

# Kumakuma (*Brachyplatystoma filamentosum*)

## Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, April 2014  
Revised, July 2017  
Web Version, 10/30/2017



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## 1 Native Range and Status in the United States

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### Native Range

From Froese and Pauly (2017):

“South America: Amazon and Orinoco River basins and major rivers of the Guianas and northeastern Brazil. Reported from Argentina [Lopez et al. 1987].”

### Status in the United States

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

### Means of Introductions in the United States

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

### Remarks

From GBIF (2016):

“COMMON NAMES [...]

Lau-lau        ENGLISH [...]  
Piraiba        ENGLISH [...]"

## 2 Biology and Ecology

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### Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2017):

“Kingdom Animalia  
  Subkingdom Bilateria  
    Infrakingdom Deuterostomia  
      Phylum Chordata  
        Subphylum Vertebrata  
          Infraphylum Gnathostomata  
            Superclass Actinopterygii  
              Class Teleostei  
                Superorder Ostariophysi  
                  Order Siluriformes  
                    Family Pimelodidae  
                      Genus *Brachyplatystoma*  
                       Species *Brachyplatystoma filamentosum* (Lichtenstein, 1819)”

“Taxonomic Status: valid”

### Size, Weight, and Age Range

From Froese and Pauly (2017):

“Max length : 360 cm TL male/unsexed; [Lundberg and Littmann 2003] ; common length : 120 cm TL male/unsexed; [Cervigón et al. 1992]; max. published weight: 200.0 kg [Boujard et al. 1997]”

From Cepeda and Luque (2010):

“*Brachyplatystoma filamentosum* (Lichtenstein, 1819) is the largest catfish species [...]"

### Environment

From Froese and Pauly (2017):

“Freshwater; brackish; demersal; potamodromous [Riede 2004].”

### Climate/Range

From Froese and Pauly (2017):

“Subtropical, preferred ?”

## Distribution Outside the United States

### Native

From Froese and Pauly (2017):

“South America: Amazon and Orinoco River basins and major rivers of the Guianas and northeastern Brazil. Reported from Argentina [Lopez et al. 1987].”

### Introduced

No introductions of this species have been reported.

## Means of Introduction Outside the United States

No introductions of this species have been reported.

## Short Description

From Eigenmann and Eigenmann (1890):

“This species is a true *Brachyplatystoma* with the teeth as described for this genus. It cannot be separated on account of the number of branchiostegal rays because Lichtenstein states that they cannot be counted, and he estimates them at 7.”

“Br. 7, D. 7; A.9. Upper caudal lobe produced ; length to end of lower caudal lobe 9 inches, to end of upper caudal lobe 22 inches.”

“Maxillary barbels 24 inches. Spine soft. Head flattened forward, pointed. Occipital process scarcely noticeable, 1 inch from the dorsal spine. Adipose fin as long as and opposite to the anal. Upper jaw longer, vomerine teeth and the inner ones of the jaws velvety. Eyes about in the middle of the head ; interocular 1 inch.”

## Biology

From Froese and Pauly (2017):

“Juveniles and subadults may be found in brackish water of river mouths. Found on soft bottoms [Cervigón et al. 1992]. Feeds on fish [Boujard et al. 1997]. Stomach contents are said to include parts of monkeys.”

From Barthem et al. (1991):

“During the low-water period (June-October), as seawater invades the estuary, a great number of catfish schools leave the brackish waters to move up the Amazon river and its tributaries. [...] Whether forming large schools (*B. flavicans* and *B. vaillantii*) or smaller groups (*B. filamentosum*), piscivorous catfish not infrequently mix with the huge schools of characins on which they prey, and which at this time of year are also migrating (Smith, 1979). Since mature catfish have never been reported in these schools, it is suggested that these upstream movements

should not be classified as spawning runs. Rather, they seem to be partially related to feeding or even to dispersal, as also hypothesized for characins (Ribeiro, 1983; Ribeiro & Petrere, 1990).”

“As the Amazon starts to rise, pushing the brackish waters back offshore, alevins (ca. 2 cm), pre-adults and adults of the migratory catfish penetrate the estuary to feed intensively on polychaetes, bivalves, crustaceans and fish (Barthem, 1984). [...] The downstream movements of the alevins of the migratory catfish species via the main channel of the Amazon river are indicative of spawning taking place somewhere upstream far from the estuary. [...] A large mature female (90 kg) of *B. filamentosum* was sampled in the estuary during rising water but ripe individuals were also noticed at this time of the year by fishermen in the upper Araguaia river, nearly 2000 km from the estuary. [...] The evidence presented above leads to the conclusion that not only is the estuary the main feeding ground for adults and pre-adults of the migratory catfish but also most of their alevins are raised there. Whether the estuary is the only nursery habitat of these species is still difficult to ascertain but the strong flow of the Amazon river during the high-water season (11 km/h) would passively carry eggs and/or larvae from a distance of 3500 km in just 13 days.”

## Human Uses

From Froese and Pauly (2017):

“Fisheries: commercial; gamefish: yes”

“Flesh considered excellent quality [Cervigón et al. 1992]. Captured using nets and longlines [Le Bail et al. 2000]. Threatened due to over harvesting [Stone 2007].”

## Diseases

From Cepeda and Luque (2010):

“Specimens of *Demidospermus ceccarellii* n. sp., *Demidospermus brachyplatystomae* n. sp., and *Demidospermus araguaiaensis* n. sp. were collected from the gills of the siluriform fish, *Brachyplatystoma filamentosum* (Lichtenstein, 1819). [...] This is the first record of monogeneans that are parasitic on *B. filamentosum*.”

From de Chambrier and Vaucher (1997):

“In 1934, Woodland described three new species of proteocephalidean tapeworms (Monticelliidae) from the Amazonian siluriform fish *Brachyplatystoma filamentosum*: *Endorchis piraeeba* (type-species), *Nomimoscolex piraeeba* (type-species) and *Amphoteromorphus piraeeba*. Examination of Woodland’s type-material and its comparison with newly collected specimens from the same host close to the type-localities revealed inaccuracies in Woodland’s diagnoses of these taxa. [...] In our revision, we establish that: (1) the scolex assigned by Woodland to *E. piraeeba* belongs to *N. piraeeba*, and the actual scolex of *E. piraeeba* is characterised by bi-lobed suckers; (2) the gravid proglottis figured by Woodland does not belong to *N. piraeeba*, differing in particular, in the presence of paramuscular vitelline follicles and the cirrus-pouch length/proglottis width ratio; and (3) the cross-section assigned by Woodland to *A. piraeeba* belongs to *N. piraeeba*.”

From Rodrigues et al. (2015):

“Zoonotic parasites can infect fish and be a serious threat to human health. The objective of this research was to estimate the prevalence for the main fish-borne zoonotic parasitic diseases of freshwater fish marketed in Colares Island and Vigia, Pará, Brazil.”

Rodrigues et al. (2015) report the following parasites in *B. filamentosum*: *Anisakis* sp. (9% prevalence), *Contracaecum* sp. (68%), *Pseudoterranova* sp. (18%), *Hysterothylacium* sp. (9%), and *Eustrongylides* sp. (9%).

No OIE-reportable diseases have been documented in this species.

### Threat to Humans

From Froese and Pauly (2017):

“Harmless”

“Stomach contents are said to include parts of monkeys. In parts of the Amazon, this catfish occasionally makes prey of a man [Burgess 1989].”

## 3 Impacts of Introductions

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There have been no reported introductions of this species. Therefore, impacts from introductions cannot be evaluated at this time.

## 4 Global Distribution

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**Figure 1.** Map of known global established locations of *Brachyplatystoma filamentosum*. Map from GBIF (2016). The point from the coastline of Guyana was not included in climate matching because of data quality concerns highlighted by GBIF (2016).

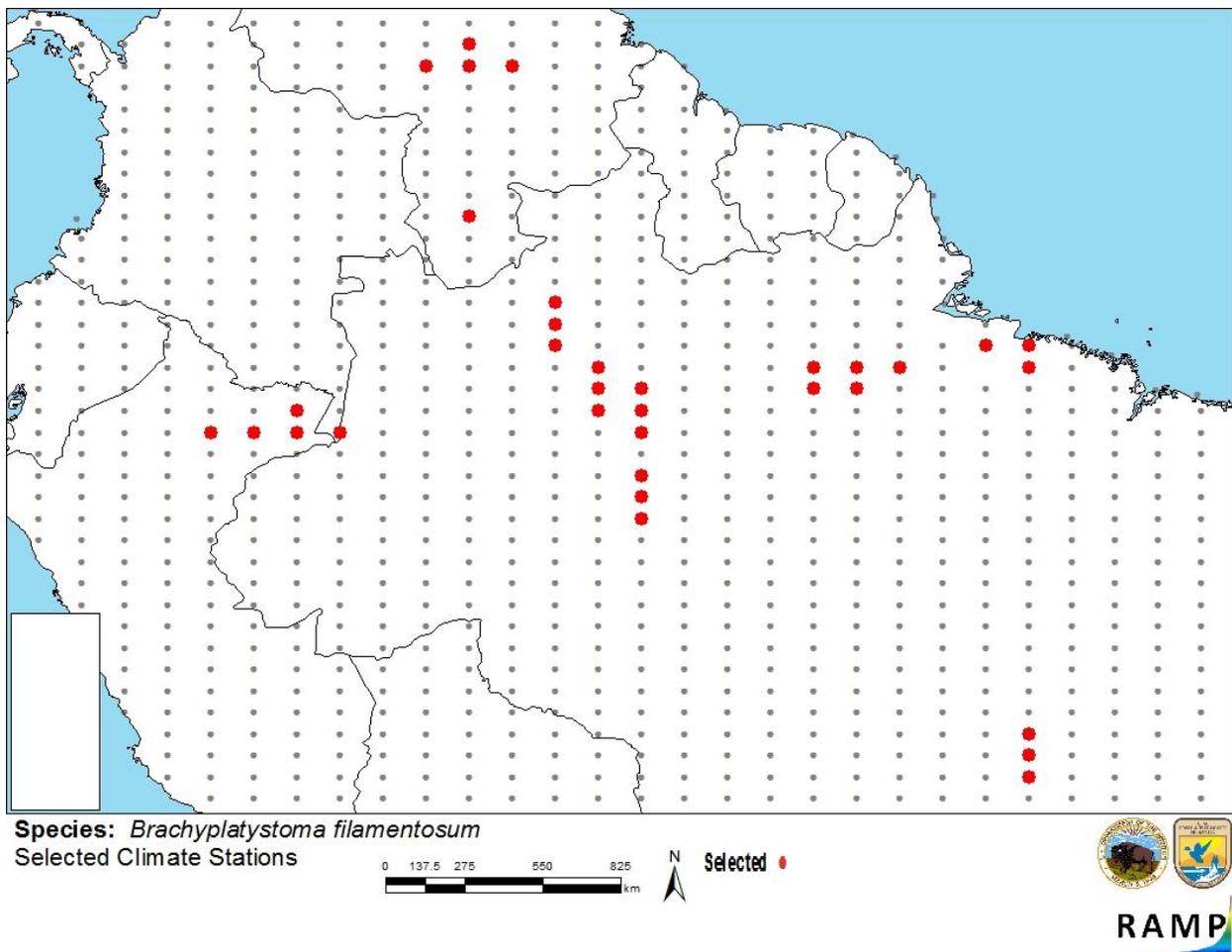
## 5 Distribution within the United States

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

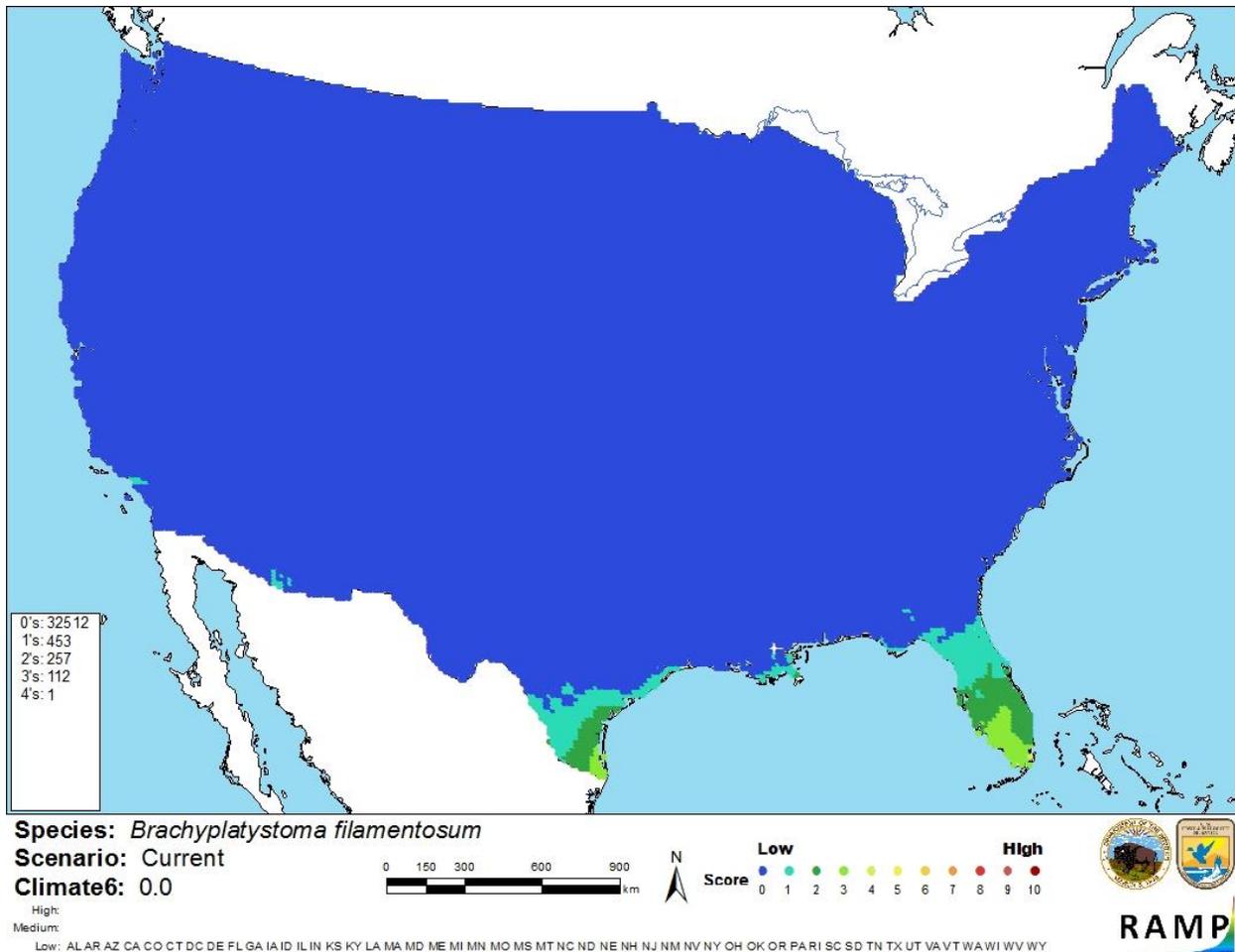
## 6 Climate Matching

### Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was medium for a small area of Florida near Miami and low across the remainder of the contiguous U.S. Climate 6 score indicated that the contiguous U.S. has a low climate match overall. The range of scores classified as low match is 0.000-0.005; Climate 6 score for *Brachyplatystoma filamentosum* was 0.000.



**Figure 2.** RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red) and non-source locations (blue) for *Brachyplatystoma filamentosum* climate matching. Source locations from GBIF (2016) and VertNet (2017).



**Figure 3.** Map of RAMP (Sanders et al. 2014) climate matches for *Brachyplatystoma filamentosum* in the contiguous United States based on source locations reported by GBIF (2016) and VertNet (2017). 0=Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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
$\geq 0.103$	High

## 7 Certainty of Assessment

Information on the biology, ecology, and distribution of *B. filamentosum* is available, but the species lacks an introduction history. More information is needed to evaluate the potential impacts of the species if introduced before the certainty of assessment can be anything but low.

## 8 Risk Assessment

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### Summary of Risk to the Contiguous United States

*Brachyplatystoma filamentosum* is a large freshwater catfish native to northern South America, including the Amazon and Orinoco River basins. *B. filamentosum* is a migratory species and heavily harvested for its high quality flesh. As the largest known catfish species, it occasionally preys on large animals including monkeys and humans. No introductions of the species have been reported, so potential impacts of introductions remain unknown. Climate match to the contiguous United States is low. Overall risk posed by *B. filamentosum* is uncertain at this time.

### 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

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**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

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**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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