

Barred Grunter (*Amniataba percoides*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, January 2022

Revised, March 2022

Web Version, 4/13/2023

Organism Type: Fish

Overall Risk Assessment Category: Uncertain



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https://www.flickr.com/photos/arthur_chapman/27719523575. (01/14/2022).

1 Native Range and Status in the United States

Native Range

From Thompson and Bray (2021):

“Endemic to and widespread in the Lake Eyre Basin and north coastal regions of the Northern Territory, Queensland, South Australia and Western Australia. The natural distribution is from the Pilbara and Kimberley regions of Western Australia, to the Burnett River, southern Queensland, and the inland Finke and Georgina rivers, Northern Territory.”

Status in the United States

No records of *Amniataba percoides* in trade or in the wild in the United States were found.

Means of Introductions in the United States

No records of *Amniataba percoides* in the wild in the United States were found.

Remarks

The species' valid name, *Amniataba percoides*, was used to search for information for this screening.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Fricke et al. (2022), *Amniataba percoides* (Günther 1864) is the current valid name for this species. It was originally described as *Therapon percoides* Günther 1864. The following are synonyms of *Amniataba percoides*: *A. percoides burnettensis*, *Datnia fasciata*, *Therapon fasciatus*, *T. spinosior*, *T. terraereginae*, and *T. percoides yorkensis*.

From ITIS (2022):

Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Acanthopterygii
Order Perciformes
Suborder Percoidei
Family Terapontidae
Genus *Amniataba*
Species *Amniataba percoides* (Günther, 1864)

Size, Weight, and Age Range

From Froese and Pauly (2022):

“Max length: 18.0 cm SL male/unsexed; [Allen 1989]; common length: 11.0 cm SL male/unsexed; [Allen 1989]”

From Ebner et al. (2019):

“This species reaches sexual maturity in less than twelve months and likely lives beyond ten years (G. Butler pers. comm. 2019), [...]”

Environment

From Froese and Pauly (2022):

“Freshwater; benthopelagic; potamodromous [Riede 2004]. [...] 22°C - 28°C [Baensch and Riehl 1985; assumed to be recommended aquarium temperature]”

“Adults live in a variety of environment from still ponds and isolated rock pools to fast-flowing streams. They are found in clear to turbid water over both rock and sand bottoms. Adapt readily to a wide range of temperature (to 40°C), pH (4.5-8.6) and salinity (fresh to brackish) conditions.”

Climate

From Froese and Pauly (2022):

“Tropical; [...]”

Distribution Outside the United States

Native

From Thompson and Bray (2021):

“Endemic to and widespread in the Lake Eyre Basin and north coastal regions of the Northern Territory, Queensland, South Australia and Western Australia. The natural distribution is from the Pilbara and Kimberley regions of Western Australia, to the Burnett River, southern Queensland, and the inland Finke and Georgina rivers, Northern Territory. Occurs in a variety of freshwater habitats ranging from still ponds and rock pools, to fast-flowing rivers and streams. The species tolerates a wide range of environmental conditions, from the clear headwaters of streams to the slightly brackish upper parts of estuaries, and can live in a range of water temperatures.”

Introduced

From Thompson and Bray (2021):

“Barred Grunter have been introduced into rivers and streams in southern Queensland, and into the Clarence River system in northern New South Wales. These populations are now well established.”

“While Barred Grunter were not detected in the Clarence River during a 1996 survey of NSW [New South Wales] rivers, the species was taken there by anglers in 1999.”

Means of Introduction Outside the United States

From Loh et al. (2014):

“These were introduced into the Brisbane River or the lake [Australia] either by accident [barred grunter *Amniataba percoides* (Günther 1864); Rowland, 2001], [...]”

Short Description

From Thompson and Bray (2021):

“Body oblong to oval, moderately compressed and deep, depth 2.2-2.7 in SL [standard length]; dorsal profile more pronounced than ventral; dorsal profile straight from snout to nape, then convex to dorsal-fin origin; ventral profile straight from tip of lower lip to isthmus; convex from isthmus to pelvic insertion, then straight to anus.

Head length 2.7-3.3 in SL. Snout slightly elongate, length 2.8-3.7 in HL [head length]. Eye width 2.6-3.6 in HL. Jaws equal with lips slightly fleshy, especially in larger fish; jaw length 3.3-4.0 in SL; gape oblique; maxillary reaching to vertical through posterior nostril; teeth conic, slightly recurved, in bands, outer row enlarged; vomer and palatines without teeth. Interorbital region with distinct ridges. Nostrils distant, separated by a distance equal to one-third of eye diameter. Lacrimal serrate. Preoperculum serrate; serrations largest on vertical edge. Lower opercular spine longer and stronger; not extending beyond edge of opercular lobe. Cleithrum exposed; serrate posteriorly; scales on side. Supracleithrum exposed. Posttemporal not exposed, covered with skin and scales.

Scales finely ctenoid; lateral line continuous, smoothly curved; 4-6 scales on caudal; 14-16 predorsal scales to occiput; 1 row of scales in sheath at base of dorsal fin, sheath extending to third or fourth dorsal ray; two rows of scales in sheath at base of anal fin, sheath extending to third or fourth anal ray; cheek scales in 4-5 rows.

Dorsal fin continuous; length of base of dorsal 1.8-2.1 in SL; spinous portion strongly arched; first spine very short; fourth to sixth spines longest, longest dorsal spine 1.4-1.9 in HL; longer than longest dorsal rays, subsequent spines decreasing in length gradually to penultimate which is shorter than last; longest dorsal ray 1.6-2.0 in HL, soft dorsal with posterior edge straight or slightly convex. Second anal spine strong; about twice as long as first, 1.5-2.1 in HL, longer than third and about as long as longest anal ray; longest anal ray 1.9-2.1 in HL, posterior margin of soft dorsal slightly convex. Pectorals asymmetrically pointed; fifth ray longest. Pelvic fins pointed; first and second rays longest; reaching to anus. Caudal slightly emarginate, lobes obtusely pointed.”

“Juveniles have several stripes on top of the head running between the eyes, and additional stripes from the snout tip to the top of eye and under eye across the cheek.

In adults, the top of the head is darker with stripes variably masked. Stripes below and in front of the eye are variably masked; head lighter below. Body dark above, lighter below. Scales above lateral line with darker edges. 5-7 vertical black bands on side; each about 2 scales wide.

Spinous dorsal fin slightly dusky, soft portion with 1-2 rows of dusky spots and a blotch near the base above 4th body bar. Spinous anal-fin clear; soft anal-fin dusky with a lighter border and a horizontal band of pigmentation. Caudal fin with dark edges and many small spots on the anterior 2/3 forming irregular vertical bands; lower rays white. Pectoral fins clear or with slightly dusky markings. Pelvic fins clear except outer rays dusky.”

Biology

From Froese and Pauly (2022):

“Form loose aggregations [Allen et al. 2002]. Feed on insects, crustaceans and algae. Breeding takes place between August and March [southern hemisphere]; highly fecund females lay demersal eggs. Sexual maturity is reached at a length of about 7.5-9.0 centimeters. Breed readily in ponds [...] [Allen et al. 2002]. Eggs are guarded and fanned by the male parent [Breder and Rosen 1966].”

From Ebner et al. (2019):

“Spawning occurs when temperatures are between 26 and 33 degrees Celsius (Unmack 2003). This species reaches sexual maturity in less than twelve months and likely lives beyond ten years (G. Butler pers. comm. 2019), and has a fecundity of 40,000 - 70,000 eggs which are 0.4 - 0.45 mm in diameter (Pusey et al. 2004).

This species has high mobility capacity (Hermoso et al. 2013) and has been seen migrating in some areas of its range (Pusey et al. 2004).”

From Thompson and Bray (2021):

“Feeds mostly on aquatic insects and crustaceans; also consumes algae and aquatic plants, as well as snails and the occasional small fishes.”

Human Uses

From Ebner et al. (2019):

“This species is popular in aquariums in Singapore but is not suitable in community tanks due to their aggressive behaviour (Allen et al. 2002). They are also kept in aquariums in New South Wales but result in \$11,000 fines if they are not in an enclosed aquarium (Thompson and Bray 2018). They are not commonly used for sport or food (McGrourther 2015) but still have bag limits (Thompson and Bray 2018). It is commonly used as a live bait species.”

Diseases

No records of OIE-reportable diseases (OIE 2022) were found for *Amniataba percoides*.

According to Bailly (2017), *Amniataba percoides* can be the host to *Opecoelus variabilis*.

According to Poelen et al. (2014), *Amniataba percoides* can be the host to *Chilodonella hexasticha*.

Threat to Humans

From Froese and Pauly (2022):

“Harmless”

3 Impacts of Introductions

No realized impacts of introductions for *Amniataba percoides* were found. The following refer to potential impacts of introductions.

From Thompson and Bray (2021):

“While Barred Grunter were not detected in the Clarence River during a 1996 survey of NSW rivers, the species was taken there by anglers in 1999. The species has the potential to damage the aquatic environment and may affect other native fishes.”

4 History of Invasiveness

The history of invasiveness for *Amniataba percoides* is Data Deficient. *Amniataba percoides* has been introduced and become established outside of its native range in southern Queensland and into the Clarence River system in northern New South Wales. Information regarding impacts from those introductions was not found. There is also evidence that this species is popular in aquariums in Singapore, but no information was found on how many fish are traded each year or how long the species has been in trade.

5 Global Distribution

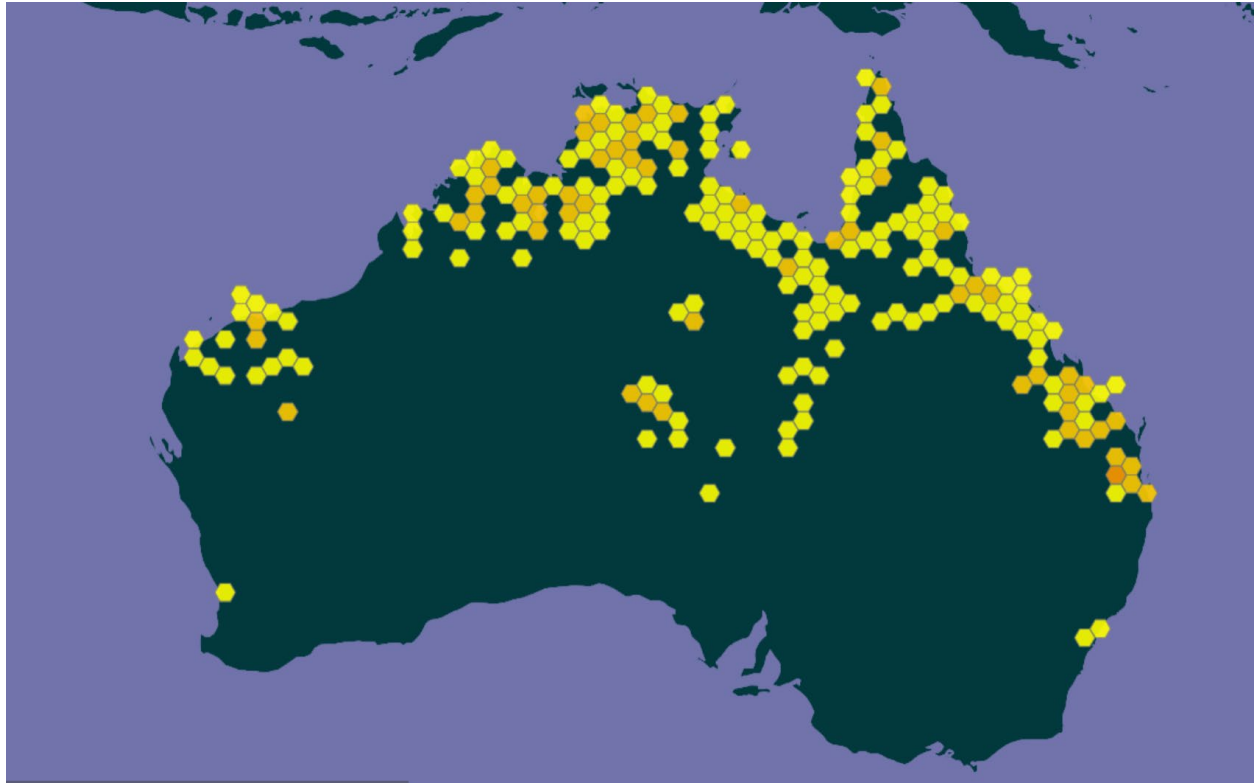


Figure 1. Known global distribution of *Amniataba percooides*. Observations are reported from Australia. Map from GBIF Secretariat (2022).

The southernmost observations near the eastern coast in New South Wales and the western coast near Perth, Western Australia, were not used to select source points for the climate match as they did not represent known established populations.

6 Distribution Within the United States

No records of *Amniataba percooides* in the wild in the United States were found.

7 Climate Matching

Summary of Climate Matching Analysis

There were areas of both high and low climate match for *Amniataba percooides* found within the contiguous United States. Areas of high match were found in southern Florida and north to southern South Carolina and along the United States-Mexico border from Arizona to the Gulf Coast of Texas. A few small patches of high match were also found in southern California and Nevada. Areas of low match were found in New England and northern New York, along the Pacific Coast, in patches throughout the Rocky Mountain range, and along the border between the United States and Canada from Washington to northern Minnesota. There was also an area of low match in the southern Appalachian Mountains and south from western North Carolina to

eastern Texas. Elsewhere had a medium match locally. The overall Climate 6 score (Sanders et al. 2021; 16 climate variables; Euclidean distance) for the contiguous United States was 0.205, High (scores greater than or equal to 0.103, are classified as High). The following States had High individual Climate 6 scores: Arizona, Florida, Georgia, Indiana, Kansas, Missouri, New Mexico, Oklahoma, South Carolina, Texas, Virginia, and West Virginia. The following States had Medium individual Climate 6 scores: California, Colorado, Illinois, Louisiana, Michigan, Nevada, North Carolina, Ohio, Tennessee, Utah, and Wisconsin. All other States had Low individual scores.

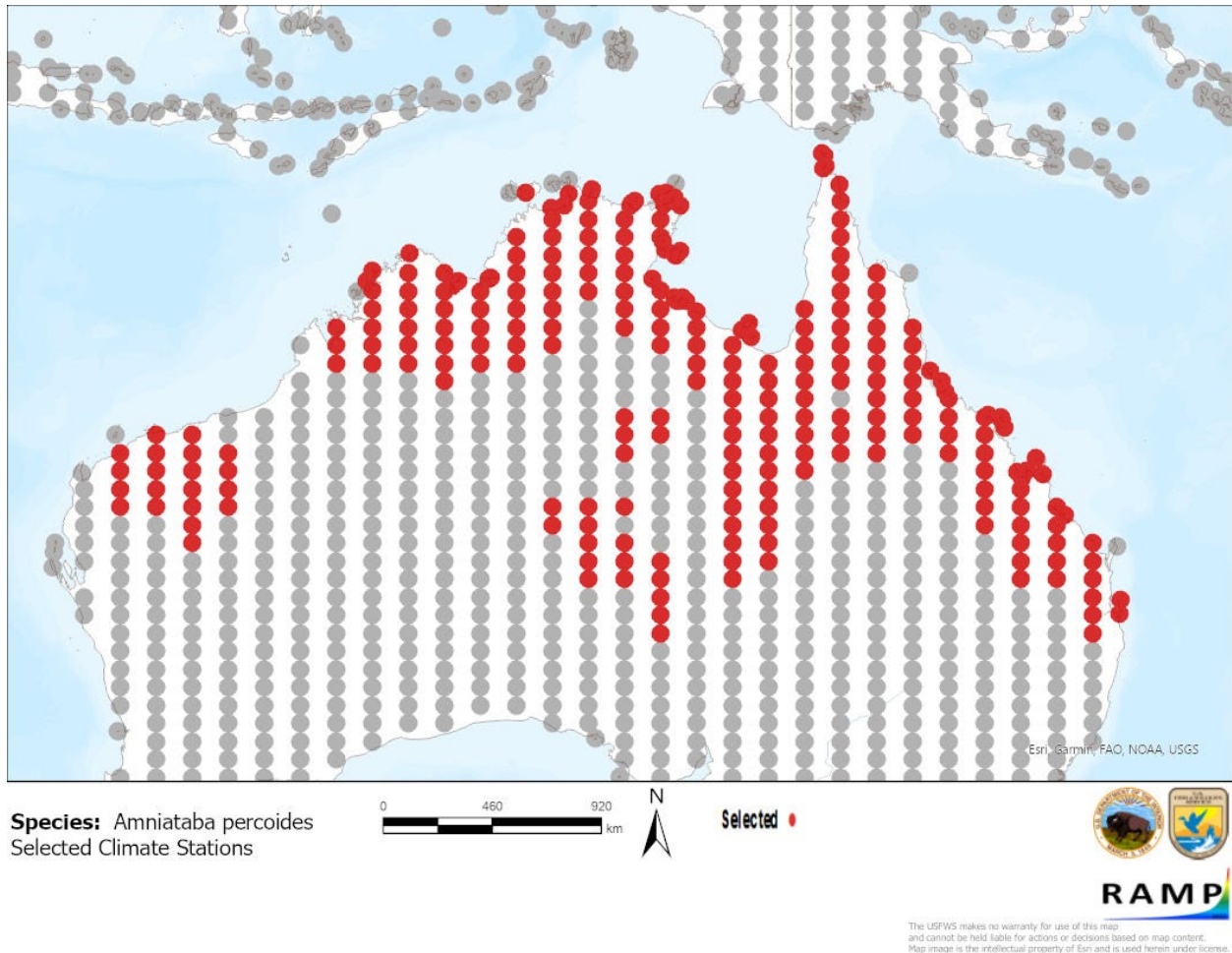


Figure 2. RAMP (Sanders et al. 2021) source map showing weather stations in Australia selected as source locations (red; Australia) and non-source locations (gray) for *Amniataba percoides* climate matching. Source locations from GBIF Secretariat (2022). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

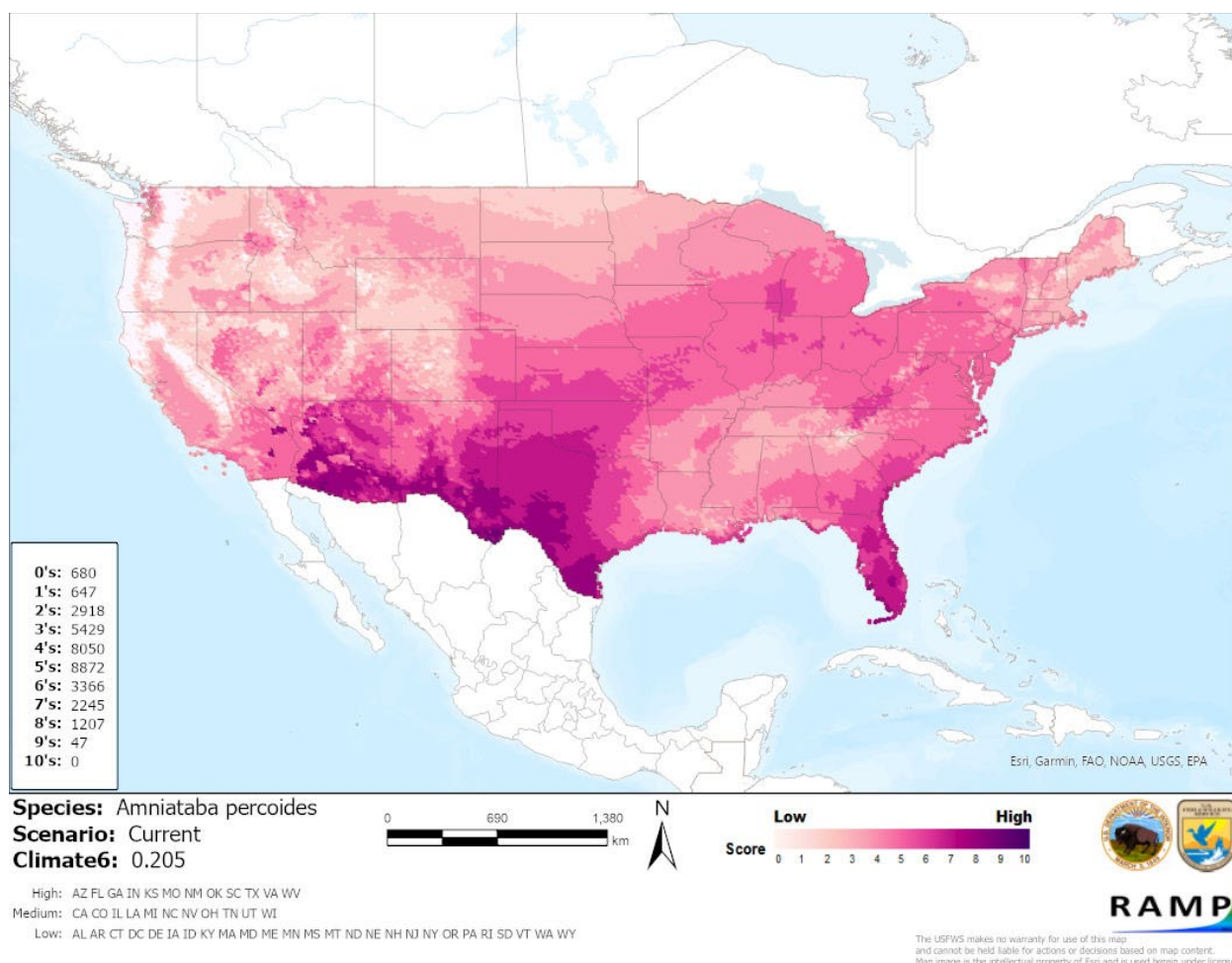


Figure 3. Map of RAMP (Sanders et al. 2021) climate matches for *Amniataba percooides* in the contiguous United States based on source locations reported by GBIF Secretariat (2022). Counts of climate match scores are tabulated on the left. 0/Light Pink = Lowest match, 10/Dark Purple = Highest match.

The High, Medium, and Low climate match categories are based on the following table:

Climate 6: (Count of target points with climate scores 6-10)/ (Count of all target points)	Overall Climate Match Category
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

8 Certainty of Assessment

Scientific information on the biology and ecology of *Amniataba percooides* is widely available, however information regarding the impacts of introductions is lacking. Absence of impact information and research makes the certainty of this assessment Low.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Amniataba percoides is a demersal fish endemic to parts of Australia. *A. percoides* is found in the aquarium trade. Introductions and established populations have been reported for the species in other areas of Australia. There is no information on impacts of introductions associated with this species, therefore the history of invasiveness is Data Deficient. The overall Climate 6 score for the contiguous United States was High. Areas of high match were located in Florida and along the United States Mexico border from Arizona to Texas. The lack of introduction impact information makes the certainty of this assessment Low. The overall risk assessment category is Uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): Data Deficient**
- **Overall Climate Match Category (Sec. 7): High**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks, Important additional information: No additional remarks.**
- **Overall Risk Assessment Category: Uncertain**

10 Literature Cited

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 11.

- Bailly N. 2017. *Amniataba percoides*. World Register of Marine Species. Available: <https://www.marinespecies.org/aphia.php?p=taxdetails&id=991187> (March 2022).
- Ebner B, Brooks S, Kerezszy A, Butler G. 2019. *Amniataba percoides*. The IUCN Red List of Threatened Species 2019: e.T123358775A123382836. Available: <https://www.iucnredlist.org/species/123358775/123382836> (March 2022).
- Fricke R, Eschmeyer WN, van der Laan R, editors. 2022. Eschmeyer's catalog of fishes: genera, species, references. California Academy of Science. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp> (March 2022).
- Froese R, Pauly D, editors. 2022. *Amniataba percoides* (Günther, 1864). FishBase. Available: <https://www.fishbase.se/summary/Amniataba-percoides.html> (March 2022).
- GBIF Secretariat. 2022. GBIF backbone taxonomy: *Amniataba percoides* (Günther, 1864). Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/2374606> (March 2022).

- [ITIS] Integrated Taxonomic Information System. 2022. *Amniataba percooides* (Günther, 1864). Reston, Virginia: Integrated Taxonomic Information System. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=168038#null (March 2022).
- Loh WKW, Bond P, Ashton KJ, Roberts DT, Tibbetts IR. 2014. DNA barcoding of freshwater fishes and the development of a quantitative qPCR assay for the species-specific detection and quantification of fish larvae from plankton samples. *Journal of Fish Biology* 85:307–328.
- [OIE] World Organisation for Animal Health. 2021. Animal diseases. Available: <https://www.oie.int/en/what-we-do/animal-health-and-welfare/animal-diseases/> (May 2021).
- Poelen JH, Simons JD, Mungall CJ. 2014. Global Biotic Interactions: an open infrastructure to share and analyze species-interaction datasets. *Ecological Informatics* 24:148–159.
- Sanders S, Castiglione C, Hoff M. 2021. Risk Assessment Mapping Program: RAMP. Version 4.0. U.S. Fish and Wildlife Service.
- Thompson VJ, Bray DJ. 2021. *Amniataba percooides*. Fishes of Australia. Museums Victoria and OzFishNet. Available: <https://fishesofaustralia.net.au/home/species/687> (March 2022).

11 Literature Cited in Quoted Material

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.

- Allen GR. 1989. Freshwater fishes of Australia. Neptune City, New Jersey: T.F.H. Publications.
- Allen GR, Midgley SH, Allen M. 2002. Field guide to the freshwater fishes of Australia. Perth, Western Australia: Western Australian Museum.
- Baensch HA, Riehl R. 1985. Aquarien atlas. Band 2. Melle, Germany: Mergus, Verlag für Natur- und Heimtierkunde GmbH.
- Breder CM, Rosen DE. 1966. Modes of reproduction in fishes. Neptune City, New Jersey: T.F.H. Publications.
- Hermoso V, Ward DP, Kennard MJ. 2013. Prioritizing refugia for freshwater biodiversity conservation in highly seasonal ecosystems. *Diversity and Distributions* 19:1031–1042.
- McGrouther M. 2015. Banded grunter, *Amniataba percooides* (Günther, 1864). Available: <https://australianmuseum.net.au/banded-grunter-amniataba-percooides>. [Source material did not give full citation for this reference.]

- Pusey B, Kennard M, Arthington A. 2004. Freshwater fishes of North-Eastern Australia. Collingwood, Victoria: CSIRO.
- Riede K. 2004. Global register of migratory species - from global to regional scales. Bonn, Germany: Federal Agency for Nature Conservation. Final Report of the R&D-Projekt 808 05 081.
- Rowland SJ. 2001. Record of the banded grunter *Amniataba percoides* (Terapontidae) from the Clarence River, New South Wales. Australian Zoologist 31:603–607.
- Thompson VJ, Bray DJ. 2018. *Amniataba percoides*. Fishes of Australia. Available: <http://fishesofaustralia.net.au/home/species/687>. [Source material did not give full citation for this reference.]
- Unmack PJ. 2003. *Amniataba percoides* (Gunther 1864) banded grunter. Available: <https://www.desertfishes.org/australia/fish/amniperc.html>. [Source material did not give full citation for this reference.]