

Guest Editorial

Alien introductions - why are the Treaty Parties and COMNAP sitting on their hands?

Climate change and other natural phenomena are primary agents in ecosystem evolution, but contending with anthropogenic influences is another matter. Introduced organisms, especially, have been causing increasing concern over the past few decades in Antarctica where species-poor terrestrial communities are especially susceptible to biological invasion by alien species. Since its inception in 1958 SCAR has been paramount in advising the Antarctic Treaty Consultative Parties on the issue of alien biota, with particular regard to mitigating introductions. Most recently this was actively taken up by the Committee on Environmental Protection (CEP) and COMNAP, culminating in the recent SCAR-sponsored International Polar Year Aliens in Antarctica Project. A series of CEP information papers, in 2010, proposed guidelines on monitoring and biosecurity techniques.

Reports of terrestrial alien macro-organisms have been increasing in recent years throughout Antarctica and the sub-Antarctic islands, all associated with human activity. While accidental introductions of viable propagules are inevitable no matter how stringent the biosecurity measures, Antarctic managers have a clear legal responsibility to minimize the problem. Nevertheless, there have been numerous examples of negligence and blatant disregard for the AT regulations. Some scientists, too, appear to have little knowledge of these regulations and their own role in promoting environmental protection.

Imported soil in greenhouses was originally a potential source of non-indigenous invertebrates, especially when the soil was discarded outside. Numerous species, some living, have been recorded in such soil at the Indian station Maitri in Schirmacher Oasis. The occurrence of a brachypterous midge and an enchytraeid worm introduced in soil from South Georgia to Signy Island by British scientists has been carefully documented but no attempt has been made at control so that over 40 years fly larvae have spread > 200 m from the point of introduction. At the Polish Arctowski station in the early 1980s several plants of the grass *Poa annua* were discovered close to a greenhouse. SCAR recommended on several occasions the eradication of the plants. No action was taken and the alien is now well-established amongst native plant communities and colonizing a glacier foreland up to 1.5 km from its source. Neither the fly nor the grass can now be easily eradicated. Several alien flowering plants were transplanted to a site near the Chinese Great Wall station as well as near their Zhongshen station. After about 12 years all plants were removed, but not before one species had flowered and produced many offspring. In 2009 several mature individuals of two Fuegian plant species were found near the whaling station on Deception Island. Whilst they may have been natural immigrants, since the site receives the greatest number of cruise ship visitors of any in Antarctica it seems more likely that the aliens were inadvertently introduced. Under these circumstances individual scientists took the initiative to remove the plants before they could spread, an action supported by the Deception Island Management Group.

The Treaty has a basic policy on alien biota, COMNAP is responsible for educating the national agencies operating in Antarctica, and SCAR should be doing the same for scientists. Yet despite this many agencies and individuals seem unaware of the regulations or are not prepared to implement them strictly. Even Antarctic Treaty inspections have failed to notice, or at least formally report, numerous occurrences of domestic animals and improper cultivation of plants. At the CEP XIII and the later COMNAP/SCAR Meeting in 2010, there was much discussion and many thought-provoking publications, but still only a proposal for a voluntary biosecurity manual. What can be done practically to protect Antarctica if the guardians themselves have so little regard for the rules?

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