

The Antarctic Site Inventory



REPORT 2001

CONTENTS

Research Update and Overview

The Forthcoming, 2001-02 Field Season

Publications

Declining Blue-Eyed Shag Populations

Diverse, Environmentally Sensitive Sites

Website, Site Guide Updates

Antarctic News

Donations, Contact Numbers

Welcome

The Antarctic Site Inventory completed its seventh field season last February and our 2001-02 season begins on November 13th. It's the time of year when penguins flood my radar screen and embolden my cautious optimism that Inventory achievements will continue.

From the start, the overriding goal has been assisting a successful implementation of the new Antarctic Environmental Protocol. At the end of the day, that means having necessary *baseline* information in place so proper management decisions can be made under the Antarctic Treaty and, then, implemented by each Treaty nation.

In this regard, as you'll read below, our recently published scientific papers bring new and important findings to the table — evidence of declining shag populations and an evaluation of which Peninsula visitor sites are most diverse in species composition and the most sensitive to potential environmental disruptions.

All in all, the Inventory remains the *only* research project in the Antarctic Peninsula regularly collecting relevant biological and physical data and information at a wide range of locations. We've also taken first steps to expand our data and information *delivery* to a much broader, international audience — developing the most comprehensive, interactive website relating to Antarctic issues, interests, and education.

In the past year, we've expanded the network of *Antarcticists* who have made donations and contributions to ensure that our work continues. On behalf of all of us in the Oceanites/Antarctic Site Inventory family, I thank each and every one of you for your gracious, energetic support. We're hoping that you continue telling friends about our efforts — and that you encourage them to assist the cause.

Again, my optimism is *cautious*. I'm frequently asked: If the Inventory's database is so potentially important to the Treaty and the Protocol, then why isn't there more substantial government support? The answers lie with politics and geologic time.

When Antarctica erupts as a "hot" issue — as it did with Antarctic tourism in the early-1990s, eager and willing support followed, but proved fleeting and wasn't sustained. Absent other incentives, governments typically are reluctant to fund assessment and monitoring efforts because, to succeed, they operate over long time frames, rather than in the more immediate "present." Bureaucrats are inherently uncomfortable with work that has no ascertainable completion date and which relies, necessarily, on retrospective data comparisons and analyses. Sadly, that's exactly what is needed for long-term conservation — everywhere.

Nonetheless, I remain optimistic because Antarctica is, simply, too inspiring.

Amid the conflict and horrifying terror of our times, the Antarctic Treaty is truly a shining beacon for a modern-day, interconnected, and thoughtful world community.

The great Antarctic explorer and biologist Apsley Cherry-Garrard fervently believed that we *Antarcticists* could change the world — and I agree. Thanks for your help and let's keep the data flowing.

Onward! Keep talking, thinking — and believing in — Antarctica!

Ron Naveen

President, Oceanites, Inc

Principal investigator, Antarctic Site Inventory

November 1, 2001

RESEARCH UPDATE AND OVERVIEW

During the 2000-01 season, 49 site visits were accomplished and seven new locations were added to the Inventory database. In addition, key northeastern Peninsula study sites were photodocumented successfully in the ongoing, cooperative effort between the Inventory and Her Majesty's Royal Navy ice patrol ship, *HMS Endurance*.

In seven seasons of effort, from November 1994 through February 2001, Inventory researchers now have conducted 336 survey visits to 66 locations in the Antarctic Peninsula, including this region's most heavily-visited sites.

The Inventory's season-to-season data collection helps assess and monitor possible changes in Peninsula faunal populations and floral communities. Because data are collected pursuant to standard methods used throughout the Antarctic, they are fully comparable to data collected elsewhere and help provide a better understanding of the complex Peninsula ecosystem. For example, such comparisons potentially assist analyses of whether any observed changes are Peninsula-wide trends or, rather, aberration confined to one or more locations.

Ultimately, it is hoped that Inventory baselines will provide proper underpinning for site-specific management strategies that may be considered under the Antarctic Treaty and its Environmental Protocol. For example, in time, the Treaty Parties are likely to compare site-specific breeding chronologies developed by the Inventory against the actual chronology of visitors to environmentally sensitive sites. These comparisons will assist decisions whether management measures may be necessary and appropriate to mitigate or possibly eliminate any potential disruptions.

THE FORTHCOMING, 2001-02 FIELD SEASON

The Inventory's 2001-02 field season begins on November 13, 2001 and will extend through March 5, 2002. Primary field research will be conducted from the *Endeavour*, the expedition ship operated by Lindblad Expeditions. No oblique aerial photodocumentation is scheduled this season from *HMS Endurance*.

From its inception, the Inventory has been blessed with a core group of researchers who return each season. Experienced hands working the 2001-02 season include: Ron Naveen, Steven Forrest, Rosemary Dagit, Wayne Z. Trivelpiece, Richard Polatty, and Laina Shill. The Inventory continually strives to add skilled talent to this pool — and we're very happy that John Carlson, Laura Gittings-Carlson, Megan McOsker, and Chris Edelen are joining the Inventory

during the coming field season.

In 2001-02, the intention is will to on select sites that are species diverse or, potentially, most sensitive to potential environmental disruptions (see *Diverse, Environmentally Sensitive Sites*, below). These key sites include: Hannah Point; Paulet Island; Baily Head; Orne Island; and Petermann Island.

Base support for the 2001-02 field season has been provided by private foundation grants (The Tinker Foundation, the David and Lucille Packard Foundation), partner organizations (Environmental Defense, the Cincinnati Zoo and Cincinnati Zoo Conservation Fund), and private contributions (Lindblad Expeditions and many individuals who were guests on previous Lindblad Expeditions Antarctic trips).

PUBLICATIONS

Recent, peer-reviewed scientific papers published by Inventory researchers include:

- Forrest, S. and Naveen, R., Prevalence of Leucism in Pygoscelid Penguins of the Antarctic Peninsula, *Waterbirds* 23 (2): 283-285 (2000).
- Naveen, R., Forrest, S. C., Dagit, R., Blight, L. K., Trivelpiece, W. Z., and Trivelpiece, S. G.: *Censuses of penguin, blue-eyed shag, and southern giant petrel populations in the Antarctic Peninsula region, 1994-2000*, *Polar Record* 36 (199): 323-334 (2000).
- Naveen, R., Forrest, S. C., Dagit, R., Blight, L. K., Trivelpiece, W. Z., and Trivelpiece, S. G.: *Zodiac landings by tourist ships in the Antarctic Peninsula region, 1989-99*, *Polar Record* 37 (201): 121-132 (2001).

The *census* paper presents penguin, blue-eyed shag, and southern giant petrel census data collected from 26 Antarctic Peninsula locations from 1994 to 2000. For nine sites, population data are published for the first time. During the period, declines in nesting populations of blue-eyed shag were documented at five of thirteen Peninsula locations where the Inventory has identified nesting shags; at three of these sites, the declines were significant.

The *zodiac landings* paper examines the location, intensity, and frequency of zodiac landings by expedition tour ship passengers in the Antarctic Peninsula over ten seasons, 1989-90 through 1998-99. In this period, the number of passengers increased 307%, from 2,460 to 10,013. Zodiac landings have occurred at 165 Peninsula region sites, concentrating in the South Shetland Islands and the northwestern part of the Peninsula. From 1989-90 to 1998-99, the number of zodiac landings in the Peninsula region increased 423%, from 164 to 858.

The most visited sites are identified, as are sites experiencing increases in the second half of this 10-year period. The 10 and 20 sites experiencing the most zodiac landings each season consistently account for approximately 55% and 75% of that season's landings, respectively. Based on 1998-99 data, sites with high or medium species diversity or with high or moderate sensitivity to potential environmental disturbance account for a significant percentage of landings.

However, it is important to note that the question of whether the frequency and intensity of human visitation translates to *actual* disturbance of resident fauna and flora still needs to be explored fully.

DECLINING BLUE-EYED SHAG POPULATIONS

The shag declines are of great concern. For all biological creatures — shags, as well as humans, everything depends on four factors: *food, sex, weather,* and breeding *territory*. If all are in synch, a species will survive and flourish. If not, there will be problems.

In this light, it nonetheless appears to our trained eyes that shag sex is as excellent as ever and that there exists sufficient, available breeding ledges at many locations. The declines, therefore, may be linked to the warming Antarctic climate or from a not-yet-understood, changing distribution of fish prey the shags prefer. Interestingly, many of these shag colonies are either inaccessible to tourists or receive very few tourist visits, so human disturbance does not appear to be a cause. Clearly, the population declines suggest further monitoring to ascertain why these changes have occurred.

DIVERSE, ENVIRONMENTALLY SENSITIVE SITES

The five Peninsula sites found by Inventory analyses to have a *high species diversity* are: Hannah Point; Penguin Island; the Aitcho Islands; Cuverville Island; and Fort Point. The fifteen Peninsula sites determined to have *medium species diversity* are: Arctowski Station; Astrolabe Island; Baily Head; Brown Bluff; Half Moon Island; Heroína Island; Port Lockroy; Point Lookout; Orne Island; Paulet Island; Petermann Island; Pléneau Island; Turret Point; Whaler's Bay; and Yankee Harbor.

The four Peninsula sites found to have a *high sensitivity to potential disturbances* by visitors are: Hannah Point; Penguin Island; the Aitcho Island; and Turret Point. The nine Peninsula sites determined to have *moderate sensitivity to potential disturbances* are: Brown Bluff; Fort Point; Gourdin Island; Orne

Island; Paulet Island; Petermann Island; Pléneau Island; Georges Point; and Waterboat Point.

WEBSITE, SITE GUIDE UPDATES

The Oceanites Site Guide to the Antarctic Peninsula is, now, out-of-print. A second, revised edition is planned, in CD-ROM format.

In time, Oceanites intends to have running, and to maintain, a comprehensive, multi-language website. This will enable all collected data and information to be accessed readily and quickly by interested scientists, environmentalists, diplomats, and interested citizens. Website development has begun, but is temporarily stalled because of rising costs tied to the intricate cross-referencing of Inventory data, specific site-descriptive information, scientific papers, orientation maps, and photodocumentation. As additional funds are raised, the process will continue.

ANTARCTIC NEWS

At the consultative meeting held earlier this year in St. Petersburg, the Antarctic Treaty parties agreed for the first time on establishing a Treaty secretariat, to be located in Argentina. The next consultative meeting is slated for September 2002 in Warsaw, Poland.

One likely repercussion from the September 11 terrorist attacks in the US is a smaller number of overall Antarctic visitors. In the 1999-2000 season, 14,762 visitors came to Antarctica. In 2000-01, the overall total declined to 12,248. By contrast, in 2001-02, paralleling declines experienced during the Gulf War, there may be as few as 9,000 visitors overall.

DONATIONS, CONTACT NUMBERS

Oceanites is a tax-exempt §501(c)(3) organization under US tax law, and contributions and donations by US citizens are fully tax-deductible. We would value your support — both with respect to ongoing data collection, and our future website and *Site Guide* CD-ROM initiatives.

Please contact us directly in these regards. The foundation's mailing address, phone number, and email address are:

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Cover photo: Displaying blue-eyed shag at Petermann Island
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