

***Potamotrygon scobina* (a stingray, no common name)**

Ecological Risk Screening Summary

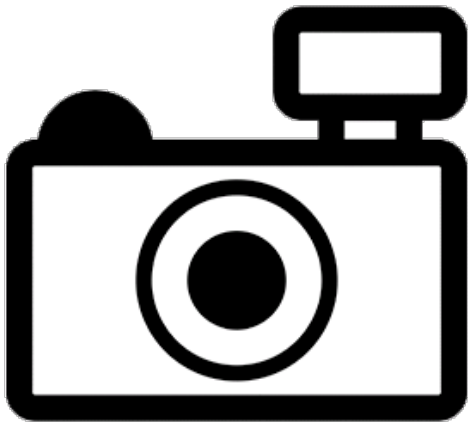
U.S. Fish & Wildlife Service, August 2012

Revised, September 2018

Web Version, 3/1/2021

Organism Type: Fish

Overall Risk Assessment Category: Uncertain



No Photo Available

1 Native Range and Status in the United States

Native Range

From Fricke et al. (2018):

“Widely distributed in the Amazon and Orinoco basins, Brazil, Peru, Colombia, Ecuador and Venezuela.”

From Froese and Pauly (2018):

“South America: Middle and lower Amazon River, lower Tocantins River, Pará River, Trombetas River in Brazil.”

From De Almeida and Charvet-Almeida (2004):

“Northern Brazil, in the mid and lower Amazon drainage, from Manaus to Belém (Rosa 1985, Carvalho et al. 2003); also found in the lower Tocantins River drainage (type locality Cametá;

Garman 1913); Pará and Trombetas River (Carvalho et al. 2003) and possibly in the lower drainage of other Amazonas tributaries (author's pers. obs.) [all locations in Brazil].

Reproduction and nursery areas have been observed for this species, more specifically inshore off some islands located in the Marajó Bay region (State of Pará, Brazil) (Almeida 2003, Charvet-Almeida, pers. obs)."

From Ramos (2017):

"Brazil, Peru and Colombia, mid to lower Amazon River, lower Tocantins River, Pará River, Trombetas River, Solimões River, Madeira River and Orinoco River (FONTENELLE, 2013; LASSO et al., 2013; REIS; KULLANDER; FERRARIS, 2003)."

Status in the United States

No records of *Potamotrygon scobina* in the wild or in trade in the United States were found.

The Florida Fish and Wildlife Conservation Commission has listed the freshwater stingray *Potamotrygon scobina* as a conditional species. Conditional nonnative species (FFWCC 2018), "are considered to be dangerous to the ecology and/or the health and welfare of the people of Florida. These species are not allowed to be personally possessed, although exceptions are made by permit from the Executive Director for research, commercial use (with security measures to prevent escape or release) or public exhibition purposes."

From Arizona Office of the Secretary of State (2013):

"I. Fish listed below are considered restricted live wildlife:

[...]

32. All species of the family Potamotrygonidae. Common name: stingray."

From California Department of Fish and Wildlife (2019):

"It shall be unlawful to import, transport, or possess live animals restricted in subsection (c) below except under permit issued by the department. [...]

Restricted species include:

[...]

Family Potamotrygonidae-River stingrays: All species (D)."

From Georgia DNR (2020):

"The exotic species listed below, except where otherwise noted, may not be held as pets in Georgia. This list is not all inclusive. [...]

Fresh-water stingray; all species"

From Mississippi Secretary of State (2019):

“All species of the following animals and plants have been determined to be detrimental to the State's native resources and further sales or distribution are prohibited in Mississippi. No person shall import, sell, possess, transport, release or cause to be released into the waters of the state any of the following aquatic species or hybrids thereof. However, species listed as prohibited may be allowed under a permitting process where environmental impact has been assessed.

[...]

Freshwater stingrays Family Potamotrygonidae **** [indicating all species within the family are included in the regulation]”

From State of Nevada (2018):

“Except as otherwise provided in this section and NAC 504.486, the importation, transportation or possession of the following species of live wildlife or hybrids thereof, including viable embryos or gametes, is prohibited:

[...]

Freshwater stingray.....All species in the family Potamotrygonidae”

From Oklahoma Secretary of State (2019):

“Until such time as is necessary for the Department of Wildlife Conservation to obtain adequate information for the determination of other harmful or potentially harmful exotic species, the importation into the State and/or the possession of the following exotic fish or their eggs is prohibited:

[...]

Freshwater Stingray group: *Paratrygon* spp., *Potomotrygon* spp., and *Disceus* spp.”

From Texas Parks and Wildlife (2020):

“The organisms listed here are legally classified as exotic, harmful, or potentially harmful. No person may possess or place them into water of this state except as authorized by the department. Permits are required for any individual to possess, sell, import, export, transport or propagate listed species for zoological or research purposes; for aquaculture (allowed only for Blue, Nile, or Mozambique tilapia, Triploid Grass Carp, or Pacific White Shrimp); or for aquatic weed control (for example, Triploid Grass Carp in private ponds).

[...]

Freshwater Stingrays, Family Potamotrygonidae All species”

Means of Introductions in the United States

No records of *Potamotrygon scobina* in the wild in the United States were found.

Remarks

From De Almeida and Charvet-Almeida (2004):

“Misidentifications occur with several other freshwater stingray species, but especially with *P. motoro* (Rosa 1985), *P. castexi* and *P. signata* (Almeida 2003, author's pers. obs.).”

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Fricke et al. (2018), *Potamotrygon scobina* (Garman 1913) is the valid name for this species; it is also the original name.

From ITIS (2018):

Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Chondrichthyes
Class Chondrichthyes
Subclass Elasmobranchii
Superorder Euselachii
Order Myliobatiformes
Family Potamotrygonidae
Genus *Potamotrygon*
Species *Potamotrygon scobina* Garman 1913

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Maturity: L_m 39.0 range ? - ? cm

Max length : 54.7 cm WD male/unsexed; [Fontenelle et al. 2014]; max. published weight: 15.0 kg [Ferreira et al. 1998]”

From De Almeida and Charvet-Almeida (2004):

“Maximum size measured corresponded to a female specimen of 69.1 cm disc width (DW) and 132.5 cm total length (TL) (Almeida 2003).”

Environment

From Froese and Pauly (2018):

“Freshwater; benthopelagic; potamodromous [Riede 2004].”

From De Almeida and Charvet-Almeida (2004):

“The distribution of this species in the Amazon estuary region is influenced by seasonal salinity variations (Almeida 2003, Charvet-Almeida, pers. obs.).”

Climate

From Froese and Pauly (2018):

“Tropical”

Distribution Outside the United States

Native

From Fricke et al. (2018):

“Widely distributed in the Amazon and Orinoco basins, Brazil, Peru, Colombia, Ecuador and Venezuela.”

From Froese and Pauly (2018):

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From De Almeida and Charvet-Almeida (2004):

“Northern Brazil, in the mid and lower Amazon drainage, from Manaus to Belém (Rosa 1985, Carvalho et al. 2003); also found in the lower Tocantins River drainage (type locality Cametá; Garman 1913); Pará and Trombetas River (Carvalho et al. 2003) and possibly in the lower drainage of other Amazonas tributaries (author's pers. obs.) [all locations in Brazil].

Reproduction and nursery areas have been observed for this species, more specifically inshore off some islands located in the Marajó Bay region (State of Pará, Brazil) (Almeida 2003, Charvet-Almeida, pers. obs.).”

From Ramos (2017):

“Brazil, Peru and Colombia, mid to lower Amazon River, lower Tocantins River, Pará River, Trombetas River, Solimões River, Madeira River and Orinoco River (FONTENELLE, 2013; LASSO et al., 2013; REIS; KULLANDER; FERRARIS, 2003).”

Introduced

No records of *Potamotrygon scobina* introductions were found.

Means of Introduction Outside the United States

No records of *Potamotrygon scobina* introductions were found.

Short Description

From De Almeida and Charvet-Almeida (2004):

“This species shows a wide range of color variation within juvenile and adult specimens (adults may present up to four completely different color patterns) (Almeida 2003).”

“A medium to large-sized, moderately common endemic freshwater stingray, [...]”

“Sexual dimorphism has been recorded for *P. scobina* (Almeida 2003).”

From GBIF Secretariat (2018):

“*Potamotrygon scobina* is distinguished from congeners by a combination of characters: disc dark brown to dark gray with relatively small beige to yellow ocelli with thin dark brownish contours; ocelli usually smaller on central disc, varying in number and size, sometimes forming rosette-like patterns or grouped around a central larger ocellus; ventral disc whitish, with darker blotches over posterolateral margins; tail dark, with nonocellated, irregular, light colored spots; labial folds absent; teeth small, with a single low cusp; dermal denticles small and relatively few in number, concentrated mostly on central disc; disc margins usually lacking denticles; rostral denticles simple, composed of a single central crown; head denticles with low, star shaped crowns; caudal denticles with same pattern as head, but smaller; one or two irregular rows of thorns on dorsal tail midline, always converging to a single row posteriorly; thorns relatively large and curved; tail long and slender, with a narrow base; cartilaginous rod notably very long and thin; a third, smaller, lateral angular cartilage present. *Potamotrygon scobina* is distinguished from congeners by its color pattern (further detailed below) and in having a third, smaller, lateral angular cartilage, except *P. limai*, *P. adamastor* sp. nov., *P. garmani* sp. nov., and *P. amazona* sp. nov. From *P. limai*, *P. scobina* is further distinguished by lacking its polygonal color pattern on disc, and by having a thinner tail and dermal denticles with lower crowns and fewer dichotomies. From *P. amazona* sp. nov. and *P. adamastor* sp. nov., by having a less muscular disc in adults, comparatively smaller and fewer dermal denticles, larger and better defined ocelli on disc, and a more slender and longer tail (mean tail width 13.4 % DW vs. 19.0 % DW in *P. adamastor* sp. nov. and 16.7 % DW in *P. amazona* sp. nov.; mean tail length 121.5 % DW vs. 78.1 % DW in *P. adamastor* sp. nov. and 89.3 % DW in *P. amazona* sp. nov.). From *P. garmani* sp. nov., *P. scobina* is differentiated by presenting a darker disc background, smaller ocellated spots, a longer and more slender tail (mean length 121.5 % DW vs. 100.6 % DW in *P. garmani* sp. nov.; mean width 13.4 % DW vs. 14.1 % DW in *P. garmani* sp. nov.), more tooth rows in both jaws (44 / 48 – 50 vs. 32 – 40 / 33 – 40 in *P. garmani* sp. nov.), and in having comparatively smaller thorns in dorsal mid tail series.”

Biology

From Froese and Pauly (2018):

“Fecundity: 1-4 pups; gestation takes 3-4 months [Ochs 2004].”

From De Almeida and Charvet-Almeida (2004):

“Preliminary reproductive data has been observed in the Amazon estuary indicating sexual maturity at 35 cm DW (males) and 40 cm DW (females); ovarian fecundity of 1 to 13; litter size 1 to 16 embryos (Charvet-Almeida et al. in press [2005]). Evidence of sexual and ontogenetic segregation has been noted (author's unpubl. data).

Food items include mainly isopods (Sphaeromatidae) and shrimps (Paleomonidae) (Bragança 2002).”

Human Uses

From De Almeida and Charvet-Almeida (2004):

“This species is used as a human food source in some regions but is also subject to bycatch (hooking and netting) impacts from other fisheries. Juveniles are occasionally illegally caught and exported for the ornamental fish trade.”

From Gemaque et al. (2017):

“In the estuarine zone of the Amazon River, on Marajó Island, for example, and in the municipal market at Colares, in Pará, species such as *Potamotrygon orbignyi* and *Potamotrygon scobina* are sold cheaply, with an estimated annual catch of up to 100 tons (Ferreira et al., 1998; Charvet-Almeida, 2001; Charvet-Almeida et al., 2002) [...]”

Diseases

No records of OIE-reportable diseases (OIE 2021) were found for *Potamotrygon scobina*.

Domingues and Marques (2010) list *Potamotrygon scobina* as a host of *Ergasilus trygonophilus*.

Marques and Brooks (2003) list *Potamotrygon scobina* as a host of *Rhinebothroides freitasi*, and *R. glandularis*.

Marques and Reyda (2015) list *Potamotrygon scobina* as a host of *Rhinebothrium jaime*.

Domingues and Marques (2011) list *Potamotrygon scobina* as a host of *Potamotrygonocotyle tocantinsense*, *Potamotrygonocotyle septemcotyle*, and *Potamotrygonocotyle auriculocotyle*.

Additionally, Alves et al. (2017) list *Potamotrygon scobina* as a host of *Acanthobothrium psammobati*, *Potamotrygonocetus amazonensis*, and *Rhinebothrium scobinae*.

Poelen et al. (2014) lists *Potamotrygonocotyle rionegrense* and *Potamotrygonocotyle chisholmae* as additional parasites of *Potamotrygon scobina*.

Threat to Humans

From Ziegman and Alewood (2015):

“Similar to teleost fishes, such as *P. lunulata*, *I. japonicus* and *H. rubripinnis* [Kiriake et al 2013], stingray venoms also lead to acute edema [in humans]. Edema was found to be dose-dependent with venom from the fluvial species *Potamotrygon scobina* and *Potamotrygon orbignyi*.”

3 Impacts of Introductions

No records of *Potamotrygon scobina* introductions were found; therefore, there is no information on impacts of introductions.

Potamotrygon scobina is regulated in multiple States, see section 1.

4 History of Invasiveness

No records of introduction were found for *Potamotrygon scobina*. This species may be present in the aquarium trade but no information regarding the duration or volume of trade was available. History of invasiveness of *Potamotrygon scobina* is classified as No Known Nonnative Population.

5 Global Distribution



Figure 1. Known global distribution of *Potamotrygon scobina*. Locations are in Venezuela, Peru, and Brazil. Map from GBIF Secretariat (2018).

6 Distribution Within the United States

No records of *Potamotrygon scobina* in the wild in the United States were found.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Potamotrygon scobina* was low for most of the contiguous United States. Southern Florida had a small area of medium match. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.000, low (scores between 0.000 and 0.005, inclusive, are classified as low). All States had low individual climate scores.

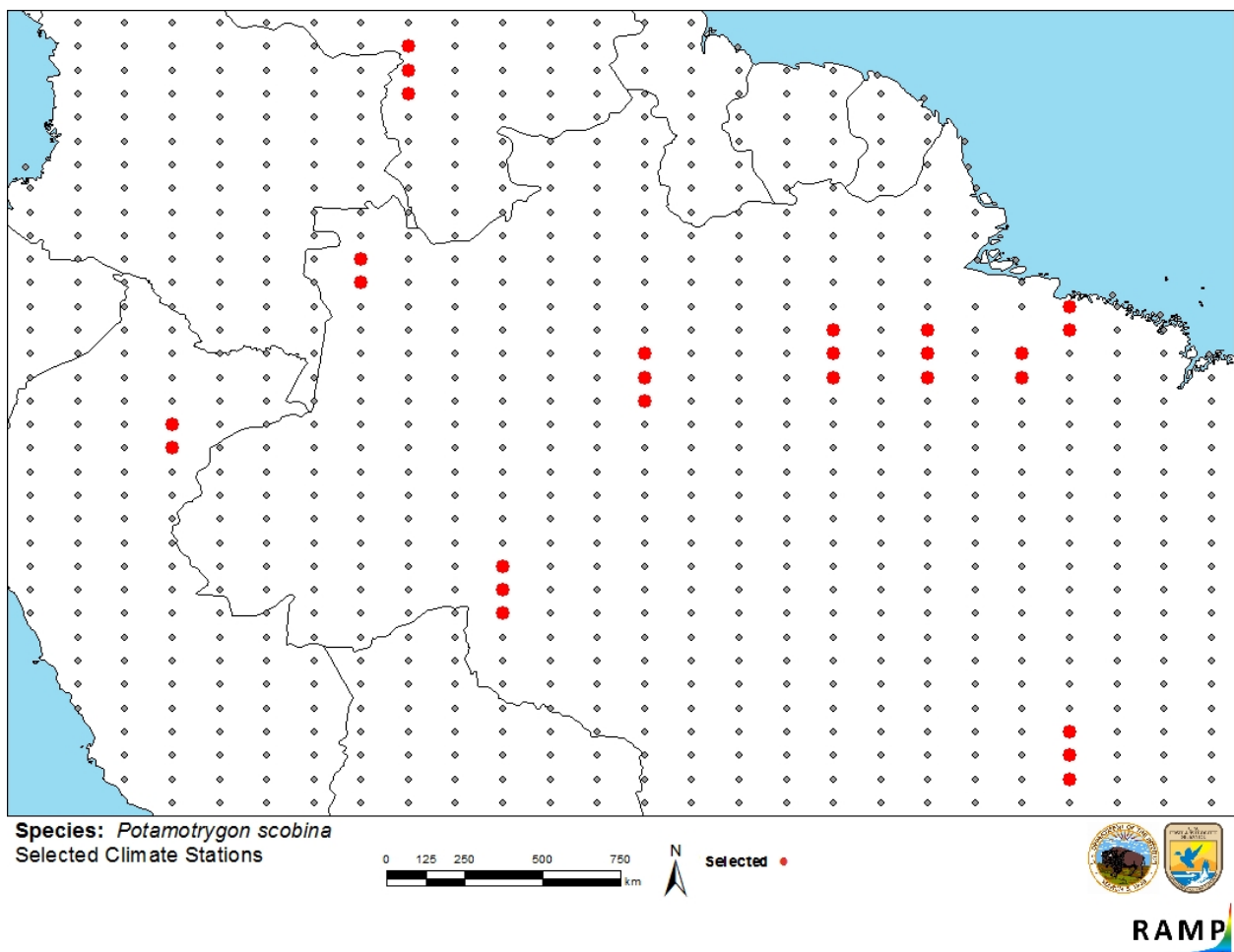


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in South America selected as source locations (red; Venezuela, Peru, Brazil) and non-source locations (gray) for *Potamotrygon scobina* climate matching. Source locations from GBIF Secretariat (2018). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

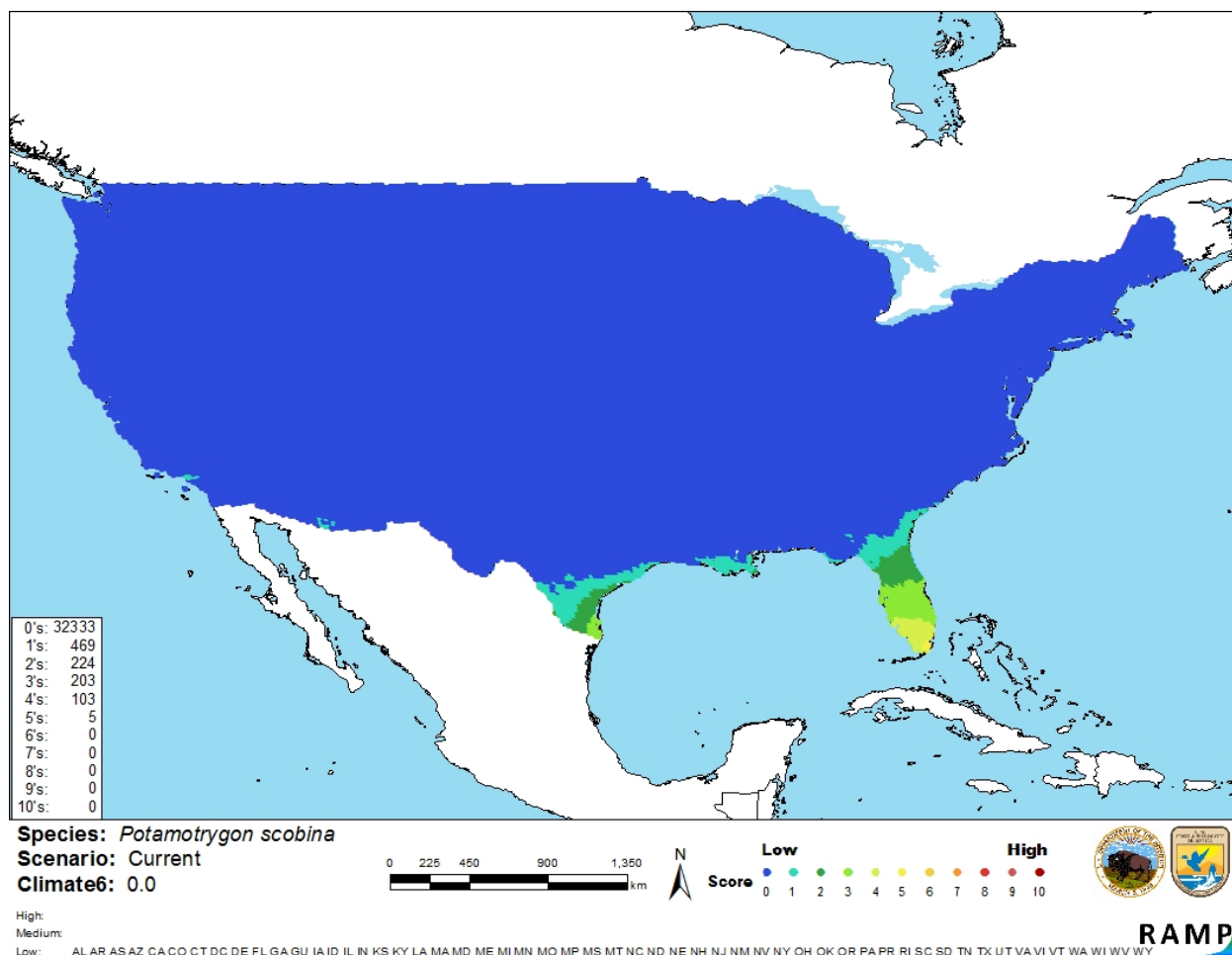


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Potamotrygon scobina* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

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

The certainty of assessment for *Potamotrygon scobina* is low. There was some quality information on the biology and ecology of the species available. No records of introductions were found so there is no information on impacts to evaluate. The range described in the

literature for this species is not fully represented by the georeferenced observations available to use as source points for the climate match.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Potamotrygon scobina is a species of freshwater stingray that is native to the Amazon River basin in South America. This species reproduces by live birth. It is used as a food source in some areas and is known to be exported illegally for the ornamental trade. This species is regulated in multiple States. The history of invasiveness for *P. scobina* is classified as No Known Nonnative Population. No records of introductions were found. This species is venomous and is capable of inflicting wounds on humans. The climate match for the contiguous United States was low. However, there was a small area of medium match in southern Florida. The certainty of assessment is low. The overall risk assessment category is Uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Overall Climate Match Category (Sec. 7): Low**
- **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.

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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.

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