www.polar.org/antsun
January 6, 2002

The Antarctic Sun

Published during the austral summer at McMurdo Station, Antarctica, for the United States Antarctic Program

~ hidden Art ~

Renaissance-style painting by an unknown artist hidden on the back door of the paint barn.

Behind the grime creativity reigns

In the dim-lit inner chamber of the paint barn, the profile of some Italian nobleman stares steadily at a fire extinguisher.

The Renaissance-style painting isn't out of place in the workshop at McMurdo Station; not with a diptych scene of a windsurfer on a tropical coastline facing it and a surreal painting of circus animals on the other side of the door.

Though at first glance the Antarctic research stations appear to be purely industrial sites, a closer look reveals art everywhere.

See Art on page 7

Stories by Kristan Hutchison

Photos by Melanie Conner

Nature vs. nature: The plight of the penguins

By Melanie Conner
Sun staff

Mother Nature gave desperate Ross Island penguin colonies a small break in the form of a four-day, blasting windstorm last month.

In mid-December, strong katabatic winds altered the fate of the penguin colonies when they swept the winter's accumulated ice out to sea and provided the birds with access to their summer breeding grounds. The event was key to the survival of some Ross Island penguin colonies, reported scientist David Ainley, of H.T. Harvey & Associates, ecological consultants based in San Jose, Calif. Before the storm, it was predicted that some colonies would not survive at all.

"Cape Royds colony is going to fail," said Ainley, in an interview in early December before the storm. "If the ice remains, it will disappear as a penguin colony."

Troubled penguins of the Ross Sea made headline news around the U.S. last week when the National Science Foundation released results of studies in conjunction with satellite images from NASA that show iceberg movements. The NSF reported one penguin colony - Cape Royds - was "in danger of extinction" while others would

See Penguins on page 12

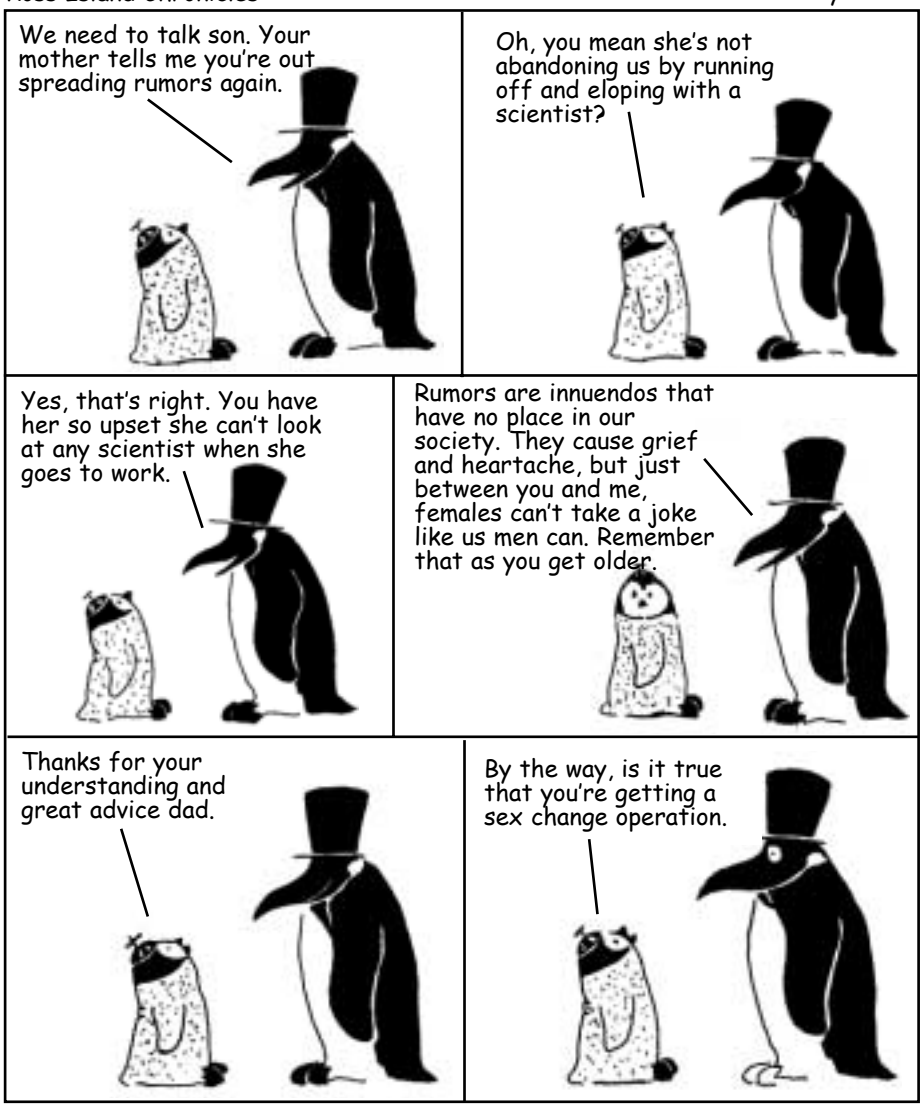
Quote of the Week

"Thanks for not getting killed. It saves paperwork."

- McMurdo electrician to resident while making dorm repairs in hallway

INSIDE

Ross Island Chronicles By Chico



Cold, hard facts

Ice on the Ice

Percentage of the world's freshwater that is ice: 90

Percent of world's ice in Antarctica: 90

Estimated percentage of world's freshwater in Antarctica: 80

Gallons of water in an iceberg measuring 500 x 800 x 250 meters: 22 billion

Drinkable gallons after being towed to an arid part of the world, assuming a 20 percent loss during transit: 14 billion

Global population facing serious water shortage: 450 million people in 29 countries

Average number of gallons of water used daily by a person in Jordan: 12

Number of days above iceberg could supply areas of shortage: 2.6

Estimated volume of ice in Antarctica: 30,109.8 trillion cubic meters

Number of days this could supply areas of shortage, after transit: 530 billion

Sources: Scientific Committee on Antarctic Research, U.S.G.S., New Zealand Herald

The Antarctic Sun is funded by the National Science Foundation as part of the United States Antarctic Program. Its primary audience is U.S. Antarctic Program participants, their families, and their friends. NSF reviews and approves material before publication, but opinions and conclusions expressed in the Sun are not necessarily those of the Foundation.

Use: Reproduction and distribution are encouraged with acknowledgment of source and author.

Senior Editor: Kristan Hutchison
Editors: Melanie Conner
Mark Sabbatini
Copy Editor: Lynn Hamann
Publisher: Valerie Carroll, Communications manager,RPSC

Contributions are welcome. Contact the Sun at AntSun@polar.org. In McMurdo, visit our office in Building 155 or dial 2407.

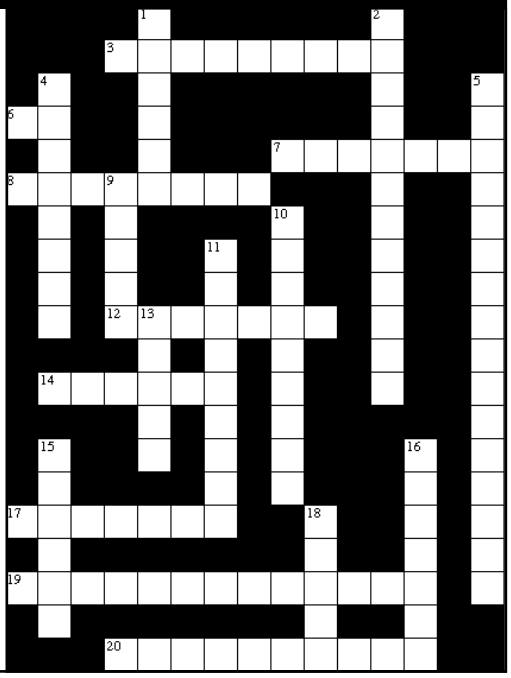
Web address: www.polar.org/antsun

Careers on the continent

Answers on page 4

Across
3) An extracurricular job with tips
6) All-purpose galley worker (abv.)
7) Every grunt has one of these
8) Rotating spiritual counselors
12) A summer worker on the Ice
14) Gas attendants for the planes
17) They know your restroom habits
19) Looks for the sunny side of things
20) Works through winter

Down
1) Worker at the former Vanda Station
2) Generic term for Ice staff (2 words)
4) The outerwear of manual laborers
5) Does it all (2 words)
9) Driver for long-distance commute
10) No HMO needed for these on Ice
11) Builds shelters and all else
13) Kills seals and other animals for oil
15) Slang for scientist
16) Stores, handles and detonates explosives
18) A dog handler



Big berg moves in small steps

By Kristan Hutchison
Sun staff

The biggest iceberg in the Ross Sea moves with the tides.

Heavy winds and currents have less to do with the path of iceberg B15 than the moon's pull on the water, according to Doug MacAyeal, who planted Global Positioning System units on the big berg last February to track its movement.

Since then B15, also called B15a since smaller chunks broke off, has traveled hundreds of miles without really getting anywhere, MacAyeal wrote in an e-mail to the *Sun*.

"The tidal motion of the iceberg is like a 'hoola hoop' on the hips of a great hoola hoop wiggler," MacAyeal said. "It's always moving, but mostly in circles."

Each day B15 moves in a "looping circle," with a diameter of about a kilometer, MacAyeal said. The GPS data from B15 shows patterns following the 28-day lunar cycles, with daily fluctuations matching the tides.

"It's almost like it's surfing on the tides," said Andy Bliss, who works with MacAyeal. "It's big enough that it can do that."

Like the 800-pound gorilla, B15 is big enough to do whatever it wants. When it broke off the icefront in the eastern Ross Sea in March 2000, B15 was about the size of Connecticut. At the time, B15 caught everyone by surprise and the National Science Foundation put out an emergency grant for MacAyeal to place tracking stations on the big berg.

"It was kind of a rushed deal and we didn't have enough time to really get the instrument package down to what we wanted, so we're going back to fix that," Bliss said.

Since then smaller chunks have split off, so the largest remaining piece is tracked as B15a, but commonly referred to as B15.

The original plan was to place two GPS units on B15 and two others on a smaller, but still substantial, berg nearby, called C16. Then one of the four GPS units failed, so they just put all the units on B15, Bliss said.

A funding extension this year allowed MacAyeal and Bliss to return. Several weeks ago Bliss set up a GPS and fluxgate compass on C16, with the help of field guide Chris Simmons and University NAVSTAR consortium GPS support from Chuck Kernik and Shad O'Neel. In January he and MacAyeal will return to B15 and C16 to correct some problems with instruments left last year and collect some of the more expensive instruments.

B15 is now the size of Delaware - 100 miles (160 km) long and 22 to 32 miles (35-51 km) wide, with 328 feet (50 m) showing above water and 525 to 820 feet (160 to 250 m) below.

"That's like the big mother of all icebergs," Bliss said. "When you're standing on the iceberg you cannot see any ocean."

At that size, storms like the one that hit McMurdo Station with 100 mph (160 kph) winds in December just blow by.

"The satellites show that the iceberg did not move appreciably, other than getting kicked into a larger hoola hoop gyration, during the storm," MacAyeal wrote. The fastest the iceberg has moved was about 15 miles (25 km) in one week during some winter storms.

B15 is so large the currents move around it.

"Little icebergs have been seen 'circumnavigating' B15a as if it were a wonderful island," MacAyeal wrote.

MacAyeal expects B15 to continue loitering where it is until the autumn storms begin in mid-February.

"My 'forecast' (and I'm going out on a limb) is that B15a will not move until it breaks in half," MacAyeal wrote. "This could be as a result of a storm, or as a result of interaction with C16 or with the two islands that are out there."

There's little chance of B15 blocking McMurdo Sound. Franklin and Beaufort islands currently keep B15 from floating in front of the sound. B15 would have to break into smaller pieces to fit through, though those could still be large enough to force the icebreaker to reroute next summer, MacAyeal said.

B15 does have a large crack about a third of the way from the southern tip, Bliss said.

The crack goes along a suture line, where two ice streams met when the berg was still part of the ice sheet. When B15 does crack, it's likely to do so there, but it would take a collision, MacAyeal wrote.

"The scenario would be a very strong South wind that would drive the iceberg West, via the Coriolis force, that causes one end of the iceberg to hit Franklin Island, while the other end is 'kedging' against Cape Crozier," MacAyeal wrote.

Kedging is a sailing term MacAyeal applies to icebergs colliding against other objects, which give them leverage to defy the normal motions of ocean current and tide, MacAyeal wrote. In that way B15 interacts with a smaller iceberg nearby, C16. C16 is about 40 miles long and 15 miles wide, grounded solidly on one end. It probably won't move until B15 breaks into smaller pieces that could nudge it loose, MacAyeal said.

Continental Drift

What science projects have you paid attention to this year and why?

"I don't know what it is called, but it makes sounds. Every crackle is lightning somewhere in the world and every pop is a meteorite."
Hailaeos "Holly" Troy
Network administrator, South Pole Station, Las Vegas, Nev.

"The closest I've ever come to science is sweeping up the scientists floors."
Sue Vittner
Crary Lab janitor, McMurdo station, Maine

"As a scuba diver, I'm particularly interested in the projects that involve divers. Especially learning what creatures live under the water."
Brenda Walker
Administrative coordinator, Sr., Denver, Colo.

speaking of science...

Parenting practices of Antarctic sea urchins

By John S. Pearse
Special to the Sun

British scientists with the 19th-century "Challenger Expedition" were startled when they collected sea urchins harboring tiny babies among their spines.

Such parental care, or "brooding," by simple animals like sea urchins was practically unknown at the time. When other species were found similarly caring for their young, prominent marine scientists suggested that harsh polar seas, particularly in the Antarctic, somehow favored this unusual form of reproduction. Most marine animals, after all, produce numerous tiny larvae that feed on plankton and float long distances before settling and metamorphosing into juveniles.

Elaborate theories were developed to explain the apparent propensity for brooding in the Antarctic, such as brooding would (1) prevent offshore winds from sweeping larvae away from the continent and (2) allow young to be nourished by the parent and develop in an area where favorable food conditions for larvae in the summer is too short for their development. These theories were contentious and unsatisfactory because other places with similar conditions (islands in the Pacific with offshore winds, the Arctic with a short period of food production) had few, if any, brooding species.

In the 1980s when we were working at McMurdo Station, we found that parental care is not all that unusual to the Antarctic, and some of the most conspicuous and common species in the Antarctic produce feeding, floating larvae. Consequently, the question "why are there so many brooders in Antarctic waters?" became moot, and more perplexing questions focused on how these delicate, slowly developing larvae survive the seemingly adverse conditions of Antarctic seas.

However, the case of Antarctic sea urchins still remains exceptional. Almost all known instances of parental care by sea urchins occur in Antarctic waters. Most of the 80 or so species of Antarctic sea urchins are brooders. They are divided mainly among three groups.

One group, with five species, are the familiar spiny sea urchins, such as the one so common around McMurdo Station; all these have larvae that float in the open ocean before settling and metamorphosing into juveniles, as do most other sea urchins in other parts the world.

The second group, burrowing heart urchins with about 35 species, all brood their young in special pockets (marsupial cavities) in their bodies. It appears that this trait developed only once in the ancestor of this group, either before or after it became established in the Antarctic, and speciation was favored because populations stayed together and interbred, and new populations are established rarely when a few individuals (or only one brooding female) float to new areas on drifting algae, pumice, ice, or other debris.

The third group, primitive cidaroid sea urchins, or pencil urchins, with stout, dead spines making them resemble naval military mines, are more enigmatic. About half of the 30 or so Antarctic cidaroid species are known to brood their young among their spines, as first noticed on the "Challenger Expedition." It is not known what the other half do.

It is also not known how the species are related to each other, whether they represent a single or multiple invasions into Antarctic waters, or whether brooding is ancestral or derived. If they represent separate invasions, many of which evolved brooding independently, a case could still be made that brooding confers a special advantage in the Antarctic. On the other hand, perhaps they actually are all brooders and are derived from a single ancestor, as are the heart urchins, or all the brooders are in a single lineage. If either of those options are the case, we would conclude that brooding is a rare event in the Antarctic, as elsewhere, and is not necessarily related to special environmental conditions in Antarctic seas. These questions directly address how Antarctic marine animals are adapted to polar conditions.

The Antarctic Benthic Deep-Sea Biodiversity project (ANDEEP) is ideal for examining these questions. Two cruises of the German research vessel *Polarstern*, between January and April 2002, will sample benthic animals from the Antarctic shelf into the deep sea of the Scotia and Weddell Seas off the Antarctic Peninsula. The main question being asked is whether animals in the deep sea gave rise to those now on the Antarctic shelf, or vice versa.

Scientists from a dozen countries will be on board to sample bottom animals ranging from sponges and sea anemones to worms and shrimps to sea urchins and fishes. Our group and one other (BO-292-O, James Blake, PI) will represent the two American projects on board. Our group will examine all the sea urchins collected to see if they have brooded juveniles among their spines or buoyant eggs that float and could not be brooded.

In addition, all the specimens will be preserved for studies of their structure and their DNA, compared to animals from other localities, to try to map the history of their evolution and relationships. The goal is to determine how many times brooding arose in these sea urchins, so characteristic of Antarctic waters, to better understand adaptations for living in polar seas.

John S. Pearse is a scientist from the University of California, Santa Cruz.

answer to crossword on page 2

around the continent

PALMER

Masked merriment

By Tom Cohenour
Palmer correspondent

Festive masks provided good-natured release from inhibitions during the New Year's Eve party held at Palmer Station.

Mask making began several days earlier when it was discovered that surplus medical cast forming material was available. One evening, 10 eager people descended into the carpenter's shop prepared with mask designs, forming material, a flair for creativity, or just the desire to watch. During the week before New Year's, nearly two dozen masks were made.

"Just rub the lotion all over your face," said Heidi Geisz, with the seabird component of the Long Term Ecological Research (BP-013-P). "It will help you get it [the mask] off after it's made."

People took turns lying on the shop table so helpers could place multiple layers of damp, white colored strips of cast fabric strategically over their well-lubricated faces. Two were completely covered and resembled a mummy face, while most were half-masked like Zorro or Rocky Raccoon. Extra layers were built up on some masks creating thick furrowed brows, a high bulbous forehead, or sagging jowls. Most masks were gently smoothed but some were left rough and textured.

After two days, the cast material was perfectly hardened so the decoration process could begin. Acrylic paints were the most popular method of finishing each custom-made mask. Ribbons and sequins were applied to others. One mask appeared straight out of a horror film with 2" nails sticking out of its blackened face.

Disguised as monster, mummy, Zorro, or Rocky Raccoon, it was fun way to bring in the new year.

Photo by Cara Sucher/Special to The Antarctic Sun

Masked revelers at Palmer Station enjoy the New Year.

SOUTH POLE

Pole move marks New Year

By Judy Spanberger
South Pole correspondent

We had two New Year's celebrations here at Pole this week. Rest assured the New Year has been adequately rung in. Sunday being our day off, we held the big party on Saturday night in the cleaned and mopped out heavy garage. Thunderjug, our most beloved and local band, played a few sets with accompaniment from their new female back-up singers, the Jugettes (watch the jokes). "Neil Diamond" also made an appearance. Neil gave up a coveted Vegas act to come here, God bless him, and sang "Cherry-Cherry." Neil sounded as good as ever and the crowd went wild. A variety of underwear made it up on the stage, from where it came we don't want to know. At midnight we counted down to Sunday, which was more silly and funny than celebratory, but hey, it was only the 30th after all. It was a fun evening and a good enough reason to laugh and dance the night away.

Monday night, the actual New Year's Eve, we had a small impromptu party in the summer camp lounge. It was a bit more subdued than Saturday, but the need to make note of the New Year kept enough people up 'til midnight to count down and wish each other well. Hugs went all around, as well as wishes for a happy and peaceful New Year. Thunderjug and the Jugettes were there to do a couple of sets. The New Year had arrived and we had done what we could to bring it in with the proper fanfare.

On Sunday morning we dedicated the new pole marker. The physical pole, versus the ceremonial pole that has the flags around a mirror ball, is in constant movement. Well, the axis of the Earth doesn't move much, but the ice sheet that Pole station sits upon moves 30 feet each year along the 40 degree West Longitude line towards Brazil. Thus the need for a new marker each year, marking the actual axis. This is done in a ceremony around the first day of the New Year. A steel pole is placed in the snow and the new marker is placed on top the pole. The markers are made and designed by the previous winter-overs and usually reflect the flavor of the people and the winter's accomplishments. It's fun to go down the row of markers and note the different styles and choices. (Replicas of the markers can be bought at Pole-mart, our station store). The sign announcing that you are now standing at the geophysical pole is also moved to keep up with the moving ice sheet.

Otherwise it's been a rather quiet week here. Our winter-overs are beginning the R & R process: A week at McMurdo Station to sleep, relax and enjoy the many activities that McMurdo plans for them. Science has been continuing on with no major interruptions, which is always a good thing. And construction has begun to put the outside panels on phase three (pod A-3) of the new Elevated Station. The weather has been spectacular, nary a cloud in the sky, very little wind and temps hovering around minus 12. Balmy, just balmy. We're thinking a beach party might be in order.

Photo from Judy Spanberger

New Pole marker.

And that's all. We here at Pole wish everyone a New Year filled with success and peace.

Apology:

An inappropriate Spanish phrase was used to describe a piece of tunneling equipment used at South Pole in our Dec. 16 issue on this page. This phrase has been removed from the Web versions. We extend our sincere apologies to our readers for this oversight.

the week in weather

McMurdo Station
High: 51F/10.5C Low: 24F/-4.5C
Wind: 56 mph/91 kph
Windchill: -11F/-24C

Palmer Station
High: 43F/6C Low: 27F/-3C
Wind: 64.5 mph/104kph
Precipitation: 0.6 in/17 mm

South Pole Station
High: -9.5F/-23C Low: -16.5F/-27C
Wind: 17 mph/28 kph

Experiencing Antarctica

Creating a human landscape on an inhuman continent

By Kristan Hutchison
Sun staff

Bill Fox and Bill McIntosh hike along the Mt. Erebus caldera rim.
Photo by Henry Kaiser/ Special to the Antarctic Sun

Writer Bill Fox traveled from the tunnels below the South Pole to the top of Mt. Erebus this season trying to define how we experience Antarctica.

Fox explains his ideas as relating to the way people turn "space into place, land into landscape." But land has less to do with the landscape in Antarctica than snow, ice and weather.

In his first journey into the Antarctic landscape, snow machining across the sea ice with Ted Dettmar to visit the Cape Evans hut, Fox was caught in a storm. Blowing snow narrowed their views to shadowy glimpses of the nearest flag, surrounded by white, white and white.

"The overarching inquiry of my work is sensory perception of the world," Fox said. "Whiteout, in neuro-physical terms, is kind of a 'ganzfield.' Basically that is a space in which you are deprived of sensory inputs. What such a condition allows you to do is understand how you see, because you cannot see."

About 80 percent of the sensory input people receive is visual, Fox said. In a whiteout, unable to see even the ground beneath one's feet, other senses are distorted. People become dizzy.

In Antarctica, Fox has become familiar with that void, having one or more senses muffled by the conditions at a time. On Mt. Erebus during the December storm he experienced it again, along with wind-chill temperatures of minus 100F. The whiteout reminded Fox of sandstorms he went through in another desert, the Nevada Black Rock, four months before. There the temperature was 100 plus. The overwhelming heat or cold was almost all he could sense in each case. There was not much smell and the constant wind was a white noise isolating him from sounds outside his own mind.

"My senses are being taken apart by the Antarctic one by one," Fox said. "The history of exploration here is one of scientists, cartographers and artists struggling to put back together our senses, including our sense of place."

Place is not just an area of land or a spot on the map, but includes the people and buildings and memories. All of those are missing on the polar plateau, where people find themselves in what is called isotropic space, Fox said. The view is the same in all directions, flat and white to the horizon. Nothing stands in the foreground or gives perspective to the scene.

"It's a big white, right? So how do you place yourself in that landscape?" Fox asked rhetorically during a lecture he gave in November.

According to Fox, humans are most comfortable in the environment they evolved in, the combination of field and woods found in Africa.

"When you look out a picture window of a house in suburban America, what you're looking at is idealized African savannah, as processed through hundreds of years of English gardens," Fox said. "You can see those same processes at work here, in McMurdo."

As an example, he pointed out the rock-lined, duck-shaped pond the residents of Mammoth Mountain Inn built in the volcanic dirt and snowmelt beside their dorm. Two benches accompany the "duck pond."

"They're creating a park," Fox said.

When people go to a big, empty landscape, they tend to lay a grid right over it, Fox said. They try to explore and measure the space, turning it into maps to which they can refer to orient themselves.

The first explorers did that in Antarctica, charting the shores and working their way inward in search of the Pole from whence the globe's grids run. The mapping continues still, from planes carrying radar to look through the ice at the rock below. It occurs in other ways too, Fox said.

"It doesn't matter if you're measuring how long penguins dive or the age of the separation of Antarctica from South America," Fox said. "You're always measuring our relationship to this land and life."

The place of people in the polar landscape is something like a Wallace Stevens poem, which miner John Wright quoted to Fox as they walked through a tunnel under the South Pole: "I placed a jar in Tennessee upon a hill, and it made everything in Tennessee turn and face that hill."

"If you've ever been to middle Tennessee, that makes sense. The otherwise monotonous terrain orders itself around the jar," Wright wrote in an e-mail to the Sun.

In the same way, the buildings at the South Pole rearrange the landscape around them.

"The lines nevertheless come to mind here: I placed a dome on the polar plateau and it made all the sastrugi on the plateau turn and face that dome," Wright wrote.

The dome and other structures at the South Pole change the landscape in some very real ways, creating drifts of snow and gullies. The structures also change the way people perceive the

See Fox on page 8

~ hidden Art ~

Carved and painted flowers decorate a work truck at McMurdo Station, at left.
Below, a stained glass window from the South Pole cargo office and a stone and fake bush on a McMurdo footbridge.

Photo by Carol Crossland

Art From page 1

"Personally, I feel that most of these touches are to add a little bit of normalcy to life here, to make it feel less like an institution, more like home," wrote Carol Crossland in an e-mail from the South Pole. "We can't create anything close to the beauty that ma-nature displays all around us in the halo displays, the feather crystals, the auroras, or the diamond dust, but we make our best attempt."

Over their long, dark winter, Polies sometimes entertain themselves by creating unusual works of art. In 1998 Diana Logan took bits of electronics she was inventorying for the trash and made them into a mobile of inch-tall figures, one for each winter-over.

At Palmer Station, artists take inspiration from the sea. Utility technician Mike Patterson left his mark with metal whale and krill sculptures, and a whale mural on the side of a fuel tank he painted with Scott Bowes and Ray Spain in 1994.

Inside the South Pole dome, somebody planted a picket fence and a few fake flowers

See Art on page 8

~ Karen's Bridge ~

People crossing the bridge between Crary Lab and Building 155 laugh, stop to examine an object or add their own. Sprouting figurines, small branches and lines of magnetic poetry, the bridge has begun to resemble a folly, the whimsical architecture found in English gardens, said Bill Fox, a writer and critic of art and architecture.

"There are few words involved. It's mostly just small visual objects standing in for other things," Fox said. "Little dinosaurs put on the rocks, among other things, signify paleontology and childhood myths, childhood stories."

The decoration of the bridge began last year, before the bridge was built, with a tale of unrequited love and rejected tokens of affection.

A beautiful blonde in Karen Joyce's office was sought after by a man named Kevin.

"Kevin brought her rocks and rocks and more rocks, like a penguin trying to make a new love gift," Joyce said.

But the damsel loved another, off the Ice, and left without the rocks or Kevin. The stone collection was dumped beside the outside stairs, which seemed a shame to Joyce. When the wooden bridge was finished she decided to place them there for others to enjoy.

"I'd take, every day, eight rocks up there and put them on the stairs overlooking the pillars," Joyce said, "and I'd stand there for a second overlooking my work and thinking 'It is good.'"

Then she'd go to lunch, and when she returned they'd be gone.

"Art is not eternal and it's interactive," Joyce said. "I really struggled with that in the beginning."

After a few days bringing new rocks each day, the rock pile was running low. Frustrated, Joyce decided to cement things to the bridge, starting with a quarter.

"It's been a war of equilibrium since, trying to find stasis," Joyce said. "I know that's a bridge between two bars, and I know drunk guys love to destroy things."

She's made a small study of how long things last. The plastic space shuttles, dinosaurs and ET figurines she glues on always disappear, but the metal block with "Please turn me over" written on one side and "Thank you" on the other remains.

She's running low on dinosaurs, but has plenty more ET's. For some reason Doug Ruuska brought a thousand.

After experimenting with seven different kinds of glue, she settled on the five-minute epoxy used to attach cameras to the backs of penguins.

"If you can glue something on with that it takes a real jerk to pull it off," Joyce said.

~ hidden Art ~

Art

From page 7

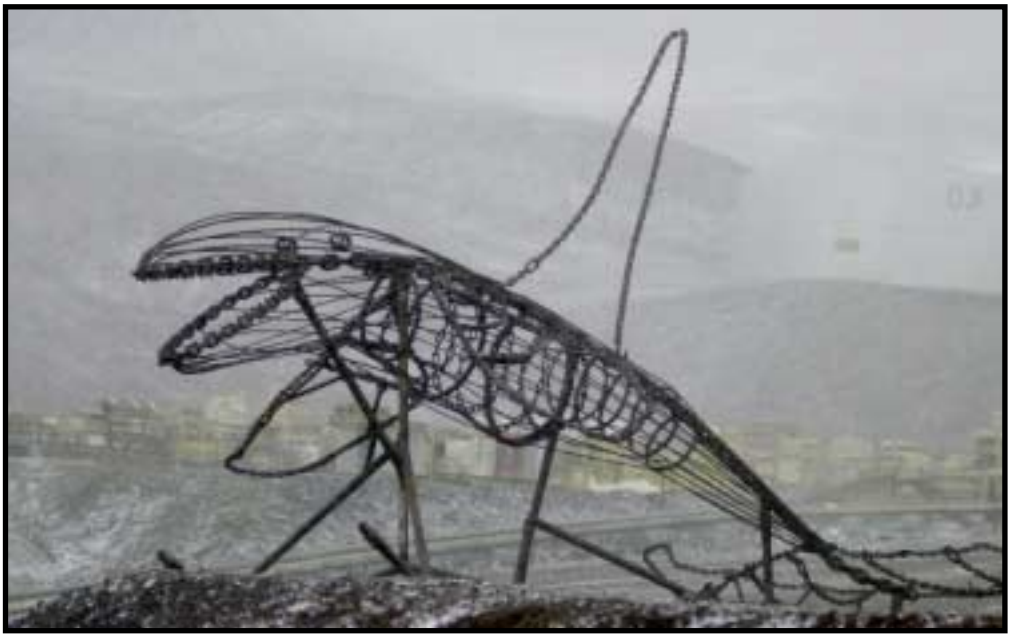
outside one of the red buildings. It's both a homey touch and out-of-place on the lifeless Ice.

"What you're doing there is creating an absurd contrast," said grantee Bill Fox, whose background includes reviewing art for several newspapers and magazines and running the Nevada Arts Council. "You're doing that not to remind yourself of home, but to remind you of where you are and to enjoy it."

Public art may be more common in Antarctica because people don't own property here, beyond their personal belongings, said Stacey Rolland, assistant supervisor of the Mechanical Equipment Center. Creativity they might normally direct toward their home or yard is instead focused on public spaces.

"The human instinct to decorate our landscape is hard-wired into us," said Karen Joyce, the lead for computer science support. "Since we can't plant trees,

See Art on page 9



The scrap metal whale is hidden behind building 141. Roy Eglund made it as a winterover project in 1993.

"If you really want it to stand, it's got to be strong enough to stand on its own."

Risk Miller

Fox

From page 6

landscape.

"The surrounding plateau and sastrugi seemingly orders itself around the edifice. Flags, people, buildings give 'shape' to the land," Wright said. "Small topographic rises or depressions are discernable when there is a familiar object to accentuate such a feature. Without such, that subtle shape is not discernable to me."

Humans instinctually change the landscape to make more sense to them because they are uncomfortable with the vast, open spaces, Fox said. Like the primates we evolved from, people prefer "conceal and reveal terrain," with bushes and trees to hide in.

Antarctica is particularly foreign, most easily compared with science fiction settings or the surface of Mars, Fox said.

"This is still a strange place to us. This doesn't look like the African Savannah. This doesn't look like Central Park," Fox said. "We still don't have a grasp of this place emotionally."

Lead helicopter technician Sarah Krall is not convinced that is true, even after eight days together with Fox on Mt. Erebus. She feels comfortable in Antarctica and other wide-open spaces that make some people nervous or uncomfortable.

"It is a land likened to no other," Krall wrote. "It is so big, so untouched by all that makes us human. It thrills me to know it is out there. It makes me want to wander and prowl and sit and look."

Her first extended trip into the field was in 1987-88, when she spent two and a half months snowmobiling through a section of the TransAntarctic Mountains, from the Byrd to Nimrod glaciers, with two geologists and another mountaineer.

"Sometimes, hunkered down on a ridgetop, waiting while the geologists discussed their finds, I would look out at the miles and miles and miles of land and grin until my smile muscles ached," Krall wrote. "I don't have any need to change the land into landscape. It isn't just space, it IS place."

Fox also prefers working in deserts. The simplified landscape makes it easier to take apart and reconstruct how people relate to it.

"The thing is, there are no trees, so you can see everything more clearly," Fox said. "Whether it's what has shaped your life, or what is shaping the building of this community."

Fox is scheduled to fly back to the more familiar landscape of Christchurch next week, and then home to Oregon where he plans to write at least one book and several articles from his Antarctic experience. The University of Georgia Press will publish the book in 2004 and the first article may appear in Orion Magazine this year.

With his National Science Foundation Artists and Writers Grant almost at its end, Fox already realizes he will miss Antarctica. Before coming to Antarctica, Fox interviewed most living Artist and Writers grantees. All of them yearned to return to the Ice, he said.

"Part of that has to do with the landscape, but most of that has to do with being part of this family," Fox said. "It's not that it's all wine and roses here, but there is a sense of participating in creating a human landscape that I haven't experienced anyplace else."

~ hidden Art ~

Art From page 8

which we would be doing, we try to put a permanent tag on things."

Art also becomes a commentary, pointing out the humor in a situation and challenging assumptions, Rolland said. That's often the role of signs that appear around town, such as the "Wild Kudzu Mining Co. Sluice No. 2" claims sign over a ditch or the "Bungy jumping" sign at Sausage Point.

Without these outlets, the visual and psychological landscape would become maddeningly sterile, Rolland said.

The 'harsh continent' axiom applies to art as well. Unsanctioned artistic expressions often disappear after a few days or weeks, depending on how controversial they are. The bungy jumping sign was gone after a few weeks. Sometimes art is blown down or worn off by the strong winds. Other times the art is removed.

The best-known example of banished art was a metal whale made over the winter of 1993 by Roy Eglund in the

See Art on page 10

"The human instinct to decorate our landscape is hard-wired into us."
Karen Joyce

Risk Miller, left, cuts holes in pieces of metal for a contraption unveiled at the MEC Alternative Art Gallery Saturday. The hands he cut from a scrap last year are now in front of the FEMC.
Below, a krill sculpture points the direction of the wind above the sauna at Palmer Station. Mike Patterson made the krill in 1994.

Photo by Tom Cohenour/For the Sun

~ hand rail ~

A line of metal hands wave to the right of the stairs leading to the Facilities, Engineering, Maintenance and Construction building. Like many pieces of Antarctic art, they were inspired by the materials at hand. The long strip was cut from a pipe being readied to protect a communications line last year. Insulator Foreman Richard Perales set the unusual scrap aside, with the thought of making it into a totem, but never got around to it. Just before the Antarctic Outback party held in the welding shop last season he gave Risk Miller permission to make a decoration from the scrap.

"I thought, 'Well, what could I do quickly? Well, I have this stencil right here at the end of my arm,'" Miller said, holding out his hand.

Using his left hand, and other people's rights, he created the pattern of waving hands.

"It was something for me that was readily available and expressed a sense of people being here." Miller said.

After the party the Hand Rail lay in the shop for a while before finally being welded to the stanchions in the parking lot.

"The impact I got when I first got to McMurdo was 'Wow, it's so dismal. What can I do to improve that?'" Miller said. "You could start adding things to the landscape to liven it up."

Miller has many other ideas of ways to ornament the town, from letting people personalize the flags marking trails and roads, to welding metal hands to the pipes running through town.

"So there's no bushes or vegetation. You could still make a rock garden or something to make it nicer to move through the landscape," Miller said.

He'd like to hide pieces of welded art all over town, "little things that would catch your eye, here and there," he said.

Miller puts up his art to improve the community, but there's a personal payoff too. Even though he doesn't sign his work it gets noticed.

"Last year it got me a little attention from this girl I was sweet on," Miller said.

~ hidden Art ~

Art From page 9

heavy shop. It has chain ribs and a gaping mouth filled with sawteeth. For a while the sculpture stood by the Coffeehouse, until the National Science Foundation summer station manager arrived and took a disliking to it, Joyce said. A "Save the Whale" campaign kept the sculpture from being returned to the scrap metal heap, and instead it was relegated to the backside of building 141.

In an interesting twist, grantee Fox is now lobbying for the whale to be redeemed and returned to a more prominent position in town.

Artist Risk Miller also works in scrap metal and was responsible for one of the most recent art installations, hands cut from a length of scrap. He accepts the reality that the "Hand Rail" he created outside the Facilities, Engineering, Maintenance and Construction building could be removed.

"If I put something out there, I realize I run that risk," Miller said. "If you really want it to stand it's got to be strong enough to stand on its own."

Strong enough both physically and aesthetically, but Miller doesn't begrudge the artistic judgments of the authorities.

"That's those people's job. If something is offensive, that's not what this whole thing is about," Miller said. "I don't think people should just be able to put up whatever they want."

While it brings up questions about how much people are allowed to invest in the community, the transitory nature also sometimes adds to the art, making it part of station's oral tradition, Rolland said.

Some of the art is meant to be transitory anyway, like the peace sign formed on Ob Hill from people in red parkas a few weeks ago or snow sculptures near the South Pole marker. The biggest art event of the season at McMurdo, the MEC Alternative Art Gallery or MAAG, is as much a happening as a show. Now in it's fifth year, the MAAG started as spoof

See Art on page 11

A museum of murals painted by past winterovers hangs in a room at the carpentry shop at McMurdo Station, at left. The Goat Path to the carpentry shop is itself a work-in-progress, below.

"It's like the Inca trail, only shorter."
Salvatori Consalvi

~ Goat Path ~

The Goat Path started as a shortcut up the hill, from behind Facilities, Engineering, Maintenance and Construction building to the Carpentry shop. No goats were involved, but over the years people have carved steps, built rock cairns and painted a sign for it.

"It's kind of like a little spiritual path," said carpenter Galen Schlich, who walks it daily.

Old trail flags pulled from waste bins flutter along the path like Tibetan prayer flags. The wind plays music on a set of chimes Schlich made two seasons ago from electrical conduit, wire cable, copper stripping and a piece of oak.

"I wanted to build something that made sort of a little more variety of sounds," Schlich said.

He has grander plans for the path, expanding on the rock pile and creating a place to sit.

"Human beings like to pick up rocks and move them around," Bill Fox said of the four-year-old cairn.

All that will disappear soon, as the area is taken over by milvans, carpenter Mark "cmdr" Melcon said. But the trail will just develop again in another location, as it has several times before over the last seven or more years.

"I always say it's like the Inca trail," Salvatori Consalvi said, "only shorter."

~ hidden Art ~

Painters turn walls and doors of the paint barn into canvases to display their prowess. At right, a painting of a windsurfer on a tropical beach creates a diptych on the double doors. In the waste barn, a bulldozer crafted from cardboard hangs from the ceiling.

~ Working man's gallery ~

People's art reflects the materials at hand, giving each work center at McMurdo Station its own style. The older buildings have the best art, either because it has collected over time, or because nobody is as concerned with preserving newly built sterility.

At the Movement Control Center an abstracted figure cut from earplug containers hangs near the door with a gallery label: "Lend an Ear, Industrial paper and ink, Jonathan Keller, 2000, Donated by the artist on behalf of the US Hearing Protection Board." A cardboard bulldozer hangs from the ceiling of the waste barn, where cardboard farm animals and bubble-wrap aliens decorate the walls under the hungry eye of a tiger prowling a cardboard jungle scene.

"If you walk into any of the shop areas here you'll find some of the best, most interesting folk art you can imagine," Bill Fox said.

The paint barn is a mini-gallery. Andy Warhol could have done the black marker drawing of Bob Marley on an orange door. Even the heating vents are painted rainbow colors and the scrub brushes have carved wooden handles and painted heads.

The masterpiece painted on the vault-like backdoor is clearly reminiscent of early Italian renaissance portraiture. A cat and red apple sit beside the man, in his puffy-sleeved brocade shirt. Even the texture of rust and layers of paint beneath the richly colored paint give the effect of an oil painting cracked with time or a fresco painted on stucco.

Like many renaissance paintings, the artist is unknown, or known only to a few. This painting is initialed, but unlabeled, and by now the painter has left the Ice.

The carpentry shop is almost a museum, preserving painted panels they've found tearing down old buildings. Murals by past winter-overs hang high over one of the shop rooms, sporting slogans: "Which way to the beach," "Daylight come and we wanna go home," and "Way off the flagged route."

One shelf holds this year's group project, a model of a log cabin built from beef jerky. Other odds and ends hang in a hodge podge on the walls.

"A lot of it isn't even art to some people," said John "Woody" Haywood, carpenter shop foreman. "It's just weird little things they stick on the wall that attracted them at some time."

Art From page 10

of the pretentious New York City art scene. It's evolved into a highly interactive event, like Burning Man, where the audience is the show, Rolland said. One year two people in Tyvek suits lay on a canvas and passersby painted them along with the canvas. Last year blocks of ice were set out for people to chip away at or melt with torches. Last night the MAAG featured a Rube Goldberg-style contraption.

The MAAG stands out from the pre-holiday Arts and Crafts Show because it is completely not-for-sale. The lack of commercialism is another trait of the art that appears around town. It's put up free for all to see, often made of scrap and found material.

The artists don't get paid, or even remembered. Though a few paintings are signed, most of the artwork is anonymous. Often it's a shared, spontaneous effort. One person moves a few stones or places a few flags along a trail, and soon others are adding to it.

"It's like this spirit that's coming out, this collective spirit," Miller said.

In a way it's also a silent conversation. Even the most frivolous looking pieces, plastic dinosaurs and stone piles, can be fraught with meaning.

"It's complicated stuff. If you were Freud, you'd go out there and have a ball," Fox said.

There's nothing complicated about the basic philosophy behind the various installations and art pieces though. That is simple.

"Just make it a little nicer if you can," said carpenter Mark "cmdr" Melcon.

Photo courtesy of David Ainley

After the storm, an Adelie penguin is buried to its neck in snow at Cape Crozier. The ice and snow conditions have been difficult for penguins this year. At right, a wall of jumbled ice impedes the birds' migration to breeding grounds.

Photo courtesy of David Ainley

Penguins From page 1

experience a "significant reduction" because of abnormally extensive sea ice and the movement of massive icebergs, one the size of Delaware.

"Enormous Icebergs Imperil Penguins," read one headline from the Los Angeles Times last week, where it was reported the two icebergs that broke off in March of 2000, combined with sea ice, have "choked" some coastal areas.

This year emperor and Adelie penguins have had difficulty traveling to and from their breeding grounds, usually located at the sea's edge, because of ice conditions in the Ross Sea. According to Ainley the birds' normal walking speed is 0.5 miles per hour, while their swimming speed averages 4 to 5 miles per hour.

Long, difficult over-ice journeys discouraged penguins from breeding this year. Usually, the birds migrate inland to their breeding grounds from the pack ice in the eastern Ross Sea, where the female penguin lays eggs in pebble-lined nests, then travels to the sea for food while her mate incubates them. This year, the foraging parent has often returned too late, if at all, causing the incubating birds to abandon the eggs in search of food.

"Males take the first turn on the eggs, for about 12 days," said Ainley. "But now males sit and wait but the females don't return."

Their fate seemed a cruel act by Mother Nature until the mid-December storm originating on the polar plateau, blew 20 miles (32k) of ice out to sea and cleared the way for penguins. Ainley's team and other scientists were studying the birds at Cape Crozier, Cape Bird and Cape Royds when the storm hit and they witnessed the immediate effects of the removed sea ice.

"A bunch wiggled their way to the surface, but likely hundreds are still buried."

Dave Ainley, penguin researcher

"When we ventured forth, we found that the colony population had tripled and more penguins continued to stream in," wrote Ainley in an e-mail. "It appears that the big wind expanded the Ross Sea polynya sufficiently enough to encourage all these birds to show up."

The storm could have saved the colonies had it not arrived two months too late. The four-day storm that should have occurred during the early austral spring hit Ross Island one week before summer solstice on Dec. 14.

What is left of theAntarctic summer is not long enough to raise chicks before winter arrives.

"If they don't lay eggs by Nov. 20, it's too late," said Ainley.

For the penguins, Mother Nature is fickle. In many ways, the timing of the storm couldn't have been worse, as it occurred during the peak-hatching season. The winds carried away more than sea ice - it also stole eggs and chicks.

"Apparently, whenever a parent rose to switch position or give over nest duty to its partner the eggs or hatchlings departed, swept away by the wind," wrote Ainley.

About 500 adults were blown down the hillside and killed at the Cape Crozier Adelie colony. Hundreds of remaining penguins were buried in snowdrifts 5 to 15 feet (1.6 to 4.9 m) deep.

"A bunch wiggled their way to the surface, but likely hundreds are still buried," wrote Ainley.

After the storm only 2 percent of the Adelie breeding population at Cape Crozier, the sixth largest Adelie colony in the world, has chicks.

Beforehand,emperor penguins at Cape Crozier failed to produce chicks, according to Gerald Kooyman of Scripps Institution of Oceanography. The problem with the emperor colony is that the largest iceberg (called B15 based on the location from which it broke) may have bumped up against Cape Crozier during the winter, which is when they lay eggs and incubate.

"It is unclear as to the timing of the iceberg's movement in relation to the coming and going of emperors during the winter," said Paul Ponganis of the University of California in San Diego. "But the end result was that we could not find any live emperor chicks at the usual Cape Crozier emperor colony location."

The exact fate of the birds remains a puzzle.

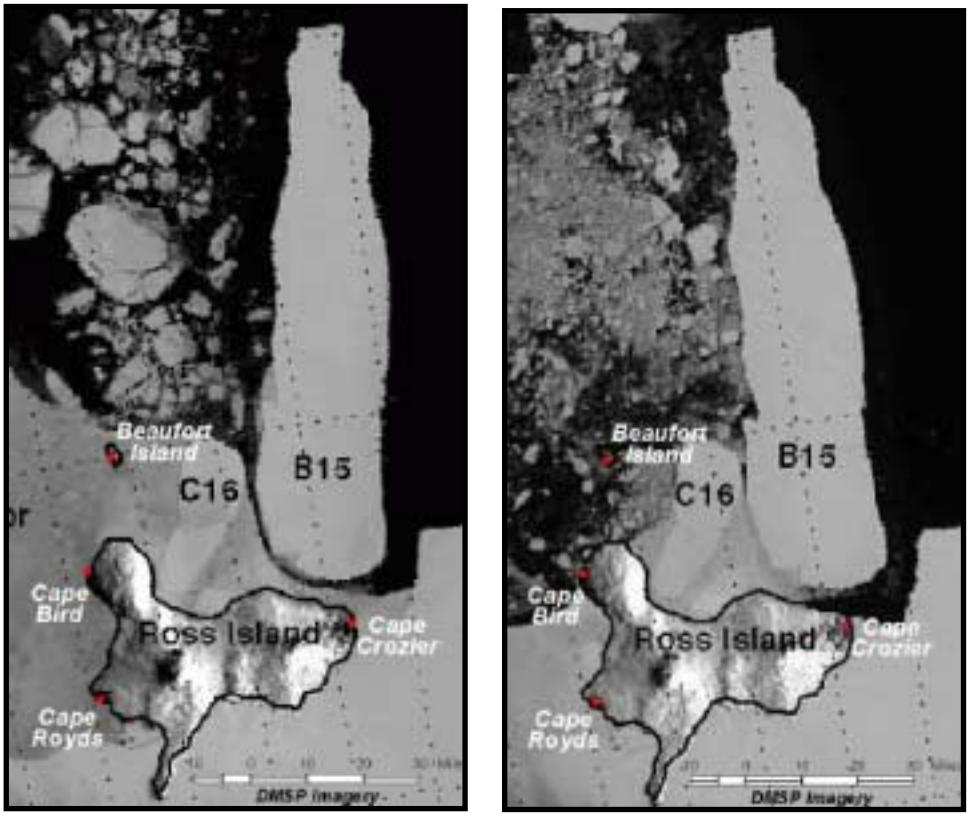
"We do not know if most of the emperors abandoned the site and left, if they were trapped there and died, or if they may have moved to another site," Ponganis said.

On the other side of Ross Island, before the four-day, mid-December storm, the

See Penguins on page 13

"There is also some argument now as to whether the sea ice is caused by B15a or that the fact that B15a didn't get blown away last winter is due to an unusually windless winter that also caused the sea ice."

Doug MacAyeal,
University of Chicago



The location of B15 in relation to the penguin colonies before the storm, left, and after.

Penguins From page 12

Adelie penguin colony at Cape Royds and the southernmost Adelie penguin colony in the world was headed for extinction. The outlook remains grim. While the storm blew out 30 to 75 km (18 to 45 miles) of ice, the population increased only slightly. The birds' journey has been shortened from a 120-km (72-mile) round-trip walk to a 60-km (36-mile) round-trip walk - still too far for an over-ice journey. If the sea ice can break up more the colony will be fine, Ainley said.

Just north of Cape Royds the wind worked miracles for the Cape Bird colony that was expected to suffer the same fate as its neighbor to the south. However, Cape Bird is located slightly farther north and closer to open water than Cape Royds. "It now takes a day for the penguins to go out and back," said Ainley. "That's their 'normal' feeding trip duration."

According to Ainley, about 30 percent of the Cape Bird breeding population has chicks, compared with 2 percent at other colonies.

The ice as a culprit

Just as penguins are a part of Antarctic ecology, so are ice movement and the constant calving of icebergs. The irony is that penguins need coastline and shores upon which they can breed; yet this terrain is provided by the retreat of ice shelf through the calving of bergs. Colonies around Ross Island are very vulnerable to ice calving and they are now living through the effects of a giant iceberg that calved-off almost two years ago.

The trouble began for the penguins in March of 2000, when the B15 iceberg broke away from the Ross Ice Shelf and eventually migrated toward Cape Crozier on the east side of Ross Island. The iceberg measures 100 miles long (160k), 22 to 32 miles wide (33-50 miles), 150 feet (46m) above water and 800 feet (246m) deep. The berg has split in two, shifted, drifted, pivoted and cracked in the last two years, and harbors the potential to block sea access to McMurdo Station.

On the west side of the island, the effects of accumulated sea further increased the isolation of the island. This year, for the second consecutive season, the sea ice in the McMurdo Sound did not break up as it usually does in the late austral spring. Usually, strong, southerly winds send newly-formed sea ice on its way and out of the area. Researchers say that perhaps the absence of the wind this year prevented the sea ice and from escaping McMurdo Sound. Others are exploring the possibility that persistence of the sea ice is caused by the B15 iceberg.

"There is also some argument now as to whether the sea ice is caused by B15a or that the fact that B15a didn't get blown away last winter is due to an unusually windless winter that also caused the sea ice," wrote Doug MacAyeal of the University of Chicago, in an e-mail.

Along with the annual breakup of the sea ice comes the U.S. Coast Guard vessel, the *Polar Star*, an icebreaker used to cut a channel through remaining ice to allow safe passage of re-supply ships. However, this year the NSF has contracted two icebreakers to clear a path in the extra-thick ice. The breakers helped the Cape Royds birds by collapsing the integrity of the ice, which created enough cracks to allow open water to reach the colony when strong winds blew the ice out on Wednesday and Thursday.

"The breaker cuts a swath down the middle about 100 yards wide," said Ainley. "The ice becomes two big ice sheets that can break apart.

Meanwhile, researchers at Cape Bird and Crozier will use radio telemetry to track the birds and find out where penguins are feeding. They will track their progress during the coming years and study as much of the penguin colonies as possible.

According to the NSF, "The penguins response to the icebergs likely will provide major new insights into the biology,

Profile

In tune with the Ice

Zimmerman is 1 cup folk, 2 T funky

By Mark Sabbatini
Sun staff

When David Zimmerman started writing songs, he quickly figured out how to tell if they were reaching an appreciative audience.

"I would write nothing but funny songs because you can tell instantly if people like funny songs," he said.

The tactic seems to have worked for Zimmerman, a waste equipment operator at McMurdo Station, with those who have heard his acoustic-oriented work often referring to his sense of humor. But the guitarist has also expanded into more serious topics during performances on the Ice, while working as a sailor on replicas of historic East Coast ships and on an album he's released.

"The way I describe what type of music I play is one cup raw folk and two tablespoons funky," he said.

Zimmerman drew a sizeable crowd during a largely humor-oriented Christmas show at McMurdo this year with one of his older brothers, Robert, who helped teach David to play guitar and played a large role in his decision to work in Antarctica. The older Zimmerman worked in waste operations before David came down three years ago to work as an insulator's helper. But during his free time David often helped his brother and others at the waste plant.

"Everybody up there seemed like they were real cool," he said. "It seemed like a fun place to work."

So after a year at the South Pole and another off the Ice, Zimmerman took a job there this season. He said his work is largely driving a loader and emptying full trash bins around the station. The work has some fringe benefits beyond the company of his co-workers.

"You find lots of cool stuff in the trash," he said. "If you wonder why the skua shack is kind of barren it's because we all get a chance to go through it first."

Among the more memorable items, Zimmerman said, are pieces of wood painted to look like Greek pillars, "an entire wardrobe" of clothes, unused blue and yellow x-ray film that has a stained glass effect when placed on windows, and various materials he uses to make sculptures.

He also worked in waste operations during his season at the Amundsen-Scott South Pole Station, but said he prefers McMurdo because it's easier to find places to play music. Most Pole workers are housed in communal Jamesways, where playing guitar can be disruptive to those trying to sleep or seeking some quiet.

"If you're going to play for yourself you've got to go into a lounge and nine times out of 10 someone's watching a movie," Zimmerman said.

He has played various musical instruments since the age of 4, but said he's more likely to simply play for fun for an hour rather than follow any structured routine.

"I was never a big fan of practicing," he said.

Zimmerman grew up on Long Island and at the age of 6 moved with his family to Woodstock, N.Y., where he still keeps his stuff even if he doesn't live there full-time. His mother signed him up for violin lessons early in his childhood and then he took several years of piano lessons - which he said he enjoyed more - starting at age 10.

At about the same time he started volunteering with his father for the Hudson River Sloop Clearwater. The Clearwater vessel, started by folk star Pete Seeger and now in its 32th year of operation, teaches history, biology, environmental science and navigation to about 20,000 people a year. Zimmerman's mother saw an ad for it when he was 8.

"She dragged all of us kids kicking and screaming," Zimmerman said. "There was a bunch of hippies playing folk music."

But he said that experience was how he and his two older brothers started playing guitar. He also spent years working on the Clearwater, first as a volunteer and then in a variety of paid positions all the way up to first mate, and a number of other traditionally rigged vessels along the East Coast.

"It's just really fun to move something that big with just the wind," he said.

Zimmerman got his first guitar for Christmas when he was 14. He learned to perform with others between deckhand shifts on the Clearwater, often struggling to gain appreciation from an audience that consisted of junior high school students on field trips.

"We played for the kids and that's the best way to feel comfortable in front of an audience…it certainly can't get any worse than that," he said.

The next step was songwriting and humor was the easiest genre at the beginning. It made an impression on Andy White, a pipefitter apprentice at McMurdo who met Zimmerman during his first season on the Ice. White said one of the "hysterically funny" songs he remembers hearing was one called "Storm Trooper Commander."

"I thought it was the funniest thing ever," White said. "The entire 'Star Wars' movie is included in the song. It's about what a schlep job being a storm trooper is."

Photo by Mark Sabbatini/The Antarctic Sun

David Zimmerman and his faithful guitar.

Parodies of Antarctic life were a large part of the Christmas shows Zimmerman performed during his first year on the Ice and again this season, both times with his brother. He said this year they played songs one or the other had written previously - and together wrote about five more the week before the show - with material about the Ice coming naturally.

"It's a lot easier because everybody has to deal with the same stuff," he said.

A sample of such work is found on his 1999 album "Just a Little Something," where he spends "Another Night in Christchurch, N.Z." lamenting the mounting number of mishaps on the transport plane that keep him from getting to his job on the Ice. Other songs profile the life of a "Mean Nasty Bowling Guy," talk about English being the "Language of Land Mines" and feature him getting turned down in embarrassing fashion by a "Kiwi Girl."

Zimmerman said friends helped him find an inexpensive studio and provided assistance with artwork for the album, and so far he's sold about half of the 1,000 CDs produced. He said he's planning another recording project after this season, possibly adding a percussionist to the guitar and vocals that make up his first effort.

White, a sculpting artist who helped design the cover of Zimmerman's album, said it was surprising to find such artistic and humorous instincts in Zimmerman, since during his first season he often sat quietly alone during break times.

"He wouldn't talk much, (but) the whole time he was writing songs, the entire season," White said. "Occasionally he'd ask you for a rhyming word, like 'what rhymes with lasagna.'"

Songs from David Zimmerman's album "Just a Little Something" can be heard this week at The Antarctic Sun's Web site at www.polar.org/antsun.