Elaboration of an ASPA Draft Mana-gement Plan for Otto-von-Gruber-Gebirge, Dronning Maud Land, East Antarctica

Elaboration of an ASPA Draft Management Plan for Otto-von-Gruber-Gebirge, Dronning Maud Land, East Antarctica

Summary

In the 2022/2023 Antarctic summer season, German and U.S. scientists respectively undertook a research expedition into the Gruber Mountains. The main objective of the German team was to collect data in order to derive orthomosaics[[1]](#footnote-1) and digital elevation models of the proposed ASPA. Further, mapping and assessing the colonies of the snow petrel (*Pagodroma nivea*) were important goals of the German expedition. The U.S. scientists continued both short- and long-term studies of ecological responses of the glacier, soil and lake ecosystems within the Untersee Oasis. The results of these investigations, which are still to be evaluated, will support the initial compilation a Draft Management Plan for the proposed ASPA. Finally, Germany and the United States plan to set up an informal ICG after CEP XXV with the aim of gathering input and comments to elaborate the first Draft Management Plan for the Area by involving interested stakeholders and experts.

***Introduction***

In May 2022 at ATCM XLIV - CEP XXIV in Berlin, the Treaty Parties agreed to the proposed Prior-assessment for Otto-von-Gruber-Gebirge and the Committee ‘*welcomed the prior assessment and encouraged Members to work with the proponents towards a management plan during the intersessional period’.* Further, it was stated that *‘In reply to a concern about older data on snow petrels and the size of the proposed site, Germany mentioned that an expedition was planned for 2022-23 to gather more data. Germany expressed its appreciation for offers of assistance from Members and IAATO in further work.’* (see paragraphs 111-112 in the Final Report CEP XXIV and WP12 XLIV ATCM).

***Elaboration of an ASPA Draft Management Plan***

In November/December 2022 German scientists from Jena carried out an expedition to the Otto-von-Gruber-Gebirge, Dronning Maud Land, East Antarctica. The investigation area of the expedition focused on the valley of Lake Untersee. Unpiloted Aerial Vehicles (UAV) were used to enable surveys of the large and complex high mountain terrain. It is the first time that UAVs were applied to support the assessment of a colony of snow petrel (*Pagodroma nivea*), the southernmost breeding bird species of the world. Both a rotary wing multicopter and a VTOL (Vertical take-off and landing) fixed-wing UAV were used for the survey, combined with ground-based mappings. In total an area of 54 km² was covered by UAV imagery (see Figure A.1). From this imagery orthomosaics and digital elevation models were calculated with a ground sampling distance of 7 cm and 15 cm respectively. For ground truthing reference, sites with an area of 0.82 km² were mapped in detail for the occurrence of snow petrel nests, revealing 1035 nests (430 active). These data are currently being analyzed to quantify the snow petrel colony and assess its extent in the full area. The expedition could verify the occurrence of snow petrel subspecies *Pagodroma [nivea] nivea*.

For further understanding of the local breeding phenology of snow petrels, five automatic cameras were installed in the colony. Additionally, for investigations on the snow petrel colony, samples (snow petrel carcasses) were taken to search for signs of various contaminants. The impact of humans in the area, such as waste dumps and vehicle tracks, were mapped as well.

During their whole stay in the investigation area, the German scientists were fully supported by U.S. scientists under the lead of Dr. Dale Andersen (SETI Institute), whose research team and collaborators regularly visit the Untersee Oasis area to conduct research on the glacier, soil, and lake ecosystems. These ongoing studies of the ecosystems of the area's permanently frozen lakes are of great value because they considerably contribute to the continuous improvement of knowledge about the area and support the refinement of the Draft Management Plan.

***Future Plans***

Germany and the United States like to inform the CEP and the Treaty Parties that

1. the first compilation of the first Draft Management Plan for the proposed Antarctic Specially Protected Area at the Otto-von-Gruber-Gebirge (Dronning Maud Land, East Antarctica) is currently taking place. Hereby, the results of the recent German and U.S. research expeditions into the Area should help to significantly improve the baseline dataset in the area.
2. As described in the Final Report CEP XXIV, following CEP XXV, Parties were encouraged by the CEP to work with the proponents towards a management plan during the intersessional period (see paragraph 113, Final Report CEP XXIV). Taking this up, an informal ICG will be set up by Germany and the United States with the aim of elaborating the first Draft Management Plan for the Area by involving interested stakeholders (scientists, environmental experts as well as representatives from ASOC and IAATO).

***References***

ATCM XLIV WP012, Prior assessment of a proposed Antarctic Specially Protected Area at Otto-von-Gruber-Gebirge (Dronning Maud Land, East Antarctica).

ATCM XLIV Final Report, Final report of the Antarctic Treaty Consultative Meeting 2022.

Annex A

Figure A.1 Map of the proposed ASPA and investigation Area of the German expedition in 2022

Mapa

Descripción generada automáticamente

1. Orthomosaics are photogrammetrically orthorectified image products mosaicked from an image collection, where the geometric distortion has been corrected and the imagery has been color balanced to produce a seamless mosaic dataset. [↑](#footnote-ref-1)