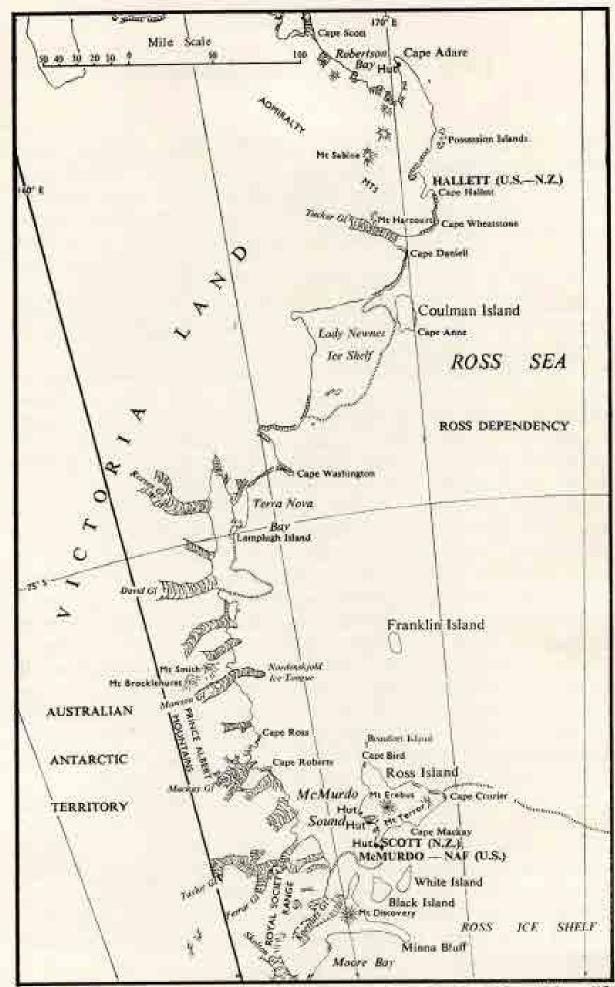
ANTARCTICA, SOUTHERN OCEAN, ROSS SEA, VICTORIA LAND, TRANSANTARCTIC MOUNTAINS, ROSS ICE SHELF, MCMURDO SOUND, TERRA NOVA BAY



BOUNDING BOX

Coordinates System *EPSG:4326* WGS 84 -- WGS84 - World Geodetic System 1984, used in GPS https://epsg.io/4326

> POLYGON((152.93 -65.83, 152.93 -82.89, 188.36 -82.89, 188.36 -65.83, 152.93 -65.83

WELL-KNOWN TEXT (WKT) STRING

ICE NOMENCLATURE.

SIR CLEMENTS R. MARKHAM, K.C.B. F.R.S., AND HUGH ROBERT MILL, D.Sc. LL.D.

www.com.com

Ablation.—Surface waste of ice or snow by melting or evaporation.

Anchor Ice = ground-ice.

Aser.—Ridges of stone or gravel believed to have been formed by glacial action. See Esker.

Avalanche.—A mass of snow, névé, or ice detached from its position, and slipping down a slope.

Barrier .- See Ice Cliff or Barrier.

Bay Floe .- A floe newly formed.

ANTARC

ich first forms on the surface of the sea in autumn. ung ice

vasse usually found at the line where a glacier touches in slope.

en closely surrounded by ice.

Bight .-- An indentation in a floe of ice (like a bay).

MANY WA

IGE BLINK.—A peculiar brightness along the horizon, which shows itself over take to field. The blink over large quantities of ice and over land is y is a blue streak on the horizon, denoting open water.

WATER The open ation of boring through ice consists of entering it under press of sail or steam, and forcing the ship through by separating the masses.

Boulder Clay. -See Till.

OF NAMI

co.—mall fragments and nodules, the wreck of other kinds of ice.

of ice lying under a floe near its margin, and, when disengaged from the nor doe, rising with violence to the surface.

Calving (of icebergs).—When a large or small block of ice breaks off from a parent ice-

berg. The word may also be applied to an iceberg breaking off from a glacier. cliff in which some glaciers or ice sheets terminate

DEFINING

by the sea. cier or ice-sheet.

in, inclusive of superficial detrital materials, coarse or fine, deposited by water, ice, or wind-more commonly the former.

Drift Ice .- Pieces smaller than a floc-

REPRESE

ICE

sand formed by glacial action.

y "erratics.' Portions of rocks, usually iceice from their original position.

Exters.—Long mounds or ridges, sometimes resembling moraines, or even railway embankments in general aspect, composed mostly of gravel, with more or less stratification, the layers often having some relation to the outer surface. Field Is — Is-field.—A sheet of ice of such extent that its termination cannot be seen from the cove's nest.

from the crow's nest.

Fig. — The same as a field, except that its extent can be made out from the crow's nest.

Fig. — The same as a field, except that its extent can be made out from the crow's nest.

Floeberg — Large masses of sea ico, broken off from ancient floes of great thickness, when they are forced upon the shore.

Gladation. — The action of a glacier or ice-sheet on the rocks or the country over which it has passed.

—A river of solid ice, descending from its source in the high neve of a snowfield.

Glacier.—A care on some use, quescending from its source in the high nevé of a snowfield.

Glacier.—A care containing ice all the year round.

Glacier.table.—A block of stone supported on a pedestal of ice on the surface of a glacier.

Ground Ice.—Ice formed on the bed of a river, lake, or shallow sea, while the water as a whole remains unfrozen.

Ground Moraine.—Term applied to detrital material travelling—sometimes, perhaps, accumulated—between a glacier or ice-sheet and the bed of rock below.

Hele.—A small pool of water in the ice.

Hummock,-A rough hillock of ice, whether formed by seraes, pressure ridges, or other-

wise.

Iceberg.—A mass of land ice, broken from a glacier and floating in the sea.

Ice Blink.—The whitish glare in the sky over ice which is too far distant to be visible See Blink.

Ice Block,-Dam formed across a river by the packing of masses of ice in spring

Ice Cap .-- A continuous covering of ice, névé, or snow, such as occ

Ice Cliff or Barrier.—The edge of the great Antarctic glaciers which enter the sea, but remain attached to the land.

Ice Fall .-- An interruption in a glacier caused by an abrupt change of slope in its bed. Ice Floe.—See Floe.

Ice Pice.—See Pice.

10e Picet along a coast is caused by the accumulation of the autumn snow-full as it drifts to the beach, being met by sea-water with a temperature just below the drifts to the beach, being met by sea-water withed into the proming a solid wall from the bottom of the sex, constantly as such sections of the sex produced by the product of the prod

Inland Ice.—An ice cap of very great extent, as in Greenland.

Kame.—A gravel ridge, similar to, or identical with an Eaker (which see).

Land Ice.—Ice attached to the land, either in flees or in heavy groundenear the shore.

near the snore.

Lane.—A narrow track of open water between portions of pack ice or floes.

Lateral Moraine.—A ridge of rock debris along the side of a glacier.

Lend.—A lane or channel of open water through the ice.

Medial Moraina.—A ridge of rock debris running more or less along the middle line of a glacier.

as gaster.

Moulin (or Glacier Mill).—A vertical hole through the ice of a glacier down which a stream of water pours.

stream of water pours.

Névé = fira.—The upper portion of a glacier, the top layers of which are more nearly in the condition of snow, and in the whole of which much air is mingled with the ice—i.e. it is rather frozen snow, though often hard frozen, than true ice.

Nip.—The situation of a ship when forcibly pressed by ice on both sides. She is then said to be nipped.

THE ANTARCTIC MANUAL.

Nunatak.—A rocky hill, generally glaciated, projecting from an ice sheet, or from an inland ice.

k.—A body of drift ice consisting of separate pieces, and the extent of which cannot be seen.

Pack.—A body of drift ice consisting of separate pieces, and the extent of which cannot be seen.

Orax Pack.—When the pieces do not touch.

Close Face.—When the pieces are pressed together.

Pack Ice.—The broken ice of f

cake Ice consists of small circular pieces with raised edges. In a ruffled sea the pieces of bay ice strike each other on every side, and so become rounded with the edges turned up.

ch.—A collection of drift ice, the limits of which are visible, in contradistinction_to reach ice.

Pelagic.—Pertaining to the open ocean; removed from land influences.

**ensentes = Seraes on Andes glaciers.

Penknife Ice.—Described by Parry in his attempt to go north from Spitzbergen in 1827.

In drained-off pools on the ice a columnar attracture is left, the columns being 6 inches high, increasing in July to 18 in-hes. When stratification of now covering a fine is exposed by a novily-stemed crack, the lower portion granulates, the genus collecting together perpendicularly and testing intermediate air spaces. This Parry called penkulic toc.

Perched Blocks.—Boulders, usually glaciated, perched on other stones, as a result of ice

action.

Regelation.—The freezing together of portions of ice which have been broken up.

Bothe moutonnee.—A boulder or portion of rock which has been rounded and sm
by glaciation.

wy gracussom.

Rotten Ice.—Old ice, partially melted, and in part honeycombed.

Sailing Ice.—Ice of which the pieces are so separated as to allow of a ship sailing among them. Sallying a ship. Causing her to roll by the men running in a body from side to side, so as to relieve her from adhesion of young ice around her.

Serace—Sharp irregular ridges or pinnacles of ice, formed in a glacier where there is a sudden change in the slope of the best too slight to produce an ice-fall.
Shearing Plane (the usual sense of the worl).—A plane along which the particles on either side undergo a displacement parallel with it.

Sludge Ice.—Small pieces of brash ice saturated by the salt water. Snout (of glacier).—The lower extremity of a glacier.

Saout (of glacies).—The lower extremity of a glacier.

Saout Line.—The line representing the level above which snow, not exceptionally protected, remains unmelted throughout the year.

Striam.—A drifting line of loose ise.

Striam.—Scratches made by hits of grit frezen in ice on rock surfaces, smoothed by ice.

Striam.—Scratches made by hits of grit frezen in ice on rock surfaces, smoothed by ice.

Trill.—Some authors restrict the term i'll to material containing more or less angular material derived from the neighboring valley system, splying boulder clay to that where the materials are derived from more various quarters and more often rounded—others use the terms as synonymous.

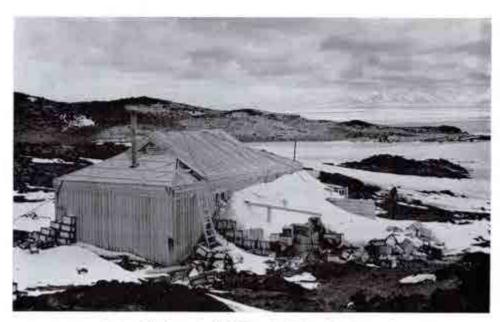
Tounded—others use the terms as synonymous.

Forgue.—A mass of ice projecting under water from a floe or an iceberg, and generally distinguishable at a considerable depth in smooth water. It differs from a calf in being fixed to and forming part of the larger body.

Water Sky.—The dark appearance of the sky over open water, seen from a distance, in the ice.

Young Ice.—Nearly the same as buy ice; but applied to ice more recently formed.

PERMANENT SNOW AND ICE FEATURES	COMPILATION			DRAFTING	
	Symbol	Specifications	Symbol	Specifications	
Glacier, approximate contours		.02 .006 .11 .08 .02 .03 .51 .08 .02 .02 .1	2005	.08 2.03 .006 2.03 .005 .51 .00 .005 .51 .00 .005	
Glacier, form lines		.08	5	2.08	
Glacial moraine		HAND DRAFT DOTS (005	MAND DRAFT DOTS	
Glacial outwash	Outwash	FRESHAND LETTERS	ing	STIC-PAT 188	
Snow-ice contour	5000	.13	5000	.000	
Snow-ice supplementary contour	2500	.005	5500	.000	
Snow-ice form lines	- //////	.1520 3.81-5.09 .005		.1520 2.81-5.08	
Limits of snowfield or icefield		51.02		.08 2.03 .15	
Snow-ice hachures	0 0		0 0		
Ice cliff	- marine	.51 -005.1 .02 2.03 .51.02 -005.1 .08 .02 .15		2.03 .51.02 7 .000	
Surrounding limits of nunataks, ice, glaciers and similar features	-	.51 .02 2.03 .08		2.03	



9 Cape Royds area in 1957. Penguin Rookery in background.



10 Interior of Cape Royds hur, 1957.













STARTING A
COLLECTION AND
BIBLIOGRAPHY
FOR
ANTARCTICA
(ON BASIC NEEDS
AND RIGHTS)

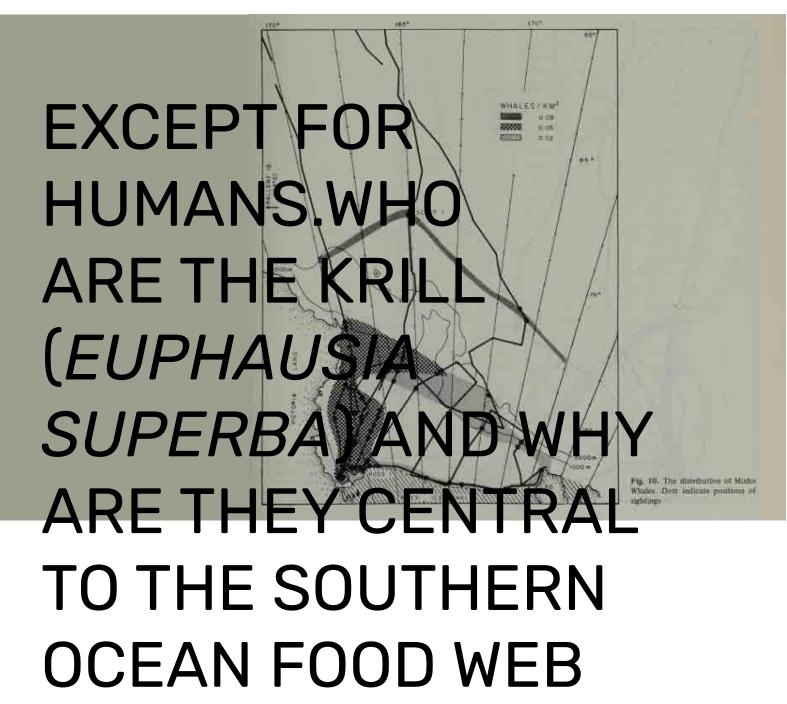
IS IT POSSIBLE TO GROW FOOD



1982 image of a Davis Station hydroponics facility (Australian Antarctic Division)



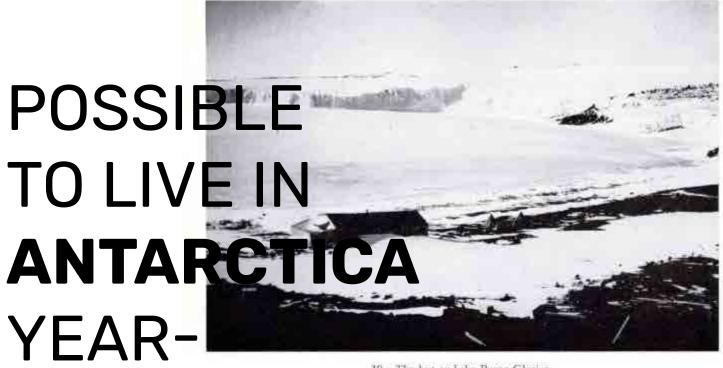
SCAR Symposium on Antarctic Biology Antarctic (1983) Nutrient cycles and food webs





The importance of Antarctic krill in biogeochemical cycles

<u>Gambling with Krill Fisheries in the Antarctic: Large uncertainties equate</u> <u>with high risks</u>



19 The hut and the Barne Glacier.

ROUND?

AN EARLY ATTEMPT



20 The Cape Evans hut in 1959.

October 1974

Civil Engineering Laboratory

Naval Construction Battalion Center
Port Hueneme, California 93043



CEL Techdata Sheet



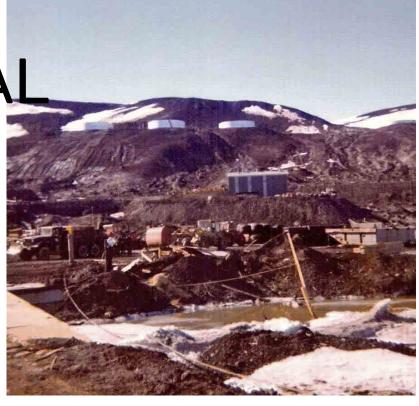
SNOW-COMPACTION EQUIPMENT-SNOW DRAGS



UNAVOIDABLE. HANDLING WASTE AND

1975 image of the McMurdo Station incinerator

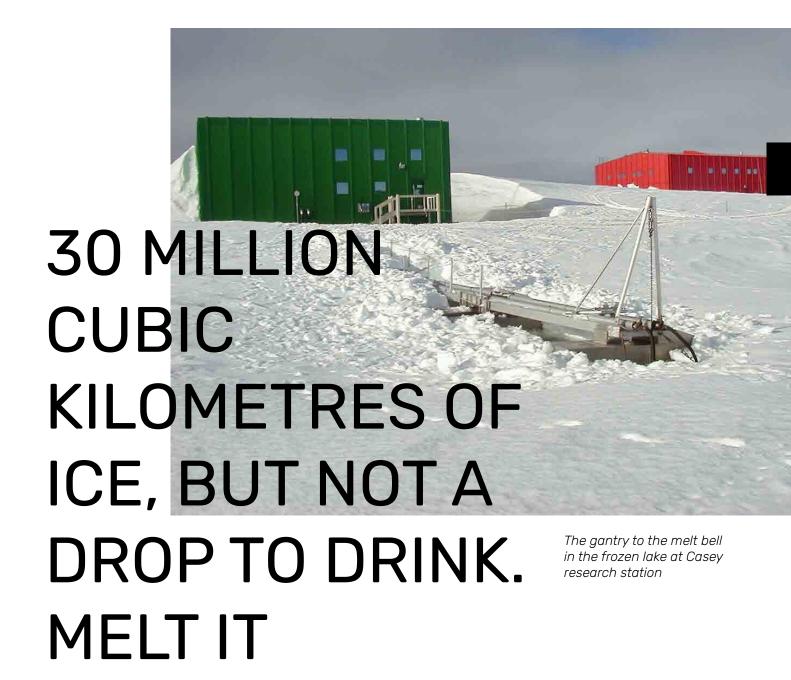




NO MORE ENERGY SHORTAGE. RENEWABLE ENERGY CAN BE DEPLOYED WIDELY





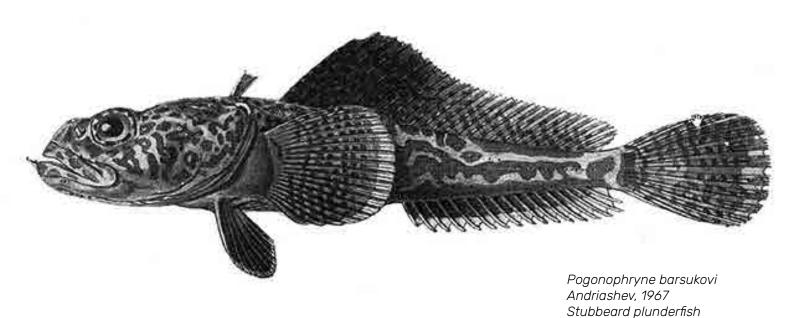


A SIMPLE QUERY TO THE ANTARCTIC PLANT DATABASE

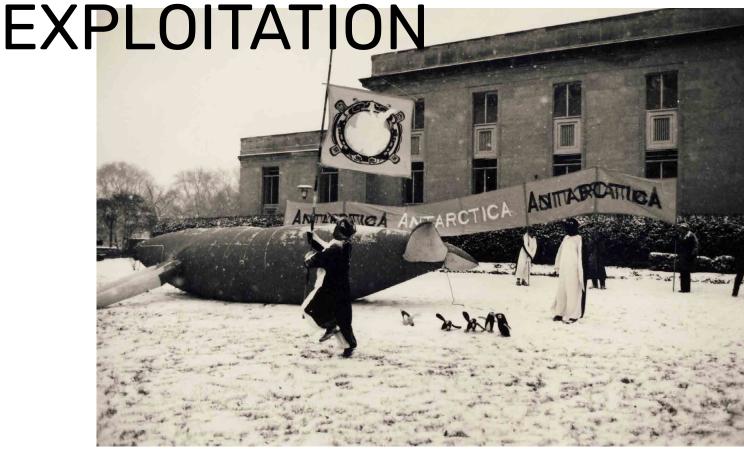


THE RED LIST. **ENDANGERED** SPECIES POPULATIONS



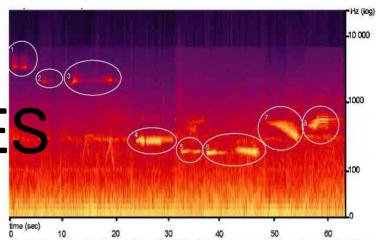


MORE THAN A CENTURY OF MARINE



NO LONGER IN SILENCE. ANTHROPOGENIC NOISE AMONG

ACOUSTIC PRESENCES



Leopard seal calls in the acoustic spectogram

THE ANTARCTIC DICTIONARY



WITH NO

INDIGENOUS

POPULATION

LANDSCAPE

LANGUAGE V IMPORTED

aaaa, aaaaah, aaahh See ahhh

Adelaite

[From Queen Adelaide Island, sighted by British sea captain and naviga-tor John Biscoe in February 1832 and named after Queen Adelaide, wife of William IV.]

An occupant of the British Adelaide Island base, off the west coast of the Antarctic Peninsula, which was opened in 1961 and closed in 1977, except for occa-sional use. It was transferred to Chile in the 1982–83 summer, and is now the station Tenjente Luis Carvaial Villarroel, generally known as Carvajal.

1967 British Antarctic Survey Newsletter 5 (Aug): 5. He and John enjoyed the hospitality at Adelaide, which they repaid by dog driving tips, and by John taking some "Ade-laites" on a trip northwards.

Adelian

|French explorer jules Sébastien César Dumont d'Urville sighted part of continental Antarctica on his voyage in the Astrolabe in 1840, and named it Terre Adélie (Adélie Land) after his wife Adéle-Dorothée.]

past or present occupant of Adélie Land.

915 Maw ory of the

IDS Mawson. Sir Douglas The home of the blizzant: being the stop of the Australasian Antarctic Expedition, 1911–1914 William elienmann, London, vol II: 251. The Adelians, if that may be used as a distinctive title, sat on the garm deck and read letters and papers in voraclous had, with snatches of the latest intelligence from the Mac-quarie Islanders and the ship's officers.

adelie penguin noun phr. and attrib. Occas. adelie land penguin, and often shortened to adelie. The French accent in adélie is often used in English.

The scientific name adeliae was given by French surgeon Jacques-Bernard Hombron and naturalist H, Jacquinot (Ann. Sci. Nat. Sci. 2, vol. xvi (1841) 320 to a bind of penguin first seen in Adélie Land. Terre Adélie was so called after the wife of Dumont d'Urville: see Adelian.

The 1879 quotation is interesting because it suggests that the penguin did

The black and white penguin Pygoscells adeliae (fam. Spheniscidae) the only nenguin with a distinctive white ling arout dits even it is niches about 70 cm (2 ft line in height. Ad breits on the antarctic continental e antarctic converand has also been

[1879 Moseley, H.N. Notes by a naturalist on the 'Challenger' Macmillan and Co, London: 254.

Penguins were common at the edge of the ice. They pro-gressed through the water like Rock-hoppers, and probably were the Eudyptes Adeliæ of Ross's Expedition, since they had

black heads; we could not catch any, though we tried to get some which were on an ice-block; they seemed shy,] 1900 Cook, Frederick A. Through the first Antarctic night 1898– 1899 William Heinemann Ltd, UK: 423.

The birds which were constantly present upon the ice-pack are .. the Adelia land penguin (Pygosulis Isici adeliae).

1901 Bernacchi, Louis To the South Polar regions Hurst and Blackett Ltd, London: 314.

lackett Ltd, London: 31-1.
Adélie Land Penguin (Pygoscelis adeliæ): the smaller blunt-billed, black-headed species found in immense rookeries on Victoria Land and Adélie Land, as well as in the area around Louis Philippe and Graham Lands. Length, 30 inches; weight,

Louis Philippe and Graham Lands. Length, 30 inches; weight, about 12 lbs.

24 Feb 1903 Wilson, Edward in Roberts. Brian. ed. (1967) Edward Wilson's birds of the Antarctic New Orchard Editions. Poole (Dorsell: 18.

Only an occasional Adelie Penguin has paid us a visit.

1904 The Cantretury Times Annual The Canterbury Times, Christchurch, I Oct. 1241.

(captionl Egg of Adeliæ Penguin.

1905 Bulletin of the British Ornithologists' Club XV(CXIV): 58.

The following Lantern-slides were then exhibited:- By Mr. W. Eagle Clarke, a series of very fine slides taken by the Scottish National Antarctic Expedition in the South Orkneys and at Gough Island. The subjects were as follows:- I. Rookery and nesting-habits of the Adelie Penguin (Pygoscelis adeliæ) [etc.].

1914 Priestley, Raymond E. (1974) Antarctic adventure: Scott's northern party T. Fisher Unwin, London, repr. Melbourne University Press: 56.

Penguin and seal have all the good qualities of mutton and

Penguin and seal have all the good qualities of mutton and beef, and the flavour of Adélie penguin is equal to that of

1921 Ponting, Herbert George The great white South Duckworth London: 246.

Adelle penguins' eggs are about the size of a goose's; they are either white, or of the same shade as a duck's, but have are either white, o'ed the same shade as a duck's, but have much coarser shells. They are excellent to eat: the white being semi-transparent and gelatinous, and they olk delicate of flavour. Two eggs are laid, with an interval of three or four days between. They are laid on the bare stones which form the nest, and are kept warm during the process of incubation by being enveloped in a deep crease in the thick, downy feathers of the lower abdomen. This crease permits of the eggs coming into close contact with the skin. The eggs are frequently turned, so that warmth can be applied equally. 1923 (South Orkneys) Brown, R.N. Rudmose A naturalist at the poles: The life, work & voyages of Dr. W.S. Bruce the polar explorer Sceley, Service & Co, London: 127.

Sheathbills and skuas were nesting as well as ... adelia penguins. To take adelial eggs it is necessary to lift the struggling bird from the nest.

1950 Admiral Lord Mountevans The desolate Antarctic Lutterorth Press, London: 33.

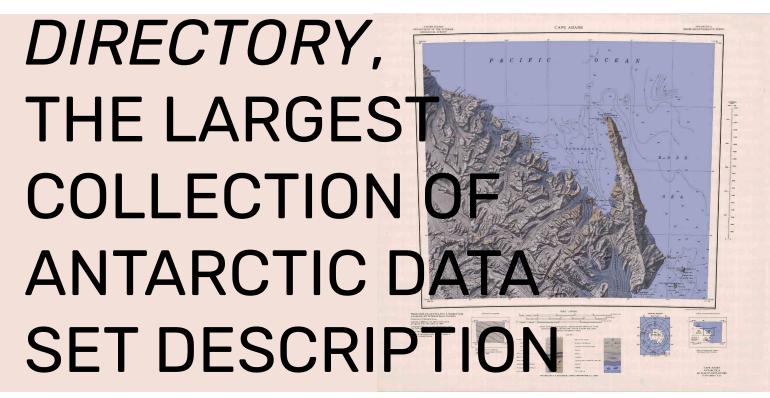
worth Press, London: 33.

Of all the different penguin species, the Adélie Land Penguin is the most numerous and the most amusing to watch. From the explorer's point of view or taste he is the most appetising: properly prepared and thoroughly well cleaned from all traces of blubber the Adélie penguin tastes quite like hare, and is much improved by red currant jelly!



Bernadette Hince (2000) The Antarctic Dictionary: A Complete Guide to Antarctic English

STORE KNOWLEDGE: THE ANTARCTIC METADATA







The Scientific Committee on Antarctic Research

U.S. Antarctic Research Center: Topographic Maps (250K)

DIGITAL BATHYMETRIC

MODE Consistence of an analysis of the latest and t INTERNATIONAL BATHYMETRIC CHART OF THE SOUTHERN OCEAN (IBCSO)

According to the control of the cont





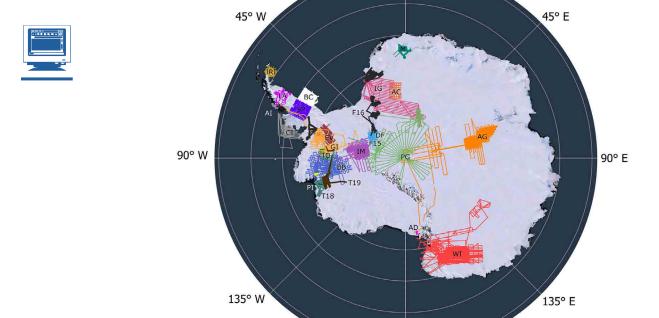






(2016 - 2020) LAND COVER CLASSIFICATION ACROSS MCMURDO DRY VALLEYS

A DIGITAL SURFACE MODEL (DSM) OF ANTARCTICA AT 2-METER SPATIAL RESOLUTION

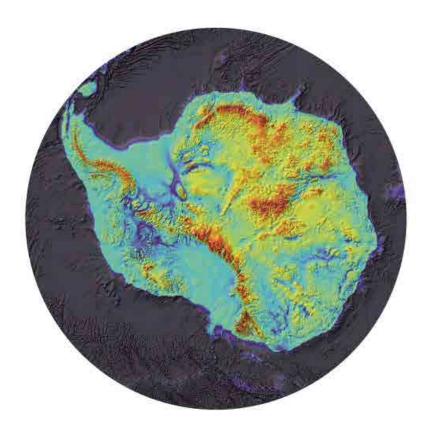


180°

Spatial coverage of the published geophysical database by British Antarctic Survey

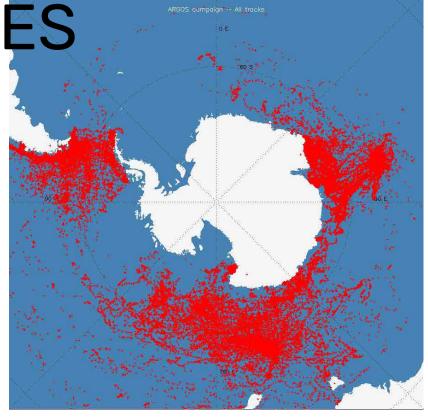
1000 km

HOW THICK IS THE ICE? WHAT'S UNDER THE ICE?

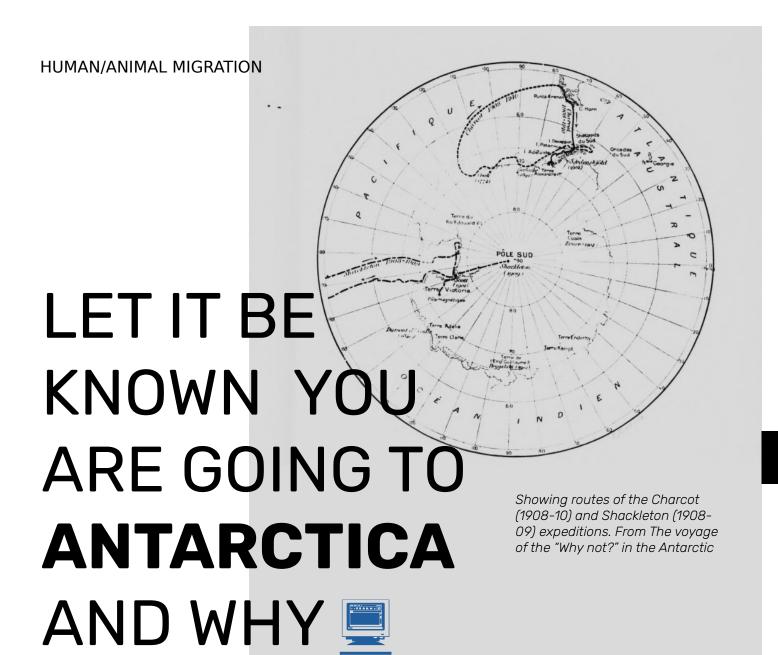


BIRDS AND MAMMALS OBSERVED FROM SATELLITES





Map of tracked animals by ARGOS systems at May 2010 (Australian Antarctic Data Centre)



71° 18′ 00.0″ S 160° 10′ 00.0″ E

Allegro Valley

This name originates from New Zealand.

A steep-sided, glacier-filled valley indenting the E side of Daniels Range just N of White Spur, in the Usarp Mountains. The northern party of the NZGSAE, 1963-64, experienced fine weather here after several days of unpleasant travel; therefore, members named it after Milton's poem "L'Allegro" in antithesis with Penseroso Bluff, 14 mi to the north.

39,142 NAMES THAT CORRESPOND TO 20,125 FEATURES, 22 COUNTRIES PARTICIPATING. APPLY TO PLACE NAMING 💻

POLITICAL ECOLOGY

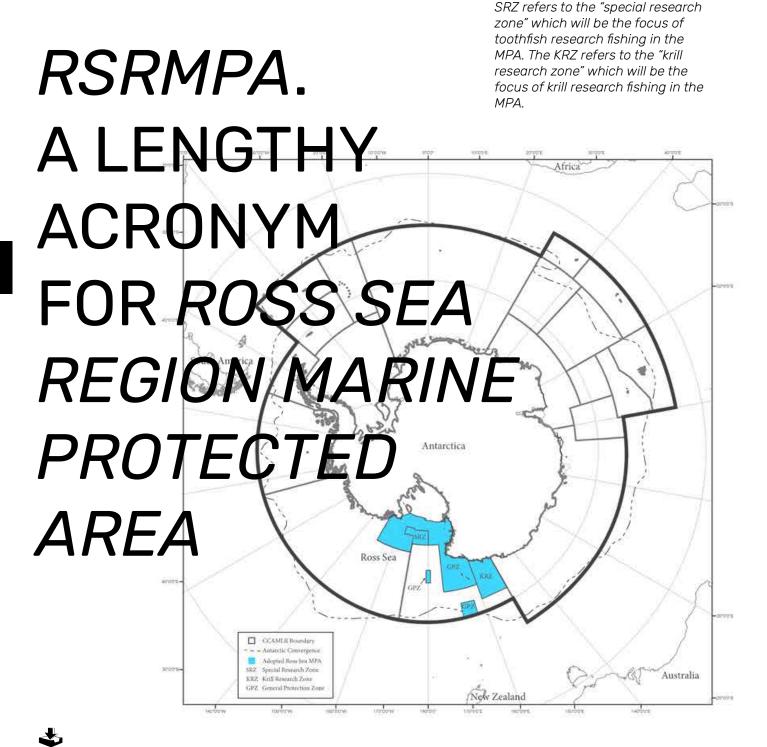
Polyamide fabric marker flags used in Antarctica. Before being placed outside and after they were retrieved



MICROPLASTICS ARE FOUND IN FRESH **ANTARCTIC SNOW** AND PLASTIC DEBRIS FLOAT IN THE SOUTHERN OCEAN 📮



Marine plastic pollution in the polar south: Responses from Antarctic Treaty System



The GPZ refers to the "general protection zone" in which no commercial fishing is allowed. The

The Ross Sea, Antarctica: A highly protected MPA in international waters

91-05 (2016)

Ross Sea region marine protected area; Conservation Measure

THE VISITOR GUIDELINES LIBRARY UNDER THE ANTARCTIC TREATY



ECHO Antarctica camp, by White Desert

71°32′47″ S 8°50′11″ E



The IIATO visitor guidelines library

<u>High Resolution Spatial Mapping of Human Footprint across</u>
<u>Antarctica and Its Implications for the Strategic Conservation of Avifauna</u>

BEATING
NEW PATHS.
TRAMPLING
AND GROUND
DISTURBANCES
ON ANTARCTIC
SOILS



OIL AND MINERALS DEVELOPMENT. POTENTIAL







<u>The Antarctic Environment and Potential Impacts From Oil</u> <u>and Minerals Development</u>

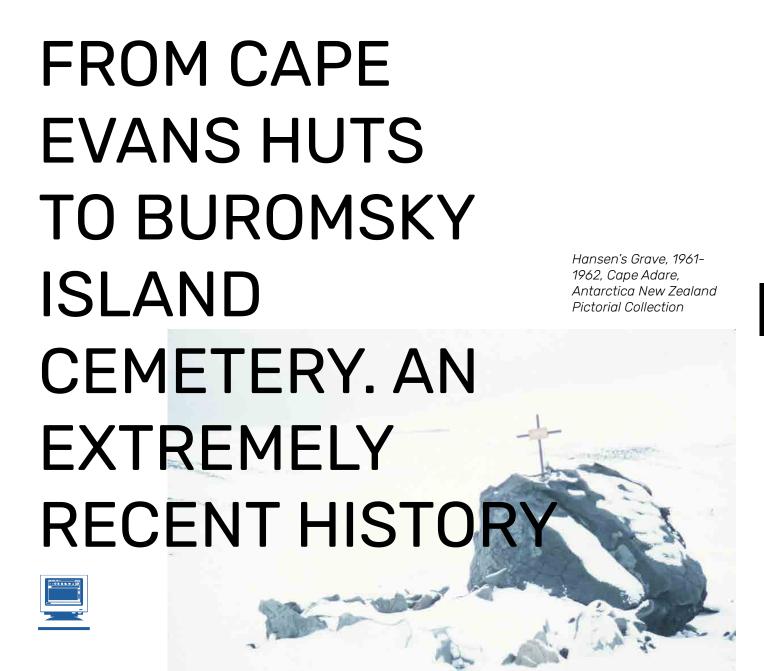
<u>Antarctic mineral resources: Looking to the future of the Environmental Protocol</u>

POLITICAL ECOLOGY



Overview map showing possible cable routes between New Zealand and Antarctica

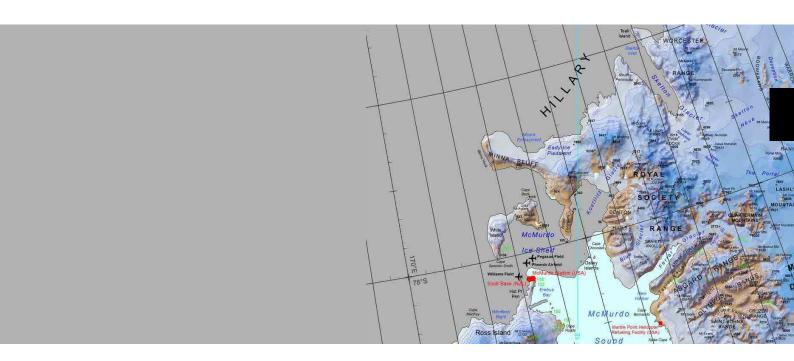








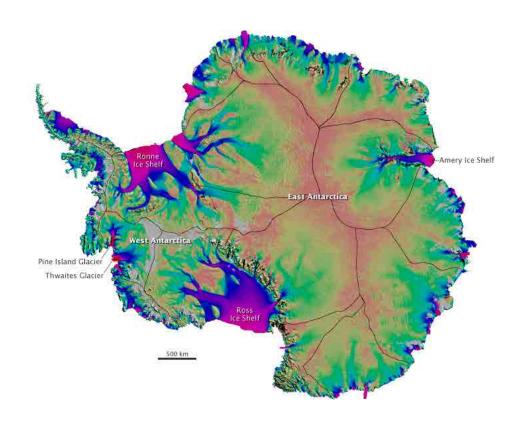
AIR OPERATION PLANNING



Ross Ice Shelf, Polar Geospatial Center (United States of America), Air Operations Planning Maps List, 2016

A CONSTANTLY SHIFTING COASTLINE

Ice Movement 1996-2006, speed (m/years)





High resolution vector polylines of the Antarctic coastline - VERSION 7.6 (2022)

High resolution vector polygon sea mask for areas south of 60S - VERSION 7.6 (2022)

- VERSION 7.5 (2021)
- VERSION 7.4 (2021)
- VERSION 7.3 (2020)
- VERSION 7.2 (2020)

THE ANTARCTIC ICEBERG TRACKING DATABASE



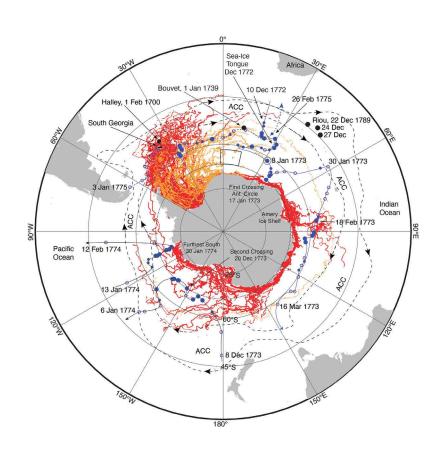


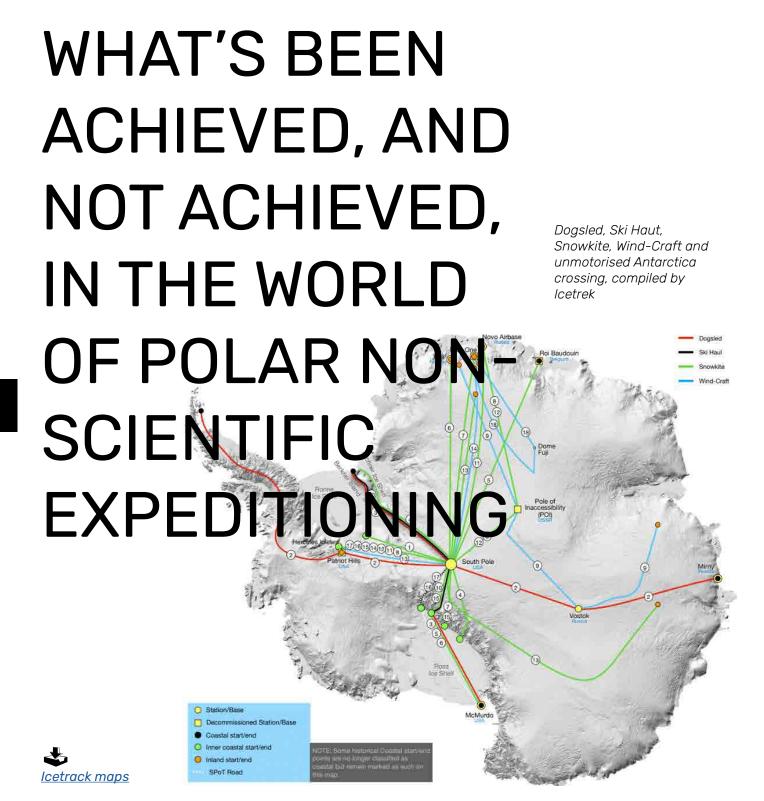


Antarctic icebergs still exist today where 1700-era sailors spotted, tracked them



Comparison of Antarctic iceberg observations by Cook in 1772–75, Halley in 1700, Bouvet in 1739 and Riou in 1789 with modern data





RATE ANTARTIC EXPERIENCES ON TRIP ADVISOR / GOING THERE

WITH AIRBNB

Antarctic Sabbatical volunteer at Union Glacier Camp



ANTARCTICA, DRAW THE BOUNDING BOX ON A MAP

ANTARCTICA. BUII D YOUR OWN MENTAL IMAGE OF THE EMPTY PLACE USING SATELLITE IMAGES AND CRITICALLY ANALYSING THE DOCUMENTATION IN THE DOSSIER

ANTARCTICA. PLOT A ROUTE THAT CONNECTS PLACES AND STORIFS BY REPRESENTING THEIR PHYSICAL AND SOCIAL GEOGRAPHY

ANTARCTICA, PUBLISH THE TRACK TO THE WEB USING MAPBOX STUDIO

ANTARCTICA, CREATE A PRINTABI F SYNTHESIS MAP WHERE YOU TELL AND REPRESENT THE STORY/ STORIES ALONG YOUR JOURNEY

ANTARCTICA. DON'T FORGET THE RITUAL AND WHO TAKES PART IN IT. THAT'S WHY YOUR MAP IS WRONG. THE MAP IS NOT THE TERRITORY. BUT BY THEN, YOU WILL HAVE LEARNED A PROCESS.