

# 1. INTRODUCTION

Tourism in Antarctica, particularly ship-based tourism in the Antarctic Peninsula area, has increased steadily in the last decade. It is unlikely that any single visit by tourists to particular sites in the Peninsula area will have significant environmental effects if they are carried out in accordance with 1) the applicable provisions of the Protocol on Environmental Protection to the Antarctic Treaty (hereafter referred to as the “Protocol” or “Environmental Protocol”), 2) the Guidance for Visitors to the Antarctic and Guidance for Those Organizing and Conducting Tourism and Non-governmental Activities in the Antarctic provided in the 1994 Antarctic Treaty Consultative Meeting (ATCM) Recommendation XVIII-1 (Attachment 1), and 3) the post visit site report guidelines for tourism and non-governmental activities adopted at ATCM XIX (Attachment 2). However, it is possible that multiple visits to some areas, during the same year or over a series of years, could have cumulative adverse effects, even if the visits are carried out in accordance with the provisions of the Protocol and applicable guidelines.

Currently available information is insufficient to accurately predict how or to what extent the physical features and biota at particular sites may be affected by repeat visits. Similarly, available information is insufficient to accurately predict the frequency and duration of visits likely to produce particular effects, i.e., to predict likely cause-effect relationships. Available information also is insufficient to determine how best to avoid or mitigate possible cumulative adverse effects and whether effects are related linearly to the level of activity or occur only when disturbance reaches some threshold level.

A number of studies have been and are being done that provide the kinds of data necessary to assess and determine how best to prevent or mitigate the possible cumulative effects of tourist activities in the Peninsula area. However, it is not clear whether these studies are providing all of the needed information and, if not, what additional research and monitoring are necessary to resolve the uncertainties. Thus, the principal objectives of this workshop were to:

1. Identify, based upon available information and experience elsewhere, the types of cumulative environmental impacts that possibly could result from commercial, ship-based tourist operations in the Antarctic Peninsula area;
2. Review on-going research and monitoring programs in the Peninsula area to determine whether they likely will be able to detect the possible cumulative adverse effects of ship-based tourism before they reach significant levels (i.e., levels that would not be

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considered minor or transitory under the Environmental Protocol); and,

3. Describe changes in existing research and monitoring programs or additional programs that would be required to detect cumulative adverse effects before they reach significant levels.

The workshop was sponsored jointly by the U.S. National Science Foundation (NSF), the U.S. Environmental Protection Agency (EPA), and the International Association of Antarctica Tour Operators (IAATO). It was held in La Jolla, California, on 7–9 June 2000. The overall objectives are provided in Attachment 3. Participants shown in Attachment 4 included scientists from several countries with many years of experience conducting research in Antarctica, and representatives of companies engaged in Antarctic tour operations and U.S. government agencies with interests and responsibilities for implementing the provisions of the Environmental Protocol and related U.S. statutes and regulations. Attachment 5 is the meeting agenda.

Three discussion groups were established to facilitate consideration and identification of the range of views concerning the key issues on the agenda. The facilitators, rapporteurs, and members of the working groups are shown in Attachment 6.

## **2. OVERVIEW OF COMMERCIAL SHIP-BASED TOUR OPERATIONS IN THE PENINSULA AREA**

Attachment 7 is a time line indicating some of the important events in the history of Antarctica. The Antarctic tourism industry is generally considered to have begun in the late 1950s when Chile and Argentina took more than 500 fare-paying passengers to the South Shetland Islands aboard a naval transport ship.

The concept of “expedition cruising,” with education a major theme, began when Lars-Eric Lindblad led the first tourist expedition to Antarctica in 1966. Lindblad once said, “You can’t protect what you don’t know.” He believed that providing first-hand experience to tourists would alert them to the ecological sensitivity of the Antarctic environment and promote a greater understanding of the earth’s resources and the important role of Antarctica in the global environment. The modern expedition cruise industry was born in 1969 when Lindblad built the world’s first expedition ship — the *M/S Lindblad Explorer* — designed specifically for carrying tourists to the Antarctic. Before 1969, human activity in Antarctica had been limited to exploration, commercial hunting of seals and whales, commercial fishing, and scientific research. Antarctica’s physical isolation, extreme climate, and remarkable scenery and wildlife are a great part of its attraction to tourists. Lindblad’s model