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MIGRATORY
SPECIES**

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Agenda Item 31.4

**PROPOSAL FOR THE INCLUSION OF THE GUILDED CATFISH (DOURADA)
(*Brachyplatystoma rousseauxii*) ON APPENDIX II OF THE CONVENTION***

Summary:

The Government of Brazil submits the attached proposal for the inclusion of the Guilded Catfish / Dourada (*Brachyplatystoma rousseauxii*) on Appendix II of CMS.

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PROPOSAL FOR THE INCLUSION OF THE GILDED CATFISH (DOURADA¹) (*Brachyplatystoma rousseauxii*) ON APPENDIX II OF THE CONVENTION

A. PROPOSAL

Inclusion of the Amazonian Gilded Catfish, *Brachyplatystoma rousseauxii*, in Appendix II.

B. PROPONENT

Governments of Brazil and Panama

C. SUPPORTING STATEMENT

1. Taxonomy

- 1.1 Class: Actinopterygii, Superorder Ostariophysi
- 1.2 Order: Siluriformes
- 1.3 Family: Pimelodidae
- 1.4 Genus and species: *Brachyplatystoma rousseauxii* (Castelnau, 1855)
- 1.5 Scientific synonyms: *Bagrus rousseauxii* Castelnau, 1855, *Bagrus goliath* Kner, 1858, *Brachyplatystoma paraense* Steindachner, 1909;
- 1.6 Common name(s):
English: Gilded Catfish
Spanish: Dorado, Plateado, Zúngaro-dorado
Portuguese: Dourada, Dourado



Figure 1. *Brachyplatystoma rousseauxii* (Dourada). From Barthem & Goulding 2007.

2. Overview

The dourada, *Brachyplatystoma rousseauxii* (Figure 1), is a large freshwater migratory catfish found in the Amazon and Orinoco basins and in the lower courses of large rivers of the Guianas (Reis et al. 2003). Dourada migrations are best known in the Amazon basin, where a single population undertakes the world's longest migration in continental waters, covering in one direction up to 5,786 km of the river extension between its spawning area in or near the Andes and its nursery at the mouth of the Amazon River. Dourada migrations in the Amazon include Brazil downstream and Peru, Bolivia, Colombia and Ecuador in headwater areas (Barthem and Goulding 1997, Batista and Alves-Gomes 2006, Barthem et al. 2017). However,

¹ Referred to by its Portuguese name, Dourada, throughout the proposal.

the number of populations may differ near the Andes, where at least three distinct genetic groups have been found in five locations sampled in the upper Madeira Basin in the Bolivian Amazon (Carvajal-Vallejos et al. 2014).

The dourada is one of the most important species for Amazonian commercial fisheries, especially in the estuary and the large turbid rivers with headwaters in the Andes (Barthem and Goulding 2007). Although the National Assessment conducted by the Chico Mendes Institute for Biodiversity Conservation - ICMBIO (2018) categorized the dourada in terms of conservation as a species of “Least Concern” based on its vast distribution, nevertheless several factors now acting in synergy could have disastrous consequences for the species. A combination of uncontrolled overfishing (Alonso and Pirker 2005, Agudelo-Córdoba et al. 2013, Prestes et al. 2022) deforestation, mining (Finer et al. 2013, Castello and Macedo 2015, Goulding et al. 2019, Capitani et al. 2021) and hydroelectric dams in Andes-Amazon rivers (Finer and Jenkins 2012, Arantes et al. 2019, Damme et al. 2019, Arantes et al. 2021) have the potential to affect the life cycle of dourada in the Amazon basin and dangerously reduce its population. This is because these migratory catfish belong to a single population that spawn in the headwaters of turbid Andes-Amazon rivers, but whose nursery is located in the Amazon River estuary, making them dependent on the connectivity of rivers from the Andes to the Atlantic. The drastic reduction in the dourada’s population is being noticed in Madeira River headwaters in Bolivia, where mining in the Andes foothills and the interruption of migration by hydroelectric dams in Brazil have compromised the abundance of this species in local fisheries (Damme et al. 2019, Ortiz et al. 2021).

The dourada is one of the most important species for commercial fisheries in the Amazon, mainly in the estuary and large turbid rivers with headwaters in the Andes (Barthem and Goulding 2007). Currently, the species is categorized as Least Concern (LC) regarding its risk of extinction in Brazil (ICMBio 2018; 2023). However, the combination of some factors that occurred in synergy can endanger the species. A combination of uncontrolled overfishing (Alonso and Pirker 2005, Agudelo-Córdoba et al. 2013, Prestes et al. 2022), deforestation, mining (Finer et al. 2013, Castello and Macedo 2015, Goulding et al. 2019, Capitani et al. 2021) and hydroelectric dams in the Andes-Amazonian rivers (Finer and Jenkins 2012, Arantes et al. 2019, Damme et al. 2019, Arantes et al. 2021) have the potential to affect the life cycle of the species in the Amazon basin and dangerously reduce its population. This is because these migratory catfish spawn in the headwaters of the turbid Andes-Amazon rivers, but whose nursery is located in the estuary of the Amazon River, making them dependent on the connectivity of rivers from the Andes to the Atlantic coast. A reduction in the population of the species is already being noted in the headwaters of the Madeira River in Bolivia, where mining in the foothills of the Andes and the interruption of migration by hydroelectric dams in Brazil have compromised the abundance of this species in local fisheries (Damme et al. 2019, Ortiz et al. 2021).

Sufficient data to demonstrate dourada migrations and the scale at which they take place are relatively recent and, considering infrastructure development and overfishing, there is an urgent need for an integrated action plan to manage and conserve dourada transnationally. Managing dourada fisheries and mitigating the impacts of large infrastructure projects requires international cooperation among countries that share this transnational migratory fish population. The Andean countries - Bolivia, Peru, Ecuador and Colombia - contain the spawning grounds, whereas Brazil downstream of these countries contains the main nursery. All these countries exploit the dourada commercially and have large infrastructure projects that have ecosystem level impacts.

Therefore, it is essential to establish an integrated commitment between the countries where this species occurs, to plan and execute initiatives, actions and strategies for the conservation of the species, management and sustainable use of these fishing resources, aiming at environmental, social and economic sustainability in the countries.

Thus, the inclusion of dourada in the CMS Appendix II will support collaborative management and environmental conservation initiatives among the countries where this species occurs. So far, all Amazonian countries, except Colombia and Venezuela, are signatories of CMS.

3. Migrations

3.1 Kinds of movement, distance, the cyclical and predictable nature of the migration

The dourada undertakes annual migrations with different strategies for young fish and sub-adults/adults. Beginning at adult breeding areas in or near the Andes, egg, larvae and juvenile phases drift or swim downstream until reaching their estuarine nursery several weeks. This one-way distance of young fish downstream migrations can be as long as 5,786 km. The dourada breeding area extends to all major Andes-Amazon headwaters and includes the following rivers: the Caquetá-Japurá and Putumayo-Içá (Colombia), Napo (Ecuador), Marañón (Peru and Ecuador), Ucayali (Peru) and Madeira (Mamoré and Beni in Bolivia and Madre de Dios in Bolivia and Peru) (Figure 2). Dourada, however, cannot now pass the Madeira dams to reach Madeira headwaters in Bolivia and Peru. In addition to the Andean rivers, the spawning area also extends to the turbid Juruá and Purus rivers on the border between Peru, Bolivia and Brazil, headwater areas associated with a low hilly region of the Fitzcarrald Arch. There is also a possible small spawning area in headwaters of the Branco River in northern Brazil (Agudelo-Cordoba et al. 2000, Barthem and Goulding 2007, Agudelo-Cordoba et al. 2013, Barthem et al. 2017, Goulding et al. 2019, Hermann et al. 2021a). However, with the construction of the hydroelectric dams on the Madeira River, no dourada migrating from the estuary managed to pass the dams (Hahn et al. 2020). Recent studies indicate that dourada living upstream of the dams are now resident, suggesting that the species performs partial migration (Hauser et al. 2019b). It is still unclear, however, whether these will be viable populations in the long run without recruitment from the estuary. Considering climate change and other factors, such as local environmental changes and overfishing, it would be careless to assume that the species can abandon a long-distance migratory behavior that has guided their evolution.

The dourada breeding area contains only individuals ready to spawn or that have already spawned. Exact spawning sites of dourada are unknown, but the presence of their eggs or small larvae confirms spawning in the foothill of the Andes (Barthem et al. 2017, Miranda-Chumacero et al. 2020, Hermann et al. 2021b). As the stomachs of adults in or near the Andes are empty, it is assumed that dourada do not remain in the region after spawning and are likely to migrate downstream for feeding (Barthem et al. 2003, Barthem et al. 2017). After spawning, the larvae drift in the river, remaining in the deepest and fastest currents, and grow during their downward migration towards the Amazon estuary (Barthem et al. 2014, Cella-Ribeiro et al. 2015, Duponchelle et al. 2016.).

The huge discharge of the Amazon River maintains a large expanse of freshwater in the Amazon mouth and even off the coast, which retracts or expands with seasonal differences in discharge (Nikiema et al. 2007). This large freshwater estuarine area provides the nursery for dourada (Barthem and Goulding 1997). When individuals reach the estuary, they are already juveniles in size (about 7-8 cm) and remain in their nursery region for about two years, until they reach about 60 cm. Industrial and artisanal fishing for dourada in the estuarine region is the most intense of the entire Amazon and includes young size classes (Barthem and Goulding 1997).

The dourada begins its upstream migration from the estuary during the low-water period of the Amazon River, and adults never return to the estuary as there is a nearly complete absence of large size classes (Barthem and Goulding 1997, Lopes et al. 2023). The average size of dourada captured in the Amazon River and its turbid water tributaries increases with

distance from the estuary and reaches the highest values (> 1 m) in the breeding area near or in the Andes. Spawning can occur at all times of the year but is most intense during the rainy season (Barthem and Goulding 1997, Cañas and Waylen 2012, Barthem et al. 2017, Goulding et al. 2019).

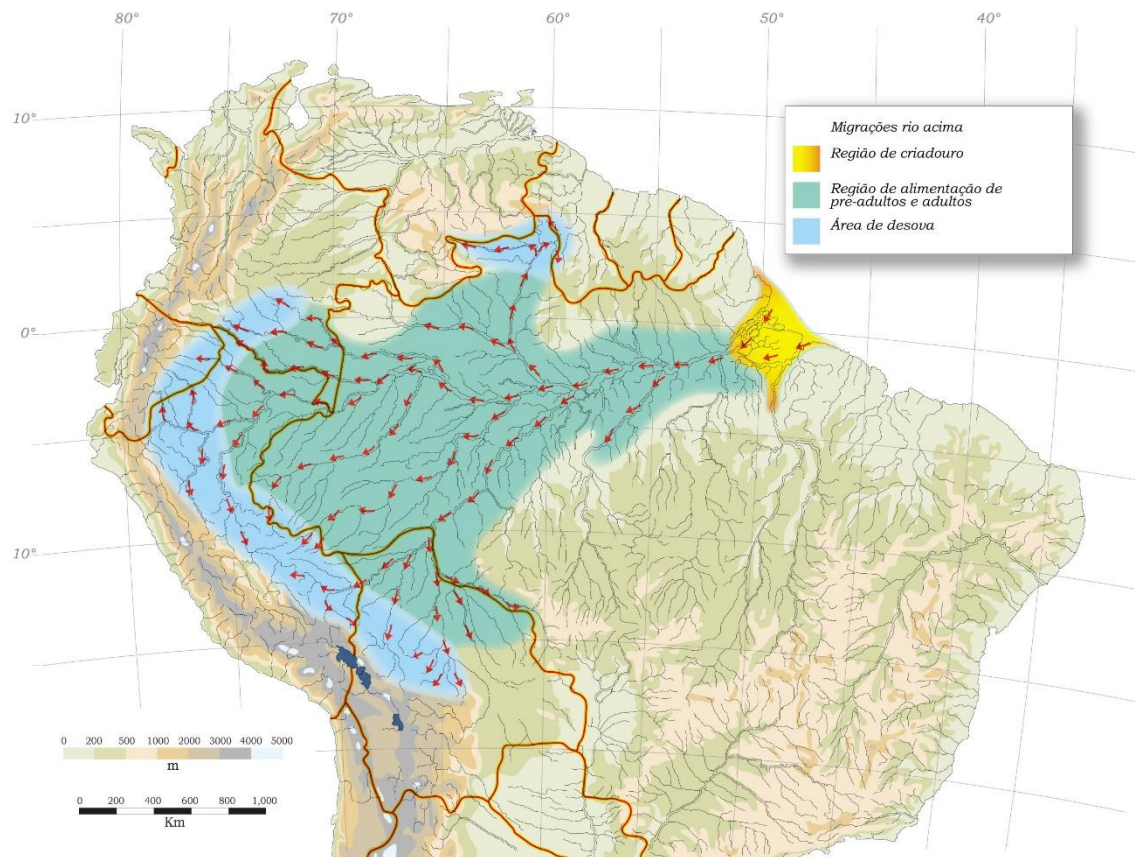


Figure 2. General migration pattern of *Brachyplatystoma rousseauxii* (dourada) in the Amazon basin. From Barthem and Goulding 2007.

3.2 Proportion of the population migrating, and why that is a significant proportion.

Excluding upstream resident fish, of which little is known about their local migrations, and which are fewer in number when compared to those migrating to the estuary, the migration of dourada in most of the basin occurs at different stages of its life history. The first migration includes eggs, larvae and juveniles moving downstream towards the estuary. The second migration includes sub-adults and immature adults who leave the estuary and migrate to the Central Amazon. The third migration is when sexually mature individuals migrate to the headwaters of turbid rivers to spawn, and then return to downstream stretches for feeding (Barthem and Goulding 1997, Barthem et al. 2017).

4. Biological data

4.1 Distribution (current and historical)

The dourada is a large migratory catfish (goliath catfishes) in the family Pimelodidae that belongs to a paraphyletic group of the genus *Brachyplatystoma*, with six existing species and one fossil. Dourada occurs in Brazil, Bolivia, Colombia, Ecuador, French Guiana, Suriname, Peru and Venezuela, with its distribution extending across the Amazon and Orinoco River basins and the mouth areas of the main rivers that flow into the Brazil-Guyana Platform bordering the continent. Despite its wide distribution, there is little genetic divergence between populations in different basins (Reis et al. 2003, Lundberg et al. 2011). In Brazil, the species

occurs in the states of Pará, Amapá, Amazonas, Rondônia, Acre and Roraima (Source: Conservation Status Evaluation Process of Amazonian Continental Fish Species, 2019 - ICMBio) (Figure 3).

The absence of spatial genetic segregation across the vast expanse of Andes-Amazon rivers, suggests that a single population is present between the estuary and the Andes (Batista and Alves-Gomes 2006), although there is some evidence for at least distinct smaller populations in some western headwater basins Andes (Carvajal-Vallejos et al. 2014). Fossil evidence shows that large migratory pimelodid catfish have a historical relationship with northern South America since the Miocene, when the Andes began to rise rapidly (Lundberg 2005) and when the Amazon River flowed to the north and formed the Paleo-Amazon-Orinoco (Wesselingh and Hoorn 2011). This relationship suggests that the spawning behavior in the headwaters of turbid rivers is the evolutionary result of an ancient association with the Andes (Barthem et al. 2017). The occurrence of a single dourada population connecting the Andes (spawning) and the estuary (nursery) demonstrates the hydrological connectivity of the species at nearly the width of South America.

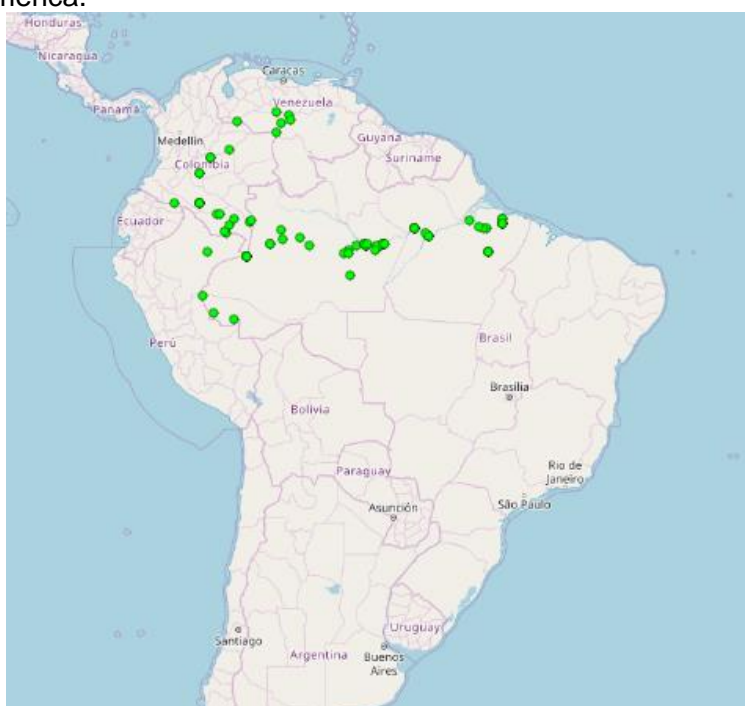


Figure 3. Distribution of the dourada (*Brachyplatystoma rousseauxii*). Data based on Processo de Avaliação do Estado de Conservação das Espécies de Peixes Continentais Amazônicos, 2019 - ICMBio.

4.2 Population (estimates and trends)

The dourada is one of the most important and valued fishery resources of the Amazon Basin exploited by several groups of fishers from the estuary to the Andes. Dourada fisheries in the estuary include an artisanal fleet, which uses gillnets and longlines, as well as an industrial fleet which uses bottom pair trawls. Inland dourada fisheries are artisanal and based mostly on drifting gillnets used in river channels (Barthem and Goulding 2007). Although there are no integrated statistics on dourada landings, regional data point to an alarming decreasing catch trend in the regions that monitor its fishery, especially in the Madeira River region (Alonso and Pirker 2005, Garcia et al. 2009, Agudelo-Córdoba et al. 2013, Hauser 2018, Damme et al. 2019, Cruz et al. 2020, Prestes et al. 2021, Duponchelle et al. 2021). The Madeira River is the Amazon River's largest tributary with its largest headwater region.

4.3 Habitat (short description and trends)

The dourada is a catfish that inhabits the channels of large rivers and the freshwater stretches of the Amazon estuary. It is highly associated with turbid rivers, generally those originating in the Andes, but it also occurs in clearwater rivers such as the Tapajós and blackwater rivers such as the Negro. The young occur in the open freshwater areas of the Amazon estuary, and usually where there are strong currents caused by the tides. The dourada's first upstream migration begins in the Amazon River when it leaves the estuary at sea level and ends at perhaps 250 m in the Andes anywhere from Colombia to Bolivia, the latter before the Madeira dams were constructed. Upstream migrations can take two or three years after leaving the estuary. The dourada is a strong swimmer and even against fast currents can move upstream to at least 19 km/day, and even pass turbulent cataracts, such as those of the Madeira River before it was dammed (Barthem and Goulding 1997, Barthem et al. 2017).

4.4 Biological Characteristics

Brachyplatystoma rousseauxii is a large predatory catfish that can reach 192 cm (Fork Length) and at least 30 Kg. Its reproduction occurs in headwaters of large turbid rivers, especially those of Andean origin. The minimum fork length (FL) of sexually mature individuals is 67.7 cm for females and 65.8 cm for males (Barthem et al. 2017), and the first average maturation size (L50) for females is 88.5 cm (Standard Length) and 81.7 cm (SL) for males (Agudelo-Córdoba et al. 2013). The dourada's reproductive period seems to extend over a long period, lasting about six months for the Caquetá River (Agudelo-Córdoba et al. 2013) in Colombia and almost all year in the Madre de Dios River (Barthem et al. 2017). Growth studies based on otoliths show that the species presents slow growth and two-ring formation per year. Most fish caught in the Brazilian part of the Madeira Basin are less than 5 years old, while those caught in this same basin in Bolivia and Peru are more than 5 years old (Hauser et al. 2018). Growth rates (K) range from 0.33 y⁻¹ (Alonso and Pirker 2005), 0.22 y⁻¹ (Agudelo-Córdoba et al. 2013) to 0.57 y⁻¹ (Hauser et al. 2018). Isotopic studies of otoliths based on the ⁸⁷Sr/⁸⁶Sr relationship agree with the downstream migration of the species to the estuary after birth, although not all apparently reach the estuary (Duponchelle et al. 2016). The dourada populations now in Bolivia appear to be a mix of those that arrived before the construction of the dams, which impeded upstream migration, and some derived from local spawning in Bolivia or southeastern Peru subsequent to the construction of the Madeira dams (Hauser 2018, Hauser et al. 2019b, Hermann et al. 2021a). It is unclear whether dourada now isolated in Bolivia by the Madeira dams can maintain a sustainable population.

4.5 Role of the taxon in its ecosystem

The dourada is a top predator that feeds throughout the water column, but preferably in the upper half. It has a diverse food spectrum during its life, feeding on insect larvae and pupae and small fish as juveniles drift downstream in the river channel to the estuary. One in the estuary juveniles add small crustaceans and polychaetes to their diet. The species becomes primarily piscivorous as it grows in the estuary, feeding heavily on anchovies (Engraulidae), gobiids (Gobiidae), croakers (Scianidae) and crustaceans (Penaidae). When dourada leaves the estuary and begins its upstream migration, it mainly preys on characiform fish, especially the detritivores/algivores of the families Curimatidae and Hemiodontidae, and frugivores of the families Serrasalminidae and Triportheidae (Barthem and Goulding 1997). Studies based on Ecopath modeling indicate the dourada's trophic level (TL) at 3.2, one of the highest in the Amazon but behind *Brachyplatystoma filamentosum* (3.3), *Pseudoplatystoma tigrinum* (3.3) and *P. fasciatum* (3.3) (Angelini et al. 2006).

5. Threat data

5.1 IUCN Red List Assessment (if available)

The IUCN classifies this species in the Global Assessment as Least Concern (LC) because it has a wide distribution (Reis & Lima, 2009). In Brazil, the species was nationally classified as Least Concern (LC) in 2014 (ICMBio, 2018) and was recently assessed maintaining this category (ICMBio, 2023).

5.2 Equivalent information relevant to conservation status assessment

Dourada is an important species in commercial Amazonian fisheries, especially in the Amazon and Solimões rivers and their main tributaries (Barthem and Goulding 2007). Heavy exploitation since the 1970s drastically reduced annual catches (Garcia et al. 2009, Santos 2018, Damme et al. 2019, Cruz et al. 2020) and the species is now considered seriously overfished (Alonso and Pirker 2005, Agudelo-Cordoba et al. 2013, Prestes et al. 2022). Some of the studies registering excessive dourada catches date more than 10 years, and though intensive fishing for the species continues due to increase to meet increased fish demand, there has not been a corresponding integrated management action plan developed by Amazonian countries. Concurrent with fishing, the dourada is being impacted by the construction of hydroelectric dams along its migratory route, deforestation and mining in its headwater breeding areas (Castello and Macedo 2015, Forsberg et al. 2017, Hauser et al. 2018, Duponchelle et al. 2021), water pollution (Soares et al. 2018) and the overall modification of critical habitats (Alho et al. 2015).

5.3 Threats to the population (factors, intensity)

Although dourada fishing needs to be monitored and managed along the entire migratory route of the species, especially worrisome is excessive mortality of young fish (overfishing) (Klautau et al. 2016) and reduction of the breeding population in their spawning areas (recruitment overfishing) (Cañas and Pine 2011). Fishing in the estuary is the most concern, considering that this area is: (i) where the largest catch of the dourada occurs (38% of the total catch); (ii) it is the nursery, and (iii); where the commercial fleet uses bottom pair trawls (Barthem and Goulding 2007, Klautau et al. 2016). The trawler fleet is the most potent fishing fleet in the Amazon and is made up of 17 to 29 m long boats with an ice capacity of 20 to 105 tons (average 50 tons) and engine power of 165 to 565 HP (Barthem and Goulding 2007). Estuarine fishing boats working in parallel pairs drag trawls near the muddy bottom, and although targeting mostly the piramutaba (*Brachyplatystoma vaillantii*), they also catch relatively large quantities of dourada (Jimenez et al. 2013). In addition to trawl fisheries, there are artisanal operations that use drift nets that reach 4 km or more in length (Dias-Neto and Dias 2015). Although at a much smaller scale, dourada fisheries in or near the Andes are also threatening the dourada, as they exploit breeding fish (Barthem et al. 2003, Cañas and Pine 2011, Barthem et al. 2017). Headwater dourada fishing uses small drifting nets in river channels and occurs from Colombia to Bolivia wherever there is access to highways to transport the catches. As these fisheries occur in different countries, management of this resource is only possible through international cooperation.

Environmental impacts caused by the construction of hydroelectric dams, mining activities and deforestation are a major concern for the conservation of migratory species as they compromise river connectivity, wetland productivity and the quality of downstream water (Castello and Macedo 2015). An international agreement promoting the mitigation of impacts caused by major infrastructure development projects, particularly in the headwaters of major Amazon rivers, would strengthen ecosystem services related to water quality, aquatic biodiversity and wetlands in general (Goulding et al. 2019).

Recent studies predict changes in river flows because of climate change. These changes predict an increase in river flow and flooding in the Western Amazon and a decrease in the Eastern Amazon (Sorribas et al. 2016, Goulding et al. 2019). The consequences of climate change, especially in conjunction with infrastructure development and overfishing, are still unclear for Amazonian migratory fishes (Feng et al. 2020). With the largest life history range, the dourada faces challenges from the Andes to the Atlantic. International cooperation agreements are the first important step to promote research and inform policy on the conservation of transboundary migratory fish. To some extent, the ACTO/UN Environment/GEF Project, which studies the impacts of climate change on transboundary water resources, addresses this concern.

5.4 Threats connected especially with migrations.

The greatest threats to dourada migrations are the synergistic effects of intense fishing and the combined impacts of dam construction along the migratory routes, headwater deforestation and mining activities (Castello and Macedo 2015, Barthem et al. 2017, Forsberg et al 2017, Goulding et al 2019, Duponchelle et al. 2021, Prestes et al. 2022). There are as many as 150 possible hydroelectric dam sites identified in the Andes-Amazon region (Finer and Jenkins 2012). Major dams or many smaller dams would lead to the alteration of the flood pulse, sediment and nutrient retention and blockage of fish migrations (Forsberg et al. 2017). Deforestation also generally has consequences on the regional rainfall patterns, which also affect the river discharge pattern (Castello and Macedo 2015). In addition, deforestation and headwater mining activities increase the erosion process and introduce pollutants into the water that, when carried downstream, compromise water quality and contaminate downstream aquatic organisms (Finer et al. 2008).

6. Protection status and species management

6.1 National protection status

Dourada is classified as Vulnerable (VU A2cd) in Colombia (Mojica et al. 2012) and Least Concern (LC) in Brazil in the Brazilian assessment of the risk of extinction of Amazonian fish species (ICMbio 2018; 2023).

6.2 International protection status

There is no international law to manage or conserve dourada.

6.3 Management measures

Some measures aimed at restricting commercial fishing for dourada exist in Brazil, Colombia and Peru. Fishing regulations for dourada and other catfish in Brazil are intended only for trawl operations in the estuary, and include the following restrictions: fishing areas, fishing periods (three-month closure), number of boats trawling in pairs, and a minimum mesh size of 100 mm in the trawl tunnel bag (Barthem et al. 2015). The minimum catch size for dourada in Colombia is 85 cm (FL) and 115 cm in Peru. The minimum gillnet mesh is 20 cm in Peru (Fabr e et al. 2005).

In Brazil, there are mechanisms and tools for monitoring and controlling fishing activities applied throughout the territory (Table 01).

Table 01: Brazilian mechanisms and tools for monitoring and control of general fishing activities:

Mechanism/Tool	Legal Basis	Object	Site
National Program for Satellite Tracking of Fishing Vessels.	Interministerial Normative Instruction N° 02 of September 4, 2006.	Use for monitoring, fishery management, and control of operations of the fleet authorized by the competent authority of national fishery management.	Industrial
Board Map.	MPA Normative Instruction N° 20 of September 10, 2014.	Specific form for recording data and information about the fishing operations of a given vessel at each fishing bid.	Industrial
Stock Declaration	IBAMA Ordinance N° 48 of November 5, 2007 SAP/MAPA Normative Instruction N° 6 of April 13, 2020.	Safeguarding that the fish was caught in a previous period, closed season, or spawning season, and therefore complies with the regulations.	Artisanal
Fishing Activity Report	SAP/MAPA Ordinance N° 265, of June 29, 2021.	Maintenance of the Fisherman and Artisanal Professional Fisherman License the General Record System for Fishing Activity (SisRGP).	Artisanal

According to Batista et al. (2004), among the variety of fish species in the Amazon, dourada is the preferred target of fishing in almost the entire distribution area. Therefore, considering the importance of this species for commercial fishing in Brazil, it is relevant to present the compilation of national fishery legislations associated with it (Table 02).

Table 02: Brazilian national compilation of fishing regulations associated with *Brachyplatystoma rousseauxii*.

Legal Basis	Object
Interministerial Normative Instruction N° 10, of June 10, 2011.	Approves the general rules and organization of the fishing vessel authorization system for the sustainable access and use of fishery resources, with the definition of fishing modalities, target species, and permitted operating areas.
SAP/MAPA Ordinance N° 1448, of January 28, 2022.	Establishes Fishing Modalities, Complementary Fishing Modalities, and general rules for Brazilian fishing vessels for the sustainable use of fishery resources (effective from January 2, 2024).
IBAMA Normative Instruction N° 166, of July 18, 2007.	Regulates gillnet fishing
IBAMA Ordinance N° 48, of November 5, 2007.	Establishes fishing regulations for the protection period of natural fish reproduction in the Amazon River basin, rivers of Marajó Island, and Araguari, Flexal, Cassiporé, Calçoene, Cunani, and Uaçá river basins in the state of Amapá.

6.4 Habitat Conservation

The life-history area of the dourada is associated with the eastern piedmont of the Andes or areas nearby, large flood plain wetlands adjacent to turbid river channels that provide prey across the Amazon and the estuary (Goulding et al. 2019). Several national parks and indigenous lands partially protect these environments, such as Manu National Park, Tambopata-Candamo Reserved Zone, Bahauja-Sonene National Park, Manuripi Heath National Park and Isiboro-Secure National Park in headwaters of the Madeira River. Approximately 15% of the areas flooded by turbid rivers have some type of protection but only 1% have full protection, the main areas being: Pacaya-Samiria National Reserve between the Ucayali and Marañón Rivers, Mamirauá Sustainable Development Reserve at the confluence of the Solimões and Caquetá-Japurá Rivers and Piagaçu-Purus Sustainable Development Reserve on the Purus River. There are also major wetlands in blackwater rivers that are associated with important prey fish populations on which the dourada feeds. These wetland areas include the Anavilhanas National Park and Jaú National Park in the lower Negro basin. Protected areas in the estuary are related to coastal areas where the use of bottom pair trawls is prohibited and include Marajó Island, which is an Environmental Protection Area (Goulding et al. 2003, Barthem and Goulding 2007, Goulding et al. 2019) (Figures 4-7).

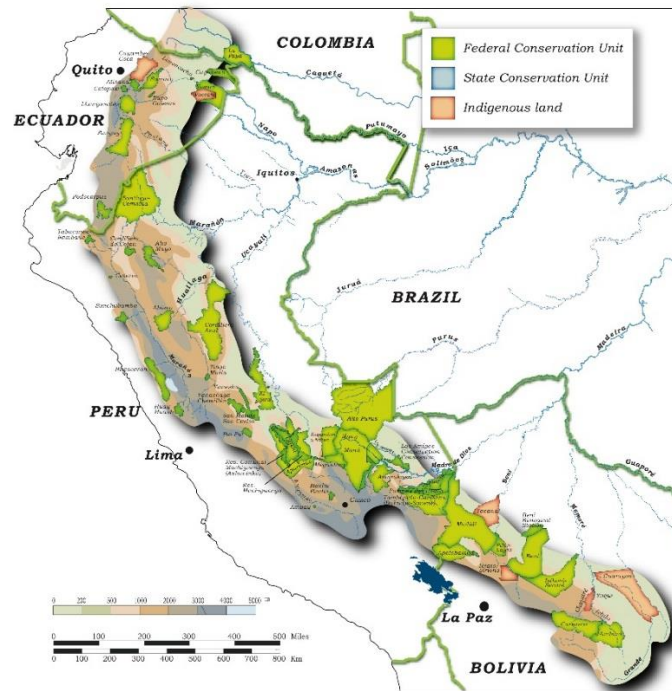


Figure 4. Protected areas in the spawning zone of dourada in the Andes.



Figure 5. Protected areas in the northern Peruvian Amazon associated with dourada. From Barthem and Goulding 2007.



Figure 6. Protected areas in the Central Amazon. From Barthem and Goulding 2007.

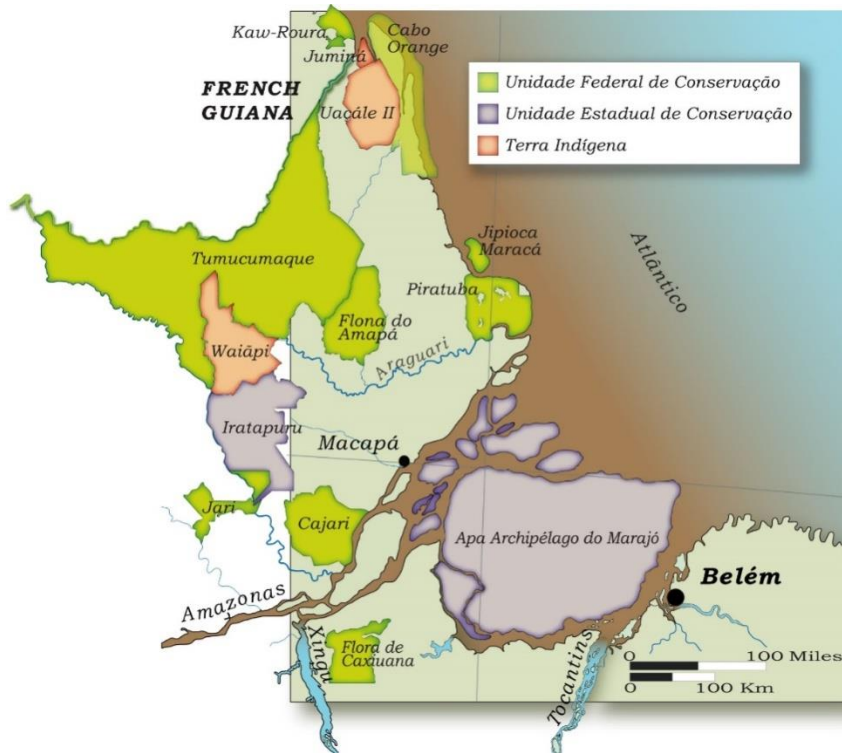


Figure 7. Protected areas in the Amazon estuary and coastal areas. From Barthem and Goulding 2007.

6.5 Population monitoring

There is no official program dedicated to monitoring dourada fisheries. There are no integrated basin fishery statistics and regional statistics cover only part of the life history area of the species.

7. Effects of the proposed amendment

7.1 Anticipated benefits of the amendment

The CMS advocates that all Parties should act jointly for the conservation and effective management of migratory wildlife species. In this sense, the inclusion of dourada in the CMS would encourage the establishment of combined actions, aiming to establish guidelines at adequate life history scales for the elaboration of strategies for conservation, management, research, monitoring and fishing information.

7.2 Potential risks of the amendment

There are no known potential risks to dourada conservation from an Appendix II listing.

7.3 Intention of the proponent concerning development of an Agreement or Concerted Action

The adoption of the present proposal in the context of the dourada distribution area and its corresponding member countries would help promote national, regional and international coordination, collaboration and partnership for the conservation and management of the species that makes the longest freshwater fish migration in the world. A first step is to organize workshops to assess the conservation status of freshwater migratory fish in the Amazon Basin and to list priority measures. These workshops can be a starting point and an opportunity to

develop concerted action between countries in the near future and to start negotiations for an agreement on CMS freshwater migratory fish.

8. Range States

Dourada occurs in Brazil, Bolivia, Colombia, Ecuador, French Guiana, Suriname, Peru and Venezuela in the Amazon and Orinoco River basins and at the mouth of the main rivers that flow into the Brazil-Guyana Platform (Reis et al. 2003, Lundberg et al. 2011). However, its capture is mostly in Brazil, in the states of Pará, Amazonas, Amapá, Acre, Rondônia and Roraima; in Peru, in the Departments of Loreto, Ucayali and Madre de Dios; in Colombia, in the Department of Amazonas; and in Bolivia, the Departments of Pando, El Beni, and La Paz.

9. Consultations

10. Additional remarks

11. References

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