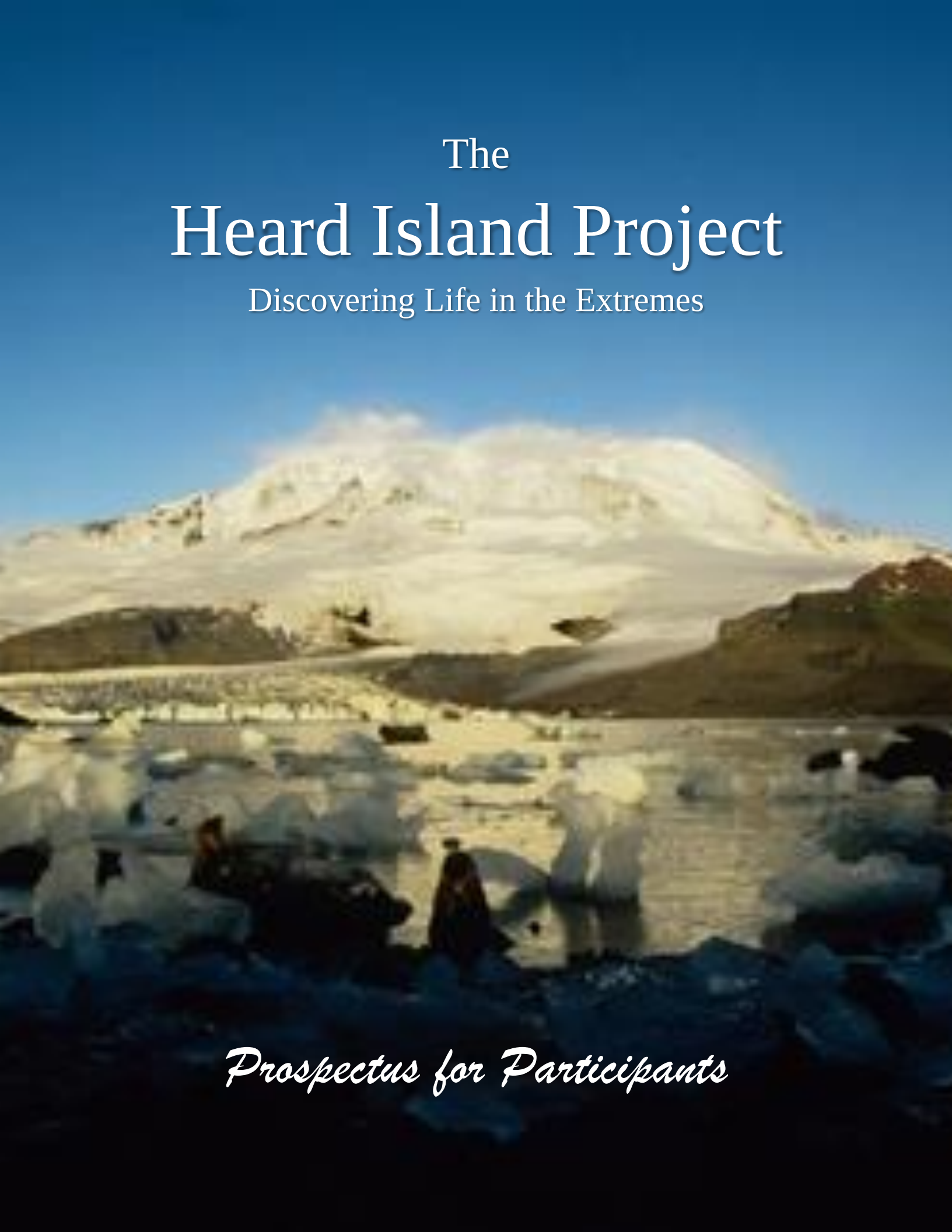
The

Heard Island Project

Discovering Life in the Extremes



Prospectus for Participants

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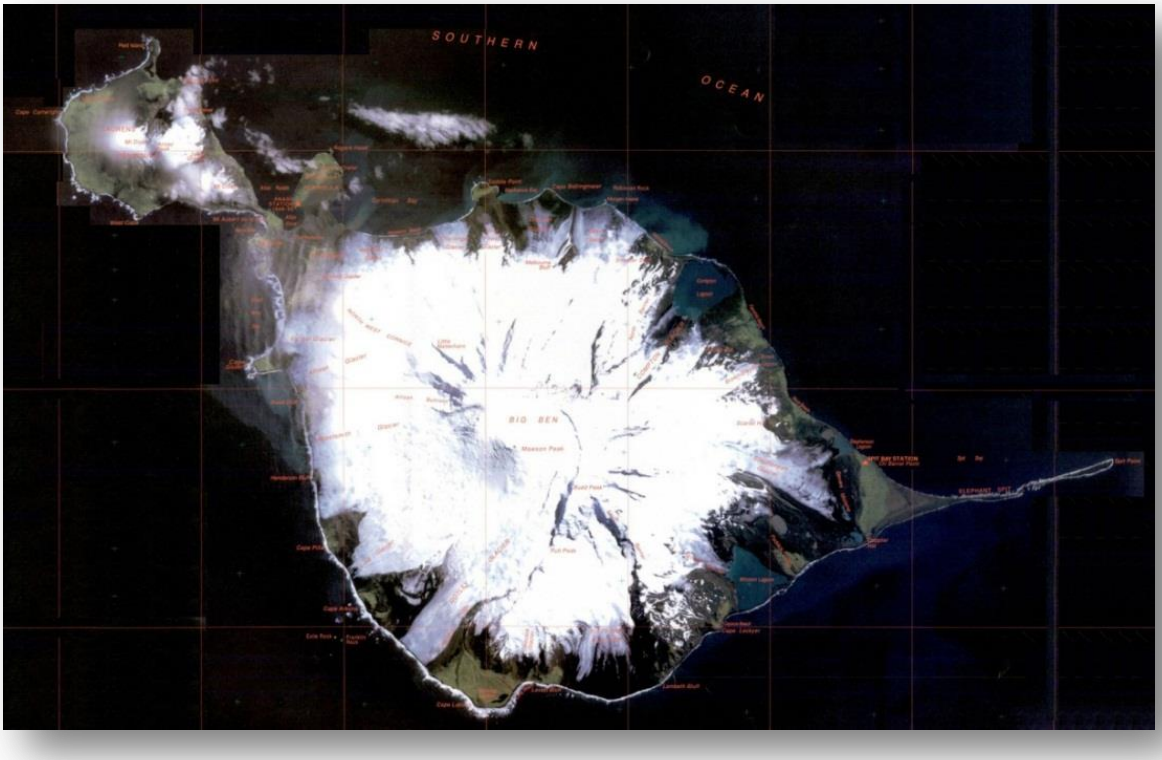
THE BARE-BONES PROSPECTUS

This document is a prospectus for potential participants in the Heard Island Project. The Project centers on an expedition to Heard Island, a territory in the Southern Ocean managed by the Australian Antarctic Division (AAD) in Hobart, Tasmania. The following list gives the essential information about the Project. The rest of the document provides an informal description the Project, meant to convey the image of the Expedition for anyone who might have interest in participating. Please look at the expedition website (http://www.heardisland.org) or contact the Expedition Leader (see below) for more information.

Title	The Heard Island Project: Discovering Life in the Extremes
Location	Heard Island 53°06'S 73°31'E in the Southern (Indian) Ocean
The island	Active glaciated 3000m-high volcano on 30x20 km isolated subAntarctic island
Human residents	None
Biological isolation	No human-introduced species
Biodiversity	Low (about 200 species known)
Megafauna	King penguins, seabirds, elephant and other seals
Exemplary macrofauna	Tardigrades, foraminifera
Exemplary flora	Kerguelen cabbage, Azorella moss
Motivation	Obtain and share new primary data for global climate-change studies
Purpose	Elaborate the biological diversity of the island: extreme life in extreme conditions and extreme isolation. Real-time communications using amateur radio.
Methods	1. Direct collections from deglaciated areas, glacial runoff and lagoons 2. Aerial imaging and remote instrumentation 3. Real-time communications with offsite parties 4. Laboratory analysis of rock samples, microorganisms
Goals	1. Discover up to 200 unknown species predicted to exist of the island 2. Traverse the volcano to search for extremophiles 3. Make confirmed real-time contacts with up to 50,000 radio amateurs worldwide 4. Provide information to the AAD, educational institutions, and the public using amateur radio, internet, and social media
The Expedition	Round-trip voyage from Fremantle, Australia, to Heard Island
Date	Nov./Dec. 2015
Vessel	Akademik Shokalskiy (91 m LOA)
Port of embarkation	Fremantle (Perth), Australia
Voyage	7 days outbound and 7 days return
Stay	21 days at Heard Island, w/vessel, optional extension
Occupation	Atlas Cove and Spit Bay (separated 20 miles)
Extension	Kerguelen Island (possible)
Expedition team	25 persons minimum, optional up to 50 persons
Personnel	Biologists, glaciologists, geologists, mountaineers, communications specialists, radio operators, technologists, explorers, filmmakers
Project budget	US$800k
Cost per person	US$15-18k fair share, depending on obtaining corporate support
Organization	Cordell Expeditions http://www.cordell.org
Expedition Leader	Dr. Robert W. Schmieder
Address	4295 Walnut Blvd., Walnut Creek, CA 94596
Phone	(925) 934-3735
e-mail	schmieder@cordell.org
Expedition website	http://www.heardisland.org



Images of Heard Island

A BRIEF DESCRIPTION OF THE PROJECT

LIFE IN THE EXTREMES…

It has become common knowledge that we still don't know about all the plants and animals that live on the Earth: out of an estimated 8.7 million species, we know about only 2.5 million. The biosphere is so complicated that we don't have any accurate models for what happens when the global climate changes, or how an invasive alien species can disrupt an otherwise stable ecosystem, or what we should do to protect key organisms such as agricultural crops upon which our world economy and our very existence depend. This situation is a prime driver of our wider interest in life in the universe, exemplified by the exploding fields of exobiology and astrobiology.

One fact has become abundantly clear in the past decade: life exists in the worst of places: in the dark abyssal depths, in boiling hot springs, in toxic chemical vents, in the absence of carbon-based nutrients and photosynthesis, in acids, in rocks, in vacuum, and maybe in the soil on Mars. In our quest for the limits of life on Earth, we are diligently searching for those special places where conditions are extreme: the sea floor, volcanos, glaciers, the Arctic and Antarctic, on islands, and in laboratories.

An encounter with Heard Island is an almost inevitable step in this quest. The island is located deep in the Southern Ocean, practically to Antarctica, some 2200 nautical miles from the nearest continent. It is 20 miles across, with a 9000-ft. high active volcano in the middle, covered with glaciers. Fumeroles vent hot toxic fumes from the high slopes, and some of the glaciers fall straight off the cliffs into the ocean. Violent winds whip up, down, and around the mountain, and across the relatively small treeless plains. It is a land of extremes: extremely windy, extremely hot and extremely cold, extremely dry and extremely wet, and extremely isolated. It is a good place to look for organisms capable of living in such extreme conditions. *Life in the Extremes*.

The Heard Island Project responds to this extreme opportunity: the operational goal of the Project is to put a team of 25 scientists, technologists, and explorers on the island, to search for unknown life and life forms. The team will collect samples from the soil, from glacial runoff, from deep in the glacial ice, from the interior of lava tubes and near the hot vents, in the wind, in the guts and gills of marine creatures, and in the putrid downwash from penguin colonies and elephant seal excreta. They will examine carcasses and skeletons of seals and birds, collect tiny animals that have the ability to dry up for a hundred years and then spring back to life, and collect ooze from lagoons that likely harbors unknown species. They will fly unmanned helicopters to take aerial images of the glaciers and floodplains, filter glacial meltwater to find evidence of ancient pollen, measure horizontal whirlwinds shed from the rocky tip of a distant mountain, and do many other things.

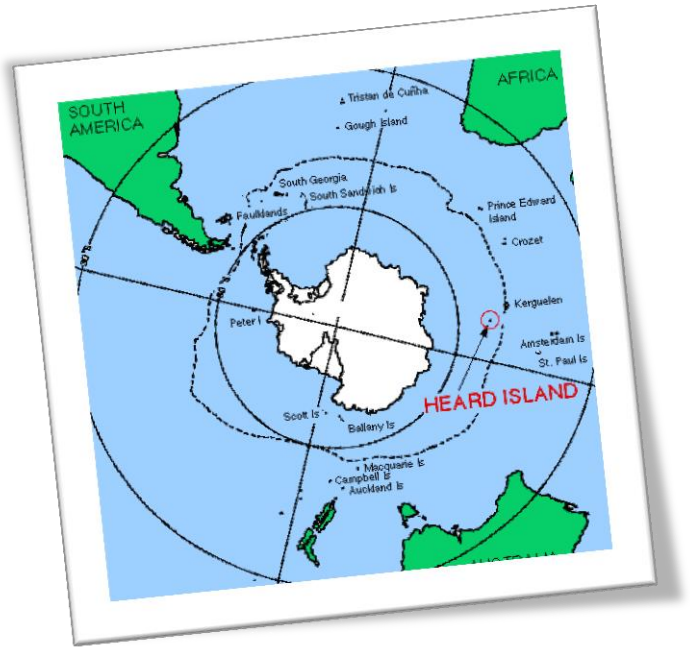
All these activities (and more) will be carried out during a 3-week stay at the island, scheduled for Nov./Dec. 2015. Many of these activities will be seen on prominent internet sites, in real-time. And people worldwide will be able to interact directly with the expedition team, sending and receiving information, comments, and suggestions. Anyone with an internet connection will be able to experience the thrill of being a virtual onsite participant.

The central theme of the Heard Island Project is to search for extreme life under extreme conditions in extreme isolation. The expedition combines a strong scientific program of worldwide interest with the powerful capabilities of social networking, to make a significant contribution to our understanding of life itself. The Project is fundamental to our understanding of the limits of life, and therefore our own future on Earth.

THE ROMANCE OF HEARD ISLAND

Heard Island could well have been conceived by Jules Verne. It's so remote that probably fewer than a thousand people have actually seen it. Fewer still have set foot there. Yet it is a storybook island. To get there, you have to sail across some of the wildest and most dangerous seas on Earth, including the infamous Drake Passage. Seas up to 50 ft. high are part of the experience; it's not for the faint-hearted. The best bet is allocate two months for the journey. You'd better take a helicopter—landing on Heard Island through the surf could be life-threatening. Take a camera, and backup plans.

The island is 20 miles tip-to-tip, about half the size of Liechtenstein, with a titanic live volcano smack in the middle, smothered in glaciers that slip down it flanks at the dizzying pace of 0.00002 miles per hour. If you drop your watch in a crevasse near the top, the glacier would drop it in the ocean perhaps a hundred years later. The weather is even worse than you can imagine. It's a mixture of Seattle, Chicago, London, and the South Pole. On an average day in the middle of summer, the sun shines perhaps 2 hours per day. It's so windy the flies don't have wings. With conditions as they are on Heard Island, it's a wonder *anything* lives there. But live there they do. You'll find the world's largest colony of King penguins, and heaps and piles of elephant seals. And a beautiful bird called (what else?) the Heard Island Cormorant, coming back from near extinction. For amateur radio operators, Heard Island is *the* most attractive target because…*almost always, there is nobody there*. For them, rarity equals desirability.



In a newly familiar irony, the features that make Heard Island so unattractive for tourists make it irresistible to scientists, explorers, and adventurers. But except for the 1947-53 and 2003 Australian scientific expeditions, there have been precious few expeditions and even fewer attempts to carry out comprehensive scientific studies. The mountain, aptly called Big Ben, has been summited only three times, and never traversed. Smoke and vapors can be seen issuing from vents on its flanks, but no one has ever seen them up close. Winds whip around the mountains, shedding giant vortices, modifying weather patterns for hundreds of miles. We are familiar with the worldwide explosion of oceanic plastic debris that is so devastating to wildlife, but we have practically no documentation of such threats in Antarctic islands. If that weren't enough, there are rare opportunities to witness the Centaurid meteors and the Aurora Australis.

About 200 species of plants and animals are known to live on Heard Island. But it's certain that there are hundreds more, probably many of them in the organic outfall from tens of thousands of penguins, seabirds, and seals. These "little creatures" are a critical part of the composition of the ecosystem, its *biodiversity*. At present, we are unable to explain this diversity, due to major gaps in the inventory of organisms in the 0.1mm-1cm size range. That's why we have to go there, to find out *what* lives there, *how* they live, and *why* they live there at all.

VISUALIZING THE EXPEDITION

The team will consist of more than 25 men and women, about half natural scientists and explorers and half communications specialists, particularly amateur radio operators. They will depart from Fremantle, Australia, aboard the Russian vessel Akademik Shokalskiy. The 7-10-day journey will culminate in the spectacular appearance of the volcano Big Ben, unless of course it's a typical foggy day with zero visibility. A full day of landing: tons of gear will be moved to the island. Within two days, a small city of shelters, a galley, an electrical power system and fresh water supply, computer networks, radios, a maze of cables, and—behold!—a shower and bathroom, will be erected and ready for occupancy.

Besides the shelters, the most obvious structures will be radio antennas, 15 or 20 of them, connected to some of the best radios in the world. On cue, a group of operators will begin recording individual contacts with stations around the world. As each contact is logged, networked programs grab the data and send it up the satellite link to the central server, which updates the web pages every minute. The expedition is live on the internet, uploading data and news. People everywhere in the world watch the expedition using an ordinary internet browser. They can see images of the individual explorers as they move about on the island, and sometimes they can interact with them directly as they go about their tasks.

Meanwhile, other team members are setting up various equipment. One person sets up the WiFi network for the campsite, so everyone can talk to everyone else, and personal locator devices are turned on to keep track of everyone. One person sets up the satellite link and tests it by uploading a status report. Another person sets up an array of weather stations. He will record the winds and analyze the time records to detect vortices and other coherent structures. One person sets up cameras to be ready to capture the aurora and the meteor shower, should they be visible. Another person assembles a camera-carrying multi-copter and begins to capture images and video from above the camp. All of this activity is carried on without interacting with the residents (the penguins, seabirds, and elephant seals); life there goes on as it has for millennia.

Soon the biologists start looking for unknown life: plants and animals that are too small or too hidden to have been seen on previous expeditions, most of them smaller than 1 cm. They will first encounter insects, and then other life forms. From the moist moss among the Azorella plants, they will collect tardigrades, the tiny eight-legged

"water bears" that apparently can die and then come to life again years later. Simultaneously, a team is preparing to explore the shallow waters in Atlas Cove and Spit Bay, using an ROV. They are after a description of the shallow subtidal community—the fishes, invertebrates, and plants that live in the nearly freezing water. They will also look for evidence of artifacts and debris that might pose a risk to the seals and diving birds. In shallow offshore waters and the lagoons near Spit Bay they will collect samples of sediments that probably contain living foraminifera, key indicators of climate change. Perhaps they will use a corer to obtain deeper sediments that might contain "fossil" forams, to be used to infer ancient climates.

Within a day or so, the climbers prepare for the ascent and traverse of the volcano. They hike from Atlas Cove to the summit of Big Ben, and from there down to Spit Bay, stopping along the way to examine the glaciers, the steaming vents, and the crater at the top of Big Ben. From the main tent at Atlas Cove, it's more than eight miles to the crater on Big Ben, and about the same distance down the other side. The rest of the team watches their progress through telescopes, measuring their distance with a laser retro-reflector rangefinder. Their trek takes a full week, sandwiched between the landing and the demobilization.

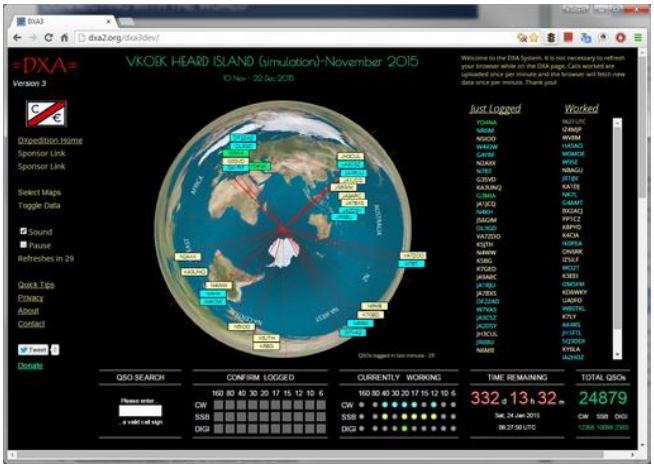
Working out from the main camp, the explorers search for unknown species, and look for potential threats to the thousands of birds and mammals that live there. On the beach, they document plastic debris, noting particularly any skeletons that may show evidence of mortality caused by plastic ingestion. Some days, some members of the team are brought back to the ship for rest, relaxation, and study. The ship picks up the climbers and other teams members from the opposite end of the island and brings them to the main campsite at Atlas Cove. Their observations and discoveries are uploaded through the satellite and posted on the website. After a full month of exploration and documentation, the team packs its gear and returns to the ship for the return voyage to Cape Town.

Upon returning home, the scientists analyze the new data and publish the results in a monograph and specialty journals. They describe the new species and fit model predictions to the newly extended species list. Ironically, with its pristine ecosystem, Heard Island may well be an extremely sensitive indicator of global climate change, giving early warning of the effects of climate change and the effects of alien invasion. It is possible that Heard Island will add one more to its list of extremes: *extremely important for monitoring the Earth's climate*. If so, the Expedition might be far more important than merely extending scientific understanding; it might help Mankind manage to navigate the unpredictable consequences of global climate change.

CONNECTING WITH THE WORLD

LIVE ON THE INTERNET

The Expedition will make extensive use of a live connection to the internet for real-time interactive presentation of the activities. To illustrate the effectiveness of this service, we cite the Cordell Expeditions to Kure Atoll (2005) and Clipperton Island (2013). For those projects, we developed a system called DXA, which made use of special software and a satellite link. It provided immediate feedback to thousands of radio operators worldwide that significantly increased the number of successful contacts and prevented interference from other stations. This service was extraordinarily popular: on both expeditions, the website experienced some 40 million hits.



The DXA system provides the opportunity for the scientific team on the island to interact in real-time with colleagues anywhere in the world. For instance, any browser anywhere will be able to monitor the locations of each team member on the island; the wind speed and temperature of an array of weather instruments; sounds received by hydrophones set near pods of seal, birds, or underwater; photographs recorded by roving cameras; and so on. Offsite persons will be able to remotely operate cameras, instruments, and computers.

DISCOVERING THE ISLAND

Some of the activities that will be of interest to the general public, and might make news, include:

- ✓ First major scientific expedition to Heard Island in 15 years
- ✓ Fourth ascent, first traverse of Big Ben, the live, active volcano
- ✓ Search for biota supported by volcanic heat and chemicals
- ✓ Search for unknown species of biota
- ✓ Exploration and documentation of recently deglaciated areas
- ✓ First observation of a large taxonomic group (freshwater foraminifera)
- ✓ Search for particulate biota in the atmosphere and glacial runoff
- ✓ Documentation of plastic debris on a major Antarctic island
- ✓ Quantitative measurements of horizontal vortex winds
- ✓ Radio contacts with tens of thousands of different amateur stations worldwide
- ✓ Search for a reported new species of killer whale
- ✓ Aerial video from remotely operated quad-copter

The audience for these activities is probably more than a million persons worldwide.

WHO WILL BE INTERESTED?

The Heard Island Project is multidisciplinary; it will appeal to the many special interest groups, such as:

Aerial photography	DXing	Invasive species	Oceanic debris
Aerobiology	Ecology	Islands	Particulates
Alien species	Elephant seals	Killer whales	Penguins
Amateur radio	Endangered species	Kite aerial photography	Planetary biology
Antarctic	Exobiology	Laser ranging	Plastic environment
Astrobiology	Exploration	Leopard seals	Radio science
Aurora	Extinction	Marine biology	Real-time comms
Biodiversity	Extreme biology	Marine invertebrates	Satellite comms
Biogeography	Foraminifera	Marine mammals	Seabirds
Biostasis	Fumerole biota	Meiofauna	Sedimentology
Birding	Geobiology	Mesoscale weather	Southern Ocean
Bones	Geology	Meteor showers	Subtidal biology
Chionophiles	Glaciology	Meteorology	Tardigrades
Climate change	Global climate	Macrobiology	Unknown life forms
Climbing	Heard Island	Microbiology	Volcanos
Cryptobiosis	Heard Island cormorant	Misoscale weather	Vortex winds
Cryptobiota	Insularity	Mountaineering	Xenobiology

The Expedition provides the opportunity to include activities in many specialties related to the main theme of the Project: “Discovering Life in the Extremes.”

TAKING ADVANTAGE OF THE EXPOSURE

From these and numerous other projects, large numbers of people with special interests will identify with the Project, contribute ideas and support, and follow the onsite activities closely. This group constitutes an extremely targeted audience, since it comes pre-disposed with interest, understanding, and desire for products and services in the areas of interest. Thus, the Expedition affords the opportunity for wide exposure for potential sponsors. Some ways in which this exposure can be implemented are:

- ✓ Logos displayed on banners, shelters, structures, etc.
- ✓ Product placement (drinks, radios, equipment, etc.)
- ✓ Advertising inserted in the live website
- ✓ Team members wearing signature clothing (jackets, tee-shirts, etc.)
- ✓ Product endorsement by participant

The importance of this exposure should not be overlooked when considering participation. Sponsorship has the potential to reduce the cost to the participants. Sponsorship can be for individuals or for a portion or the entire Expedition. The organizers of the Expedition are seeking high-level sponsorship, but this is not guaranteed, hence the prospective participant should consider potential sources of individual sponsorship. The Project organizers will gladly assist any effort for sponsorship.

ORGANIZATION OF THE PROJECT

THE ORGANIZATION

Cordell Expeditions

Cordell Expeditions (CE) is a nonprofit scientific educational association, formed in 1977 by Dr. Robert W. Schmieder. Its main activities are to carry out expeditions to remote oceanic sites to acquire scientific information that can contribute to rational management and protection of such sites. In addition, the group owns and operates a research vessel, the Cordell Explorer, and maintains an ongoing schedule of educational cruises for students and other groups interested in oceanography and marine biology. The website is www.cordell.org.

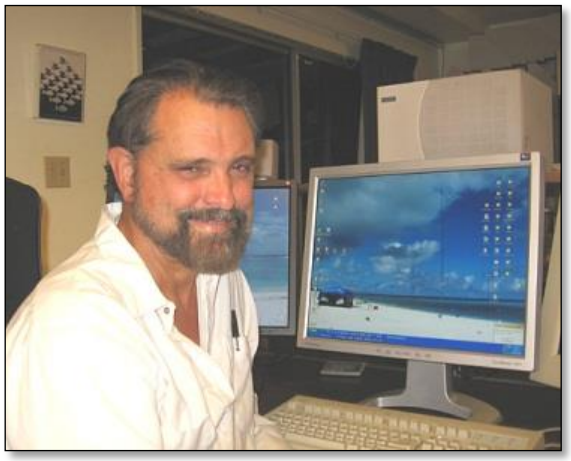
Under the leadership of Dr. Schmieder, Cordell Expeditions organized and carried out the following expeditions: Cordell Bank (California), Schmieder Bank (California), Farallon Islands (California), Rocas Alijos (Baja California), Guadalupe Island (Baja California), Roqueta Island (Mexico), Castle Rock (California), Ventura Rocks (California), Farallon Islands (California), Peter I Island (Antarctic) 1994, Easter Island/Salas y Gómez (Chile), Heard Island (Antarctic), San Felix Island (Chile), Kure Atoll (Hawaii), and Clipperton Island (Pacific).

Cordell Expeditions maintains collaborative relations with many organizations and institutions, including: University of California, Berkeley; Los Angeles Museum of Natural History; U. S. National Museum of Natural History, Washington, D.C.; California Academy of Sciences; City of Berkeley; Mt. Diablo College; St. Mary's College; Texas A&M University; Humboldt State University; Ocean Futures (J-M Cousteau); San Diego Museum of Natural History; and others.

Cordell Expeditions has received numerous awards. Over 30 years the group has produced more than 1000 new species, new depth and range extensions, and first observations on site, numerous journal publications, and seven books.

THE ORGANIZER/EXPEDITION LEADER

Robert W. Schmieder, A.B., B.S., M.A., Ph.D.



Dr. Schmieder is the Founder, Director, and Expedition Leader of Cordell Expeditions, a nonprofit research group begun in 1977. The group is responsible for the creation of the Cordell Bank National Marine Sanctuary and for numerous research expeditions to remote oceanic sites. He is a Fellow of the Explorers Club and former Chairman of its Northern California Chapter. He is the owner and operator of a research vessel, the *Cordell Explorer*. Since 1977 he has created and led very large and complicated scientific expeditions and developed new technology for remote sites, especially internet-based real-time websites.

HONORS:

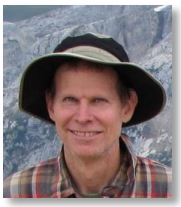
- *Schmieder Bank*
- *Codium schmiederi*
- *Erylus schmiederi*
- *Pharia pyramidata schmiederi*
- *Megalomphalus schmiederi*
- Fellow, Explorers Club
- Expedition of the Year (3 times)
- Honorary Life member, Central Arizona DX Association
- Environmental Enrichment Award, International Underwater Foundation
- Certificate of Merit, Chiltern DX Club
- Amateur Radio Hall of Fame
- Best DXpedition Communication (DX Coffee)

BOOKS:

- *Ecology of an Underwater Island*
- *3YØPI Peter I Island 1994 DXpedition*
- *Rocas Alijos: Scientific Results from the Cordell Expeditions*
- *DX-Aku: Messages from the 1995 Easter Island DXpedition*
- *VKØIR Heard Island Expedition*
- *XRØX San Felix Island, Chile*
- *Great Adventures (children's books)*
- *DXA: The Real-time Online Radio Log Server*
- *Edward Cordell and the Discovery of Cordell Bank*
- *Harry Sherman: A NAPA kid who did it his way (in prep)*
- *Element: The Amazing Life and Work of Albert Ghiorso (in prep)*

THE ONSITE TEAM (PARTIAL)

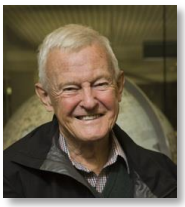
Hans-Peter Blattler
Radio operator



Fred Belton
Explorer

Joan Boothe
Documentarian

Adam Brown
Communications



Grahame Budd
Explorer

Martin Budd
Explorer

Jacky Calvo
Radio operator

Alan Cheshire
Radio operator

Rohan Clarke
Ornithologist

Christian Eichenauer
Filmmaker

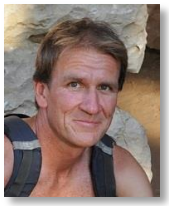
Dave Farnsworth
Radio operator

Eleanor Forbes
Health and Welfare

Jodi Fox
Geologist

Mui-Kim Hoon
Camp management

Vadym Ivliev
Radio operator



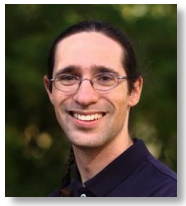
Paul Klemes
Medical Doctor

Dave Lloyd
Radio team leader

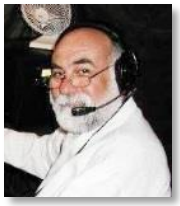
LouPhi Loncke
Explorer

Gavin Marshall
Explorer

Wolfgang Meschede
Filmmaker



Bill Mitchell
Radio operator



Carlos Nascimento
Radio operator

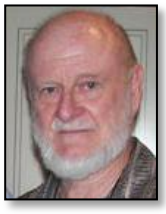
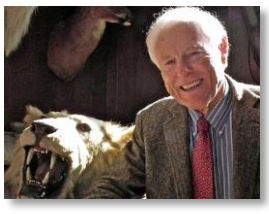
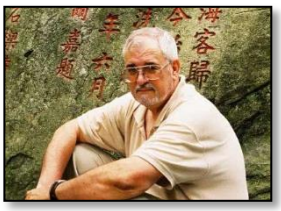
Glen Pacey
Conservationist

Martin Rietze
Photographer

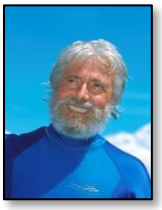
Robert Schmieder
Expedition Leader

John Weigel
Naturalist

THE OFFSITE TEAM (PARTIAL)

	**Harold Heatwole, B.A., M.S., Ph.D., Ph.D., D.Sc.** Professor, North Carolina State University. 3 doctoral degrees in Biology. Wide range of publications, editorial boards, university administration.		**Alan Nichols** President, Explorers Club. Many publications, including3 books. Many expeditions to sacred mountains, extreme cycling, including first person to bicycle Silk Web (China).
	**Mary McGann, B.A., B.A., M.A., PhD.** Staff Member, U.S. Geological Survey. Expert in meiofauna (esp. foraminifera). Participant in Cordell Expeditions since 1990.		**William Miller, B.A., M.A., Ph.D.** Professor, Baker University, Biology. Expert on tardigrades.
	**Eric van Sibble** Oceanographer, Climate Change Research Centre at the University of New South Wales		**Rich Holoch KY6R** **Co-organizer** Technical Product Manager (software). Expert in distributed data systems, social networking and media systems.
	**Robert Anderson** Algologist, Prof. Univ. Michigan, Editor-in-Chief *Phycologica*,		**John Miller K6MM** Leader in amateur radio

HONORS

	DXpedition Dedication **Jim Smith VK9NS** **Kirsti Smith VK9NL** Legendary radio pioneers and organizers of the 1983 Heard Island expedition		Expedition Dedication **The Fourteen Men** The first expedition to Heard Island, in 1947
	Honorary Expedition Leader **Jean-Michel Cousteau** Son of Jacques Cousteau, and famous in his own right for a lifetime of dedication to the exploration and preservation of the ocean and its resources		Honorary DXpedition Leader **Joseph Taylor K1JT** Nobel Prize Physics Professor Princeton University Creator of software tools for weak-signal detection

THINKING ABOUT PARTICIPATING?

PROCEDURE

The Heard Island Project welcomes serious inquires for participation. The Project is designed for professional scientists, but there is room for, and need for, nonscientists interested in contributing to the Expedition. This includes students, persons with a science background but now engaged in other professions, and adventure travelers wanting to engage in directed field research. The primary requirement is that you be ready to participate with the team in achieving the goals of the Expedition.

First step: If you are potentially interested in participating, please communicate with the Expedition Leader (see next page). Please supply the following information, at least:

- ✓ Name, contact information, basic personal information (age, profession, current activity, etc.)
- ✓ Experience, particularly with projects, expeditions, specialized technology, skills, etc.
- ✓ Current interests, preferences, motivations, what you might contribute, etc.
- ✓ Limitations such as time, travel, health, food, etc.

Second step: There is no deadline for application. However, we are actively building the team so you are encouraged to apply as soon as you can make your decision. If you are accepted, we will ask for:

- ✓ Confirmation and commitment
- ✓ A brief resume and photograph suitable for the website
- ✓ Initial payment (US$5000) against the full participation fee
- ✓ A brief statement about your particular interests, limitations, resources, abilities, capabilities, etc.

Final step: As we approach the time of the Expedition, we will need the following from each participant:

- ✓ Signed Participation and Policies Agreements
- ✓ Copy of your passport, radio license, etc.
- ✓ Health certificate
- ✓ List of emergency contacts
- ✓ Your personal itinerary.

The cost of putting each team member on Heard Island is US$32k. We have already obtained some sponsorship for the Expedition, but the amounts and allocation of such sponsorship are not known at this time. Your cost will be $18k, but you can reduce this to $15k by working to obtain corporate donations of budgeted items. You can ensure your participation by simply meeting the full cost, or you can seek your sponsorship from your institution, personal contacts, or any other sources. We will be happy to support you in seeking sponsors, but we cannot *guarantee* the sponsorship for you. If you feel you can bring at least US$18k to the Project, we would be happy to discuss your potential role in the Expedition.

Additional information is available on the website http://www.heardisland.org. It is updated often so you should check it regularly.

CONTACT

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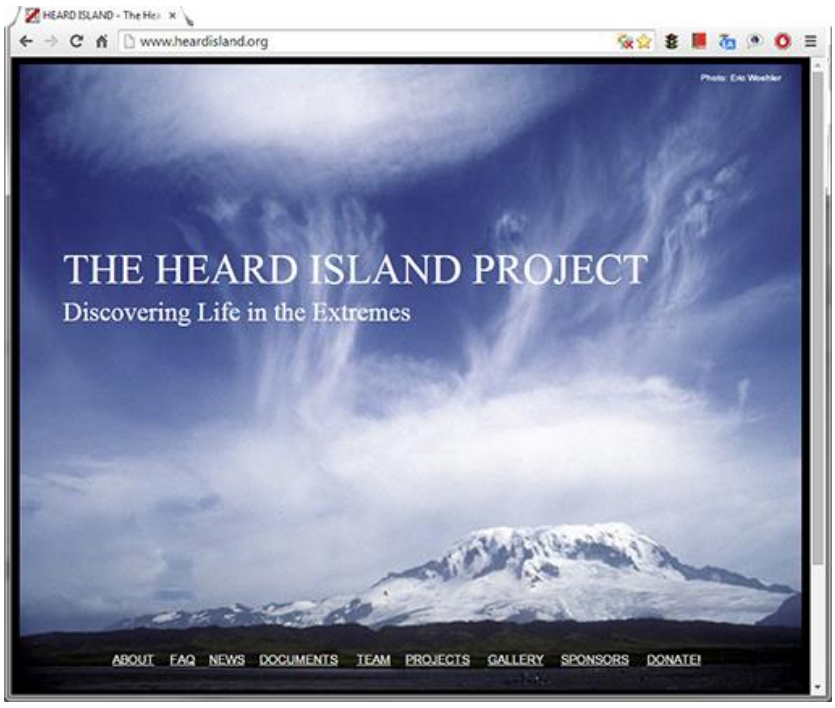

Website for the Heard Island Expedition:
http://www.heardisland.org