benin, Niger, Nigeria, Cameroon, Equatorial Guinea, Gabon, Republic of the Congo, Democratic Republic of the Congo, Angola) and non-source locations (grey) for *Bryconalestes longipinnis* climate matching. Source locations from GBIF Secretariat (2016). Climate stations within 100km of an observations were selected as source points (Sanders et al. 2014).

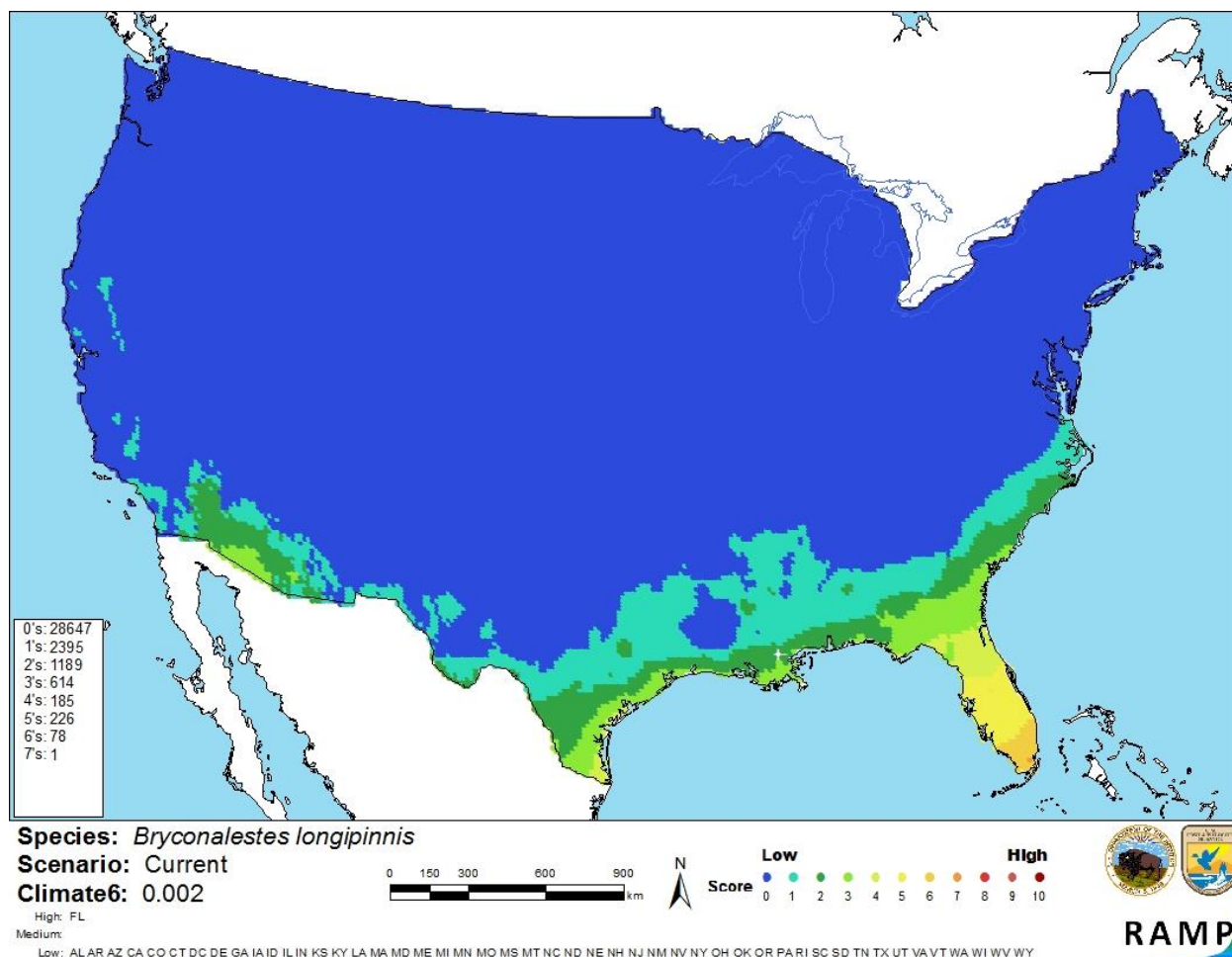


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Bryconalestes longipinnis* in the contiguous United States based on source locations reported by GBIF Secretariat (2016). 0 = Lowest match, 10 = Highest match.

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

The certainty of this assessment is medium. There is an adequate amount of quality information available about biology and current distribution of *Bryconalestes longipinnis*. No information could be found regarding introductions of this species outside of its native range. Reliable records of this species' presence in the aquarium trade was found but no information on the volume or duration of trade.

8 Risk Assessment

Summary of Risk to the Contiguous United States

The Longfin Tetra (*Bryconalestes longipinnis*) is native to the coastal river drainages of western Africa. This species is harvested for consumption and for the aquarium trade. The history of invasiveness for *B. longipinnis* is uncertain. No records of introductions to the wild were found. One reference stated the species was present in China but gave no further details regarding if it was present in the wild. *B. longipinnis* is present in the aquarium trade but no information on the volume or duration of time in trade was available. The climate match was generally low across the contiguous United States. The Climate 6 score was 0.002, low; however Florida did have an individually high climate score. The overall risk assessment uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Low**
- **Certainty of Assessment (Sec. 7): Medium**
- **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

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.

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