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**AREAS OF GEOLOGIC INTEREST IN THE ANTARCTIC PENINSULA,
AND TOURISM: A CASE FOR COMPATIBILITY**

Agenda Item 7

(Submitted by IAATO)

AREAS OF GEOLOGIC INTEREST IN THE ANTARCTIC PENINSULA, AND TOURISM:
A CASE FOR COMPATIBILITY

By John Splettstoesser

The following extended abstract is modified from a paper accepted for presentation at a Symposium on "Geology of the South Shetland Islands, following the XIXth ATCM in Seoul. This paper explains the methods of operation of tourism in Antarctica currently in use, practices of environmental guidelines, and brief overviews of geologic and other areas visited by tourists.

As a geologist, the author has been active in the U.S. Antarctic Research Program for many austral summers in the last 35 years, and also has been a naturalist-lecturer on more than 50 cruises to Antarctica. He is the author of numerous articles and editor of books on Antarctic geology, as well as on Antarctic tourism. He has represented the Antarctic tour operators association (IAATO) at Antarctic Treaty meetings, conferences, and has testified at Hearings for U.S. legislation that deals with tourism in Antarctica.

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AREAS OF GEOLOGIC INTEREST IN THE ANTARCTIC PENINSULA, AND TOURISM:
A CASE FOR COMPATIBILITY

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The onset of tourism in Antarctica in the 1960's went mostly unnoticed for many years afterward. A single tour operator, and then two, conducted visits to sites of mainly wildlife interest, and mainly in the Antarctic Peninsula region. By the 1980's, however, and well into the mid-1990's, the numbers of tour vessels and visitors increased. During the 1994-95 austral summer 15 tour ships and about 8,000 passengers visited Antarctica in the months of November to March. Some 80 different sites have been visited in the Peninsula over the last decade or so, with several sites hosting perhaps 2,000 or more visitors in a single austral summer as a result of repetitive stops by different operators. The number of shore stops in an individual itinerary of a single tour vessel averages 5 to 15, depending on the length of the cruise, weather, ice conditions, and the ingenuity of staff.

The potential impact of tourist (and non-tourist) visits to wildlife sites has yet to be determined, although some baseline studies are underway by U.S., Australian, and other Antarctic Treaty Consultative Party (ATCP) researchers. It has long been recognized that Antarctica has been "dedicated to science," the result of decisions made by 12 nations in the International Geophysical Year, 1957-58, with the 1959 Antarctic Treaty specifying that continuation of scientific investigations shall take priority in one of the "Global Commons" on this planet.

The Protocol on Environmental Protection to the Antarctic Treaty reaffirms Antarctica as a reserve devoted to peace and science, stating explicitly the protection of its wilderness, scientific and aesthetic values as an overriding goal. This emphasis on science has never been challenged by any other visitors to Antarctica (i.e. tourist, e.g.), but instead it can be shown that "science" and "tourism" are compatible in their individual operations (Splettstoesser, in press). Tourism, in fact, can be shown to be less stressful than some ATCP activities because the tour vessel is the "station" for all activities, and no shore facilities are required. Most Antarctic visitors spend little time ashore.

As tour operators have widened their base of shore locations in Antarctica, more areas are being visited that include not only sites of wildlife interest (e.g., penguin breeding sites), but also areas with geologic significance. Inasmuch as the latter are often those included in sites of current study by ATCP investigators, it is imperative that tour operators be made aware that unauthorized or improperly managed visits to such sites have the potential to

disrupt continuing investigations, and possible loss of valuable field specimens, primarily paleontological.

A first attempt at setting aside such an area as a Reserve is Specially Reserved Area No. 1 (82 36'S, 53 30'W to 82 26'S, 50 30'W), which has been designated by ATCPs in the North Dufek Massif, Pensacola Mountains, on the basis of its "geological, geomorphological, aesthetic, scenic, and wilderness values," requiring an approved management plan and a permit for entry. Because of the remoteness of the area, it is unlikely that anyone but scientists would have an interest there or access to it, but SRA No. 1 represents the concern that ATCPs have shown in attempting to protect unique areas from unauthorized entry.

Tour operators in Antarctica have exercised great care in protecting the environment as a result of self-imposed Guidelines of Conduct that were initiated by the operators in the 1980's. These Guidelines became formalized when the International Association of Antarctica Tour Operators (IAATO) was founded in 1991 as a means of pooling common resources and acting as a single body for purposes of standardizing operations, and advising regulatory organizations (such as Antarctic Treaty Parties) and others with regard to environmental protection.

IAATO has taken on more visibility since its founding because of its practice of standardizing methods of operation in Antarctica among the various tour companies and increasing numbers of tourists. The IAATO Guidelines for Visitors was incorporated into the recently enacted Recommendation XVIII-1 (Tourism and Non-governmental Activities) at the Antarctic Treaty Consultative Meeting in Kyoto, Japan, in April 1994.

Recommendation XVIII-1 has several specific statements about tourism that relate to ATCP science programs, namely to obtain advance permission before visiting Antarctic science and support facilities; noninterference of scientific equipment or markers, study sites, field camps or supplies; and the prohibition against collection of "biological or geological specimens or man-made artifacts as a souvenir, including rocks, bones, eggs, fossils, and part of contents of buildings." IAATO formally adopted Recommendation XVIII-1 at its July 1994 meeting.

The enforcement of this "Guidance" is left to the professional expedition staff, many of whom have also had prior experience with ATCP science programs (including this author), and are aware of the importance of non-interference with science programs. The Antarctic Peninsula, in particular, contains several areas that require special consideration with regard to visits by tourist vessels. Many of these sites are visited because of wildlife, and many others are off-limits because of their designations as protected areas, as enacted by ATCPs (e.g., Special Protected Areas, Sites of Special Scientific Interest).

Others such as the following examples, have geologic significance

as well, in addition to wildlife or other attractions. The sites do not require designation as protected areas, but are listed to mainly illustrate areas where tourist visits are not interfering with geologically significant sites.

(1) Hannah Point (62 39'S, 60 37'W), Livingston Island, which has fossil plant material found in glacial moraines, as well as striking minerals in the volcanic rocks. As a means of educating tourist passengers about these materials, a small collection has been made at Hannah Point and placed on a boulder for all to see while a naturalist explains each specimen (a sort of outdoor museum). This display has been there for two austral summers without being disturbed, even though different tour vessels visit here.

(2) Mount Flora (63 25'S, 57 01'W), Hope Bay, Antarctic Peninsula, where fossil plants are found, both in outcrop and in scree and glacially deposited material, near Esperanza Station (Argentina).

(3) Penguin Point (64 19'S, 56 43'W), Seymour Island, where fossil plants are found. The collecting sites of field researchers on other parts of the island are specifically avoided so as not to introduce disturbance to strata or fossil specimens.

(4) Snow Hill Island, specifically visits to the hut of Otto Nordenskjöld (64 21'S, 57W), Swedish geologist who wintered here in 1902 and 1903. This area has considerable variety of Cretaceous invertebrate fossils and worm borings.

Tour operators and their naturalist staff practice responsible management of passengers while ashore (an important aspect of the "Guidance"), while also providing an educational program designed to inform the passengers about what they are seeing and experiencing. In this way, passengers gain an awareness of the fragile environment of Antarctica, the science programs being conducted there, and the need to leave everything as it was found. Passengers become "Antarctic ambassadors," as it were, thus communicating to others after their return as to the fragileness of Antarctica's wildlife, and the need to exercise appropriate management for all visitors, scientists and tourists alike. Geologist staff naturalists are also in a position to contribute to overall geologic information by data collection and observations in areas difficult to reach by investigators from ATCP research programs.

The appropriate transfer of information from the scientific community to expedition staff is key to the continued protection of sites of geological interest. Expedition leaders must be aware of ongoing research and sensitive sites in order to manage site visits properly and avoid potential disruption.

With the successful record by tour operators of environmental practices to date, there is good reason to believe that tourism and science programs are compatible and can operate on a non-interference basis. The recently adopted Protocol on Environmental Protection to the Antarctic Treaty designates the Antarctic as a natural reserve, and applies to tourism and non-governmental activities, as well as governmental (ATCP) activities in the Antarctic Treaty Area. Geologic environments in Antarctica will thus remain undisturbed for authorized investigators to pursue their research without interference.

Reference:

Splettstoesser, John, in press (1995), Antarctic tourism:
Successful management of a vulnerable environment. (For a
volume on "Development of Tourism in the Critical Environments"),
Tourism Recreation Research (Lucknow, India).