

Guest editorial

Science vs the Environment

The Environmental Protocol to the Antarctic Treaty is rapidly approaching ratification, and nations which have now signed it see the Protocol as a signal for considerable future debate, if not scrutiny. Everyone has begun to implement, at least in spirit, many of its requirements which are now beginning to have an effect on science on the continent. This is currently evident in at least four different ways:

- a reallocation of funding from pure science, to “applied” science relating to human impacts,
- an increase in funding to allow for studies of human impact and the meeting of Protocol obligations,
- a reassessment by the science community on what can be done with minimal impact, and
- an imposition on the science community of rules and codes which will restrict many types of scientific work that have been carried out in the past, and will force modifications of future work.

Because all science on the continent (as opposed to remote sensing from space) will have an impact there will have to be tradeoffs between the benefit to science and the impact of doing the work. We can only evaluate impacts on those areas of science that we know about at present. The problem is that there will be future, presently unknown areas of science that may be compromised by operations currently considered “safe”. Who knows, for instance, what viruses we are inadvertently spreading and what the importance of these will be in future studies? At present the effects of these organisms are difficult to measure but studies on the role of viruses in natural ecosystems are increasing as technology expands.

There is only one sensible approach if we are to stay within the principles of the Protocol, while maintaining a high level of science: all research activities must be deemed to be of significant benefit to science if they are to proceed. Most scientists will be able to argue convincingly that their work is necessary. If they cannot, they should not be in Antarctica. Despite the arguments we still need to have a second look at science programmes and consider the value of the benefit to science and whether the benefits to science are outweighed by the impacts. For instance, are “surveys to see what is there” really necessary? I do not believe they are. If researchers want to visit new parts of the continent the visit should be associated, from day 1, with a hypothesis driven science programme. Do we have to collect water samples from lakes in a pristine area merely to document the water quality? Unless there is a reason other than to say in a paper “the study was carried out because the area has not been looked at before”, then it should not proceed. However, if the reason for going to a new area to collect samples is related to resolving an hypothesis that will benefit science in a more general sense, then the trade off between science vs the environment is weighted in favour of the former.

This trade off needs to be looked at carefully for all Antarctic science projects and scientists should be aware that as the public perception of the value of the Antarctic environment increases so the benefits to science of working in the Antarctic will, inevitably, need stronger and stronger justification. This is the new world we work in.

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