

## Inclusion of *Paratrygon aiereba* in Appendix II

### Proponent: Colombia

**Summary:** *Paratrygon aiereba* is a widespread freshwater stingray that occurs in the main channels of some large South American rivers in the Plurinational State of Bolivia (Bolivia), Brazil, Colombia, Ecuador, Peru and Bolivarian Republic of Venezuela (Venezuela). Little is known about the biology of this species. It is a large ray reaching up to 130 cm disc width and has low fecundity, producing two offspring every second year. It is one of 25 or so members of the family Potamotrygonidae, a family of freshwater elasmobranch fishes confined to South America.

Population numbers are unknown although the species has been reported as occurring in high densities in some areas. It is harvested (particularly juveniles) in commercial and artisanal fisheries for the international ornamental fish trade, for domestic human consumption and for export as a food item. It is also believed to be affected by habitat destruction and there is some indication that it is persecuted because of the risk it poses to tourists (it has a very painful sting). Recently, it has not been observed in some areas in Venezuela and Colombia where it was previously considered abundant. Information on the magnitude of declines, however, is not available. It was assessed by IUCN in 2009 as Data Deficient.

International demand for the species, both for live specimens and meat, may be increasing, in particular in Asia. It is not easily found for sale on the Internet, although specimens are advertised on aquarium sites and in specialist fora. The only species-specific trade data available for *Paratrygon aiereba* are for the reported export of 216 individuals between 2007 and 2011 from Colombia, mainly to Thailand, Hong Kong and Russia. There are many trade names used for *P. aiereba*, however, so trade in this species may well to be under-estimated. The main consumers of freshwater stingray meat are said to be Japan, the Republic of Korea and large cities in south and east Brazil.

Data are available on trade in the family Potamotrygonidae in general. It is not known how much of the recorded trade can be attributed to this species, nor how complete this information is. Brazil recorded the export of 36 000 specimens of Potamotrygonidae between 2003 and 2005. Colombian exports averaged about 25 000 specimens per year between 1995 and 2006 (ranging between 15 000 and 30 000), after which there was a large increase to a peak of over 60 000 individuals exported in 2008. Exports in the period 2009–2012 declined again to approximately 25 000 specimens per year.

Since 1990, export of some species of Potamotrygonidae, including *P. aiereba*, as live specimens has been prohibited by Brazil, although export of meat is still permitted. In Colombia, commercial fishing for *P. aiereba* for ornamental purposes can only be carried out with authorization and permits from the National Fisheries Authority, which also determines open and closed seasons for the fishery. Ecuador has a specific regulation on the collection of ornamental fish not listed in the CITES Appendices. There is some indication of illegal cross-border trade, with fishes imported from Brazil and Ecuador into Colombia or Peru for re-export.

The proposal is to list *Paratrygon aiereba* in Appendix II, with an 18-month delay prior to the listing coming into force, in order to help Parties prepare and develop appropriate technical and management measures required for such a listing.

**Analysis:** *Paratrygon aiereba* is a widespread species in large rivers in South America targeted in fisheries; both meat and live fishes enter international trade. It is believed sensitive to the impacts of fishing because of its low productivity. Although there are concerns that numbers are declining owing to over-exploitation, details of the magnitude of any declines in exploited populations are not available, nor is it clear what proportion of the population is subject to harvest, nor what proportion of the harvest enters international trade. Therefore, there is insufficient information to determine whether the species meets the criteria for inclusion in Appendix II.

| Supporting Statement (SS)   | Additional information                             |
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| <u>Taxonomy</u>   |  |
| <i>The species is sometimes described using a different spelling: Paratrygon ajereba (Walbaum, 1792). The IUCN Red List assessment for this species uses this alternative. White (pers. comm., 2012) notes that this issue is not fully resolved, however recommends following the spelling and authority: Paratrygon aiereba Mueller &amp; Henle 1841.</i> |  |
| <u>Range</u>  |  |
| Plurinational State of Bolivia (hereafter Bolivia), Brazil, Colombia, Ecuador, Peru and Bolivarian Republic of Venezuela (hereafter Venezuela).   |  |
| <u>IUCN Global Category</u>   |  |
| Data Deficient (ver. 3.1 Assessed 2009).  | Listed in the IUCN Red List as Paratrygon ajereba. |

### Biological and trade criteria for inclusion in Appendix II (Res. Conf. 9.24 (Rev. CoP15) Annex 2 a)

#### **B) Regulation of trade required to ensure that harvest from the wild is not reducing population to level where survival might be threatened by continued harvest or other influences**

##### Biology

*P. aiereba* is a freshwater stingray that is restricted to the main channels of some large South American rivers. It is found in Bolivia, Brazil, Colombia, Ecuador, Peru and Venezuela.

*P. aiereba* has low fecundity, long gestation periods, and slow growth. Studies suggest that there are three genetically distinct subpopulations of *P. aiereba* found in the Amazon. Maximum disc widths of 80-100 cm have been recorded. In the Orinoco basin, the species reproduces throughout the year and they can have 1 to 8 intrauterine embryos (normally 1 to 2). Females reach sexual maturity at DW 37 cm and males at DW 45 cm.

##### Population and decline information

There is little overall population information. A study in the "Estrella Fluvial de Inírida" in Venezuela and Colombia did not find any specimens of *P. aiereba* during 60 hours of sampling (fishing) over approximately 253 000 hectares between February and

##### Biology

*It is also noted that the ray is of a large size and has low fecundity (two offspring every second year) (Araújo and Rincón, 2009).*

*According to Araújo and Rincón (2009), size at birth is 16 cm DW; size at maturity 60 cm DW (males) and 72 cm DW (females); and maximum size is 130 cm DW. These are larger sizes than those quoted in the proposal.*

##### Population and decline information

*It has also been categorized as "Vulnerable" on the Colombian national Red List (criteria A2ad), owing to declines in catches observed over the last 10 years (Lasso and Sanchez-Duarte, 2012). It has only recently been found in the Colombian*

| Supporting Statement (SS)  | Additional information   |
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| <p>May 2011. Specimens were however observed during night-time visual surveys in the dry season (November 2010 to March 2011). This is of particular concern due to the fact that this was an area where the species was previously very abundant.</p> <p>In Ecuador, a total of 52 individuals were collected during two surveys in 1994 and 2010, and the majority of specimens with disc widths between 25 and 55cm. In the Orinoco River, females reach maturity at 37cm disc width (DW), and males at 45cm.</p> <p><u>Trade</u></p> <p><i>P. aierba</i> is marketed for its meat in Venezuela, Colombia, Peru and Brazil. The main importers of freshwater stingray meat are Japan and Republic of Korea. Details on the international markets specifically for <i>P. aiereba</i> for this species are not provided in the SS. Venezuela has a commercial fishery of <i>P. aiereba</i> in the Apure River during high waters (June to August) when other commercially viable fish species are not available.</p> <p>Live specimens are targeted in Colombia, Peru and Venezuela, specifically for the ornamental fish trade.</p> <p>There is some indication that illegal trafficking is occurring of freshwater stingrays from Brazil and Ecuador, which are then exported from Peru or Colombia.</p> <p>The principal purchasers of the meat of freshwater rays are reported to be cities in the south and east of Brazil, Japan and the Republic of Korea.</p> <p>Colombia exported 216 individuals between 2007 and 2011 for the ornamental trade, with 146 specimens exported in 2009 alone. These were destined for Thailand (120), Hong Kong (37), Japan (32), Russia (15), China (6) and Mexico (6). There are many trade names used for <i>P. aiereba</i>, however, so trade in this species is likely to be underestimated.</p> <p>The supporting statement also provides approximate figures for export of all Potamotrygonidae stingrays – Brazil exported 36 000 specimens between 2003 and 2005, and Colombia more than 500 000 specimens between 1995 and 2012. It is important to note that since 1990 Brazil does not permit the export of live specimens, and only meat. Colombian exports averaged about 25 000 specimens per year between 1995 and 2006 (ranging between 15 000 and 30 000), after which there was a dramatic increase to a peak of over 60 000 individuals exported in 2008. Exports in 2009-2012 declined again to approximately 25 000 specimens per year.</p> | <p><i>Amazon (Lasso and Sanchez-Duarte, 2012).</i></p> <p><i>According to Araújo and Rincón (2009), this species is widespread around the Amazonas-Solimões River and tributaries, and around the Rio Negro in Brazil this species occurs in at least 42 tributaries and is known to occur in high densities.</i></p> <p><i>According to Araújo and Rincón (2009)'s estimates of size at maturity (size at maturity 60 cm DW (males) and 72 cm DW (females)), all individuals that were collected in Ecuador during the two surveys described in the SS were juveniles.</i></p> <p><u>Trade</u></p> <p><i>FAO has not been provided with any species-specific catch or trade data for this species (CITES, 2009). Detail provided on illegal trade in this proposal specifically mentions Potamotrygon motoro and P. schroederi (CoP16 Prop. 48), although it appears that it is considered that illegal trade in this species also occurs. Lasso and Sanchez-Duarte (2012) note that there is illegal trade between Venezuela and Colombia in this species. At the South American Freshwater Stingray Workshop held in Geneva in April 2009 (AC Doc 14.2), participants concluded that uncontrolled cross-border trade was widespread within the region and this was a serious issue in some areas and for some species of freshwater stingrays.</i></p> <p><i>All reported catches in the Rio Apure fishery in Venezuela were of specimens over the minimum size of maturity (Barbarino and Lasso, 2009).</i></p> <p><i>Barbarino and Lasso (2009) note that at present harvesting levels are low and not threatening the species, but that there is potential for supplying Asian markets and that with improved fishing techniques, captures could increase by at least 70%.</i></p> |

| Supporting Statement (SS)  | Additional information |
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| <p>However, it is unclear how many of these specimens can be attributed to <i>P. aiereba</i>, with this family being composed of ~25 species.</p> <p><i>P. aiereba</i> is not easily found for sale on the internet; however, there are some specimens for sale on aquarium sites and forums (USD200 per specimen, e.g. <a href="http://www.aquascapeonline.com/products/cega-stingray-10in-paratrygon-aiereba.html">http://www.aquascapeonline.com/products/cega-stingray-10in-paratrygon-aiereba.html</a>). Whether these come from legal sources is unclear.</p> <p>The liver and its oil have traditional medicinal uses in Colombia and the spines from Potamotrygonidae are used to make ornaments, small arrows and spears in Brazil and Ecuador.</p> |                        |

### Inclusion in Appendix II to improve control of other listed species

#### A) Specimens in trade resemble those of species listed in Appendix II under Res. Conf. 9.24 (Rev. CoP15) Annex 2 a or listed in Appendix I

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| <p>The proposal notes that this species belongs to a monotypic genus and that it can be differentiated from <i>Potamotrygon</i> by various features. Brazil is planning to develop identification manuals for fish species to support enforcement efforts.</p> | <p><i>Frederico et al. (2012) found evidence that there was “more than one species within what currently is considered P. aiereba”.</i></p> |
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### Other information

#### Threats

The main threats to *Paratrygon aiereba* are commercial and artisanal fisheries for the ornamental fish trade, particularly juveniles, and human consumption. However, habitat destruction is also a threat to the species, in particular that resulting from the building of hydropower plants and ports and agricultural and mining activities. In Ecuador, principle river systems such as the Napo, which are known habitats for *P. aiereba*, are now degraded and fragmented.

Though the effects of disturbance from ecotourism have been noted at least in two species of Potamotrygonidae (*Potamotrygon orbignyi* and *P. aiereba*) in the Rio Negro Basin, the data are uncertain.

*Araújo (2001; as cited in Araújo et al., 2004) has estimated 21 000 individuals have been removed from the population (during an undefined time period) by ecotourism companies in Brazil, to avoid accidents with freshwater stingrays. This activity is unregulated because it is not considered a “fishery” by the Brazilian Environmental Agency (IBAMA).*

#### Conservation, management and legislation

Brazil has regulated the capture and exports of Potamotrygonidae species since 1990. Initially exports of freshwater stingrays for ornamental purposes were completely prohibited, but taking into consideration the negative effect this was having on local communities, quotas were agreed for certain species. Exports of *P. aiereba* for this purpose, however, are still prohibited.

*When Brazil halted stingray exports for two years, Brazilian exporters were no longer able to provide the variety that the market demanded and exports of other species also declined. There was also an increased export of wild-caught ornamental fishes (of all species) from other exporting countries in South America. When stingray trade from Brazil reopened, the value and volume of all ornamental fish exports rose steeply. This demonstrates the importance of co-ordinating exploitation and trade*

| Supporting Statement (SS)   | Additional information  |
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| <p>In Colombia, commercial fishing for <i>P. aiereba</i> for ornamental purposes can only be carried out with authorisation and permits from the National Fisheries Authority (Resolution 3532, 2007). This authority also determines closed seasons, when capture, transport, storage and marketing are prohibited. The Ministry of Agriculture and Rural Development sets annual fishing and export quotas for certain species used for ornamental purposes (Resolution 0301, 2011). The National Action Plan for the Conservation of Sharks, Rays and Chimaeras of Colombia lists <i>P. aiereba</i> as a species of high priority for action. Minimum sizes for capture have been proposed by experts.</p> <p>Ecuador has a specific regulation on the collection of ornamental fish not listed in CITES Appendices.</p> <p>There are several national parks/reserves in the Amazon and Orinoco River Basin, which contain <i>P. aiereba</i> subpopulations.</p> | <p><i>management measures across all countries of origin in the region (CITES, 2009).</i></p> <p><i>In 2009, only three companies in Ecuador had permits for extracting ornamental fish (CITES, 2009).</i></p>  |
| <b><u>Captive breeding/Artificial propagation</u></b>   |   |
|   | <p><i>There is a small, but reportedly growing market for adult Potamotrygonidae stingrays to supply captive-breeding programmes in Asia (CITES, 2009).</i></p> <p><i>The report of the South American Freshwater Stingray Workshop (Geneva, 15–17 April, 2009) (see AC24 Doc. 14.2) notes that “any popular ornamental species can now be captive-bred. This is undertaken on a large scale in Asian countries, both for domestic markets and for export to other parts of the world. International transport costs are lower from major Asian centres than from remote areas of South America, and captive-breeding is now providing a wider range of colour patterns from hybrids. Freshwater stingray breeding operations were under way in Asia before the adoption of a moratorium on export of stingrays from Brazil, and have continued to expand significantly”.</i></p> <p><i>Wingerter (2012) also notes that “commercial river stingray breeding facilities are currently operating in the United States, Germany and Southeast Asia. Fortunately, the use of PIT tagging in the trade is slowly regaining the confidence of consumers who are again relying on breeders, rather than collectors, to supply “pure stock.” In fact, as breeders continue to increase production, they could potentially flood the market with captive-bred product and all but neutralize the export of river stingrays from their native lands altogether. At the very least, relieving pressure on wild populations in this way could help to ensure that the existing legal harvest quotas will not be reduced, thereby keeping supply lines for wild genetics open”.</i></p> |

| Supporting Statement (SS)  | Additional information |
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| <u>Other comments</u>  |                        |
| <p>Two Decisions regarding South American Freshwater Stingrays were adopted at CITES COP14: 14.109 (that a regional workshop be held) and 14.110 (that the CITES Animals Committee consider the workshop outputs and make recommendations to the range States and CoP15 on improving the conservation status and regulation of international trade in these taxa). Decision 15.85 was consequently adopted at COP15, in which Range States of species in the family Potamotrygonidae are encouraged to:</p> <ol style="list-style-type: none"> <li>a) note the findings and conclusions of the freshwater stingrays workshop (document AC24 Doc. 14.2), and increase their efforts to improve data collection on the scale and impact of the threats facing stingray species and populations from collection for ornamental trade, commercial fisheries for food and habitat damage;</li> <li>b) consider implementing or reinforcing national regulations regarding the management and reporting of capture and international trade of freshwater stingrays for all purposes, including commercial fisheries for food and ornamental trade, and standardizing these measures across the region, for example through existing South American intergovernmental bodies; and</li> <li>c) consider the listing of endemic and threatened species of freshwater stingrays (Potamotrygonidae) in CITES Appendix III as needing the cooperation of other Parties in the control of trade.</li> </ol> |                        |

**Reviewers:** G. Sant.

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