

## Guest Editorial

### Protecting Antarctica's geological heritage

Since the International Geophysical Year (1957/58), conservation of sites of biological and ecological significance has been an important objective for many nations active in the Antarctic. Although conservation, as such, was not considered in the original Antarctic Treaty provisions in 1961, it was soon introduced through the Agreed Measures developed in 1964. The designation of particular areas, initially to protect scientific research and then to conserve key examples of Antarctic habitats, was a cause supported by the Scientific Committee on Antarctic Research (SCAR) and agreed by Treaty Parties in the form of Sites of Special Scientific Interest (SSSI) and then Specially Protected Areas (SPA). At that stage non-biological sites could not be designated as SPAs and it took until 1989 for the Parties to recognize this might be necessary for outstanding geological sites and establish Specially Reserved Areas (SRA) of which only one - the Dufek Massif in the Pensacola Mountains - was ever designated.

The Protocol on Environmental Protection to the Antarctic Treaty agreed in 1991 attempted to rationalize the protected area system by merging all the SSSI, SPA and SRA sites into a single system called Antarctic Specially Protected Areas (ASPAs) and redefined its scope to allow outstanding geological and geomorphological areas to be considered. This opened the way for earth scientists to propose geological sites for protection, such as important fossil sites for example, but there was concern that this approach might attract attention to important sites and result in increased damage and souveniring from tourism. Even so, geological heritage (or 'geo-heritage') remained almost completely outside the formal protected area system. With both tourism and researcher numbers increasing it was noticed that Antarctic fossils were being offered for sale indicating that potentially priceless material might be being pilfered from important Antarctic sites. There was also an increasing threat to the continent's geological values from human activities such as oversampling by scientists, damage by infrastructure construction and impact from foot or vehicular traffic as the number of scientific stations and tourism landing sites increased. The need for recognition, proactive protection and management of geo-heritage in the Antarctic was becoming increasingly obvious and pressing.

Despite the opportunities presented by the Protocol little has been done in the past 25 years to protect geological sites in spite of the numerous excellent, and globally significant, examples worthy of recognition and protection. Of the 72 ASPAs currently agreed, only 7% were designated with geological features as the primary values for protection. With geo-conservation actively developing in many other parts of the world, the lack of initiative in the Antarctic might simply be due to a i) lack of widespread awareness of geological heritage values and issues, or ii) a reluctance amongst geoscientists to designate, promote and champion geologically significant places as ASPAs.

To provide the up-to-date scientific input necessary to rectify this lack of progress, the Geological Heritage and Geo-conservation Action Group has been established by SCAR. Tasked with developing a range of criteria for identifying and classifying geological, paleontological and geomorphological sites of significance within Antarctica, the group will also develop sustainable management strategies and a code of conduct for geological field activities, with a view to balancing scientific research needs with long term conservation of geo-heritage, providing advice directly to the Committee for Environmental Protection. This Action Group provides an opportunity for all geoscientists to promote Antarctic geological heritage values and ensure that these features are recognized, valued and respected by future generations of scientists and visitors. Broad participation from the Antarctic science community is needed now to make rapid and significant progress.

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