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Editorial

Antarctic biosecurity – making it happen

Despite worldwide concern over the problems caused by introductions of non-native species, what is now called biosecurity - or the prevention of the accidental introduction of non-native species - has surfaced rather late in the development of human activities in the Antarctic. As recently as the late 1960s there were deliberate introductions of phanerogams to the Maritime Antarctic. The development of both science and tourism originally caused little concern as a potential source of accidental introductions, but recognition of the potential from tourism did give rise to the development of the Visitors Code of Conduct by IAATO as an important step forward. The concern has been and still is twofold – alien species might establish themselves in Antarctic ecosystems and/or diseases could be introduced with potentially disastrous effects, especially on warm-blooded animals.

A workshop hosted by Australian Antarctic Division in 1998 established the range of diseases that might be of concern in the Antarctic and provided the CEP with recommendations on monitoring, research and precautions. This could have triggered a co-ordinated sampling programme or precautionary regime by national operators but nothing happened. An important paper by Yves Frenot and others in *Biological Reviews* established what we do know at present about non-native species both in the Antarctic and the sub-Antarctic islands. What do we need to do to ensure that Antarctic biosecurity is acted upon and not just talked about at an international level, that the risks of anthropogenic introductions have been properly quantified and that risk management procedures are in place for all Antarctic visitors, not just the tourist industry? From a risk point of view the problem is that there is little information on the frequency or routes of natural introductions (either terrestrial or marine), and even less on the substantive occurrence of disease at either chronic or lethal levels in birds and seals. Indeed, the recent outbreak of avian cholera on South Georgia should have reminded us that we still have very little evidence for the importance of disease in native bird populations, the frequency of natural introductions by migrating species and the role of sub-lethal infection in triggering the production of antibodies in birds that then go on to leave a normal life. In fact, despite previous discussions at the ATCM many Consultative Parties seem to have concluded that there is both no need for research and no need for new precautionary procedures.

Several countries have been taking more rigorous steps and their experience could be a useful guide for others. The recent CEP biosecurity workshop in New Zealand could again provide the basis for concerted action but, whatever we do, we should make it a proportionate response and one based on knowledge. Common sense suggests that cargo, vehicles and field equipment should be clean before being despatched to the Antarctic, but the limited data available suggests that this is not necessarily so. Tracking data for seals and sea birds as well as seasonal migrations tells us that the areas visited make natural routes for introduction of disease across the Polar Front more likely than infected chicken carcases. Incidentally, has anyone ever identified chicken with Newcastle's Disease in the Antarctic? How would the precautions in place at present ensure that it was identified before shipping?

Biosecurity is an environmental management issue that needs good underpinning science, clear objectives to determine risk, the development and implementation of guidelines for national operators and a monitoring programme to detect any unwanted trends. We also need to know how to identify a non-native introduction!

There is still a chance to minimise these possible impacts in the Antarctic if we act now and act together.

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