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

A. PROPOSAL: Listing of *Hippocamelus bisulcus* in Appendix I of the Convention on the Conservation of Migratory Species of Wild Animals (CMS).

B. PROPONENT: **Government of the Argentine Republic**

C. SUPPORTING STATEMENT

1. Taxon

1.1 Class: Mammalia
1.2 Order: Artiodactyla
1.3 Family: Cervidae
1.4 Scientific name: *Hippocamelus bisulcus* (Molina 1782)
1.5 Common name
Spanish: huemul
English: South andean deer
Other common names: huemul or güemal (Araucan); güemul, gúamul, trula, trulá, shoan, shoam or shonan (Tehuelche); ciervo andino, huemul del sur, heumul chileno, ciervo, ciervo chileno, ciervo cordillerano, huemul patagónico, ciervo patagónico, ciervo colorado (Spanish); hueque, hueque chileno, güeymul or bueymul, oop, anta.

2. Biological data

2.1. Distribution

South-west of South America. It is an endemic species of the subantarctic woods of the Argentine and Chilean Republics.

Argentina: Formerly from the south of Mendoza province (36°S), Neuquén, Río Negro, Chubut, up to the Strait of Magellan (52°S), Santa Cruz province. It was to be found in ecotonal wooded areas and even steppes, with sightings reported in the last century in the vicinity of Puerto Deseado, Puerto Santa Cruz and Río Gallegos. At the present time, it has been significantly reduced and comparison between the furthermost points of the range in the past and present centuries reveals a shrinkage of 200 km in the north and 500 km in the south. It has disappeared from the steppe and is confined exclusively to places not easily accessible in the cordilleran woods with low or zero population and little or no farming activity. The northernmost limit of the range is in the south of Neuquén province, in the Nahuel Huapi National Park (40°30'), the easternmost limit is at 71°25'W, at Cordón Cholila in Chubut province, while in the south the species is still to be found in Santa Cruz province, in the central part of Los Glaciares National Park (49°54'S). The presence of the species has been identified in 63 places, in 39 of which it has been confirmed and in 24 it has been considered to be probable. Moreover, it has also been reported in 35 "binational or cross-border localities", with populations which, moving within border areas, are common to Argentina and Chile.

Chile: The original range covered extensive precordilleran and cordilleran areas of the Andes, from the central area (34°S) to the Strait of Magellan (53°S). It has now disappeared from the Metropolitana de Santiago, Rancagua (VI), Talca (VII) and Temuco (IX) regions and is considered to have decreased in numbers by 50 per cent throughout the country. At the present time the northernmost limit of its known range is thought to be a small group in region VII in Nevados de Chillán (36°S), which also continues to live in the mountain areas of the Los Lagos

region (X). The highest concentrations of the species are to be found in Aisén (XI) and Magallanes (XII) (43°-54°S) - including coastal populations - as in the Wellington and Riesco islands and the Brunswick peninsula. The two last-mentioned areas are regarded as the deer's main places of refuge in Chile.

2.2. Population

Population figures for the two countries are not certain. However, it is estimated that the minimum figure for Argentina is 600 individuals with the biggest identified group being in Perito Moreno National Park in Santa Cruz province. As for the population in Chile, it is thought to be approximately 1,500 animals, concentrated for the major part in the region of Aisén and in periglacial areas of Magallanes, with a northern residual group in the snowfields of Chillán.

It is currently estimated that the known population groups, in Argentina and Chile alike, are of reduced size. It may be noted in this connection that in the past sightings of groups containing large numbers of individuals were reported, whereas at present the average sighting is of one or two animals.

2.3. Habitat

Most of the areas where the species is currently to be found in the south of Argentina and Chile consist chiefly of deciduous woods of *Nothofagus pumilio* - largely springing up as thicket in the wake of forest fire - associated with a transitional vegetation of evergreen woods of *Nothofagus betuloides*. It is likewise to be found in periglacial thicket that has sprung up following the melting of glaciers in areas adjoining the continental icefields. Species of shrub to be noted in its habitat belong to the following genera: *Embotrium, Pernettya, Berberis, Empetrum, Maytenus, Escallonia* and *Chiliotrichium*.

In terms of altitude, the habitat range of the huemul or south andean deer varies according to latitude, the species being found at sea level and all the way up to mountain pastures, beyond the highest limit of the wood. Groups of deer are thus to be found in the vicinity of the fiords in Chile, while others manage to live at an altitude higher than 1,700 metres above sea level in the northern portion of the species' range.

The areas where large numbers have been observed are thought to be preferred on account of certain common environmental features which ensure protection and food for the species. These common features are as follows:

* slopes preferably facing north, exposed to the sun and dominant winds;
* escarpments and rocky sanctuaries not easily accessible to human beings and/or domestic animals;
* nearby presence of *Nothofagus* woods;
* during the summer, thicket or young shoots with green leaves measuring not more than one metre in height;
* absence of livestock, dogs or deer of other species.

2.4. Migrations

In winter, owing to the cold and snow, the size of the habitat is severely reduced, as the deer move downwards to lower, more sheltered spots with less accumulated snow, where they can more easily have access to perennial vegetation.

Some populations live in the border area between Argentina and Chile and individual animals are reported to move between the two countries. Accordingly, target areas measuring between

300 and 700 or 500 and 100 ha have been designated which are frequently said to run from one side of the border to the other. Furthermore, the optimal plant cover for the species usually extends without a break across both slopes of the Patagonian Andes, there being no topographic obstacles to the normal migrations of the animals.

High priority has been given to the conservation of the following border areas containing huemul populations common to Argentina and Chile, with joint actions by the two countries being proposed:

(1) Nahuel Huapí-Pérez Rosales; (2) Cerro Ventisquero-Río Manso; (3) Arroyo Motoco-Lago de las Rocas; (4) Lago Esperanza-Laguna de los Patos; (5) Río Grande-Futaleufú; (6) Lago la Plata-Lago Las Torres; (7) Perito Moreno-Lago Alegre; (8) Cocoví-El Mosco; (9) Laguna del Desierto-Glaciar O'Higgins.

3. Threat data

The range of the species and the size of its population were drastically reduced following colonization, which radically affected the deer's habitat. Forest fires, the indiscriminate felling of trees, the replacement of native woods, urban expansion, the introduction of deer belonging to other species and extensive cattle breeding have resulted in a dwindling of the species. Similarly, the transmission of parasites and diseases by cattle and the use of dogs for livestock management and hunting have caused the deaths of many individuals.

At the present time there exists not a single herd or any animal of the species in zoos or in breeding centres worldwide owing to the failure of the various attempts at maintenance and reproduction in captivity being carried out by Argentina and Chile.

It is suspected that the predatory impact of the puma (*Felis concolor*) may be significant in fragmented, genetically isolated populations of reduced size, especially when there also exist other problems of conservation. In addition, the possibility has been mooted of an increase in the size of the puma population linked to cattle breeding in the present century.

3.1. Direct threats to the population

* Clandestine hunting: There is clandestine hunting of the species in the two countries both outside and within protected areas. The effect of this, even when only a small number of animals are hunted each year, is serious in view of the reduced size of the existing populations.

* Presence of dogs: The presence of domestic dogs, connected with human activities, or of dogs that have become wild, is a source of disturbance and/or death to individual animals through predation.

3.2. Habitat destruction and/or modification

* Extensive cattle breeding: The greatest pressure at the present time seems to derive from the use of the optimal habitat of the species for the purposes mainly of animal husbandry. The situation is particularly critical in winter when the deer has to move to lower-lying areas in search of food and more clement climatic conditions, thus facing competition with domestic livestock and the risk presented by the proximity of human beings and their dogs.

For the reasons stated, there is agreement that in areas where there are south andean deer, extensive cattle raising, without strict control, is incompatible with the long-term survival of the species. This is due to the resulting competition for food and to characteristics of the huemul's behaviour, which cause it to avoid areas where cattle are permanently present. The situation is

aggravated in many areas where there is overgrazing, and owing also to the lack of health plans, genetic improvement and livestock management.

* Replacement of native woods by exotic species: The dwindling of the species through the extension of the area given over to the planting of conifers is worrying as a future trend. Depreciation of native woods, together with a failure to see them in terms of an ecosystem and their gradual replacement by non-native conifers, are harmful to most of the native flora and fauna, including the huemul.

* Irrational management of native woods: The irrational use of native woods and a lack of the forest management plans needed to ensure their continuous renewal, the absence of enironmental impact assessments in respect of the large areas to be exploited and the inadequacy of controls, besides impairing the sustainability of forest use directly affects the deer's habitat.

* Introduction of species of exotic wildlife: The presence of animals not native to Patagonia is a very serious problem (e.g. non-native deer, rabbits and untamed livestock) in the subantarctic woods, impairing forest regeneration, contributing to erosion and creating competition for resources (food, wintering areas, etc.). In particular, the red deer (*Cervus elaphus*), through having evolved in its original area, is aggressively competitive, very adaptable as to the use it makes of its habitat and tolerant of disturbances, and for these reasons it is able to supplant the huemul in areas where the two species live side by side.

* Infrastructure development: Infrastructure development (highways, gas pipes, oil pipes, hydroelectric dams, ski resorts, mountain refuges, etc.) in areas containing south andean deer may lead to the loss of substantial portions of their habitat or to the fragmentation and isolation of populations by acting as barriers to the animals. In addition, the construction of new highways or the improvement of the present road system is gradually opening up to human beings new, previously inaccessible areas where the deer take refuge.

3.3. Indirect threats

* Small size of populations, fragmentation and genetic isolation: Many huemul populations are fragmentated and isolated owing to human action, with very little or no possibility of exchange in terms of population or genetic stock with other nearby groups. This has many consequences, including: higher likelihood of inbreeding and other genetic and demographic problems and greater vulnerability to predators, diseases and disasters (fires, earthquakes, landslides, etc.).

* Diseases: There is evidence of the transmission to the huemul of infectious and parasitic diseases from cows, sheep and goats, and also from dogs. These include brucellosis, coccidiosis, foot-and-mouth disease in particular. There also exist several other diseases from domestic or wild animals that have been introduced which are capable of affecting the species (e.g. actinomycosis). Exotic ungulates that have become wild, particularly cervidea, present considerable risks for the transmission of pathogenic agents.

* Uncontrolled tourist development: If there is tourist development (tourist and ski resorts, adventure tourism, etc.) without consideration first being given to the huemul's requirements, this results in disturbances that are very harmful to the species, which is made highly vulnerable by its behaviour and ecological needs. Tourism is steadily increasing throughout the species' range, with pressure being applied for it to be allowed in protected and increasingly remote areas. Measures to regulate and control tourism would be very much in the interests of the conservation of the huemul, failing which the species can be expected to be harmed. Concern for the species has at present to take second place to the requirements of tourism and not the other way round, making it necessary for those working for the conservation of the huemul to

show that unregulated tourist activity is prejudicial to the species, without the onus of proof being on promoters.

3.4. Threat connected especially with migrations

The threats in question spring from the fact that two different countries are responsible for administering a common resource, combined with a lack of knowledge regarding cross-border huemul populations. It may therefore be concluded that there is no joint, co-ordinated management by Argentina and Chile to ensure effective protection for the regular migrations of the species.

3.5. National and international utilization

No comments

4. Protection status and needs

4.1. National protection status

In Argentina, under Resolution No. 144/83 of the Department of State for Agriculture and Cattle Breeding, the huemul is considered to be in danger of exinction and classified as "vulnerable". In the national parks it is protected by Act 22351/80 on the legal provisions governing National Parks, Natural Monuments and National Reserves. The National Parks have also designated the huemul as a "species of special value", which means, according to Article 3 of the Regulations for the Protection and Management of Wildlife approved by Resolution No. 180/94, that "it shall serve as a basis for assessing the gravity of violations committed".

It is also a Provincial Natural Monument of Santa Cruz (Act 2103/89), Chubut (Act 3381/898) and Río Negro (Act 2646/93). It is protected in the National Parks of Nahuel Huapi (Neuquén and Río Negro) Lago Puelo and Los Alerces, the last two of which are in Chubut, and in Perito Moreno and Los Glaciares, both in Santa Cruz.

In the past few years new protected areas have been designated containing huemul populations, following the establishment of the first parks and reserves protecting the species under provincial jurisdiction. Special mention may be made of the Provincial Reserves of Río Azul-Lago Escondido, situated in Río Negro, the Multi-purpose Provincial Park and Reserve of Río Turbio and the Provincial Park of Cerro Pirque, both in Chubut, and the Provincial Reserve of San Lorenzo in Santa Cruz.

4.2. International protection status

Is is listed in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and is classified as "endangered" in the Red Book of the Intternational Union for the Conservation of Nature and Natural Resources (IUCN).

In Chile it has been protected by law since 1929 (Act 4601), making it illegal to hunt or to trade in the species. It is also listed as an endangered species in the National Forestry Board's Red Book of Terrestrial Vertebrates of Chile. Notable areas from the point of view of the presence of huemuls are included in protected areas within the framework of the National System of Natural Areas under State Protection. These are the National Reserves of Nuble (Region VIII), Lago Palena (Region X), Cerro Castillo (Region XI), Mañihuales (Region XI), Río Simpson (Region XI), Tamango (Region XI), Jeinimeni (Region XI), and the National Parks of Laguna San Rafael (Region XI), Bernardo O'Higgins (Regions XI and XII), Alacafules (Region XII) and Torres del Paine (Region XII).

4.3. Additional protection needs

* Effective means of action for protected areas containing huemul populations, with adequate support in staff, materials and equipment for those working in the field;
* Creation of new protected areas in places of vital importance for the huemul;
* Co-ordination of activities relating to the protection, study and management of populations common to Argentina and Chile;
* Support for research on the impact on the huemul of, and possible alternatives to, livestock management, diseases, tourism, forest exploitation, the red deer and the puma;
* Education, training and consciousness-raisingactivities in the different organs of society in both countries concerning the problems faced by the huemul.

5. References

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