

Chapter 3



Layer descriptions

Introduction

The summary descriptions of the different layers in the Antarctic digital database are arranged alphabetically according to the layer name. Each layer description is organized into three parts:

- ❑ The **layer name, coverage file name** (includes a two-digit number to indicate the scale at which these data are available) and **feature class** (point, line or polygon).
- ❑ **Items, codes and values** which list the attribute names, feature code (ADD code), brief definitions of the features in the layer, and the equivalent SCAR code. Note that the features listed appear on Antarctic maps in general but not all of them are present in ADD Version 3.0.
- ❑ **Feature attribute table** that includes the item names and field definitions, and the number of the column in which the fields begin. Dates are not held in a date field because they may be incomplete; they may be quoted, for example, as 1980, June 1980 or 5 June 1980 depending on the availability of the information.

An introductory paragraph at the beginning of most layer descriptions summarizes the features briefly and includes comments for special attention. A tabular summary of the database layers provided is given in Chapter 2, Table 2.1. Note that the **zero contour** represents the coastline and it is, therefore, in the COAST layer rather than in the CONTOUR layer.

Naming conventions

Naming conventions have been established to allow the user to identify the layers and their basic contents from the name. Coverage names begin with an abbreviated form of the theme name and end with a numeric code indicating the scale of the data, e.g. CONT00 represents Scale0 contours. The three types of coverages are line, point and polygon. Line coverages have lines with attributes attached, such as the STREAMS layer. Other layers may contain only point data, such as the FAUNA layer. Some coverages combine both lines and polygons into a coverage type; these are referred to as polygon coverages. For example, the ROCK coverage includes individual line segments that define the rock areas, the polygon enclosed by the line, and a point that acts as a seed point for the polygon.

The item names within the coverages also carry a naming convention to ensure that they are unique within the database. All item names are preceded by a three-letter theme abbreviation, a two-digit code for the scale of the coverage and a three-letter abbreviation for the type of attribute. The naming conventions used in the database are given below in Tables 3.1–3.3.

Segmentation

The tiling scheme adopted for the Scale0 and Scale1 data corresponds to the boundaries of the International Map of the World 1:1,000,000 scale map sheets (see Chapter 2, Fig. 2.1). The Scale5 and Scale10 datasets are not tiled.

Table 3.1. Theme abbreviations (layers)

<i>Topographic data</i>			
<i>Code</i>	<i>Description</i>	<i>Code</i>	<i>Description</i>
CLF	Cliff	HMN	Human
CNT	Contour	ICD	Ice dome
CST	Coast	LAK	Lakes
ELV	Elevation	MRN	Moraine
FLW	Flowline	RCK	Rock
FNA	Fauna	STR	Streams
GMG	Glacier margin	TRV	Traverse

Table 3.2. Numeric codes used to denote the different scales

<i>Code</i>	<i>Description</i>
00	Basic scale of data capture (1:100,000, 1:250,000, etc.)
01	1:1,000,000
05	1:5,000,000
10	1:10,000,000
50*	1:50,000,000

* Dataset planned for the future, after the release of Version 3.0

Table 3.3. Codes denoting attribute type

<i>Code</i>	<i>Description</i>	<i>Code</i>	<i>Description</i>
TYP	Feature code	EDT	Editor
HGT	Height	SRC	Source
DAT	Date	REV	Revision date
INF	Text	SRF	Surface type
SHT	Sheet		

Layers for topographic data

CLIFF layer

Coverage name: CLIFF00

Feature class: Line

Items, codes and values:

CLF00TYP - This cliff line item contains the feature codes with the following values:

ADD code	Definition	SCAR code
23070	Steep slope on snow	3.7
23080	Inland ice cliff or escarpment	3.8
23190	Rock cliff or escarpment	3.9
23260	Steep slope on ice-free area	-

Feature attribute table (Arc attribute table)

<i>Variable</i>	<i>Defined item name</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	CLIFF00-ID	25	4, 5, B
Cliff line type	CLF00TYP	29	5, 5, I
Date	CLF00DAT	34	10, 10, C
Text	CLF00INF	44	100, 100, C
Sheet	CLF00SHT	144	10, 10, C
Editor	CLF00EDT	154	10, 10, C
Source	CLF00SRC	164	50, 50, C
Revision date	CLF00REV	214	10, 10, C

COAST layer

This layer contains the coastline and the grounding line of ice shelves or glacier tongues; it divides the area into sea, ice shelf, ice rumples or land. Note that the zero contour represents the continental coastline against open water but that a grounding line does **NOT** correspond to the zero contour.

Coverage name: COAST00

Feature class: Line and polygon

Items, codes and values:

CST00TYP - This coast line item contains feature codes with the following values:

ADD code	Definition	SCAR code
22010	Ice coastline (definite)	2.1
22011	Rock coastline (definite)	2.1
22012	Grounding line (definite)	2.1
22013	Rock against ice shelf (definite)	-
22020	Ice wall (approximate)	2.2
22021	Rock coastline (approximate)	2.2
22022	Grounding line (approximate)	2.2
22023	Rock against ice shelf (approximate)	-
22030	Iceberg tongue	2.3
22040	Floating glacier tongue	2.4
22050	Ice shelf and front	2.5
22090	Ice rumples (distinct)	-
22100	Ice rumples (indistinct)	-
0	Part of a tile boundary	-

CST00SRF - This coast surface item contains the following values:

ice shelf
ice tongue
land
ocean
rumple

Feature attribute tables

Arc attribute table

<i>Variable</i>	<i>Defined item name</i>	<i>Begin</i>	<i>Item definition</i>
Feature ID	COAST00-ID	25	4, 5, B
Coast line type	CST00TYP	29	5, 5, I
Date	CST00DAT	34	10, 10, C
Text	CST00INF	44	100, 100, C
Sheet	CST00SHT	144	10, 10, C
Editor	CST00EDT	154	10, 10, C
Source	CST00SRC	164	50, 50, C
Revision date	CST00REV	214	10, 10, C

Polygon attribute table

<i>Variable</i>	<i>Defined item name</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	COAST00-ID	13	4, 5, B
Coast surface type	CST00SRF	17	10, 10, C

CONTOUR layer

The height attribute gives the contour or formline elevation in metres.

Coverage name: CONT00

Feature class: Line

Items, codes and values:

CNT00TYP - This contour line item contains the feature codes with the following values:

ADD code	Definition	SCAR code
23090	Index contours on ice definite	3.9
23091	Contours on ice (definite)	3.9
23100	Index contours on ice (approximate)	3.10
23101	Contours on ice (approximate)	3.10
23110	Depression contour on ice	3.11
23160	Index contour on ice-free area (definite)	3.16
23161	Contours on ice-free area (definite)	3.16
23170	Index contours on ice-free area (approximate)	3.17
23171	Contours on ice-free area (approximate)	3.17
23180	Depression contour on ice-free area	3.18

Feature attribute table (Arc attribute table)

<i>Variable</i>	<i>Defined item name</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	CONT00-ID	25	4, 5, B
Contour line type	CNT00TYP	29	5, 5, I
Height	CNT00HGT	34	4, 12, F, 3
Date	CNT00DAT	38	10, 10, C
Text	CNT00INF	48	100, 100, C
Sheet	CNT00SHT	148	10, 10, C
Editor	CNT00EDT	158	10, 10, C
Source	CNT00SRC	168	50, 50, C
Revision date	CNT00REV	218	10, 10, C

ELEVATION layer

This layer contains all points with height information. The height attribute gives the elevation of the point, except for ADD code 24040, when the height attribute shows the ice thickness. All measurements are in metres. Lack of height information for a point is indicated by 0.

Coverage name: ELEVN00

Feature class: Point

Items, codes and values:

ELV00TYP - This item contains the feature codes with the following values:

ADD code	Definition	SCAR code
24010	Elevation on rock (differential levelling or trigonometrical)	4.1
24011	Elevation on ice (differential levelling or trigonometrical)	4.1
24020	Elevation on rock (airborne altimetric, surface barometric)	4.2
24021	Elevation on ice (airborne altimetric, surface barometric)	4.2
24030	Elevation on rock (photogrammetric)	4.3
24031	Elevation on ice (photogrammetric)	4.3
24040	Ice thickness	4.4
24050	Geodetic satellite observation station (precise)	4.5
24051*	Geodetic satellite observation station (less precise)	4.5
24060	Astronomical station (monumented)	4.6
24061	Astronomical station (not monumented)	4.6
24070	Survey control station (monumented)	4.7
24071	Survey control station (not monumented)	4.7
24080*	Bench mark and elevation	4.8

* Feature not present in ADD Version 3.0

Feature attribute table (Point attribute table)

<i>Variable</i>	<i>Defined name item</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	ELEVN00-ID	13	4, 5, B
Elevation point	ELV00TYP	17	5, 5, I
type Height	ELV00HGT	22	4, 12, F, 3
Date	ELV00DAT	26	10, 10, C
Text	ELV00INF	36	100, 100, C
Sheet	ELV00SHT	136	10, 10, C
Editor	ELV00EDT	146	10, 10, C
Source	ELV00SRC	156	50, 50, C
Revision date	ELV00REV	206	10, 10, C

FAUNA layer

The point data in this layer, giving the location of bird or seal colonies, represent information derived from published map sources. Note that not all map series display this type of information and the coverage is, therefore, incomplete. Information on protected areas in Antarctica is available on the World Wide Web at: <http://www.nerc-bas.ac.uk/public/magic/protected-area>, which is accessible from the ADD pages.

Coverage name: FAUNA00

Feature class: Point

Items, codes and values:

FNA00TYP - This fauna point item contains the feature codes with the following values:

ADD code	Definition	SCAR code
25010	Adélie pen guin rookery	5.1
25020	Empero r penguin rookery	5.2
25030	Seal colony	5.3
25040	Petrel colony	5.4
25050*	Specially Protected Area (SPA)	5.5

* Feature not present in ADD Version 3.0

Feature attribute table (Point attribute table)

<i>Variable</i>	<i>Defined item name</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	FAUNA00-ID	13	4, 5, B
Fauna point type	FNA00TYP	17	5, 5, I
Date	FNA0000DAT	22	10, 10, C
Text	FNA00INF	32	100, 100, C
Sheet	FNA00SHT	132	10, 10, C
Editor	FNA00EDT	142	10, 10, C
Source	FNA00SRC	152	50, 50, C
Revision date	FNA00REV	202	10, 10, C

FLOWLINE layer

Contains glacier flowlines. Note that other mappable features on glaciers, such as crevasses and crevasse fields, are not recorded in the database for lack of comprehensive source material over the whole continent. In the majority of cases the flowlines have been amended so that they flow downhill. This was achieved by obtaining the height at each end of the arcs by interpolation from the BPRC DEM, and changing the direction of those lines where the beginning of the line was lower than the end. On ice shelves, where slopes are low, obvious errors have been corrected. The process has been applied with minimal checking; the results are not guaranteed to be correct but the majority of the lines now point in the correct direction.

Coverage name: GFLOW00

Feature class: Line

Items, codes and values:

FLW00TYP - This flow line item contains the feature code with the following value:

ADD code	Definition	SCAR code
23011	Plottable feature on glacier	3.1
23240	Ridge line on ice or snow	-

Feature attribute table (Arc attribute table)

<i>Variable</i>	<i>Defined item name</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	GFLOW00-ID	25	4, 5, B
Flow line type	FLW00TYP	29	5, 5, I
Date	FLW00DAT	34	10, 10, C
Text	FLW00INF	44	100, 100, C
Sheet	FLW00SHT	144	10, 10, C
Editor	FLW00EDT	154	10, 10, C
Source	FLW00SRC	164	50, 50, C
Revision date	FLW00REV	214	10, 10, C

GLACIER MARGIN layer

Only glacier margins, including shear zones at the margins of ice streams, are present in this layer.

Coverage name: GMARG00

Feature class: Line

Items, codes and values:

GMG00TYP - This glacier margin line item contains the feature code with the following value:

ADD code	Definition	SCAR code
23010	Glacier margin/shear zone at margin of ice stream	3.1

Feature attribute table (Arc attribute table)

<i>Variable</i>	<i>Defined item name</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	GMARG00-ID	25	4, 5, B
Glacier margin line type	GMG00TYP	29	5, 5, I
Date	GMG00DAT	34	10, 10, C
Text	GMG00INF	44	100, 100, C
Sheet	GMG00SHT	144	10, 10, C
Editor	GMG00EDT	154	10, 10, C
Source	GMG00SRC	164	50, 50, C
Revision date	GMG00REV	214	10, 10, C

HUMAN layer

This layer contains all point data related to human activity.

Coverage name: HUMAN00

Feature class: Point

Items, codes and values:

HMN00TYP - This human point item contains the feature codes with the following values:

ADD code	Definition	SCAR code
24160*	Aircraft wreckage	4.16
24180*	Single radio mast	4.18
24181*	Multiple radio masts	4.18
24190	Scientific station†	4.19
24191	Summer-only scientific station (records incomplete)	
24200	Occupied building	4.20
24201	Abandoned building	4.20
24210	Refuge	4.21
24240	Oil tanks (in use)	4.24
24241*	Oil tanks (disused)	4.24
24242*	Water tanks (in use)	4.24
24243*	Water tanks (disused)	4.24
24250*	Automatic weather station	4.25
24260*	Historic Sites and Monuments ‡ (sites listed in Antarctic Treaty)	4.26
24270*	Sites of Special Scientific Interest‡	4.27

* Feature not present in ADD Version 3.0

† The positions of scientific stations have been derived from published map sources, at a range of scales, and from the most up-to-date SCAR list of permanent Antarctic stations (see Appendix 4). The latter source identifies the locations to a minute of arc only and the stations may not be positioned accurately when viewed on screen at a scale of 1:250 000.

‡ These items are derived from published map sources but not all sites are recorded on maps and some have been designated after the source maps were published. A comprehensive, up-to-date list of such sites, derived from approved management plans for protected areas, is available on the World Wide Web at <http://www.nerc-bas.ac.uk/public/magic/protected-area> (accessible from the ADD pages).

Feature attribute table (Point attribute table)

<i>Variable</i>	<i>Defined item name</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	HUMAN00-ID	13	4, 5, B
Human point type	HMN00TYP	17	4, 6, B
Name	HMN00NAM	21	50, 50, C
Latitude	HMN00LAT	71	8, 20, F, 5
Longitude	HMN00LON	79	8, 20, F, 5
Nationality	HMN00NAT	87	3, 3, C
Date	HMN00DAT	90	10, 10, C
Text	HMN00INF	100	100, 100, C
Sheet	HMN00SHT	200	10, 10, C
Editor	HMN00EDT	210	10, 10, C
Source	HMN00SRC	220	50, 50, C
Revision date	HMN00REV	270	10, 10, C

ICE DOME layer

Point data indicating the presence of isolated ice hillocks or domes are included in this layer.

Coverage name: IDOME00

Feature class: Point

Items, codes and values:

ICD00TYP - This ice dome item contains the feature code with the following value:

ADD code	Definition	SCAR code
23130	Ice hillock, ice dome	3.13

Feature attribute table (Point attribute table)

<i>Variable</i>	<i>Defined item name</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	IDOME00-ID	13	4, 5, B
Ice-dome point type	ICD00TYP	17	5, 5, I
Date	ICD00DAT	22	10, 10, C
Text	ICD00INF	32	100, 100, C
Sheet	ICD00SHT	132	10, 10, C
Editor	ICD00EDT	142	10, 10, C
Source	ICD00SRC	152	50, 50, C
Revision date	ICD00REV	202	10, 10, C

LAKES layer

Outlines of lakes and melt-pools are present in this layer. Note that ephemeral melt-pools on ice shelves are not recorded in the database although they were plotted on some series of Antarctic maps used as source material.

Coverage name: LAKES00

Feature class: Line and polygon

Items, codes and values:

LAK00TYP - This lake line item contains the feature codes with the following values:

ADD code	Definition	SCAR code
23061	Lake or melt-pool on ice	3.6
23062	Lake or melt-pool on rock	3.6

LAK00SRF - This lake surface item contains the following values:

lake

Feature attribute tables

Arc attribute table

<i>Variable</i>	<i>Defined item name</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	LAKES00-ID	25	4, 5, B
Lake line type	LAK00TYP	29	5, 5, I
Date	LAK00DAT	34	10, 10, C
Text	LAK00INF	44	100, 100, C
Sheet	LAK00SHT	144	10, 10, C
Editor	LAK00EDT	154	10, 10, C
Source	LAK00SRC	164	50, 50, C
Revision date	LAK00REV	214	10, 10, C

Polygon attribute table

<i>Variable</i>	<i>Defined name item</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	LAKES00-ID	13	4, 5, B
Lake surface type	LAK00SRF	17	10, 10, C

MORAINE layer

Contains the outlines of superficial deposits on ice and on rock.

Coverage name: MORAN00

Feature class: Line and polygon

Items, codes and values:

MRN00TYP - This moraine line item contains the feature codes with the following values:

ADD code	Definition	SCAR code
22011*	Rock coastline (definite)	2.1
22021*	Rock coastline (approximate)	2.2
22013*	Rock coast against ice shelf (definite)	-
23220	Scree/outwash	3.22
23230	Moraine on ice and on rock	3.23
23061*	Lake on ice	3.6
0	Part of a tile boundary	-

* Codes only used on data derived from one map (James Ross Island area, Antarctic Peninsula).

MRN00SRF - This moraine surface item contains the following values:

moraine
out-wash

Feature attribute tables

Arc attribute table

<i>Variable</i>	<i>Defined item name</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	MORAN00-ID	25	4, 5, B
Moraine line type	MRN00TYP	29	5, 5, I
Date	MRN00DAT	34	10, 10, C
Text	MRN00INF	44	100, 100, C
Sheet	MRN00SHT	144	10, 10, C
Editor	MRN00EDT	154	10, 10, C
Source	MRN00SRC	164	50, 50, C
Revision date	MRN00REV	214	10, 10, C

Polygon attribute table

<i>Variable</i>	<i>Defined name item</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	MORAN00-ID	13	4, 5, B
Moraine surface type	MRN00SRF	17	10, 10, C

ROCK layer

All lines delimiting exposed rock areas are included in this layer.

Coverage name: ROCK00

Feature class: Line, polygon and point

Items, codes and values:

RCK00TYP - This rock line item contains the feature codes with the following values:

ADD code	Definition	SCAR code
22011	Rock coastline (definite)	2.1
22013	Rock against ice shelf (definite)	-
22021	Rock coastline (approximate)	2.2
22023	Rock against ice shelf (approximate)	-
23062	Lake on rock	3.6
23150	Ice-free area (rock outcrop)	3.15
23220	Scree/outwash	3.22
23230	Moraine	3.23
0	Part of a tile boundary	-

RCK00SRF - This rock surface item contains the following value:

rocks

Feature attribute tables

Arc attribute table

<i>Variable</i>	<i>Defined item name</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	ROCK00-ID	25	4, 5, B
Rock line type	RCK00TYP	29	5, 5, I
Date	RCK00DAT	34	10, 10, C
Text	RCK00INF	44	100, 100, C
Sheet	RCK00SHT	144	10, 10, C
Editor	RCK00EDT	154	10, 10, C
Source	RCK00SRC	164	50, 50, C
Revision date	RCK00REV	214	10, 10, C

Polygon attribute table

<i>Variable</i>	<i>Defined item name</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	ROCK00-ID	13	4, 5, B
Rock surface type	RCK00SRF	17	10, 10, C

STREAMS layer

Only melt-streams on rock and on continental ice are present in this layer. Melt-streams on ice shelves are not recorded in the database although they have been plotted on some series of Antarctic maps used as source material.

Coverage name: STRMS00

Feature class: Line

Items, codes and values:

STR00TYP - This stream line item contains the feature code with the following value:

ADD code	Definition	SCAR code
23060	Meltwater stream	3.6

Feature attribute table (Arc attribute table)

<i>Variable</i>	<i>Defined item name</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	STRMS00-ID	25	4, 5, B
Stream line type	STR00TYP	29	5, 5, I
Date	STR00DAT	34	10, 10, C
Text	STR00INF	44	100, 100, C
Sheet	STR00SHT	144	10, 10, C
Editor	STR00EDT	154	10, 10, C
Source	STR00SRC	164	50, 50, C
Revision date	STR00REV	214	10, 10, C

TRANSPORT layer

Contains features such as air strips and helicopter landing sites.

Coverage name: TRANSPORT00

Feature class: Point

Items, codes and values:

TRN00TYP - This transport item contains the feature codes with the following values:

ADD code	Definition	SCAR code
24110	Aerodrome (with facilities) suitable for wheeled aircraft	4.11
24111*	Aerodrome (without facilities) suitable for wheeled aircraft	4.11.1
24120	Aerodrome (with facilities) suitable for ski-equipped aircraft only	4.12
24121	Aerodrome (without facilities) suitable for ski-equipped aircraft only	4.12.1
24130	Helicopter aerodrome (with facilities) unsuitable for fixed wing aircraft	4.13
24131	Helicopter aerodrome (without facilities) unsuitable for fixed wing aircraft	4.13.1

* Feature not used in ADD Version 3.0

Feature attribute table (Arc attribute table)

<i>Variable</i>	<i>Defined item name</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	TRANSPORT00-ID	13	4, 5, B
Transport type	TRN00TYP	17	4, 6, B
Name	TRN00NAM	21	50, 50, C
Latitude	TRN00LAT	71	8, 20, F
Longitude	TRN00LON	79	8, 20, F
Nationality	TRN00NAT	87	3, 3, C
Date	TRN00DAT	90	10, 10, C
Text	TRN00INF	100	100, 100, C
Sheet	TRN00SHT	200	10, 10, C
Editor	TRN00EDT	210	10, 10, C
Source	TRN00SRC	220	50, 50, C
Revision date	TRN00REV	270	10, 10, C

TRAVERSE layer

Contains the tracks of overland traverses. The attribute 'text' contains the name of the traverse and its date.

Coverage name: TRAV00

Feature class: Line

Items, codes and values:

TRV00TYP - This traverse line item contains the feature codes with the following values:

ADD code	Definition	SCAR code
24090	Oversnow route (marked)	4.9
24100*	Oversnow route (unmarked)	4.10

* Feature not used in ADD Version 3.0

Feature attribute table (Arc attribute table)

<i>Variable</i>	<i>Defined item name</i>	<i>Begin column</i>	<i>Item definition</i>
Feature ID	TRAV00-ID	25	4, 5, B
Traverse line type	TRV00TYP	29	5, 5, I
Date	TRV00DAT	34	10, 10, C
Text	TRV00INF	44	100, 100, C
Sheet	TRV00SHT	144	10, 10, C
Editor	TRV00EDT	154	10, 10, C
Source	TRV00SRC	164	50, 50, C
Revision date	TRV00REV	214	10, 10, C