CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Seventeenth meeting of the Conference of the Parties
Johannesburg (South Africa), 24 September – 5 October 2016

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

To list *Potamotrygon motoro* (Müller and Henle, 1841), shown in Figure 1, in Appendix II, in accordance with Article II, paragraph 2 (a), Criteria for inclusion [Resolution Conf. 9.24 (Rev. CoP13), Annex 2 a].

B. Proponent

Bolivia (Plurinational State of)*.

C. Supporting statement

1. Taxonomy

1.1 Class: Chondrichthyes

1.2 Order: Myliobatiformes

1.3 Family: Potamotrygonidae

1.4 Genus, species or subspecies, including author and year: *Potamotrygon motoro* (Müller and Henle, 1841)

1.5 Scientific synonyms: *Paratrygon laticeps* Garman, 1913
Potamotrygon alba Castex, 1963
Potamotrygon circularis Garman, 1913
Potamotrygon labradori Castex, 1963

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* *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.*

Potamotrygon laticeps Garman, 1913
Potamotrygon pauckei Castex, 1963
Trygon garrapa Jardine, *1843*
Trygon mulleri Castelnau, *1855*

1.6 Common names: Spanish: Raya, raya motoro, raya tigra, raya pintada, raya amazónica
French:
English:

1.7 Code numbers

2. Overview

The species *Potamotrygon motoro* forms part of the family of freshwater stingrays (Potamotrygonidae), native to South America and known to be in the ornamental fish trade, which is of major economic significance. According to Barreto *et al.* 2009, CEP 2010, and Barreto *et al.* 2011, more than 500,000 specimens of the family Potamotrygonidae were exported from Colombia in the period 1995-2012, and more that 36,000 specimens from other countries such as Brazil between 2003 and 2005. According to Ramos (IBAMA – Brazilian Institute of Environment and Renewable Natural Resources), the specimens exported from Brazil are sent principally to some 18 countries, notably Germany, the United States and Asian countries and territories such as Taiwan Province of China and Japan, into which more than 600 specimens were imported

The family Potamotrygonidae includes 25 species spread over four genera: *Heliotrygon* , *Potamotrygon* , *Paratrygon* and *Plesiotrygon* (Froese and Pauly 2012, de Carvalho and Lovejoy 2011). However, the present proposal covers only one species of the genus *Potamotrygon,* namely *P. motoro*, on the basis of the biological conditions, situation of vulnerability and trade which make it eligible for listing in CITES Appendix II.

The particular features of this species, namely its size, colour and its attractive fins, have caused it to be used in other countries as an ornamental breed, which has led some traders to encourage the catching of it, and trade in it, involving the peasants living in the area in such illicit activity.

Potamotrygon motoro qualifies for listing in Appendix II in accordance with Article II, paragraph 2 (b) of the Convention and Resolution Conf. 9.24 (Rev. CoP15), since it is known, or can be inferred or projected, that regulation of trade in the species is required to ensure that the harvest of specimens from the wild is not reducing the wild population to a level at which its survival might be threatened by continued harvesting or other influences.

Listing of the species *Potamotrygon motoro* in Appendix II will ensure the sustainability of a resource identified as commercially important, also taking into account the vulnerability arising from exploitation activities. It will also assisting in monitoring the statistics on legal activity and in reducing illicit trade, promoting the management, administration and regulation of these species in the countries.

3. Species characteristics

3.1 Distribution

In addition to Bolivia, its distribution includes Colombia, the Bolivarian Republic of Venezuela, Guyana, Suriname, Brazil, French Guiana, Ecuador, Peru, Paraguay, Uruguay and Argentina. In Bolivia it is distributed in the basins of the Orthon, Madre de Dios, Beni, Madera, Yata, Mamoré and Iténez rivers and possibly in the Paraguay, Pilcomayo and Bermejo rivers.

3.2 Habitat

It is a species common to the clear and black waters of the Amazon region (Lasso and Sánchez Duarte 2012a). As well as in the main course of clear or black water rivers and channels, it is also found in lagoons on the flood plain.

3.3 Biological characteristics

The males reach sexual maturity at 31 cm DW (disc width) and the females at 35 cm DW (Rosa 1985). As reported by Torzón *et al.* (1983), only the left ovary is normally present and functional. Reproduction takes place at any time of the year, with a fertility rate of 3 to 6 embryos. Size at sexual maturity is over 30 cm DW in males and greater than 38 cm DW in females. Males may reach a maximum size of 43.7 cm DW and females of 43.4 cm DW, at a weight of 3.1 and 3.4 kg respectively.

Subcircular disc; colour of dorsal surface olive-brown to dark brown or dark grey. It has numerous yellow spots of an orange or reddish tinge, larger than the diameter of the eye, but varying in size and arranged in some five elliptical groupings. Tail moderately thick and short, and may be shorter than the disc. Has 18 to 39 longitudinal rows of teeth in the upper jaw (Rosa 1985). Its colouring pattern distinguishes it clearly from other species of the genus.

3.4 Role of the species in its ecosystem

According to Araujo *et al.* (2004), in all types of habitat where freshwater stingrays are found, they are considered as predators at the top of the food chain. *Potamotrygon motoro* is considered a carnivorous species which consumes fish and aquatic invertebrates (Santos *et al.* 2004). The diet of the juveniles consists of small molluscs, crustaceans and larvae of aquatic insects (Drioli and Chiaramonte 2005), while the adults consume some fish of the family Loricariidae.

4. Status and trends

4.1 Habitat trends

Habitat degradation and productive activities such as agriculture and mining may affect ecosystems and the populations of the species of the family Potamotrygonidae, including *P. motoro.*

4.2 Population size

Unknown

4.3 Population structure

Unknown, although specimens that are similar in colouring and shape have been differentiated at the molecular level.

4.4 Population trends

Furthermore, although specific data are not available to help in calculating the population of the species [Definitions, Resolution Conf. 9.24 (Rev. CoP15)] in order to reach a finding on its shrinking, it should be stressed that *P. motoro* has an internal and low fertility, long gestation periods, slow growth and considerable longevity (Araujo *et al.* 2004).

5. Threats

Commercial and small-scale fishing, capture as ornamental species, harmful fishing (fishing carried out directly owing to possible conflicts with tourist activities) or fishing for consumption are the principal threats, together with habitat destruction resulting from the construction of hydroelectric plants, ports and mining activities.

Also, the evaluation of the risk of extinction of freshwater fish in Colombia carried out in accordance with IUCN criteria (Lasso and Sánchez-Duarte 2012a, b, Mojica *et. al*. 2012) includes overfishing for ornamental or commercial purposes as one of the principal threats to *Potamotrygon motoro*, and the same applies to a significant degree in Bolivia.

6. Utilization and trade

6.1 National utilization

The methods used for catching rays of the family Potamotrygonidae mainly involve nets, and the fish are utilized directly for their fat (for oil) to be used in traditional medicine to control asthma and influenza, while the back of the disc is used like sandpaper for smoothing down wood.

6.2 Legal trade

The species *Potamotrygon motoro* is in trade as an ornamental species at local level (local aquaria) and also internationally.

Although they are not readily found offered for sale on the Internet, *P. motoro* and *P. schroederi* are on offer in the forums and pages for advanced fish enthusiasts, in which case it is not known whether they are of legal origin. The asking prices for specimens average 200 USD and the highest valuations on the market are for *P. motoro* (79 to 325 USD). Shown below are the websites where this species can be purchased.

Common name	Selling country	Selling establishment	Price $US	E-mail address
Potamotrygon motoro	Netherlands	Rfi Tropical Fish	300	http://www.rfitropicalfish.com/stingrays/motoro_stingray
Potamotrygon motoro	Japan	Arowana	140	http://www.arowana.in/
Potamotrygon motoro	Belgium	Au Poisson d'Or	167	http://www.poisson-or.com/search.php?orderby=position&orderway=desc&search_query=motoro&submit_search=OK

6.3 Parts and derivatives in trade

Although international trade in these species is based on live animals used as ornamental fish (Araujo *et al.* 2004), in the case of Brazil Ramos (2009) reports that the flesh of stingrays is another export, sent mainly to Asian countries. In Bolivia, its flesh has begun to be consumed and this and other species are regularly caught for extraction of oil from their liver, primarily in the case of females. The oil is used for respiratory system problems and as a tonic against weakened immune systems and anaemia.

6.4 Illegal trade

In the Amazon region of Bolivia there are indications of illegal trading, going back at least five years. Similarly, Ramos (2009) refers to the cluster of problems in the frontier areas relating to illegal trading, possibly arising from the harvesting of specimens that are then exported from Peru.

The inclusion of *P. motoro* in Appendix II of CITES would improve communication on exchanges between exporting and importing Parties and would contribute to reducing illegal trade and support species management and control.

7. Legal instruments

7.1 National

While the Forestry Development Centres are the bodies charged with surveillance and monitoring of commercial fishing for consumption, relating to any species in the Plurinational State of Bolivia, administration of the specific resources intended to be used for ornamental purposes falls under the Ministry of the Environment and Water, acting through the Directorate-General for Biodiversity and Protected Areas. This body is also involved in CITES, as the Management Authority in Bolivia. The relevant legislation comprises the Environment Act No. 1333, which prohibits the gathering and

catching of species of wildlife without official authorization from the national Competent Environmental Authority (AACN), and Decrees No. 22641 and 25458 on a general and unlimited closed season, which may authorize the gathering, possession, catching or breeding of wild species in line with utilization plans under the AACN.

7.2 International

Convention on International Trade in Endangered Species of Wild Fauna and Flora

The countries concerned must monitor the trade in those species that are listed in the various Appendices of the Convention. Each Party shall keep records, expressed in numbers of specimens, of the trade in the species in those Appendices. Likewise, each Party shall undertake to prepare and submit to the Secretariat periodic reports on the application of the provisions of the Convention. Currently, Decision 15.85 calls on the range States of species of the family Potamotrygonidae to:

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;

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;

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.

Convention on Biological Diversity (CBD)

This Convention has as its objectives the conservation of biodiversity, sustainable utilization of the components of biodiversity and a fair and equitable sharing in the benefits arising from the utilization of genetic resources, by way of appropriate access to those resources and suitable transfer of the relevant technologies, taking into account all rights over such resources and to such technologies (Domingo *et al*. 2008).

Regional Biodiversity Strategy for the Andean Tropic Region

The four member countries of the Andean Community (CAN), namely Colombia, Ecuador, Peru and the Plurinational State of Bolivia, taking into account the important natural heritage in their territory, have signed and ratified the Convention on Biological Diversity and within that framework have drawn up the Regional Biodiversity Strategy (CAN, 2012a). This includes the BioCAN programme, which seeks to promote the sustainable use of resources, improved utilization of the benefits of scientific information and traditional knowledge and sound management of national territory. The strategy is based on lines of action having six major objectives:

1) To conserve and sustainably use ecosystems, species and genetic resources *in situ* and complementary activities *ex situ*;

2) To distribute benefits in an equitable manner, based on a correct valuation of the components of biodiversity;

3) To protect and strengthen the knowledge, innovations and practices of the indigenous, Afro-descendent and local communities, based on recognition of their individual, community and collective rights;

4) To develop scientific knowledge, innovations and technologies for the conservation and sustainable use of biodiversity, preventing and minimizing risks to the environment and to human health;

5) To ensure that sectoral policies and development projects having a subregional impact incorporate the conservation and sustainable use of biodiversity; and

6) To develop the capacity for international negotiation in the field of conservation and sustainable use of biodiversity in the Andean Community (CAN 2012b).

The Amazon Cooperation Treaty (ACT)

The Amazon Cooperation Treaty (ACT) was signed by the eight Amazon countries: the Bolivarian Republic of Venezuela, Brazil, Colombia, Ecuador, Guyana, Peru, the Plurinational State of Bolivia and Suriname. It is a legal instrument, technical in scope, aimed at promoting the harmonious and integrated development of the Amazon basin, as a basis for sustaining a model of regional economic complementarity with a view to improving the quality of life of its inhabitants and conserving and making rational use of its resources. The Treaty provides for collaboration among the member countries in order to promote scientific and technological research and exchange of information, rational utilization of natural resources, freedom of shipping movements on the rivers of the Amazon basin, protection of shipping movements and trade, preservation of the cultural heritage, work on health care, creation and operation of research centres, establishment of an adequate transport and communication infrastructure and increasing tourism and cross-border trade. All of these measures must be implemented through bilateral action or cooperation within groups of countries, with the objective of promoting the harmonious development of the various territories (ACT, 2012).

8. Species management

8.1 Management measures

Some countries, such as Colombia and Uruguay, have national action plans: in the case of Colombia, the National Plan of Action for the Conservation and Management of Sharks, Rays and Chimeras (Caldas *et al.* 2010); for Uruguay the National Plan of Action for the Conservation of Chondrichthyes in Uruguayan Fisheries (Domingo *et al.* 2008).

Brazil and Colombia are implementing regulatory measures to set up export quotas more in line with biological criteria adjusted to take account of the characteristics of ornamental fish species, including the stingray species of the family Potamotrygonidae (Araujo *et. al.* 2004, Ramos 2009, Bustamante *et al.* 2010). In the case of Colombia, the Colombian Institute for Rural Development, or Incoder, which is the body with responsibility for managing fishery resources, has proposed a range of minimum catch sizes (18-22 cm DW) for all species of the family Potamotrygonidae in trade in the country (Bustamante *et al.* 2010). Other Incoder species management rules include the Resolution on global fish quotas for 2012 and Resolution 3532 of 2007 which permits trade in stingrays as ornamental fish species.

8.2 Population monitoring

No information available.

8.3 Control measures

8.3.1 International

Reference may be made to instruments both binding and voluntary. The principal voluntary ones would be the pronouncements of the Committee on Fisheries of the FAO Council and the Code of Conduct for Responsible Fisheries for FAO member States (FAO 2012a, b).

8.3.2 Domestic

Bolivia has a preliminary version of the *Reglamento para la comercialización de peces ornamentales* (Regulation on trade in ornamental fish) prepared by the Ministry of the Environment and Water, which is close to being approved and which has the objective of establishing specific rules on the regulation, administration and monitoring of the catching, harvesting, breeding, gathering, transport and trading of, and research into, species of ornamental fish from Bolivian territory, at regional, national and international level, within the

framework of the legal provisions in force covering conservation and sustainable utilization of national natural resources.

8.4 Captive breeding and artificial propagation

No information is available on captive breeding of the species.

9. Information on similar species

There is very little information on *P. motoro* and other ray species in Bolivia. From observations in the field it can be said that the species produces between 25 and 30 young per laying, but almost nothing is known about its longevity or growth patterns. Based on a preliminary molecular study, it has been seen that the species appears to comprise a set of entities that are similar in shape but different at the genetic level, giving rise to a need for a detailed examination at morphological and molecular level. In the light of the foregoing, it is very probable that the species identified as *P. motoro* are entities that differ from one river basin to another or from country to country.

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