Comprehensive approach to the study of the Emperor Penguin colony in Snow Hill Island

English version provided by the author

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***Information paper submitted by Argentina***

Summary

This document informs the Parties about the work that Argentina is currently carrying out to study and protect the Emperor penguin colony in Snow Hill Island, following WP44 of ATCM XL.

During the 2022/2023 season, the Argentine Antarctic Program installed a multipurpose module intended to improve conditions for on-site development of scientific activities. Also, a visitor guideline for the colony will be drafted and submitted for consideration of the Committee for Environmental Protection (CEP) next year.

***Introduction***

The Snow Hill Island colony was discovered in the mid-1990s (Coria and Montalti, 2000) and is the northernmost Emperor penguin colony in Antarctica. It is located right above the ice pack (64° 30' S and 57° 26' W) (Libertelli et al., 2014), about 40-50 meters from the southern coast of the island, northeast of the Antarctic Peninsula.

The Emperor penguin (*Aptenodytes forsteri*) is one of the Antarctic penguins with the greatest affinity for ice, adapted to survive temperatures below -50 °C, common in the Antarctic winter. Its reproductive cycle is also one of the longest, beginning in April and ending in December. Current climate models predict a decline in the population of this species, as a result of reduced sea ice distribution and altered food availability, as Antarctic krill depend directly on ice for their larval stage of development (Forcada and Trathan, 2009).

***Background***

This colony of Emperor penguins is under various pressures. On the one hand, it is located in one of the regions of the world where the effects of global climate change are most evident (Vaughan *et al.* 2003). Population numbers, measured through aerial photographs, indicate that the colony is growing, with counts of more than 10,000 adult individuals in recent years, although climate conditions have a strong incidence on reproductive success from one season to another.

Likewise, it is one of the only colonies of Emperor penguins that is visited by tourists, thus increasing the anthropic pressure on the colony’s area of influence, especially considering that most visits are made by helicopter. Scientific evidence indicates that helicopter flights modify the behaviour of nestlings (Giese and Riddle, 1999), even when carried out at altitudes much higher than those suggested in the “Guidelines for the operation of aircraft near concentrations of birds” (Resolution 2, 2004).

With more than 10 years in the field, the Life Sciences’ Coordination of the Argentine Antarctic Institute, under its Predator Biology Working Group, regularly carries out monitoring of the colony’s population and its reproductive phases, analyzing the variations of several population parameters under a comprehensive study. This particular penguin population is exposed to different local conditions and also to changes registered in one of the areas of the Antarctic Peninsula where the clearest signs of global warming were recorded.

***Setting up of the Multipurpose Module***

In mid-summer 2023, in the southwest of Snow Hill Island, in the Dingle nunatak, at 64°31'16.89¨ Latitude South and 57°24'56.33¨ Longitude West, a multipurpose module was installed with the objective of providing accommodation for scientists of the Argentine Antarctic Institute that work in the Important Bird Area (IBA) 069 - the northernmost known colony of Emperor Penguin (*Aptenodytes forsteri*)-.

The module was set up on the Dingle nunatak as this is the closest and safest ice-free area in the surroundings of the colony, 3km away. Said module will allow the development of scientific activity during the late winter and early spring, period on which the reproductive cycle of this species takes place.

In accordance with Decision 5 (2022), Argentina presented the Initial Environmental Evaluation "Construction of a refuge in the Nunatak Dingle, Snow Hill Island, Antarctica" which will be shared via the Electronic Information Exchange System of the Antarctic Treaty.

***Guidelines for Visitors to the Snow Hill Island Emperor Penguin Colony***

In WP 44 of ATCM XL, Argentina proposed different protection mechanisms for the Emperor penguin colony on Snow Hill Island, taking into account the current context of climate change and anthropogenic pressures.

The Committee agreed to recommend the application of the “Guidelines for behavior in the vicinity of the Emperor penguin colony in Snow Hill Island”, attached to said WP, as a provisional measure, until the need to develop more restrictive protection mechanisms was assessed (p. 221 of the Final Report of ATCM XL).

In order to advance the conservation measures recommended by the Committee, Argentina decided to step up field work. Therefore, it was imperative to have more support on the ground that would allow personnel to work in better conditions. On top of that, given the increase in visits to the colony, this research will make headway in the development of the Guidelines for visitors to Snow Hill’s Emperor penguin colony, bringing about an additional protection measure for this species.

Although this colony is not among the sites most visited by tourists, and considering that in ATCM XLIV the Emperor penguin was not designated a Specially Protected Species, its particular characteristics merit specific Guidelines.

Argentina kindly requests the CEP to recognize the need to have a better management tool and raise awareness among visitors and Antarctic tour operators so as to avoid adding stress vectors to the colony. These Guidelines will contribute to having better science and to mitigating the impact of climate change on fauna. Interested Parties are invited to provide comments for the development of said Guidelines during the intersessional period.