

PROPOSAL FOR INCLUSION OF SPECIES ON THE APPENDICES OF THE CONVENTION ON  
THE CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS

A. **PROPOSAL:** Listing of *Phoenicoparrus andinus* in Appendix I.

B. **PROPONENT:** Government of Chile

C. **SUPPORTING STATEMENT**

1. **Taxonomy**

1.1 Class: Aves

1.2 Order: Phoenicopteriformes

1.3 Family: Phoenicopteridae

1.4 Genus and species: *Phoenicoparrus andinus*

1.5 Common names

English: Andean flamingo

Spanish: Parina Grande

2. **Biological data**

2.1 Distribution (current and historical)

The species is of limited distribution, essentially endemic in the Andean plateaux of Bolivia, Argentina and Chile. Its main known populations and breeding areas are in Chile.

In Chile *Phoenicoparrus andinus* lives in the far north of the country, with its latitudinal range extending to Laguna Cotacotani (18°14'S, 69°13'W) in the north and Laguna del Negro Francisco (27°26'S, 69°15'W) in the south (Parada 1990).

The species is found at between 2,300 and 4,500 metres above sea level (asl), although it shows a preference to group at under 3,500 m.

Three aggregation groups can be indentified, namely, at Salar de Surire (18°50'S, 69°06'W), Salar de Atacama (23°23'S, 68°21'W) and Laguna del Negro Francisco. The first and last of these are high-altitude populations living above 3,900 metres, while Salar de Atacama lies on the coast at 2,300 metres elevation and is the most important area for the species in northern Chile (Parada 1990).

In Bolivia it has been reported in most of the salt lakes of the high plateau (Lagos Soledad, Uru-Uru and Poopo). It is also reported in Laguna Colorada (22°11'S, 67°47'W) and in the Department of Potosí, which comprises a nesting area for three species of South American flamingo (Campos 1990, Hurlbert and Flores 1990).

Hurlbert (1978) has not observed the species in the Peruvian high plateau.

In Argentina its presence has been reported in low-lying lakes like Pozuelos (3,500 m above sea level) and Guayatayoc (3,660 m asl). Its presence has also been recorded in Laguna Mar Chiquita, in Cordoba province, during the winter period.

According to Chebez (1994) one individual ringed in Chile has been recorded exceptionally in Santa Catarina, Brazil.

## 2.2 Population (estimates and trends)

The population has been estimated to number fewer than 50,000 individuals (Rose and Scott 1994).

In Chile the Andean flamingo populations are concentrated essentially in the Surira, Atacama and Maricunga salt flats and the Lejía and Negro Francisco lakes.

Outstanding among them is the Atacama salt flat with its large summer groupings in 1986 and 1987, comprising 20,873 and 22,293 birds respectively and representing 51.2 and 59.8 per cent of the total census count for the species (Parada 1990).

In the summer aggregations in the Maricunga salt flat (26°55'S, 69°05'W) there were as many as 4,010 individuals in 1987, while in the same year 3,335 birds were recorded in Negro Francisco lake.

Between 1990 and 1996 a notable decline was recorded in the population numbers of the Andean flamingo. Of the census count of 18,936 individuals in the summer of 1990 in the whole of Chile, only 2,070 individuals were recounted at the same period in 1995. In 1996 the number of flamingos increased considerably, attaining 6,839 individuals (CONAF, unpublished).

In Argentina *P. anindus* is regularly to be found in the lakes of Puzuelos and Guayatoyoc and, in the winter, in Mar Chiquita. Six individuals were recorded in Laguna Vilama in November 1977 (Hurlbert 1978).

In Bolivia Hurlbert (1978) notes the presence in a sample made in November 1977 of 495 individuals in 13 locations where sampling was undertaken. Subsequently, in January 1980, the same author counted 1,173 individuals in 7 places where there were population counts, and then in July of the same year only one individual was recorded in the Chalviri salt flat (Hurlbert 1980). No more recent data are available.

Concerning the sightings in Santa Catarina, Brazil (Chebez 1994), there is no previous record available.

## 2.3 Habitat (brief description and trends)

The species shows a preference for salt flats in the high plateaux of Chile, Argentina and Bolivia, under 3,500 m asl, where there exist shallow lakes with high concentrations of salt, rich in such microalgae as *Surirella sp.* (López 1990) and diatoms.

## 2.4 Migrations (types and movements, distances, proportion of the population migrating)

It emerges from the information available that a large part of the Andean flamingo population inhabits the Chilean salt flats and lakes in the summer (Atacama and Maricunga salt flats, and Negro Francisco lake), with over 60 per cent of the total number in Chile migrating to lower-lying areas in the winter, and specifically to such locations as the Pozuelos, Guayatoyoc and Mar Chiquita lakes in Argentina and the Soledad, Uru-Uru and Poopo lakes in Bolivia (Parada 1990a).

According to Hurlbert (1978), it is not observed in the Peruvian high plateau.

## 3. Threat data

In the Andes flamingo colonies have long been a source of feathers, meat and eggs for the indigenous peoples of the high plateau. However, this type of practice has been reduced through the educational and safeguarding campaigns carried out in each country.

Nowadays the main problems encountered by flamingo populations concern the modification of the

habitat by mining, industrial and tourist activities and by the increase in pollution and human settlements.

In Bolivia direct plunder by human beings has ceased to be a problem for the flamingo populations thanks to safeguarding and educational campaigns conducted in particular during the breeding season. However, other sources of harm have been identified such as the salt industry and mining, which disturb the flamingo populations and their habitat through heavy metal pollution of the waters (Campos 1990).

In Lago Poopo there have been found to be high concentrations of heavy metals resulting from the mining and industrial activities on the banks of the waterways flowing into that lake.

The increase in the human population living in the vicinity of the salt flats is a further factor of change in the flamingo populations, directly affecting the behaviour of individuals and their optimal habitat conditions (Campos 1990).

In the case of Lago Uru-Uru, the major cause of concern is the invasion of the areas around the lake by human beings. The lake lies south of the city of Oruro and is being directly affected by the urban and industrial development of that city and the increase in its population. For example, many factories and ore refineries discharge their sewage directly into the lake. Similarly, the city rubbish dump is 400 metres from the water's edge. Furthermore, owing to the increase in the area under cultivation, there is growing use of pesticides and chemical fertilizers.

In Chile the situation is just as worrying. The extraction of non-metallic ores in the salt flats, the increase in tourist activities, the drawing of water for human consumption and for industrial and mining operations have enormously affected the flamingo populations and their habitat, which is reflected in the drastic decrease in the size of the population in the past five years (CONAF, unpublished).

The Atacama salt flat, for instance, has in recent years been affected by intense mining and tourist activity. The extraction of non-metallic ores such as lithium has brought about change in the structure of the ecosystem, reducing its potential as a nesting area. In addition, the tourist boom, reflected in the increase in the number of visitors (approximately 10,000 people a year), has led to a decline in the flamingo populations and to an alteration in their reproductive behaviour (CONAF, unpublished).

#### **4. Protection status and needs**

##### **4.1 National protection status**

In Chile *P. andinus* is classified as a "vulnerable" species in accordance with the Red Book of Terrestrial Vertebrates of Chile (A. Glade, Ed. 1993).

Furthermore, most of the lakes and salt flats in the high plateau of northern Chile form part of the National System of Protected Wildlife Areas of the State, especially those corresponding to aggregation cores (Surire and Atacama salt flats and Negro Francisco lake). These very sites will shortly be proposed as wetlands of international importance for the RAMSAR Convention.

From the legal point of view, the new Regulations issued under Hunting Act No. 4,601 of March 1993 prohibit the hunting, capture and possession of species of terrestrial vertebrates native to Chile for the next twenty years. Moreover, General Environment Act No. 19,300 in force since March 1994 makes it mandatory for environmental impact studies to be carried out prior to the undertaking of any development or production project that may affect the environment, in order to identify impacts and propose mitigating measures and long-term plans for the monitoring of the biotic and abiotic components of the ecosystem affected.

#### 4.2 International protection status

In Bolivia major efforts are being made to improve the conservation of *P. andinus* in the Colorada, Verde and Kalina lakes, which form part of the Eduardo Avaroa Andean Wildlife National Reserve, in the Department of Potosi, where the nesting areas of the three species of South American flamingos are to be found.

Flamingos are protected by law in Bolivia, but the laws protecting these birds and their products are not widely observed. Bolivia's General Wildlife Act (Legislative Decree No. 12,301) provides the general framework for the use and marketing of animal species. This Act is implemented through Supreme Decrees Nos. 16,605 and 08063, which list the species in danger of extinction and prohibits the hunting and marketing of them. Flamingos are listed in both (Campos 1990).

In Argentina Pozuelos lake is a Natural Monument of the National Parks Administration and a RAMSAR site.

#### 4.3 Additional protection needs

It is considered highly necessary for all the Range States of the species *P. andinus* that have not ratified the Bonn Convention (Bolivia) do so as soon as possible.

In addition, as a way of ensuring the conservation of wetlands in the high plateau, Protected Wildlife Areas should be established in the wetlands serving as mating and nesting areas for the Andean flamingo, and they should be included among those listed under the RAMSAR Convention.

### 5. Range States

Chile, Argentina, Bolivia and Brazil.

### 6. Comments by Range States

### 7. Additional remarks

### 8. References

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