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Systematic Conservation Plan for the Antarctic Peninsula

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Information Paper Submitted by SCAR and IAATO

Summary

The Scientific Committee on Antarctic Research and the International Association for Antarctica Tour Operators have just agreed to undertake a collaborative effort to develop a systematic conservation plan for the Antarctic Peninsula, particularly with a view to managing the long-term sustainability of Antarctic tourism.

Introduction

The Antarctic Peninsula holds much of the continent's biodiversity. A relatively benign climate, combined with the area's history and oceanography make for an environment comparatively rich in species located over a wealth of sites. For much the same reason, the Antarctic Peninsula is also the area of the continent most heavily used by people. This use extends to science, tourism and other activities, such as fishing.

Much focus is, as a result, now being given to how these activities should be managed in an integrated manner.

For many Antarctic Treaty Parties, and for IAATO, the focus of management also extends to issues related to landing site management. Increasingly, understanding the issues related to site management requires a broader understanding of all the activities and their ecological setting, to ensure that management actions will be effective in the long run.

Currently discussions of thresholds, site limits and other forms of regulation do not include integration of all activities (science, fishing, tourism) with the features (such as particular breeding colonies of seabirds, or unique areas of terrestrial vegetation) to be conserved. Arguably, taking this approach would strengthen the management decision-making, as would taking advantage of developments in the most modern tools available to enable flexible, evidence-based conservation decision-making.

Elsewhere on the globe, decisions about the conservation and management of areas, in the context of economic activity (such as tourism or fishing), are often taken on the basis of an approach known as *Systematic Conservation Planning* as this enables decision making to explore different management scenarios.

Systematic Conservation Planning

Systematic Conservation Planning (SCP) describes suites of tools and decision-making processes which seek an optimal solution for balancing conservation and economic activity in the context of an explicit set of goals (or preferred scenarios) agreed collaboratively by stakeholders. For example, which sites may be used for tourism, knowing that other sites represent the populations of a target species well, and are never visited. SCP enables such decisions to be made for all species and all activities together. Doing so enables particular sites or activities to have different priorities at different times, for example at the beginning, middle or end of a summer season.

The SCP approach has the ability to show what the best spread of sites is to be used for different activities at any given time to arrive at the best solution among parties that have very different interests. And, because it is based on finding the best solution given a set of goals (or scenarios), it can be redone quickly for many variations of these goals and with changing interest by the parties concerned.

For example, if a popular, readily accessible Adélie penguin site were to be proposed for closure on conservation grounds, the SCP approach would be able to indicate whether alternatives could better achieve that conservation goal, or whether no other solution exists.

Figure 1 below illustrates a portion of the growing data suite available that can be used for the discovery of optimal solutions for visitor use and conservation.

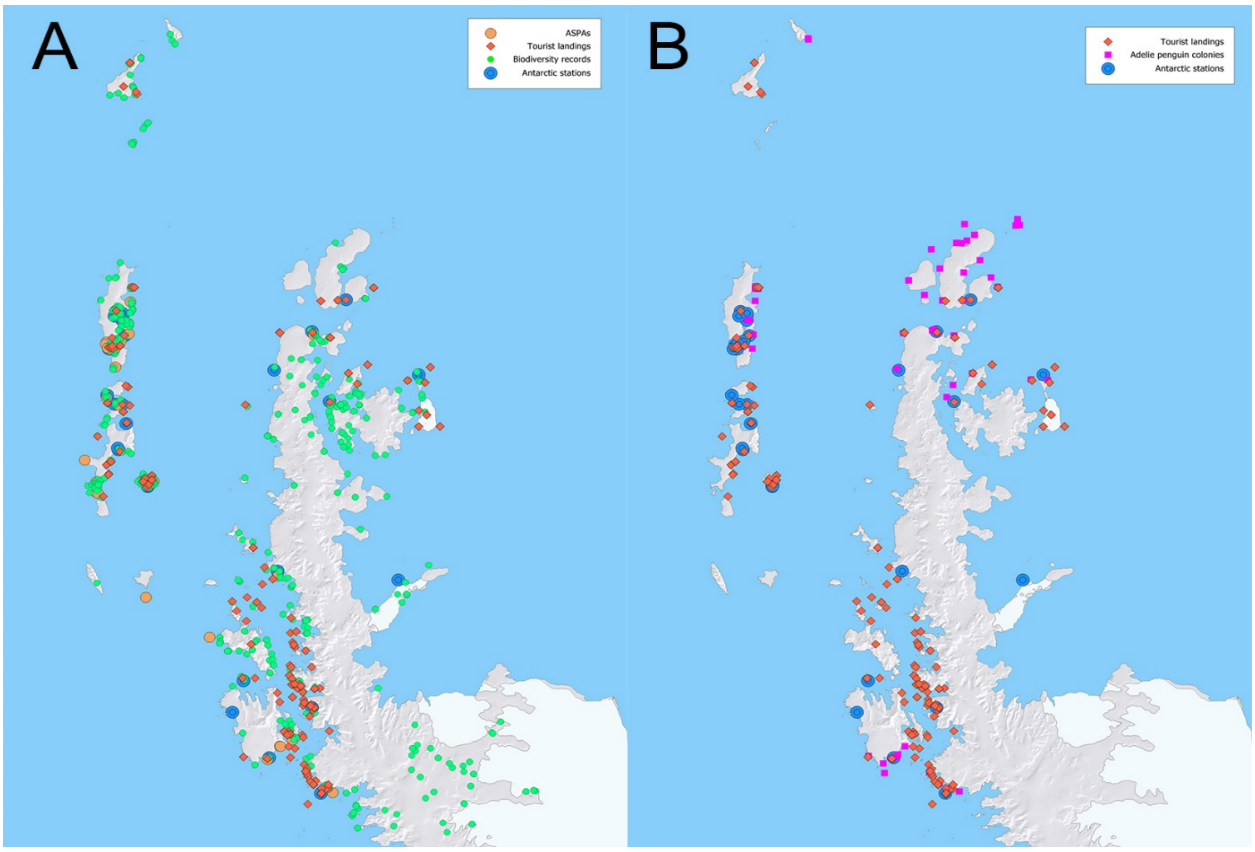

Figure 1. Data available for optimisation of activities. Panel A shows Antarctic Specially Protected Areas, tourist landings, stations and biodiversity (e.g. mosses) records. Panel B shows similar data, but now with Adélie penguin colonies. The approach can be focussed at a wide range of scales from regional to very local.

The Project

Working collaboratively, SCAR, IAATO and partners have agreed to develop a systematic conservation plan for the Antarctica Peninsula which will define quantifiable, justifiable solutions to potential issues in landing site management, in line with IAATO's mission statement.

This SCP will include:

1. Gathering baseline data about the features to be conserved. These are typically populations of various species and the geographic locations of breeding sites, sites of occurrence of commonly used aggregation areas. The species may be seabirds, seals, plants or whatever other groups might be included (see Figure 1), carefully selected for their ability to indicate biodiversity and trends. Much of the required data is readily available. Similar data are also required for management of economic activities, and these are data are routinely collected by IAATO and others (e.g. COMNAP for national programs).

2. Consideration of various factors including: to what extent conservation targets are already met within the existing management regime; or the usage of different landing sites within the area, and within the wider context of the full distribution of similar species across the area. For example, if ten colonies of a species exist, and a certain number of them are preferred sites at which tourists may view the species, how much of the rest of the population is conserved by the other sites? And how would changing the preferred site(s) for tourism change the impact on species and the ease of tourism access? The process can be repeated multiple times with different parameters to find a solution and can include many sites, species and activities simultaneously. Several computer-based optimal solution approaches exist, and these are being further improved on a regular basis to deal flexibly with real-world complexity.
3. Developing different scenarios by setting explicit goals for conservation and for all activities in the area. For example, a set of preferred sites for landings to view all three pygoscelid penguin species early in the season can be compared with the goals of conserving a certain proportion of the total breeding population of these species. Equally if, in the future - as the breeding sites for some species become more common or for other species less so - the system can be used to test whether changes to the use of sites would better achieve conservation, tourism and other (such as science) objectives.
4. Engaging with multiple stakeholders to test outcomes using different goal criteria. This would allow a clear understanding of the wider implications of applying different stakeholders' anticipated goal preferences.