European Commission

Science for Environment Policy

Invasive species: monitoring system aims to protect vulnerable Antarctic

Better monitoring is needed to safeguard the Antarctic against threats posed by invasive alien species, according to a new study. The authors developed 'the Antarctic Biological Invasions Indicator' (ABII) to help generate data for tracking trends in alien invasions and the measures taken to prevent them.

Invasive alien species are a leading threat to biodiversity. Currently, there are no systems for tracking invasion trends in the Antarctic, or for documenting the impacts of invasions on other wildlife or the management responses taken. Under the Antarctic Treaty System, Parties of the Treaty have committed to preventing accidental introductions of alien species, but there is no requirement to report on new species, their impacts or eradications. A global indicator of invasion developed under the Convention on Biological Diversity (CBD) is not applied in Antarctica.

In an attempt to develop a framework for monitoring invasions in the region, the authors adapted the global CBD invasion indicator and applied it to generate baseline data for future monitoring efforts. They collated data from a variety of different sources to meet the requirements of the new indicator.

The original, global indicator system combines measures of the numbers of alien species; the conservation status of native species; and the responses taken. Responses include implementation of international and national-level policy instruments such as the Cartagena Protocol on Biosafety (international) and Invasive Non-Native Species Framework Strategy (UK). The new indicator — the ABII — also includes a fourth measure for drivers of invasion, which is intended to keep track of growing levels of human activity across the region, including trade, tourism and construction. Other important differences are that the new ABII includes all alien species rather than only those with documented impacts on biodiversity. It also defines reporting regions based on biological similarities, rather than country boundaries.

According to the results, the Southern Ocean Islands have the highest concentrations of alien species in Antarctic. However, there are many areas that are rarely visited and that it was difficult to find data for. Only for seabirds were there enough data to examine the impacts of invasive species over time, and the results from over a hundred species suggest that, overall, they are at increasing risk of extinction.

More than half of the alien species recorded — a higher proportion than for other regions of the world — are already known to have negative impacts on biodiversity, meaning that there is evidence that they are invasive. Given the apparent vulnerability of the region, the researchers suggest adopting more stringent targets than in the rest of the world, aiming for zero new alien introductions as well as the eradication of all existing alien species, for example, as opposed to focusing on priority species.

The authors highlight the lack of information about management responses to alien species invasions. They say that while awareness about invasions is rising, more practical management actions need to be taken to tackle them. Monitoring and reporting of such actions could help demonstrate success and support ongoing policy development.

2 July 2015
Issue 419

Subscribe to free weekly News Alert

Source: McGeoch, M. A., Shaw, J. D., Terauds, A., Lee, J. E. & Chown, S. L. (2015). Monitoring biological invasion across the broader Antarctic: A baseline and indicator framework. *Global Environmental Change*, *32*, 108–125. DOI:10.1016/j.gloenvcha.2014.12.012.

Contact: melodie.mcgeoch@monash.edu

Read more about: Biodiversity