

THE ANTARCTIC CENTURY



*The Antarctic Century is a program of Oceanites,
an educational and scientific foundation,
dedicated to increased public awareness and knowledge
about Antarctica and the living marine resources
of the Southern Ocean.*

OCEANITES

This is THE ANTARCTIC CENTURY!

*We had pierced the veneer of outside things.
We had suffered, starved, and triumphed, grovelled,
yet grasped at glory, grown bigger in the bigness of
the whole. We had seen God in his splendours,
heard the text that Nature renders.
We had reached the naked soul of man.*

... Ernest Shackleton

We are living the century of Antarctica! The early part of our 20th Century witnessed the great, romantic exploration of Antarctica, with the feats of Shackleton, Amundsen, Scott, Byrd, and so many others commanding the world's attention. The 20th Century also saw the great whaling fleets and sealing operations set sail to the Southern Ocean after fame, fortune, and profit by exploiting—and, as we now know, decimating—the stocks of whales and seals. More recently, however, nations collectively began exploring the vast seventh continent and its waters as a matter of science—and in 1961 suspended all ownership rights so that Antarctica could remain a peaceful arena for the pursuit of knowledge.



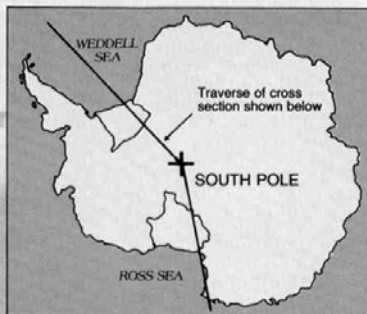
There are 6-8 million Chinstrap Penguins in Antarctica and the Southern Ocean. On average, Chinstraps are more than two feet tall and weigh up to ten pounds. They breed for the first time at age three and try to raise two chicks annually per pair.

We are at a critical stage of The Antarctic Century: Humankind has begun to focus on the potential economic wealth of the living and mineral resources of Antarctica—the wilderness home to countless millions of penguins, seabirds, whales, seals, krill, fish, and other organisms; a bastion of glaciers, snow-capped peaks, and icebergs; and the conservator of evidence regarding our planet's climatic, tectonic, and geological history.

Will Antarctica remain the last, relatively pristine ecosystem on Earth?

We human beings have intruded in this fairy tale landscape to wrest its secrets from it; those secrets which have been hidden for millenia.

... Roald Amundsen



Amundsen's fairy tale landscape lies 600 mi (965 km) from South America, 1550 mi (2500 km) from New Zealand, and 2500 mi (4000 km) from Africa. It is huge in size, scope, and character. Vast. Enormous. Almost

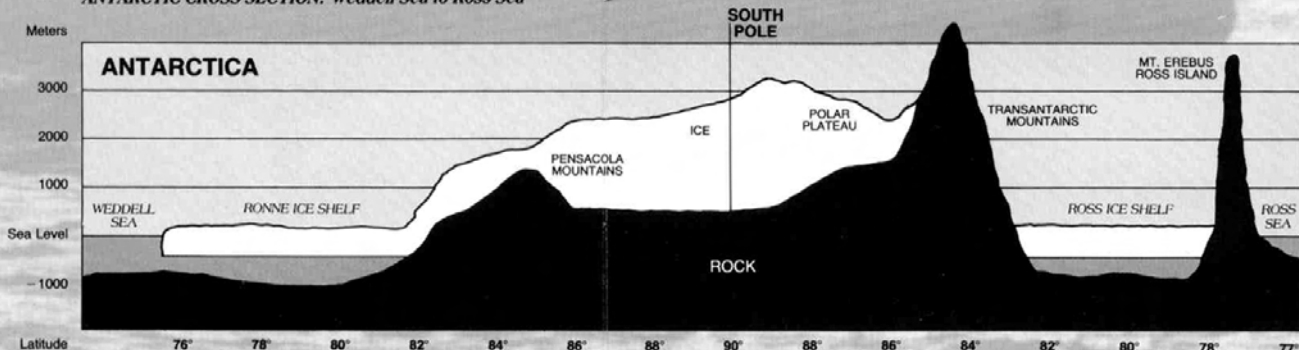
beyond comprehension or description.

Antarctica contains 5.4 million square miles (14.4 million km²) equivalent to 10% of Earth's land surface, and is approximately the size of the U.S. and Mexico combined. During the austral winter, sea ice at least doubles the size of the continent. Ninety-eight percent of Antarctica is covered by a permanent ice sheet, which averages over a mile in thickness and, in some places, is almost three miles thick. Ninety percent of the world's ice and 70% of the world's fresh water is locked in this icepack. If the ice melted, sea levels around the world would rise by more than 160 feet (50 meters).

Ten percent of Antarctica consists of great ice shelves, particularly in the Weddell Sea and the Ross Sea, which may flow as much as 4000 feet (1200 meters) and produce from 5,000 to 10,000 icebergs annually. At sea, these big, tabular bergs may move 40 miles a day.

Antarctica is our environmental early-warning system. Its growing winter 'ozone hole' raises serious concerns about global solar radiation dangers.

ANTARCTIC CROSS SECTION: Weddell Sea to Ross Sea



They were heroes. True romantics who sought the continent's great geographical goals, and whose feats are classics in the annals of the human spirit:

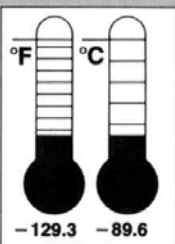
- Antarctica's first, major sledging journey, by Otto Nordenskjöld (1902-3);
- Robert Falcon Scott's 'Discovery' expedition, the first serious attempt for the South Pole, reaching 82° 16' 33" S (1902);
- Ernest Shackleton's furthest south of 88° 23', (1908);
- The 'Worst Journey in the World' by Wilson, Bowers, and Cherry-Garrard, during the Antarctic winter, to collect Emperor Penguin eggs (1911);
- Roald Amundsen's successful rush to the South Pole (14 December 1911);
- Scott, Wilson, Bowers, Oates, and Evans successfully reached the pole (17 January 1912), with all perishing on the return trip;
- Shackleton's ill-fated attempt to cross the continent, which began with his ship being crushed in the Weddell Sea ice, and ended, after a miraculous open boat voyage from Elephant Island to South Georgia, with the rescue of all of his men (1914-1916); and,
- The first flight over the South Pole by Admiral Richard Byrd (1929).



Southern Giant Petrels are important components of the vast Southern Ocean ecosystem.

After 1929, scientists came in greater numbers to Antarctica. Following the successful International Geophysical Year (1957-59), 12 nations signed the historic Antarctic Treaty, which suspended all ownership claims.

Because no country owns Antarctica, it is everyone's heritage. The Antarctic Treaty went into effect in 1961, and has now been endorsed by more than 30 nations, representing at least 66% of the world's population. The Treaty may be reviewed in 1991. Antarctica has become a totally demilitarized, nuclear-free zone devoted solely to scientific research.



Antarctica is Earth's coldest (down to -89.6° C, or -129.3° F) and windiest place (up to 220 miles per hour, or 320 kilometers per hour), and one of the driest (less than 1-2 inches of precipitation per year at the South Pole).

**The history of the human race
is a continual struggle from darkness
toward light. It is of no purpose to discuss
the use of knowledge. Man wants to know, and when
he ceases to do so he is no longer man.**

... Fridtjof Nansen

The great Antarctic ecosystem breathed its first life about 37 million years ago, when the Drake Passage opened between South America and Antarctica. Now, the Southern Ocean is the world's largest and most fertile ecosystem, representing 10% of Earth's ocean surface. It extends from the Antarctic continent to the boundary called the Antarctic Convergence, between 47°–63° S Latitude, where cold Antarctic water meets warmer water from the north. The Antarctic circumpolar current—the West Wind Drift—transports more water than any other system in the world's oceans.

The richness is staggering: annual phytoplankton and microplankton production of between 260 and 6400 million tons; 33 million seals; 500,000 whales; and more than 60 million seabirds.

The immediate focus is krill (*Euphasia superba*), a small, two-inch-long shrimp that fuels the entire ecosystem. There is a standing stock of approximately 500-800 million tons, but annual production is uncertain. Up to 500 million tons are taken, annually, by marine predators. And, because krill is a valuable source of protein, another 450,000 tons have been taken, annually, by international fishing fleets (compared to the total world consumption of fishing products of 70 million tons).

But, these numbers are rough estimates. On balance, we can't be confident that human consumption is sustainable without detriment to other participants in the food chain. We need to know more about krill's breeding biology and natural mortality.



Chinstrap Penguins, along with Macaroni Penguins, Crabbeater Seals, and Minke Whales have increased their numbers dramatically—perhaps by taking advantage of krill formerly consumed by diminished southern whale stocks.



Antarctic Fur Seals also compete for krill. The 1982 Antarctic Living Marine Resources Treaty is primed to examine the population dynamics and breeding biology of krill and to limit human krill-taking, if necessary, to avoid overexploitation.

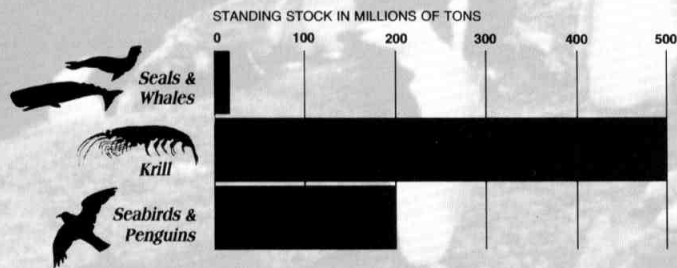
The thirst for knowledge—this struggle from darkness toward light—must not cease. Many secrets of our existence are still locked in the land mass of the Great Ice Continent, in the waters of its surrounding ecosystem, or in its overriding atmosphere. Antarctica is a priceless heritage that awes us, and demands concern.

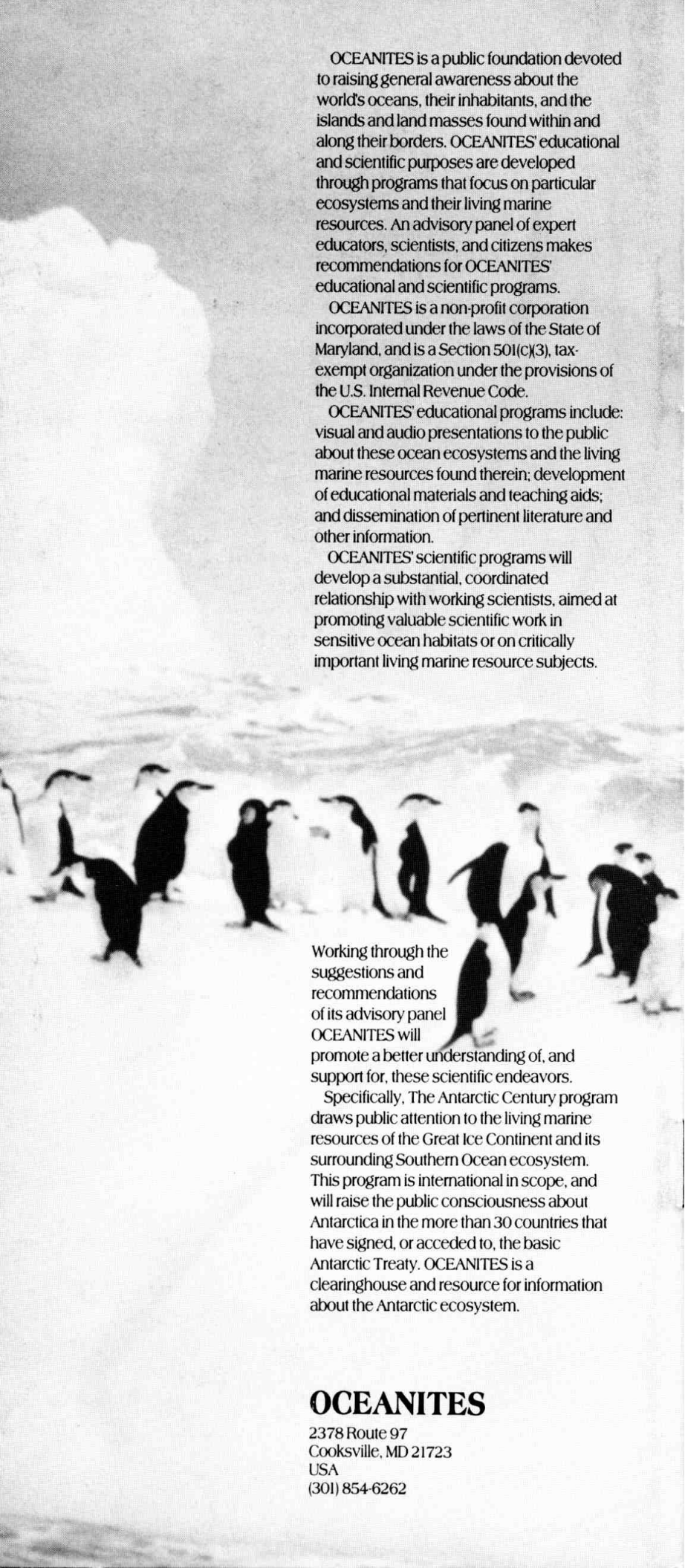
Increased knowledge is the guiding force to Antarctica's continued preservation. On the horizon are serious questions about: a potential Treaty review; uncertainties regarding the availability of krill; potential mineral, oil, and gas exploitation; an enlarged ozone hole; and—most critically—the continued welfare of that fairy-tale landscape and seascape of penguins, seals, ice shelves, and tabular bergs.

To borrow from Apsley Cherry-Garrard, why not become an 'Antarcticist', and continue to seek answers?

The legacy is yours.

Antarctica forever!





OCEANITES is a public foundation devoted to raising general awareness about the world's oceans, their inhabitants, and the islands and land masses found within and along their borders. OCEANITES' educational and scientific purposes are developed through programs that focus on particular ecosystems and their living marine resources. An advisory panel of expert educators, scientists, and citizens makes recommendations for OCEANITES' educational and scientific programs.

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OCEANITES' educational programs include: visual and audio presentations to the public about these ocean ecosystems and the living marine resources found therein; development of educational materials and teaching aids; and dissemination of pertinent literature and other information.

OCEANITES' scientific programs will develop a substantial, coordinated relationship with working scientists, aimed at promoting valuable scientific work in sensitive ocean habitats or on critically important living marine resource subjects.

Working through the suggestions and recommendations of its advisory panel OCEANITES will promote a better understanding of, and support for, these scientific endeavors.

Specifically, The Antarctic Century program draws public attention to the living marine resources of the Great Ice Continent and its surrounding Southern Ocean ecosystem. This program is international in scope, and will raise the public consciousness about Antarctica in the more than 30 countries that have signed, or acceded to, the basic Antarctic Treaty. OCEANITES is a clearinghouse and resource for information about the Antarctic ecosystem.

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