Australian Government
Geoscience Australia

June 2007

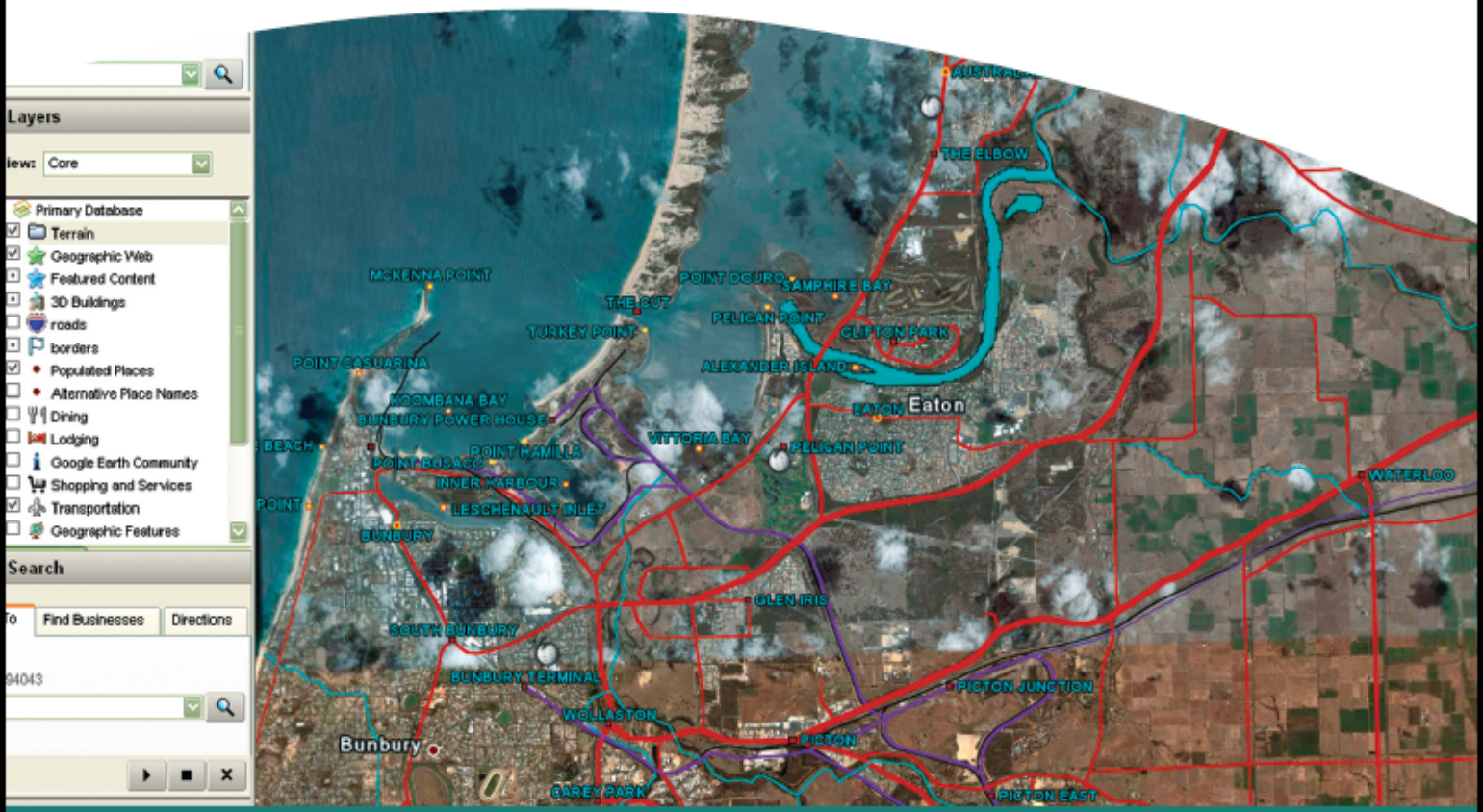
GEODATA TOPO 250K

Series 3

for Google Earth

1:250 000 scale vector map data

USER GUIDE



2007

DVD ROM

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1. General Information

1.1 Introduction

GEODATA TOPO 250K Series 3 for Google Earth contains 1:250,000 scale vector map data for Australia in KML format that can be viewed on Google Earth™ Mapping Service (Google Earth) Version 4 (or later). The map data is displayed with the Google Earth satellite imagery in the background and is arranged in tiles to facilitate ready display. Generally, only the current tile's data is loaded at any time. However, by simply panning to a neighbouring tile, that tile's data can then be loaded.

It is assumed that the users have installed Google Earth 4 or later on their computer and they are familiar with use of the software. Information regarding Google Earth software download, system requirements, user guide, etc is available at Google Earth's web site http://earth.google.com . Information for installation of Geodata 3 is provided in Appendix C and instructions for viewing and querying Geodata 3 on Google Earth are provided in Appendix D.

Important: Data in this product is the same as found in other GEODATA TOPO 250K Series 3 products produced by Geoscience Australia, however some attributes have been removed to aid quick loading of the data and to reduce file sizes.

As the data is supplied at 1:250,000 scale, users are reminded that by zooming in to a higher resolution than 1:250,000 scale, any offset between the location of a feature in the data and the same feature on Google Earth imagery (i.e.: road, river, building, etc) will be magnified. This is not an error as the data is intended to be used at 1:250,000 scale and not at larger scales (i.e. scales greater than 1:250,000 such as: 1:100,000, etc).

An example of excessive zoom causing an apparent spatial mismatch of features is shown below - note the misalignment of roads (red) and the creek (blue) with their respective features in the imagery.

The conditions of use for this product are documented in the accompanying licence agreement.

Geodata TOPO 250K series 3 for Google Earth has been wholly developed by Geoscience Australia. This product has not been developed in association with the developers and/or owners of Google Earth. In addition, this product has not been sponsored, approved or endorsed by the developers and/or owners of Google Earth.

1.2 Feedback

Geoscience Australia welcomes feedback on any aspect of this product or services. Please direct your comments or queries regarding this document or data to:

Geoscience Australia Sale Centre
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Canberra ACT 2601
Freecall (within Australia): 1800 800 173
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Internet: www.ga.gov.au

1.3 Geoscience Australia – Geospatial and Earth Monitoring Division

Geoscience Australia is the Commonwealth Government's national agency for Geoscience research and spatial information. It serves government and supports the community through its output areas of Geoscience for urban centres, regional and rural areas as well as oceans and coasts.

The Geospatial and Earth Monitoring Division (GEMD) of Geoscience Australia was formed in 2005 by the merging of the Geohazards Division and National Mapping Division. The division's mission is to provide readily accessible and timely national geographic and geo-scientific data, information and knowledge that enable Australians to make well-informed decisions particularly in regards to safeguarding our communities and critical infrastructure.

1.4 Contributors

Geoscience Australia (GA) gratefully acknowledges contributions to map and data content. Information supplied by a range of Commonwealth, State, Territory and Local Government as well as private sector agencies and individuals is utilised to update and enhance the spatial and attribute content of map and digital data products. A comprehensive list of contributors is available from the Geoscience Australia website www.ga.gov.au/nmd/mapping/acknowledge.htm.

2. About GEODATA TOPO 250K Series 3 Database

2.1 GEODATA TOPO 250K Series 3

GEODATA TOPO 250K Series 3 is Geoscience Australia's 1:250 000 (250K) scale topographic digital data with coverage across Australia. It is a vector representation of features on the earth's surface. It uses a feature-based data model to represent the real world. Features such as buildings, roads and lakes are spatially represented as points, lines or polygons, and attributes are used to describe them. The combination of its spatial location and attributes enables a feature to be uniquely identified. *GEODATA TOPO 250K Series 3* delivers nine feature datasets (or themes) of features containing 84 feature classes.

Currency of Less Than Five Years
The development of *GEODATA TOPO 250K Series 3* has run in parallel with Geoscience Australia's revision schedule of 250K data, therefore, the data generally has a currency of less than five years in any location.

2.2 GEODATA TOPO 250K Series 3 for Google Earth (KML Format) Product Components

This product consists of the following components which combine to give a complete data product:

- **Vector Data in KML Format** (Folder: KML)
  The data is available in Google Earth's KML format. This User Guide is predominately focused on this format. The data is also available in three other formats: Personal Geodatabase, Shape files and TAB file formats. Each format is available as an individual product for purchase.

- **Symbol Styles** (Folder: KMLStyles)
  Style sheets (XML files) and Icons are contained in KMLStyles folder within the View_Geodata3_KML_ Format folder. These are used to symbolise features in the KML format

- **250K User Guide** (Folder: Documentation)
  This User Guide details the *GEODATA TOPO 250K Series 3* data, particularly the Google Earth's KML format, with the aim of describing:
  - Important and common database characteristics;
  - Geodatabase components and data concepts;
  - Hierarchy of feature structure and attributes; and
  - Accuracy of the data.

- **Licence Agreement** (Folder: Documentation)

  The licence agreement details the conditions of use for the data including any referencing requirements. The conditions of use reflect the Australian Government policy on spatial data access and pricing.

2.3 GEODATA TOPO 250K Series 3 Source Data and Structure

The *GEODATA TOPO 250K Series 3* source data is managed and updated in a production geodatabase while data released to the public is stored in and delivered from a distribution database. Data arrangement in the distribution database (KML Format) consists of nine themes containing 84 feature classes to allow for easy use and access to data. The structure of the distribution geodatabase is detailed in the table below.

Table 1: Distribution GEODATA TOPO 250K Series 3 (KML Format) themes and feature classes

ELEVATION
- BenchMarks
- Contours
- HorizontalControlPoints
- SpotElevations

FRAMEWORK
- FrameworkBoundaries
- GeodataIndexes
-Islands
- LargeAreaFeatures
- Locations
- Mainlands
- ProhibitedAreas
- Reserves
- Seas

HABITATION
- BuildingAreas
- BuildingPoints
- BuiltUpAreas
- CemeteryAreas
- CemeteryPoints
- Homesteads
- Place Names
- PopulatedPlaces
- RecreationAreas

HYDROGRAPHY
- Bores
- CanalAreas
- CanalLines
- Flats
- ForeshoreFlats
- Lakes
- Locks
- MarineHazardAreas
- MarineHazardPoints
- PondageAreas
- RapidAreas
- RapidLines
- Reservoirs
- Spillways
- Springs
- WatercourseAreas
- WatercourseLines
- WaterfallPoints
- Waterholes
- WaterPoints

INFRASTRUCTURE
- AerialCableways
- Conveyors
- DamWalls
- Fences

INFRASTRUCTURE continued
- MarineInfrastructureLines
- MarineInfrastructurePoints
- MineAreas
- MinePoints
- PetroleumWells
- StorageTanks
- VerticalObstructions
- WaterTanks
- Windpumps
- Yards

TERRAIN
- Caves
- Craters
- DeformationAreas
- Discontinuities
- Pinnacles
- SandRidges
- Sands

TRANSPORT
- AircraftFacilityPoints
- BarrierPoints
- FerryRouteLines
- FootTracks
- RailwayBridgePoints

TRANSPORT continued
- RailwayCrossingLines
- Railways
- RailwayStopPoints
- RailwayTunnelLines
- RailwayTunnelPoints
- RoadCrossingLines
- RoadCrossingPoints
- Roads
- RoadTunnelLines
- RoadTunnelPoints

VEGETATION
- ClearedLines
- CultivatedAreas
- NativeVegetationAreas
- Windbreaks

UTILITY
-Pipelines
-Powerlines

Note: Spaces between words are removed so that the feature class names mirror their file name.

2.4 GEODATA TOPO 250K Series 3 KML Format Data and Structure

2.4.1 Data Structure

The *GEODATA TOPO 250K Series 3 (KML Format)* has been extracted from Geoscience Australia's distribution database stored in geodatabase format. The data in KML format is delivered in a two tier structure where feature datasets (themes) are the folders (e.g. Framework, Transport) and the feature classes are the geometry layers or tables within the folders (e.g. *FrameworkBoundaries*, *Roads*) as detailed in *Table1: Distribution GEODATA TOPO 250K Series 3 (KML Format) themes and feature classes.*

All the spatial and attribute data is stored in the same Google Earth KML file format. All the KML files are compressed and written in Google Earth's kmz files to economise on storage space.

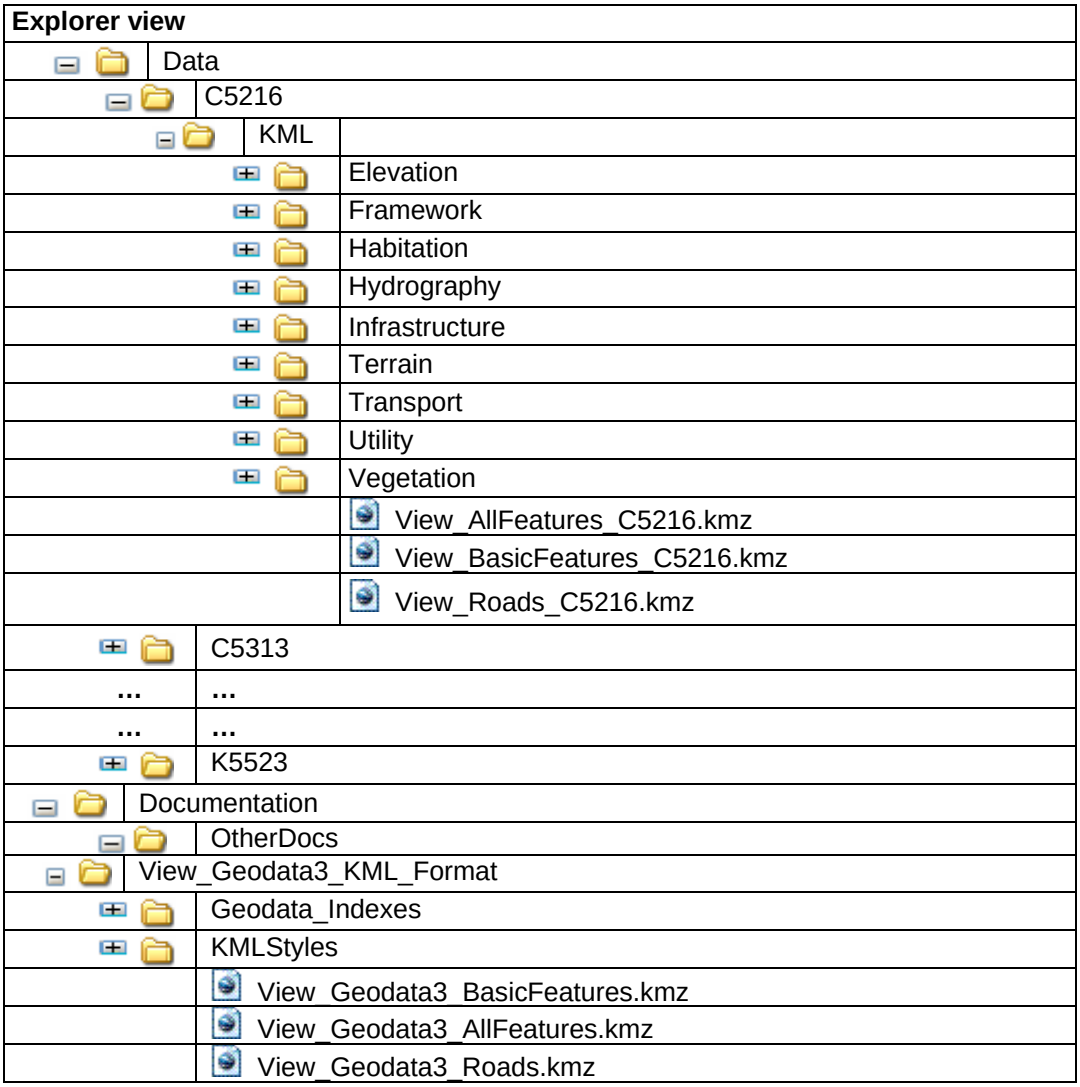
2.4.2 File Size

GEODATA TOPO 250K Series 3 Data in compressed KML format (kmz files) is approximately 1 Gigabytes.

2.4.3 KML Naming Convention

The naming convention for data provided on DVD in KML format (kmz files) is shown in an Explorer view in *Figure 1: GEODATA TOPO 250K Series 3 KML Format data arrangement.*

Figure 1: GEODATA TOPO 250K Series 3 KML Format data arrangement



3. Data Characteristics and Special Features

3.1 Data Characteristics

GEODATA TOPO 250K Series 3 (KML Format) has the following characteristics.

3.1.1 Datum, Projection and Coordinate Extents

Datum
Geographic Datum of Australia (GDA 94 equivalent to WGS 84)

Projection
Geographical (i.e. latitudes and longitudes)

Resolution of coordinates
Coordinates of all spatial objects are quoted to the nearest 0.00001 degrees (approx. 1m).

Extent of Geodatabase
-8.9 to -44 degrees of latitude and 112.8 to 154.1 degrees of longitude

3.1.2 Cartographic Generalisation

Some features are located on the earth's surface in such a way that they cannot be separated at the scale of the map. To ensure cartographic clarity, one feature is held in the correct position and the rest are displaced. This is referred to as cartographic generalisation.

During data and map compilation, the following hierarchy is used to determine which features are held in the real-world position and which are displaced when one or more are adjacent. The higher a feature is on the list, the more likely that it has been held in the correct position over those lower on the list. Natural features are given precedence over constructed features.

1. Hydrographic features
2. Railways
3. Principal roads
4. Secondary roads
5. Minor roads
6. Vehicular tracks
7. Buildings
8. Vegetation

Features that do not appear on the list may also be displaced. Their displacement may be due to an adjacent feature either appearing on the list above or having a greater landmark value.

When up to three features are close and adjacent, one may be displaced by as much as 225 metres. As far as possible, the displaced features maintain the correct alignment and spatial relationship to other features.

3.2 Special Features

3.2.1 Persistent Identifier, Creation Date and Retirement Date

The *GEODATA TOPO 250K Series 3* uses a ***Persistent Identifier*** (***PID***) attribute to identify individual features. The ***PID*** is unique on a national basis and is assigned to each feature during the population of the production geodatabase. The ***PID*** is only retired when changes have made it unavoidable (e.g. splitting of a linear feature into two features, or merging of two features). However, the ***PID*** is maintained when a feature's attributes have changed or where the spatial representation of the feature changes but logically the feature is the same (e.g. the start node and end node are the same). The ***PID*** is replacing the Unique Feature Identifier (UFI) used in the previous series of GEODATA 250K.

GEODATA TOPO 250K Series 3 data stores creation dates in the ***Created*** attribute field and represents the date that the feature was created in the production geodatabase. It has no relation to the

date which the feature physically came into existence (e.g. the completion of a building). The ***Created*** attribute field is populated for all features.

The ***Retired*** attribute field represents the date that a feature is marked as retired from the production geodatabase. It has no relation to the date on which the feature was physically destroyed (e.g. the demolition of a building). The ***Retired*** attribute field is only populated with a date once the feature is retired. Active features have a null retirement date. *Note: PIDs are not shown in this product.*

4. Data Quality Information

4.1 Lineage

GEODATA TOPO 250K Series 3 is primarily sourced from *GEODATA TOPO 250K Series 2* and 1:250 000 scale map reproduction material (from the National Topographic Map Series and Defence Joint Operation Graphics). A key revision source for the data is satellite imagery taken from the SPOT Panchromatic and LANDSAT Thematic Mapper Sensors. Revision material has also been gathered from a variety of authoritative sources. More information about the sources for this data can be found in Geoscience Australia's TOPO 250K Topographic Data and Map Specifications.

4.2 Positional Accuracy

The positional accuracy of spatial data is a statistical estimate of the degree to which planimetric coordinates and elevations of features agree with their real world values. The planimetric accuracy of *GEODATA TOPO 250K Series 3* is impacted by three sources of errors:

- **Positional Accuracy of the Source Material**
  It is difficult to verify the planimetric accuracy of the source material (repromat) used for capture of the *GEODATA TOPO 250K Series 3* source data (i.e. the *GEODATA TOPO 250K Series 2* Vector product), as it has already been produced. However, the expectation was that no more than 10% of well defined points were in error by more than 0.5mm measured on the source material. This relates to a standard deviation on the map (S_m) of 0.31mm.

- **Errors Due to the Conversion Processes**
  These errors relate to degradation caused by digitising and scanning processes. They are impacted by errors associated with equipment, software and operator. Therefore, this generally results in a standard deviation of on the map (S_{limit}) of 0.14mm.

- **Errors Due to the Manipulation Processes**
  The processes used during data manipulation introduce an error (S_{man}) of 0.05mm.

4.2.1 Absolute Planimetric (horizontal) Accuracy

The total statistical error from the source material and digitising process discussed above is given by:

$$S_{absolute} = \sqrt{(S_m)^2 + (S_{\lim it})^2 + (S_{man})^2}$$
$$= \sqrt{(0.31)^2 + (0.14)^2 + (0.05)^2}$$
$$= 0.34mm$$

This represents an error of 85m on the ground for 250K data. Alternative and equal ways of expressing this error are:

Not more than 10% of well defined points will be in error by more than 140m.

The planimetric accuracy, stated as a standard deviation in metres, is given at the feature level. The deviation has a standard value unless the source of the feature is known to have a different accuracy. A value of 9999 is used when the positional accuracy of the feature is not definable or not applicable (e.g. connector features).

4.2.2 Absolute Elevation Accuracy

The accuracy of the points captured for the Relief layer varies with the source material and the point determination of each particular point. The following table summarises these accuracies.

Table 5: Summary of absolute elevation accuracy

Type of Feature	Printed Map	Compilation Material	Digital Topographic Data
Spot Elevation	±5 metres	±5 metres	±5 metres
Spot Elevation inside Depression contour	±5 metres	±5 metres	±5 metres
Spot Elevation on Sand ridge	±5 metres	±5 metres	±5 metres
Horizontal Control Point			±15 metres

The accuracy of the contours is defined as 1/2 of the contour interval, for example +/- 25 metres for a 50 metre contour interval and +/- 10 metres for a 20 metre contour interval.

4.3 Feature Level Metadata

GEODATA TOPO 250K Series 3 provides metadata at the feature level. Apart from the standard system generated attribute fields, the following fields always apply for each feature, at the feature level. The exception is for features within the Cartography feature dataset as well as GeodataIndexes and MapIndexes feature classes. *Note: listed for information only - the following attributes are not shown in this product.*

- **Planimetric Accuracy** (PLANACC)
  This is the standard deviation in metres of the position of the feature's horizontal coordinates.
- **Feature Reliability** (FEATREL)
  This is the date of the latest source material where the position of a particular feature was verified, or subsequently changed.
- **Attribute Reliability** (ATTRREL)
  This is the date of the latest source material used to initially assign, or subsequently change the value of, one of the attributes of the feature. A new date is applied only if the feature's attributes are confirmed.
- **Source** (SOURCE)
  This is the official name of the agency that originally captured the spatial object.
- **Elevation Accuracy** (ELEVACC)
  This is the standard deviation in metres of the feature's elevation attribute value. This applies only to those features with an elevation attribute.

4.4 Data Omission

In the *GEODATA TOPO 250K Series 3* data, there has been a need to exclude some information. Detailed below is the data subject to exclusion:

- MapIndexes are supplied with the *GEODATA TOPO 250K Series 3* National product only. Users downloading tiled data through the online download service should note that MapIndexes are not supplied. The reason for this is that the extents of MapIndex features are larger than GeodataIndex features which are used for extracting all other feature classes for delivery of data on a tile basis and extend an additional three minutes to the north and five minutes to the east of GeodataIndex features.
- In the Powerlines feature class, no powerlines are depicted in South Australia. This is due to restrictions by the supplying agency.
- The Annotation, GridAnnotation and GraticuleAnnotation feature classes have not been provided as they are not supported in KML format.
- A limited range of feature attributes has been included in this product, to aid quick loading of data and to reduce files sizes in KML format.

Appendix A: Metadata

GEODATA TOPO 250K Series 3 Topographic Data

Note: This metadata describes the dataset in accordance with the ANZLIC (Australia New Zealand Land Information Council) Core Metadata Guidelines Version 2.

DATASET CITATION

Title: GEODATA TOPO 250K Series 3 Topographic Data

Custodian: Geoscience Australia

Jurisdiction: Australia

DESCRIPTION

Abstract: Series 3 contains a medium scale vector representation of the topography of Australia. The data include the following ten themes and 92 feature classes:

Cartography *(Not applicable to data in KML format)*: Annotations, CartographicLines, CartographicPoints, GraticuleAnnotations, Graticules, GridAnnotations and Grids

Elevation: Contours, BenchMarks, HorizontalControlPoints and SpotElevations

Framework: ProhibitedAreas, Reserves, FrameworkBoundaries, Islands, LargeAreaFeatures, Locations, Mainlands, Seas, GeodataIndexes and MapIndexes (not applicable to data in KML format)

Habitation: BuildingAreas, BuildingPoints, BuiltUpAreas, CemeteryAreas, CemeteryPoints, Homesteads, PlaceNames, PopulatedPlaces and RecreationAreas

Hydrography: CanalLines, Locks, RapidLines, Spillways, WatercourseLines, WaterfallPoints, Bores, CanalAreas, Flats, Lakes, PondageAreas, RapidAreas, Reservoirs, Springs, WatercourseAreas, Waterholes, WaterPoints, MarineHazardAreas, MarineHazardPoints and ForeshoreFlats

Infrastructure: AerialCableways, DamWalls, Fences, MarineInfrastructureLines, MarineInfrastructurePoints, VerticalObstructions, WaterTanks, Yards, Conveyors, MineAreas, MinePoints, PetroleumWells and StorageTanks

Terrain: Caves, Craters, DeformationAreas, Discontinuities, Pinnacles, SandRidges and Sands

Transport: AircraftFacilityPoints, RailwayBridgePoints, RailwayCrossingLines, Railways, RailwayStopPoints, RailwayTunnelLines, RailwayTunnelPoints, BarrierPoints, FerryRouteLines, FootTracks, RoadCrossingLines, RoadCrossingPoints, Roads, RoadTunnelLines and RoadTunnel Points

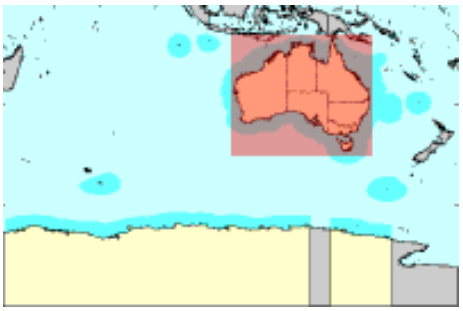
Utility: Pipelines and Powerlines

Vegetation: ClearedLines, CultivatedAreas, NativeVegetationAreas and Windbreaks

SPATIAL DOMAIN - In a Geodatabase environment the spatial domain is set as:

Minimum X: 108.000000
Minimum Y: -48.000000
Maximum X: 21582.83645
Maximum Y: 21426.83645
Precision: 100000.000000

The precision of the NTDB is 0.00001 degrees, which equates to approximately 1 metre on the ground. This value is determined by dividing 1 coordinate system unit (degree) by the scale of the data. 1 degree / 100000 = 0.00001 degrees.



GEOGRAPHIC EXTENT NAME: AUSTRALIA EXCLUDING EXTERNAL TERRITORIES - AUS - Australia - Australia

Note: The format for each Geographic extent name is: Name - Identifier - Category - Jurisdiction (as appropriate) See GEN Register

GEOGRAPHIC BOUNDING BOX:

North bounding latitude:	-8.9 °
South bounding latitude:	-44 °
East bounding longitude:	154.1 °
West bounding longitude:	112.8 °

DATA CURRENCY

Beginning date**:** 9/05/06

Ending date**:** Current

DATA STATUS

Progress**:** 9/05/06

Maintenance and update frequency: Irregular

ACCESS

Stored data format:

DIGITAL - Personal Geodatabase (pgdb) Geographic GDA94
DIGITAL - MapInfo file format (.tab) MapInfo Geographic GDA94
DIGITAL - ArcView shape file (.shp) Geographic GDA94
DIGITAL – Google Earth KML format (.kmz) Geographic WGS84

Available format type:

DIGITAL - Personal Geodatabase (pgdb) Geographic GDA94
DIGITAL - MapInfo file format (.tab) MapInfo Geographic GDA94
DIGITAL - ArcView shape file (.shp) Geographic GDA94
DIGITAL – Google Earth KML format (.kmz) Geographic WGS84

Access constraints:

The data are subject to Commonwealth of Australia Copyright. A licence agreement is required and a licence fee is also applicable for packaged data (included in the purchase price). *GEODATA TOPO 250K Series 3* replaces Series 1 and 2.

DATA QUALITY

Lineage:

GEODATA TOPO 250K Series 3 is primarily sourced from *GEODATA TOPO 250K Series 2* and 1:250 000 scale map reproduction material (from the National Topographic Map Series and Defence Joint Operation Graphics). A key revision source for the data is satellite imagery taken from the SPOT Panchromatic and LANDSAT Thematic Mapper Sensors. Revision material has also been gathered from a variety of authoritative sources. More information about the sources for this data can be found in Geoscience Australia's Topographic Data and Map Specifications.

Positional accuracy:

Geoscience Australia has carried out both error budget analysis and limited field tests to verify the positional accuracy of the data. *GEODATA TOPO 250K Series 3* data complies with the following statement of horizontal accuracy: "The summation of errors from all sources results in data with a standard deviation of 85 metres for well defined features". Alternative and equal ways of expressing this error are: Not more than 10% of well-defined points are in error by more than 140 metres; and, in the worst case, a well defined point is out of position by 300 metres. As the *GEODATA TOPO 250K Series 3* data were digitised from existing map production material, some features may be subject to cartographic displacement.

Vertical Accuracy: The accuracy of the spot elevations in the relief layer varies with the type of source material from which they were captured and the point determination for each particular point. Most spot heights have an accuracy of + or - 5 metres, however bench marks and horizontal control points have an accuracy of + or - 1 metre. The accuracy of contours is defined as 1/2 of the contour interval, for example + or - 25 metres for a 50 metre contour interval.

Attribute accuracy:

For the TOPO 250K product, attribute accuracy is a measure of the degree to which the attribute values of features agree with the information on the source material. The allowable error in attribute accuracy ranges from 0.5% to 5%, at a 99% confidence level. Where less than 1% of attribute errors are permissible the entire population is tested. Where a less stringent limit is set for allowable errors a random subset of the relevant features in the tile is generally tested. The sample size is determined from statistical tables using the known population size of the relevant feature. Further information on the validation and testing methodology used by Geoscience Australia can be found in Appendix J of the Topographic Data and Map Specifications.

Logical Consistency:

Validating logical consistency may involve tests to check that table and file names are set out as in the Data Dictionary. Also included are graphical tests which check such things as intersections, polygon closure, minimum sizes of polygons and topological relationships. The allowable error in logical consistency ranges from 0% to 5%. Further information on the validation and testing methodology used by Geoscience Australia can be found in Appendix J of the Topographic Data and Map Specifications.

Completeness:

All instances of a feature and its attribute values that appear on the source material are captured unless otherwise indicated in the selection criteria for that feature.

CONTACT INFORMATION

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METADATA INFORMATION

Metadata date: 2006-06-15

Appendix B: Geodatabase Features

1. Feature Types within GEODATA TOPO 250K Series 3

The following hyperlinks are links to the relevant features in the Data Dictionary that are contained within *GEODATA TOPO 250K Series 3*.

A

Aerial Cableway
Airport
Annotation
Aquaculture Area

B

Bay
Beach
Bench Mark
Bore
Breakwater
Building Area
Building Point
Built Up Area

C

Canal Area
Canal Line
Cape
Cave
Cemetery Area
Cemetery Point
Civic Square
Cleared Line
Cliff
Connector
Connector Discontinuity
Connector Standard
Contour- Interpolated
Contour- Standard
Conveyor
Crater
Cutting

D

Dam Wall
Depression Contour
Distance Indicator
Distorted Surface

E

Embankment

F

Fence
Ferry Route Line
Flood Irrigation Storage
Flow Direction Arrow
Foot Track
Ford Line
Ford Point
Foreshore Flat
Forest Or Shrub
Forestry Reserve

G

Gardens
Gate
GeodataIndex
Gnamma Hole
Golf Course
Gorge
Graticule
Graticule Annotation
Grid
Grid Annotation

H

Heliport
Homestead
Horizontal Control Point

I

Indigenous Reserve
International Boundary
Interpolated Contour
Island

J

Jetty
Junction

L

Lake
Landing Ground
Land Subject To Inundation
Large Area Feature
Levee
Lighthouse
Limit Of Data (Elevation)
Limit Of Data (Framework)
Lock

M

Mainland
Mangrove
Map Grid
Map Index
Marine Swamp
Mine Area
Mine Point
Miscellaneous Area
Mountain
Multiple Use

N

Native Well
Nature Conservation Reserve

O

Offshore Rock
Orchard
Outcrop
Oval Area

P

Pass
Petroleum Well
Pinnacle
Pipeline
Place Name
Plantation
Pointer
Pool
Populated Place
Powerline
Prohibited Area

R

Race Course
Railway
Railway Bridge Line
Railway Bridge Point
Railway Causeway
Railway Station
Railway Tunnel Line
Railway Tunnel Point
Rainforest
Rapid Area
Rapid Line
Recreation Area
Reef
Rifle Range
Road
Road Bridge Line
Road Bridge Point
Road Causeway
Road Junction
Road Marker National
Road Marker State
Road Tunnel Line
Road Tunnel Point
Rockhole
Runway Centreline

S

Salt Evaporator
Salt Evaporator Internal Line
Saline Coastal Flat
Sand Area
Sand Dune
Sand Ridge
Sea
Sea Wall
Settling Pond
Settling Pond Internal Line
Shoal
Shoreline
Show Ground
Soak
Spillway
Spot Elevation
Spring
Standard Contour
State Border
Storage Tank
Swamp

T

Town Rural Storage
Transition Point
Tropic Of Capricorn

V

Vertical Obstruction

W

Waterbody Island
Watercourse
Watercourse Area
Waterfall Point
Waterhole
Water Supply Reserve
Wharf Line
Water Tank
Windbreak
Windpump
Wreck

Y

Yard

2. Data (feature type) Dictionary table

Data dictionary layout

Feature dataset (The Distribution feature dataset in which the feature classification is contained)

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
The feature class in which the feature type classification is contained.	The spatial object type (i.e. polygon, line, point, annotation	The feature type classification to which the entry relates. **Please note:** • Where a feature subtype exists, the name is followed by the subtype name (e.g. 'Heliport') • Shapefiles and MapInfo TAB files contain the numeric subtype values, not the text. • Not all feature classes have subtypes.	The definition which applies to the feature type.	The size criteria for inclusion.	The applicable fields for each feature class.	Specifies the Distribution geodatabase feature dataset the feature class exists within.	Specifies the Production geodatabase feature dataset the feature class exists within.

Common attributes across feature classes

The following are attributes which are common to all feature classes. *Note: only a limited range of attributes are provided for each feature in this product.*

FEATTYPE:	Feature type classification to which the entry relates.
FEATREL:	Reliability date of the spatial object. Date is only adjusted during spatial change/verification of an existing feature or capture of a new feature.
ATTRREL:	Reliability date of the attribute object. Date is only adjusted during attribute change/verification of an existing feature or capture of a new feature.
PLANACC:	Standard deviation of the horizontal positional accuracy.
***CREATED*:**	Date of creation of the feature in the database.
RETIRED:	Date of retirement of the feature in the database (currently empty as no data has been retired yet).
PID:	Persistent identifier.
SYMBOL:	Symbol number that relates to the feature. (Refer to the Symbol Dictionary).
MAPNUMBER:	Number that defines the map index to which the feature is related.

Data dictionary

Cartography

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
Annotations	Anno	Annotation	Type that appears on the map not related to the graticule or grid feature classes.		FEATTYPE MAPNUMBER CREATED RETIRED PID	Cartography	Cartography
GraticuleAnnotations		Graticule Annotation	Type that appears on the map related to the Graticule feature class.			Cartography	Cartography
GridAnnotations		Grid Annotation	Type that appears on the map related to the Map Grid feature type.			Cartography	Cartography
CartographicLines	Line	International Boundary*(InternationalBoundary)*	Boundaries defining the territorial sovereignty of a country. The international boundary will be taken to be the line of sea bed jurisdictions.		FEATTYPE TYPE MAPNUMBER CREATED RETIRED PID SYMBOL TEXTNOTE	Cartography	Cartography
		Pointer*(Pointer)*	A symbol used to graphically link text to a feature where the density of detail may result in ambiguity.			Cartography	Cartography
		Runway Centreline *(RunwayCentreline)*	A symbol used to indicate the length and orientation of an airport's runway.			Cartography	Cartography
		Salt Evaporator Internal Line*(SaltEvaporatorInternalLine)*	A levee bank or small canal within a salt evaporator.	1,250 metres		Cartography	Cartography
		Settling Pond Internal Line*(SettlingPondInternalLine)*	Levee banks within settling ponds.	1,250 metres		Cartography	Cartography
		Tropic Of Capricorn*(TropicOfCapricorn)*	The parallel of latitude 23°26.5'S.			Cartography	Cartography
CartographicPoints	Point	Distance Indicator*(DistanceIndicator)*	A symbol used to indicate points between which road distances are given (in kilometres).		FEATTYPE TYPE MAPNUMBER CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Cartography	Cartography
		Flow Direction Arrow*(FlowDirectionArrow)*	A symbol used to indicate the direction of flow of water through a river system where it is unclear using the topological relationships shown on the map face.			Cartography	Cartography
		Road Marker National *(RoadMarkerNational)*	The symbol printed over a road indicating a national route.			Cartography	Cartography

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
		Road Marker State*(RoadMarkerState)*	The symbol printed over a road indicating a state route.			Cartography	Cartography
		Transition Point*(TransitionPoint)*	The point where a road or railway enters/exits a tunnel.			Cartography	Cartography
Graticules	Line	Graticule	A line on a map or chart representing a parallel of latitude or a meridian of longitude including cross ticks.		FEATTYPE MAPNUMBER CREATED RETIRED PID SYMBOL	Cartography	Cartography
Grids		Map Grid	A line forming part of a rectangular Cartesian coordinate system that is superimposed on maps and charts to permit identification of ground locations with respect to other locations and the computation of direction and distance to other points.			Cartography	Cartography

Elevation

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
Contours	Line	Connector Discontinuity*(ConnectorDiscontinuity)*	A line which represents an imaginary line on the ground joining points of equal elevation in relation to the Australian Height Datum. Connector Discontinuity is to be utilised where contours on the repromat were broken for either a cliff, cutting, embankment or razorback symbol.		FEATTYPE TYPE ELEVATION FEATREL ATTREL PLANACC ELEVACC SOURCE CREATED RETIRED PID SYMBOL	Elevation	Relief
		Connector Standard*(ConnectorStandard)*	A line which represents an imaginary line on the ground joining points of equal elevation in relation to the Australian Height Datum. Connector Standard is to be utilised where the contour's position is not known, for example in a Watercourse Area or Mine Area.			Elevation	Relief
		Depression Contour*(DepressionContour)*	A line which represents an imaginary line on the ground joining points of equal elevation in relation to the Australian Height Datum. Depression contours are to be utilised where a portion of a landform dips below its surrounding area crossing a contour interval. The depression must be fully contained within the surrounding landform.			Elevation	Relief
		Interpolated Contour*(InterpolatedContour)*	A line which represents an imaginary line on the ground joining points of equal elevation in relation to the Australian Height Datum. Interpolated contour to be utilised to join discontinued contours or to replace a contour absent in the source material for cartographic reasons. This feature type is not to be utilised where contours have been broken for features from the discontinuity feature class.			Elevation	Relief
		Standard Contour*(StandardContour)*	A line which represents an imaginary line on the ground joining points of equal elevation in relation to the Australian Height Datum.			Elevation	Relief
		Limit Of Data*(LimitOfData)*	The line bounding the limits of known source material or the edge of the defined NTDB.			Elevation	Relief

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
SpotElevations	Point	Spot Elevation	A point on the earth's surface, of known elevation, above or below the Australian Height Datum (AHD66).		FEATTYPE CLASS ELEVATION SOURCETYPE FEATREL ATTREL PLANACC ELEVACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN	Elevation	Relief
BenchMarks	Point	Bench Mark	A permanently marked point, the elevation of which above sea level has been determined by levelling.		FEATTYPE ELEVATION CODE FEATREL ATTREL PLANACC ELEVACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Elevation	SurveyMarks

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
HorizontalControlPoints	Point	Horizontal Control Point*(HorizontalControlPoint)*	A point on the ground, the geographical position of which has been determined by geodetic survey.		FEATTYPE NAME ELEVATION CODE ORDEROFACC FEATREL ATTREL PLANACC ELEVACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Elevation	SurveyMarks

Framework

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
FrameworkBoundaries	Line	Junction*(Junction)*	An artificial line used to separate adjacent hydrographic areas which have differing attributes and across which flow can occur.		FEATTYPE TYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL	Framework	Framework
		Shoreline*(Shoreline)*	A line depicting the boundary of a mainland, island or sea.			Framework	Framework
		State Border*(StateBorder)*	The boundary defining the division of the Commonwealth of Australia into State/Territory administrations.			Framework	Framework
		Limit Of Data*(LimitOfData)*	The line bounding the limits of known source material or the edge of the defined NTDB.			Framework	Framework
Mainlands	Polygon	Mainland*(Mainland)*	The area of continental Australia including Tasmania.		FEATTYPE STATE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL	Framework	Framework

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
Islands	Polygon	Island*(Island)*	An area of land fully surrounded by the sea.	3,906 sq metres	FEATTYPE NAME STATE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL	Framework	Framework
Seas	Polygon	Sea*(Sea)*	The water area surrounding the Australian continent and its offshore islands.		FEATTYPE OCEANNAME SEANAME OTHERWATERNAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL	Framework	Framework
Locations	Point	Bay*(Bay)*	A named wide, open and curving indentation into the land formed by the sea or inland waterbody.		FEATTYPE TYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Framework	Framework
		Beach*(Beach)*	A named strip of land or terrace bordering the sea, usually lying between high and low tides.			Framework	Framework
		Cape*(Cape)*	A named prominent headland projecting into the sea or inland waterbody.			Framework	Framework
		Gorge*(Gorge)*	A named deep and narrow, steep-sided, usually rocky river valley.			Framework	Framework
		Mountain*(Mountain)*	A named markedly elevated landform bounded by steep slopes and rising to prominent ridges and individual peaks.			Framework	Framework
		Pass*(Pass)*	A named low and passable gap through a mountain range.			Framework	Framework
		Road Junction*(RoadJunction)*	A named intersection of two or more roads.			Framework	Framework
		Waterbody Island*(WaterbodyIsland)*	A named island within an inland waterbody or forming part of the shoreline.			Framework	Framework

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
LargeAreaFeatures	Polygon	Large Area Feature	A representation that is indicative of the extent of nationally recognized significant regions.		FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL	Framework	Framework
Reserves	Polygon	Indigenous Reserve*(IndigenousReserve)*	Land reserved due to its Indigenous significance excluding freehold land.	3,125,000 sq metres	FEATTYPE TYPE NAME AUTHORITY FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL	Framework	Administration
		Forestry Reserve*(ForestryReserve)*	Public land reserved for forestry purposes.	3,125,000 sq metres		Framework	Administration
		Nature Conservation Reserve*(NatureConservationReserve)*	Land reserved for the conservation of native species.	3,125,000 sq metres		Framework	Administration
		Water Supply Reserve*(WaterSupplyReserve)*	Land reserved to protect water supply catchments.	3,125,000 sq metres		Framework	Administration
ProhibitedAreas	Polygon	Prohibited Area	Area into which entry is prohibited without permission from the controlling authority.	3,125,000 sq metres	FEATTYPE NAME AUTHORITY FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL	Framework	Administration
GeodataIndexes	Polygon	GeodataIndex	The line defining the limits of each GEODATA product tile supplied to the public.		FEATTYPE TILENAME TILENUMBER CREATED RETIRED PID	Framework	SeriesIndex

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
MapIndexes	Polygon	Map Index	A area defined for the production of a single map sheet whether as a singular production or as part of a series such as the National Topographic Map Series.		FEATTYPE LAYOUTGUIDE MAPNAME MAPNUMBER CREATED RETIRED PID	Framework	SeriesIndex

Habitation

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
PopulatedPlaces	Point	Populated Place	A named settlement with a population of 200 or more persons.		FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Habitation	Habitation
BuiltUpAreas	Polygon	Built Up Area	An area where buildings are close together and have associated road and other infrastructure networks.	390,625 sq metres	FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL	Habitation	Habitation

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
Locations	Point	Place Name*(PlaceName)*	A named place or area.		FEATTYPE TYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Habitation	Framework
Homesteads	Point	Homestead	A named prominent building or set of buildings which is/are the place of permanent residence in rural areas.		FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Habitation	Habitation
BuildingPoints	Point	Building Point	A permanent walled and roofed construction or the ruin of such a construction.		FEATTYPE NAME CLASS FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Habitation	Habitation

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
BuildingAreas	Polygon	Building Area	A permanent walled and roofed construction or the ruin of such a construction, capable of being represented at scale.	140,625 sq metres	FEATTYPE NAME CLASS FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Habitation	Habitation
RecreationAreas	Polygon	Civic Square*(CivicSquare)*	A normally rectangular formal open area within a town centre, usually surrounded by buildings, designated by the towns governing body for use by its citizens.	140,625 sq metres	FEATTYPE TYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Habitation	Culture
		Gardens*(Gardens)*	Formally laid out public botanical or ornamental grounds.	140,625 sq metres		Habitation	Culture
		Golf Course*(GolfCourse)*	An area of land developed and purposely designed for the playing of golf.	140,625 sq metres		Habitation	Culture
		Multiple Use*(MultipleUse)*	An area of land developed for a combination of recreational purposes.	140,625 sq metres		Habitation	Culture
		Miscellaneous Area*(MiscellaneousArea)*	An area of land developed for miscellaneous or undefined recreational purposes.	140,625 sq metres		Habitation	Culture
		Oval Area*(OvalArea)*	An area of land developed as a sporting ground for the playing of football, athletics, cricket and the like.	140,625 sq metres		Habitation	Culture
		Race Course*(RaceCourse)*	An area of land allocated & developed for the racing of horses.	140,625 sq metres		Habitation	Culture
		Recreation Area*(RecreationArea)*	A general purpose or large park in a residential area.	140,625 sq metres		Habitation	Culture
		Rifle Range*(RifleRange)*	An area specifically designated for rifle shooting.	140,625 sq metres		Habitation	Culture
		Show Ground*(ShowGround)*	Show ground arenas and buildings for the formal presentation of primary production and related activities.	140,625 sq metres		Habitation	Culture

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
CemeteryPoints	Point	Cemetery Point	An area of land for burying the dead		FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Habitation	Culture
CemeteryAreas	Polygon	Cemetery Area	An area of land for burying the dead.	140,625 sq metres	FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Habitation	Culture

Hydrography

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
WatercourseLines	Line	Connector*(Connector)*	An artificial line used to connect linear Hydrographic features across an area feature to allow network analysis of riverine networks.		FEATTYPE TYPE NAME PERENNIAL HIERARCHY FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Hydrography	Drainage
		Watercourse*(Watercourse)*	A natural channel along which water may flow from time to time.	2,500 metres		Hydrography	Drainage

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
WatercourseAreas	Polygon	Watercourse Area	A natural channel along which water may flow from time to time.	625,000 sq metres	FEATTYPE NAME PERENNIAL HIERARCHY FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Hydrography	Waterbodies
Lakes	Polygon	Lake	A naturally occurring body of mainly static water surrounded by land.	62,500 sq metres	FEATTYPE NAME PERENNIAL FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Hydrography	Waterbodies
Reservoirs	Polygon	Town Rural Storage*(TownRuralStorage)*	A body of water collected and stored behind a constructed barrier for some specific use (with the exception of Flood Irrigation Storage).	140,625 sq metres	FEATTYPE TYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Hydrography	Waterbodies
		Flood Irrigation Storage*(FloodIrrigationStorage)*	A body of water collected and stored behind a constructed barrier for the specific use of Flood Irrigation Farming	140,625 sq metres		Hydrography	Waterbodies

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
WaterPoints	Point	Gnamma Hole*(GnammaHole)*	Small holes of varying shape, diameter and depth, found in hard granite outcrops and in the decomposed granite of a breakaway, which can and usually does hold water.		FEATTYPE TYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Hydrography	Waterbodies
		Native Well*(NativeWell)*	An isolated natural depression which holds water, not within Watercourses. The natural phenomena are sometimes improved by indigenous persons for their own water collection purposes.			Hydrography	Waterbodies
		Pool*(Pool)*	A small body of still or standing water, permanent or temporary in an isolated natural depression, not within Watercourses.			Hydrography	Waterbodies
		Rockhole*(Rockhole)*	A hole excavated in solid rock by water action.			Hydrography	Waterbodies
		Soak*(Soak)*	A depression holding moisture after rain, especially the damp or swamp spots around the base of granite rocks.			Hydrography	Waterbodies
Waterholes	Point	Waterhole*(Waterhole)*	A natural depression which holds perennial water, within a non-perennial watercourse or a non-perennial lake.		FEATTYPE NAME PERENNIAL FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Hydrography	Waterbodies
Springs	Point	Spring	A place where water issues from the ground naturally.		FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Hydrography	Waterbodies
Bores	Point	Bore	A small diameter hole in the ground for the purpose of obtaining subterranean water by natural flow or mechanical pumping.			Hydrography	Waterbodies

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
Locks	Point	Lock	An enclosure in a water body with gates at both ends to raise or lower the water level to enable vessels to pass from one level to another.		FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Hydrography	Drainage
WaterfallPoints	Point	Waterfall Point	A sudden descent of water over a step or ledge in the bed of a watercourse.			Hydrography	Drainage
CanalAreas	Polygon	Canal Area	An artificial watercourse conveying water for inland navigation, irrigation or drainage purposes.	312,500 sq metres	FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Hydrography	Waterbodies
CanalLines	Line	Canal Line	An artificial watercourse conveying water for inland navigation, irrigation or drainage purposes.	1,250 metres	FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Hydrography	Drainage
RapidAreas	Polygon	Rapid Area	An area of broken, fast flowing water in a watercourse, where the slope of the bed increases (but without a prominent break of slope which might result in a waterfall), or where a gently dipping bar of harder rock outcrops.	250 metres	FEATTYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Hydrography	Waterbodies

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
RapidLines	Line	Rapid Line	An area of broken, fast flowing water in a watercourse, where the slope of the bed increases (but without a prominent break of slope which might result in a waterfall), or where a gently dipping bar of harder rock outcrops.	250 metres	FEATTYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Hydrography	Drainage
Spillways	Line	Spillway	A channel or duct formed around the side of a reservoir past the end of the dam, to convey flood discharge from the watercourse above the reservoir into the watercourse below the dam.	250 metres		Hydrography	Drainage
PondageAreas	Polygon	Aquaculture Area*(AquacultureArea)*	Shallow beds, usually segmented by constructed walls, for the use of aquaculture.	390,625 sq metres	FEATTYPE TYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Hydrography	Waterbodies
		Salt Evaporator*(SaltEvaporator)*	A flat area, usually segmented, used for the commercial production of salt by evaporation.	390,625 sq metres		Hydrography	Waterbodies
		Settling Pond*(SettlingPond)*	Shallow beds, usually segmented by constructed walls, for the treatment of sewage or other wastes.	390,625 sq metres		Hydrography	Waterbodies
Flats	Polygon	Land Subject To Inundation*(LandSubjectToInundation)*	Low lying land usually adjacent to lakes or watercourses, which is regularly covered with flood water for short periods.	390,625 sq metres	FEATTYPE TYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Hydrography	Waterbodies
		Marine Swamp*(MarineSwamp)*	That low lying part of the backshore area of tidal waters, usually immediately behind saline coastal flat, which maintains a high salt water content, and is covered with characteristic thick grasses and reed growths.	250,000 sq metres		Hydrography	Waterbodies
		Saline Coastal Flat*(SalineCoastalFlat)*	That nearly level tract of land between mean high water and the line of the highest astronomical tide.	390,625 sq metres		Hydrography	Waterbodies
		Swamp*(Swamp)*	Land which is so saturated with water that it is not suitable for agricultural or pastoral use and presents a barrier to free passage.	1,562,500 sq metres		Hydrography	Waterbodies

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
ForeshoreFlats	Polygon	Foreshore Flat	That part of the seabed or estuarine areas, between mean high water and the line of lowest astronomical tide.	390,625 sq metres	FEATTYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL	Hydrography	Marine
MarineHazardAreas	Polygon	Reef*(Reef)*	An area of rock or coral that is exposed between mean high water and lowest tide, or just below approximate lowest tide, which is visually prominent or a hazard to shipping.	390,625 sq metres	FEATTYPE TYPE NAME RELATION FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Hydrography	Marine
		Shoal*(Shoal)*	A detached area of any material the depth over which constitutes a danger to surface navigation of marine craft. The term shoal is not generally used for dangers which are composed entirely of rock or coral.	390,625 sq metres		Hydrography	Marine
MarineHazardPoints	Point	Offshore Rock*(OffshoreRock)*	A rock located offshore that represents a hazard to shipping.		FEATTYPE TYPE NAME RELATION FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Hydrography	Marine
		Wreck*(Wreck)*	A disabled vessel, either submerged or visible, which is attached to, or foul of, the bottom or cast up on the shore.			Hydrography	Marine

Infrastructure

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
AerialCableways	Line	Aerial Cableway	A conveyor system in which carrier units run on wire cables strung between supports.	750 metres	FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Infrastructure	Culture
Conveyors	Line	Conveyor	A continuous belt or series of belts mounted on rollers and used to move large quantities of goods, especially grain or ore.	750 metres	FEATTYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Infrastructure	Industry
DamWalls	Line	Dam Wall	A barrier of earth and rock, concrete or masonry constructed to form a reservoir for water storage purposes or to raise the water level.	250 metres	FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH TEXTNOTE	Infrastructure	Culture

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
Fences	Line	Fence	A structure which encloses bounds or divides a property or part thereof. Includes vermin proof fences.	2,500 metres	FEATTYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Infrastructure	Culture
PetroleumWells	Point	Petroleum Well	A pipe sunk in the ground for the purpose of obtaining subterranean oil or gas.		FEATTYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Infrastructure	Industry
StorageTanks	Point	Storage Tank	Large vessel for the storage of liquids (not water) or gases usually associated with refineries or chemical plants.		FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Infrastructure	Industry

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
Windpumps	Point	Windpump	A tower fitted with a wind-driven pump.		FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Infrastructure	Culture
WaterTanks	Point	Water Tank	A feature constructed on or below the ground for the storage of water.			Infrastructure	Culture
VerticalObstructions	Point	Vertical Obstruction	Prominent man-made features of a permanent nature that either have landmark value are useful for navigation or may constitute a danger to aircraft. Such features will have a height above the local terrain.		FEATTYPE NAME DESCRIPTN HIEGHT FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Infrastructure	Culture
Yards	Point	Yard	A small area of land enclosed by a fence and generally used for confining stock.		FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Infrastructure	Culture

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
MinePoints	Point	Mine Point	An excavation for the extraction of minerals.		FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Infrastructure	Industry
MineAreas	Polygon	Mine Area	An excavation made by the removal of stone, gravel, clay or mineral from the ground for commercial or industrial purposes and tailings dumps from mining operations.	140,625 sq metres	FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Infrastructure	Industry
MarineInfrastructureLines	Line	Breakwater*(Breakwater)*	A solid structure to break the force of the waves, sometimes detached from the coast, protecting a harbour or anchorage.	250 metres	FEATTYPE TYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Infrastructure	Marine
		Jetty*(Jetty)*	A structure projecting into a body of water for use as a promenade or as a platform alongside which vessels may be secured for loading and unloading passengers and cargo.	250 metres		Infrastructure	Marine
		Sea Wall*(SeaWall)*	A solid structure usually of concrete masonry or earth, built to prevent erosion or encroachment by the sea.	250 metres		Infrastructure	Marine
		Wharf Line*(WharfLine)*	A structure built from the land parallel to shore to provide for the berthing of vessels.	250 metres		Infrastructure	Marine

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
MarineInfrastructurePoints	Point	Lighthouse*(Lighthouse)*	A building or structure housing a light used as a navigation aid to shipping.		FEATTYPE TYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Infrastructure	Marine

Terrain

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
Discontinuities	Line	Cliff*(Cliff)*	A high, steep, significant or overhanging face of rock.	1,250 metres	FEATTYPE TYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Terrain	Physiography
		Cutting*(Cutting)*	An open excavation of the Earth's surface to provide passage for a road, railway, canal or similar entity.	500 metres (length) 25 metres (height)		Terrain	Physiography
		Embankment*(Embankment)*	An artificial bank of earth and or stone built above the natural surface.	500 metres (length) 25 metres (height)		Terrain	Physiography
		Levee*(Levee)*	A low earth wall erected to restrain flood waters or to contain irrigation water.	500 metres (length) 2 metres (height)		Terrain	Physiography
SandRidges	Line	Sand Ridge	Sand drifts in long ridges tending parallel to and elongating in the direction of the prevailing winds.	250 metres	FEATTYPE AVGHEIGHT FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL	Terrain	Physiography

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
Caves	Point	Cave	A naturally formed, subterranean open area or chamber.		FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Terrain	Physiography
Pinnacles		Pinnacle	A tall, slender spire shaped rock; projecting from a level or gently sloping surface, or the top of a mountain.			Terrain	Physiography
DeformationAreas	Polygon	Distorted Surface*(DistortedSurface)*	An area over which vehicular movement is difficult or impossible due to the fractured nature of the ground, or rock debris lying on the surface.	390,625 sq metres	FEATTYPE TYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Terrain	Physiography
		Outcrop*(Outcrop)*	An area of land where large rocks or boulders protrude from or rest on the surface.	390,625 sq metres		Terrain	Physiography
Sands	Polygon	Sand Area*(SandArea)*	An area predominantly covered with sand and devoid of vegetation.	390,625 sq metres	FEATTYPE TYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL	Terrain	Physiography
		Sand Dune*(SandDune)*	Mounds of loose sand usually crescent shaped transverse to the prevailing winds.	390,625 sq metres		Terrain	Physiography
Craters	Polygon	Crater	A bowl shaped natural depression with steep slopes at the rim, formed by volcanic activity or meteor impact.	62,500 sq metres	FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Terrain	Physiography

Transport

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
AircraftFacilityPoints	Point	Airport *(Airport)*	A facility licensed by the Civil Aviation Safety Authority for the movement of aircraft and the receipt and discharge of cargo and passengers.		FEATTYPE TYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN	Transport	Aviation
		Heliport*(Heliport)*	A constructed and maintained area for Helicopter take off and landing.			Transport	Aviation
		Landing Ground *(LandingGround)*	A paved or cleared strip on which aircraft take off and land.			Transport	Aviation
Roads	Line	Road	A route for the movement of vehicles, people or animals.	1,250 metres	FEATTYPE NAME CLASS FORMATION NRN SRN FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH TEXTNOTE	Transport	RoadTransport
RoadCrossingPoints	Point	Ford Point*(FordPoint)*	A shallow or flat portion of the bed of a watercourse or lake where a crossing may be effected.		FEATTYPE TYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Transport	RoadTransport
		Road Bridge Point*(RoadBridgePoint)*	A structure erected over a depression or obstacle to carry road traffic.			Transport	RoadTransport

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
RoadCrossingLines	Line	Ford Line*(FordLine)*	A shallow or flat portion of the bed of a watercourse or lake where a crossing may be effected.		FEATTYPE TYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH TEXTNOTE	Transport	RoadTransport
		Road Bridge Line*(RoadBridgeLine)*	A structure erected over a depression or obstacle to carry road traffic.	100 metres		Transport	RoadTransport
		Road Causeway*(RoadCauseway)*	An embankment of earth or masonry erected across open water or an area subject to inundation and carrying a road.	500 metres		Transport	RoadTransport
RoadTunnelPoints	Point	Road Tunnel Point	An artificial underground or underwater passage carrying a road.		FEATTYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Transport	RoadTransport
RoadTunnelLines	Line	Road Tunnel Line	An artificial underground or underwater passage carrying a road.	250 metres	FEATTYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH TEXTNOTE	Transport	RoadTransport
BarrierPoints	Point	Gate*(Gate)*	An opening in a fence or wall for the passage of vehicles, people or animals and which may contain a device to limit		FEATTYPE TYPE FEATREL	Transport	RoadTransport

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
			passage.		ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE		
		Grid*(Grid)*	A grid at the opening in a fence to prevent livestock crossing but allowing for the free passage of vehicles.			Transport	RoadTransport
FerryRouteLines	Line	Ferry Route Line	A route across a river, lake, reservoir or sea used by a vessel for the regular transport of vehicles or passengers from one terminal point to another.		FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Transport	RoadTransport
FootTracks		Foot Track	A track designed to carry pedestrian traffic only.	1,250 metres		Transport	RoadTransport
Railways	Line	Railway	A transportation system using one or more rails to carry freight or passengers.	1,250 metres	FEATTYPE NAME GAUGE STATUS TRACKS FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Transport	RailTransport

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
RailwayBridgePoints	Point	Railway Bridge Point	A structure erected over a depression or obstacle to carry rail traffic.		FEATTYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Transport	RailTransport
RailwayCrossingLines	Line	Railway Bridge Line*(RailwayBridgeLine)*	A structure erected over a depression or obstacle to carry rail traffic.	100 metres	FEATTYPE TYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH TEXTNOTE	Transport	RailTransport
		Railway Causeway*(RailwayCauseway)*	An embankment of earth or masonry erected across open water or area subject to inundation and carrying a railway.	500 metres		Transport	RailTransport
RailwayTunnelPoints	Point	Railway Tunnel Point	An artificial underground or underwater passage carrying a railway.		FEATTYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Transport	RailTransport

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
RailwayTunnelLines	Line	Railway Tunnel Line	An artificial underground or underwater passage carrying a railway.	250 metres	FEATTYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH TEXTNOTE	Transport	RailTransport
RailwayStopPoints	Point	Railway Station*(RailwayStation)*	A recognised stopping place for trains where passengers may board or alight or freight is loaded or unloaded. There may or may not be a platform. The railway station may not be in use.		FEATTYPE TYPE NAME FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL FEATWIDTH ORIENTATN TEXTNOTE	Transport	RailTransport

Utility

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
Powerlines	Line	Powerline	Wire or wires supported on poles, towers or pylons, used for the transmission of high voltage electricity.	2,500 metres	FEATTYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Utility	Utility

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
Pipelines	Line	Pipeline	A pipe used for carrying gases and/or liquids.	1,250 metres	FEATTYPE NAME PRODUCT RELATION FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Utility	Utility

Vegetation

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
NativeVegetationAreas	Polygon	Forest Or Shrub*(ForestOrShrub)*	An area of land with woody vegetation greater than 10% foliage cover (includes trees and shrubs).	250,000 sq metres	FEATTYPE TYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Vegetation	Vegetation
		Mangrove*(Mangrove)*	A dense growth of mangrove trees, which grow to a uniform height on mud flats in estuarine or salt waters. The land upon which the mangrove is situated is a nearly level tract of land between the low and high water lines.	390,625 sq metres		Vegetation	Vegetation
		Rainforest*(Rainforest)*	Vegetation community which contains key rainforest species, with foliage cover greater than 70%.	390,625 sq metres		Vegetation	Vegetation
CultivatedAreas	Polygon	Orchard*(Orchard)*	An area covered by an orderly planting of trees, vines or bushes which yield fruits, nuts or other edible products.	390,625 sq metres	FEATTYPE TYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Vegetation	Vegetation
		Plantation*(Plantation)*	Intensively managed stands of trees of either native or exotic species, created by the regular placement of seedlings or seeds.	390,625 sq metres		Vegetation	Vegetation

Feature Class	Geometry	Feature Type *(SubType)*	Feature Type Definition	Minimum Size Criteria	Associated Attributes	Distribution Feature Dataset	Production Feature Dataset
Windbreaks	Line	Windbreak	A narrow strip of natural or planted trees, or scrub, positioned so as to break the force of the prevailing wind.	1,250 metres	FEATTYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL	Vegetation	Vegetation
ClearedLines	Line	Cleared Line	A graded path in a straight line.	2,500 metres	FEATTYPE FEATREL ATTREL PLANACC SOURCE CREATED RETIRED PID SYMBOL TEXTNOTE	Vegetation	Vegetation

Appendix C: System Requirements and Installation of GEODATA TOPO 250K Series 3 for Google Earth

System Requirements: Computers should meet requirements for running Google Earth and requires Google Earth 4 or later installed. It should also have 2 GB space for storing the Geodata on a hard drive.

The following section (Appendix D) provides instructions on installing and using *Geodata Topo 250K Series 3 for Google Earth.*

Appendix D: Instructions for Viewing and Querying GEODATA TOPO 250K Series 3 for Google Earth

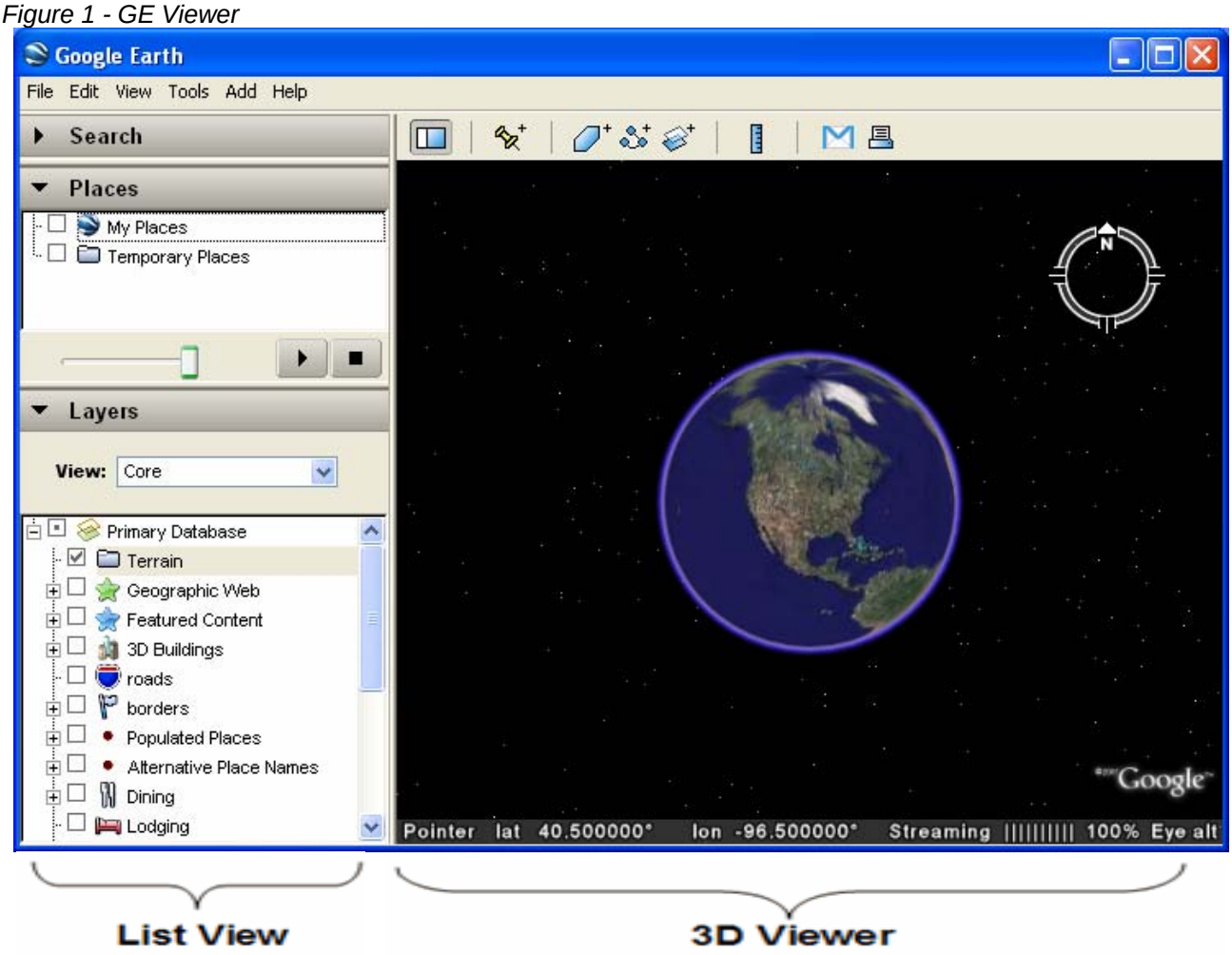
1. Your computer should meet requirements for running Google Earth and requires Google Earth 4 (or later version) installed. Install Google Earth 4 (or later version), if not installed already.

2. Your computer should also have 2 GB space for storing the Geodata on a hard drive. Copy the contents of the DVD on to your computer's hard drive, preferably under a new folder (e.g. C:\Geodata3_GoogleEarth).

Please note that copying data may take a long time. It is recommended that data should be copied when the computer is likely to be idle (e.g. at night). Please ensure that all the data has been copied. Compare the sub-folder count in the Data folder of copied data with the sub-folder count in the Data folder of the DVD*. **Advanced users*** - You may use DOS command 'XCOPY *source destination*' (for example 'C:\>XCOPY D:\ C:\Geodata3_GoogleEarth /S' where D:\ is the *source* DVD drive and C:\Geodata3_GoogleEarth is the *destination* folder).

3. Launch Google Earth (GE). The Google Earth Viewer (GE Viewer) will appear on the screen (Figure 1). GE Viewer has 2 sections, on left hand side is the "List View" and on right hand side is the "3D Viewer".

Figure 1 - GE Viewer



The next two steps (Steps 4 and 5) will improve the speed and reduce the clutter of features displayed from the Primary Database.

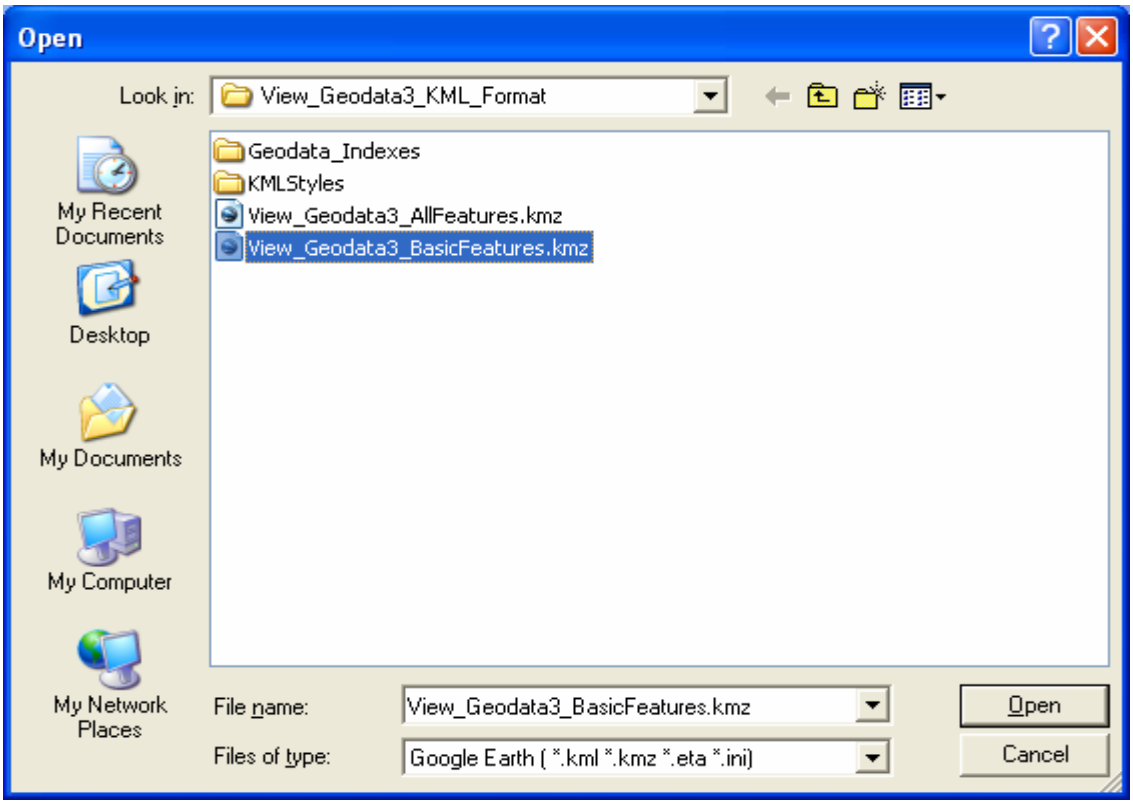
4. In GE Viewer, right click **My Places** (in Places panel of List View) and left click on **Delete Contents**. Select **Yes** button in the popup window.

5. In GE Viewer, click the box next to Primary Database (in Layers panel of List View) to make it blank. Then click the box next to Terrain (under Primary Database) to tick it on.

6. On GE Viewer, Left click **File** > **Open** - an 'Open' window will appear (Figure 2). In the 'Open' window navigate to **View_Geodata3_KML_Format** folder. Then select file **View_Geodata3_BasicFeatures.kmz** to view basic features (select **View_Geodata3_Roads.kmz** to view roads, or select **View_Geodata3_AllFeatures.kmz** to view all features). Then left click the **Open** button located at the right hand lower corner of the 'Open' window.

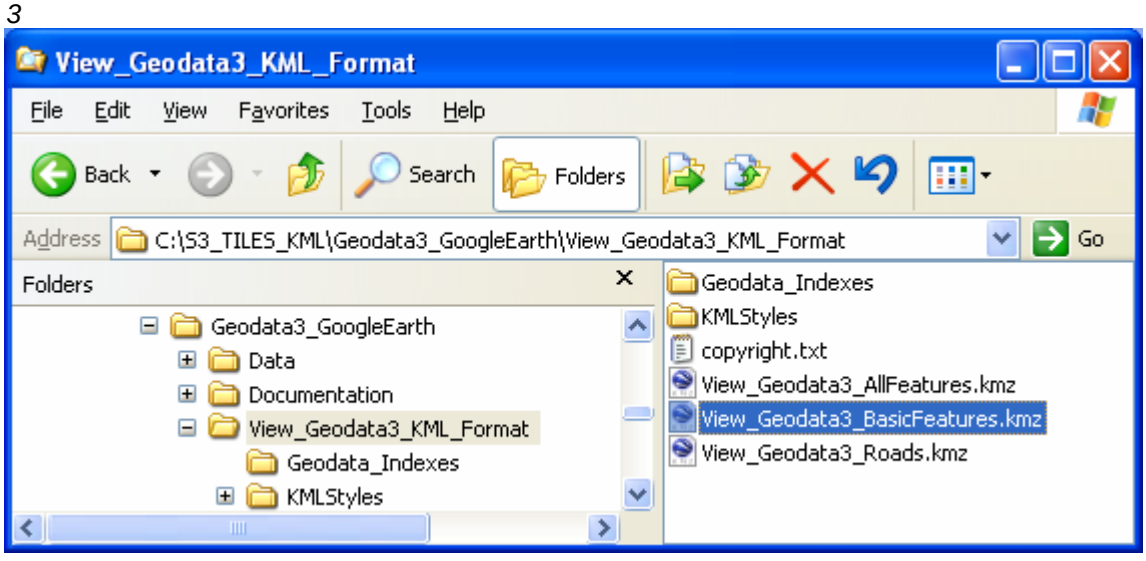
   Note: When viewing data via these files, features switch on and off at predefined scales. Viewing the basic features is usually adequate for most purposes. View**_Geodata3_Roads** loads data for roads and populated places only whereas **View_Geodata3_AllFeatures.kmz** loads data for all features. However, several features such as contours, bridges, sand ridges etc are turned off to avoid clutter in the display. These features do not display by default. To view these features, turn them on as described in section 11.

Figure 2



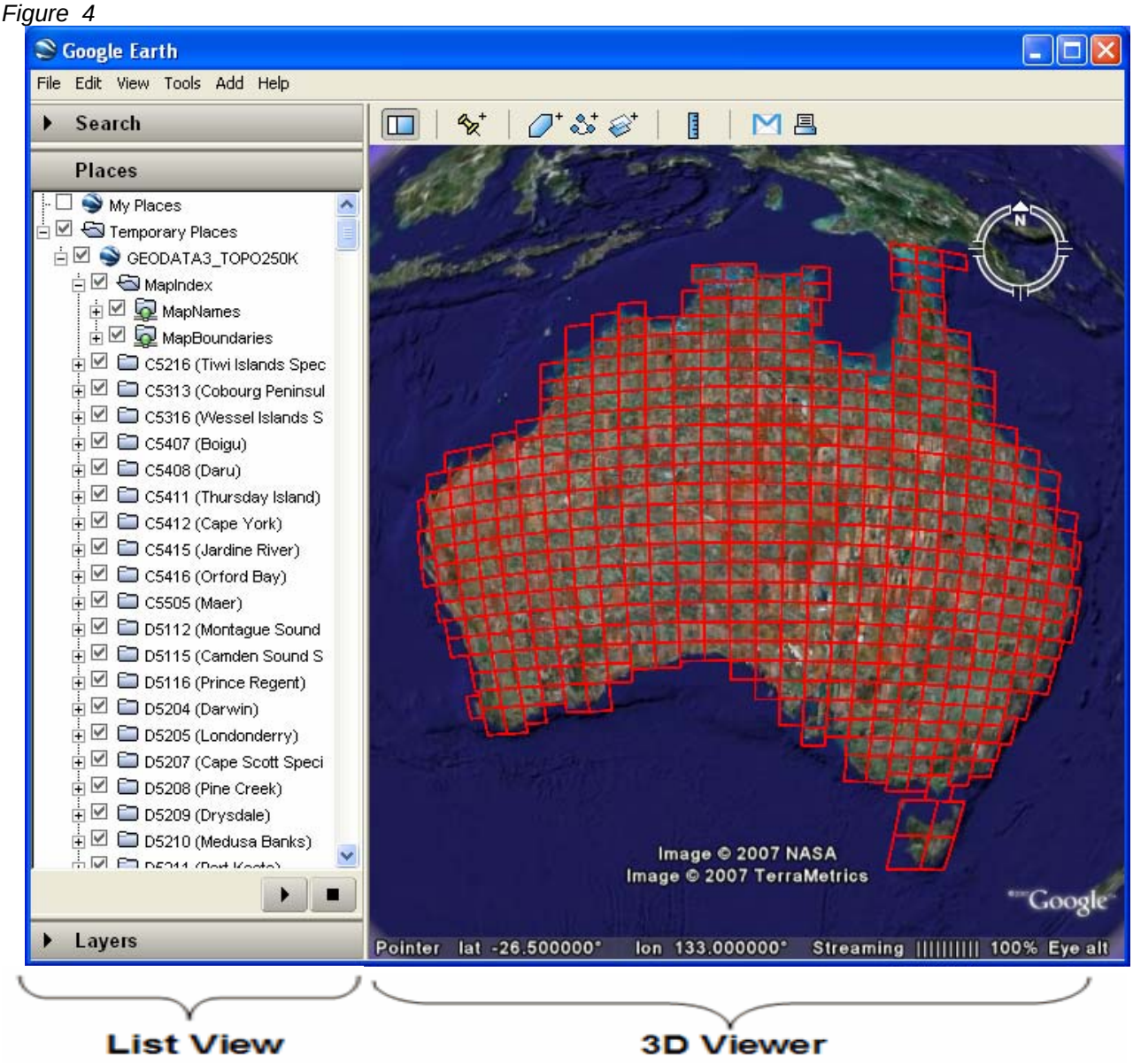
7. **An alternate method to Step 6** is to locate the **View_Geodata3_BasicFeatures.kmz** (or **View_Geodata3_AllFeatures.kmz**) in the Windows File Explorer (Figure 3) then drag and drop it on to the GE Viewer.

Figure 3



8. The **GEODAT3_TOPO250K** folders containing map data files and links are displayed in List View and the Tile Indexes Grid containing GEODATA TOPO 250K Series 3 features are displayed in the 3D Viewer (Figure 4).

Figure 4



9. There are 3 main ways to view feature details in any map/tile area, these are:

9.1. Using zoom in 3D Viewer. In 3D Viewer window navigate to the desired area (e.g. CANBERRA, Figure 5A) and zoom in further to view features in the area (Figure 5B).

Figure 5 A

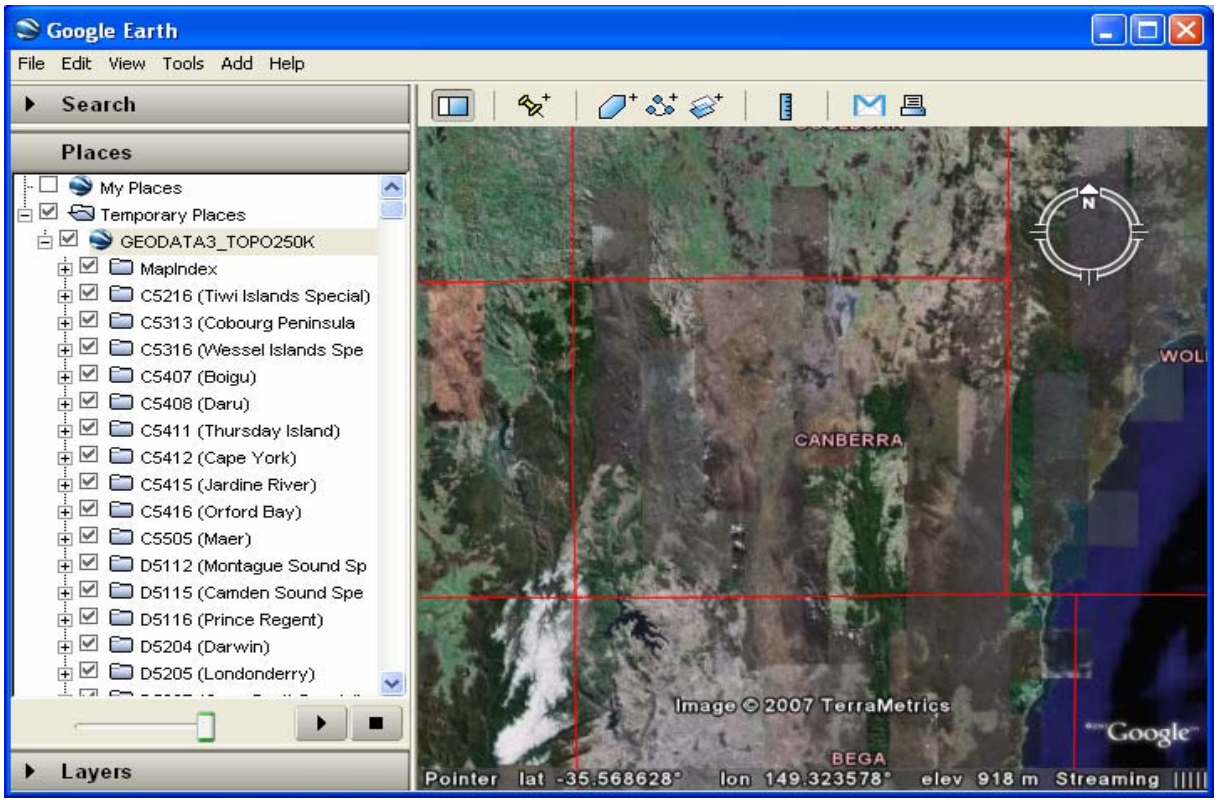
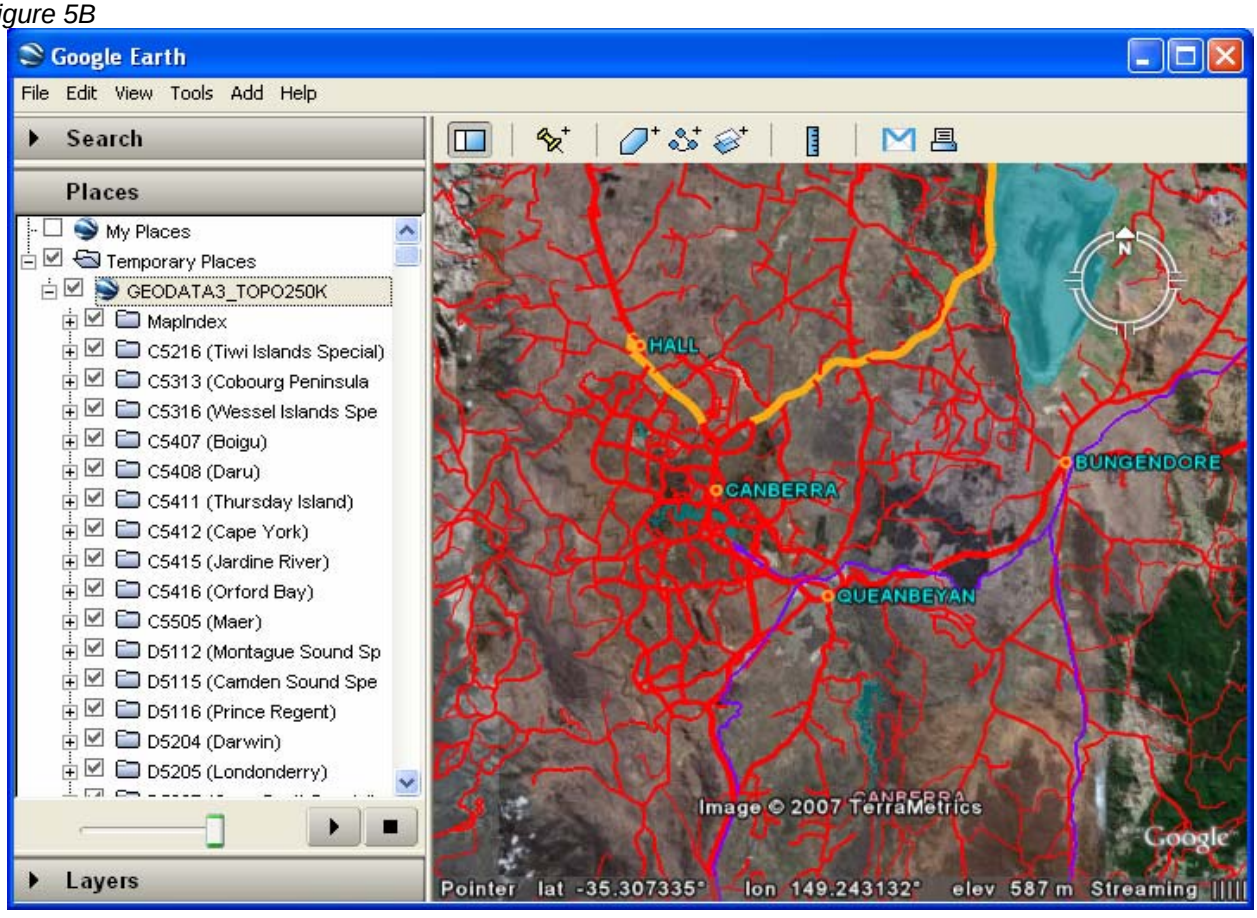
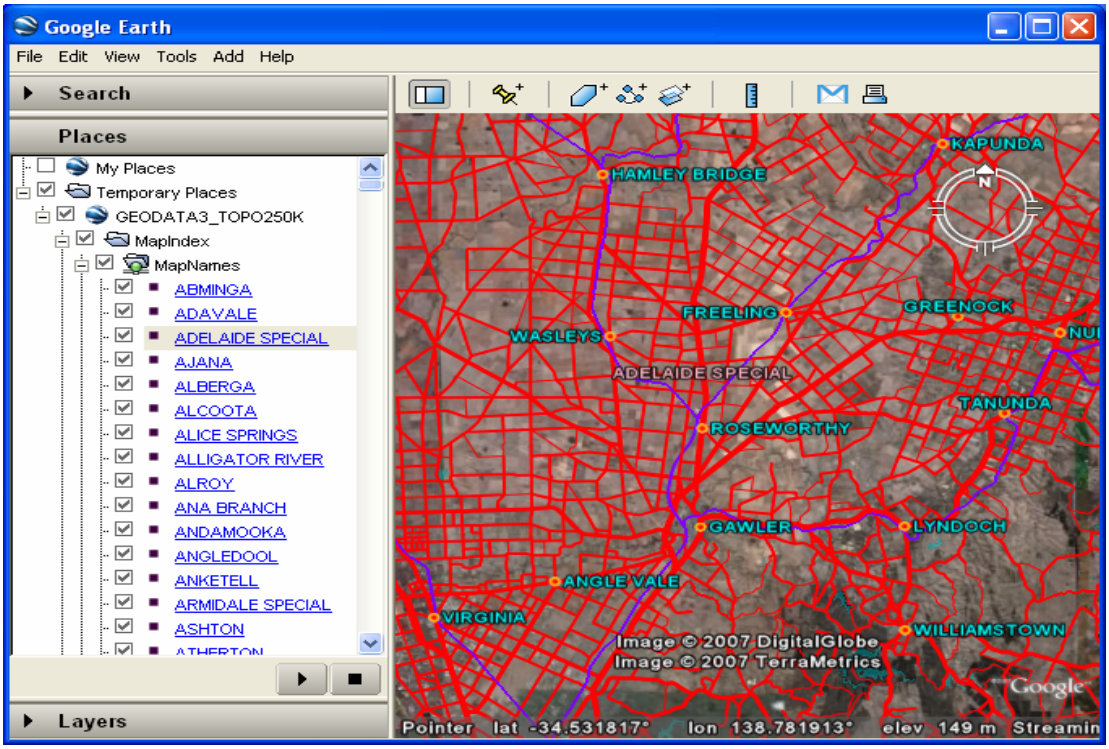


Figure 5B



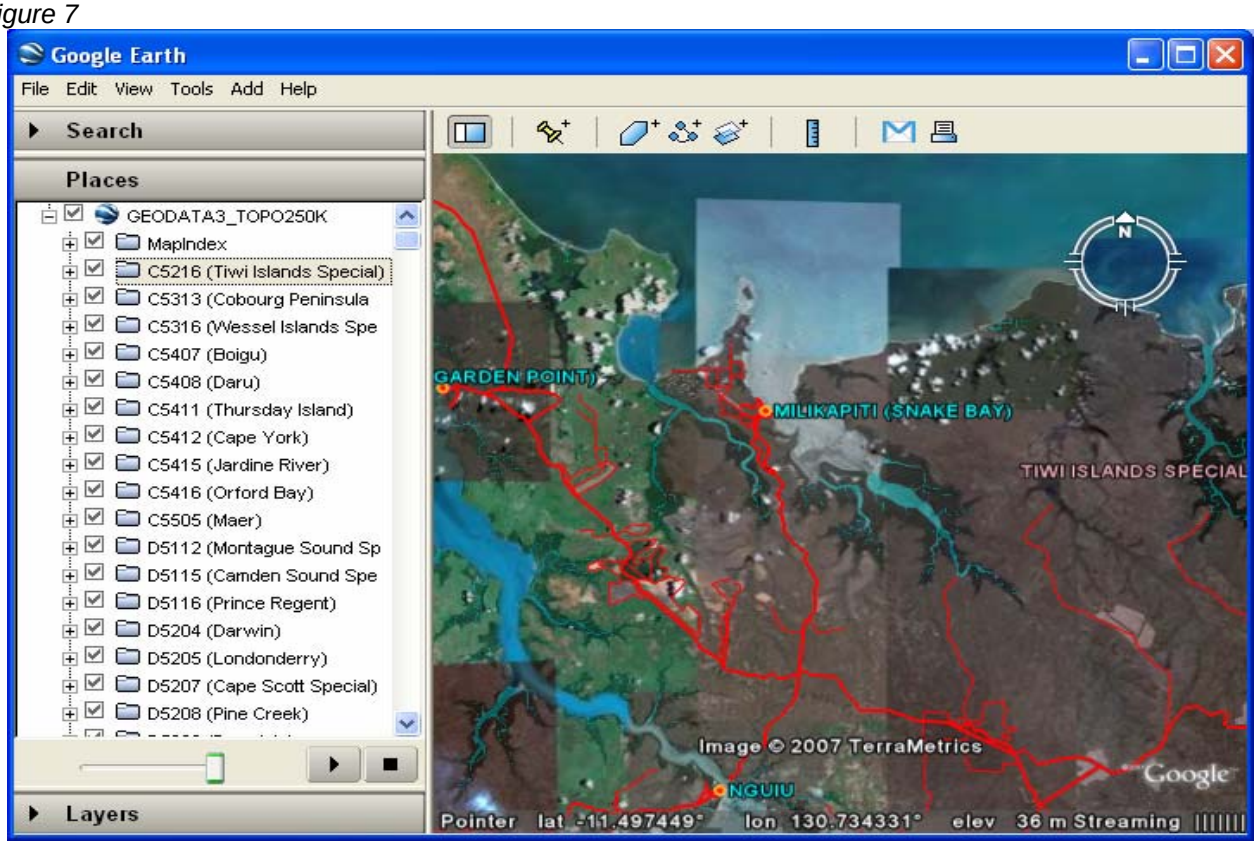
9.2. Using Map Names. To see NATMAP map names, expand the **MapNames** Folder in List View by clicking on the **+** next to it (**GEODATA3_TOPO25K\MapIndex\Map Names**). Scroll down to the desired map name (e.g. ADELAIDE SPECIAL). Double Click on the name. Google Earth will navigate to the map. Then zoom in further to see the features (Figure 6).

Figure 6



9.3. Using Map/Tile Number. In List View, scroll down to the desired map/tile number - e.g. C5216 (Tiwi Islands Special). Double Click on the map number. GE will navigate to the area of that Map/Tile. Then zoom in further to see the features (Figure 7).

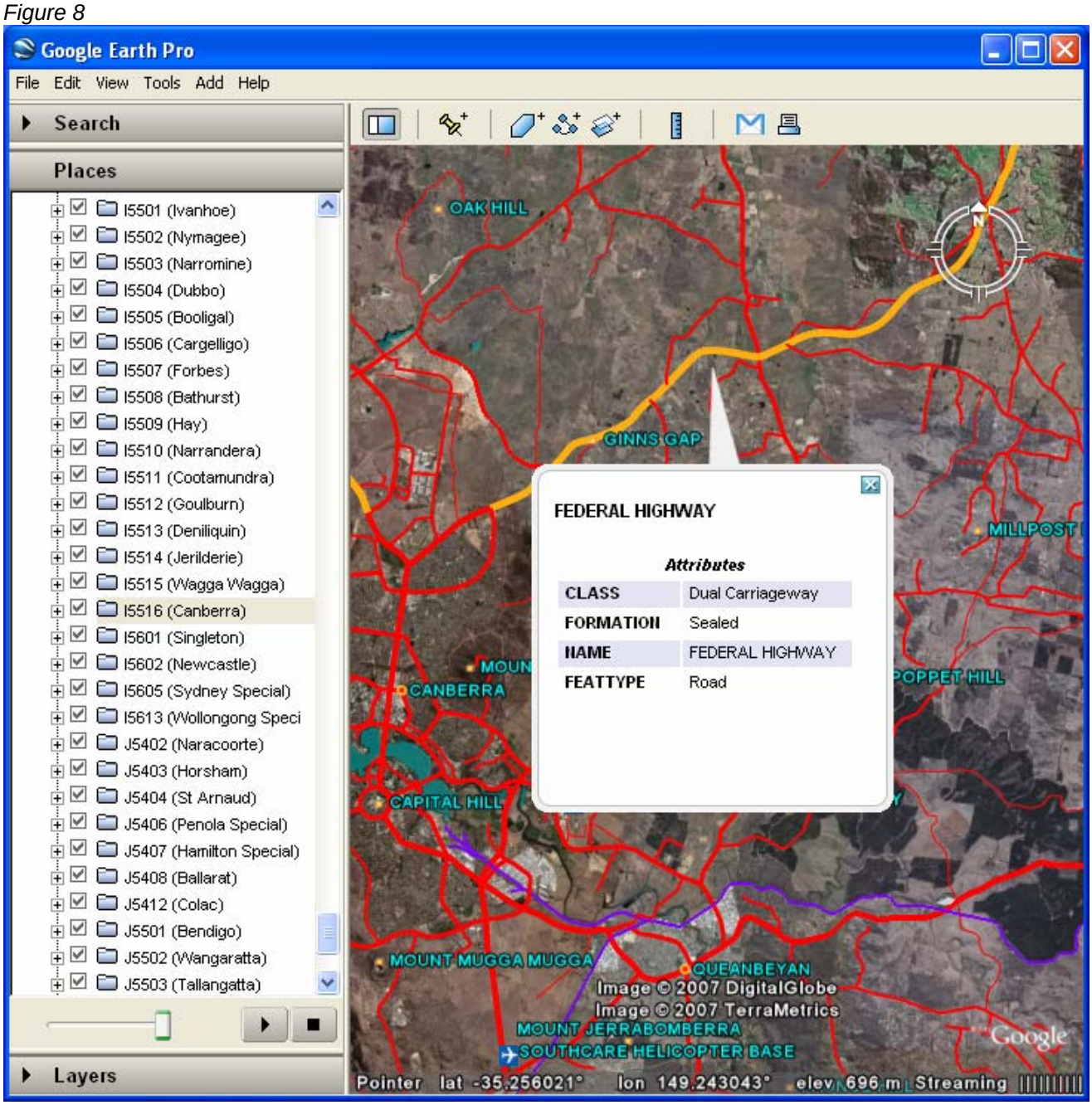
Figure 7



10. Finding information about GEODATA TOPO 250K Series 3 features in Google Earth. In 3D Viewer, place the cursor over the desired feature then press Control (Ctrl) key on the keyboard and left click. A balloon will appear showing a list of attributes for the feature. To close the balloon, click on **X** located at the top right corner of the balloon (Figure 8).

Please note that to find information about a linear feature which lies within an area feature, you have to first turn off the display of the area feature - this procedure is described in the next section.

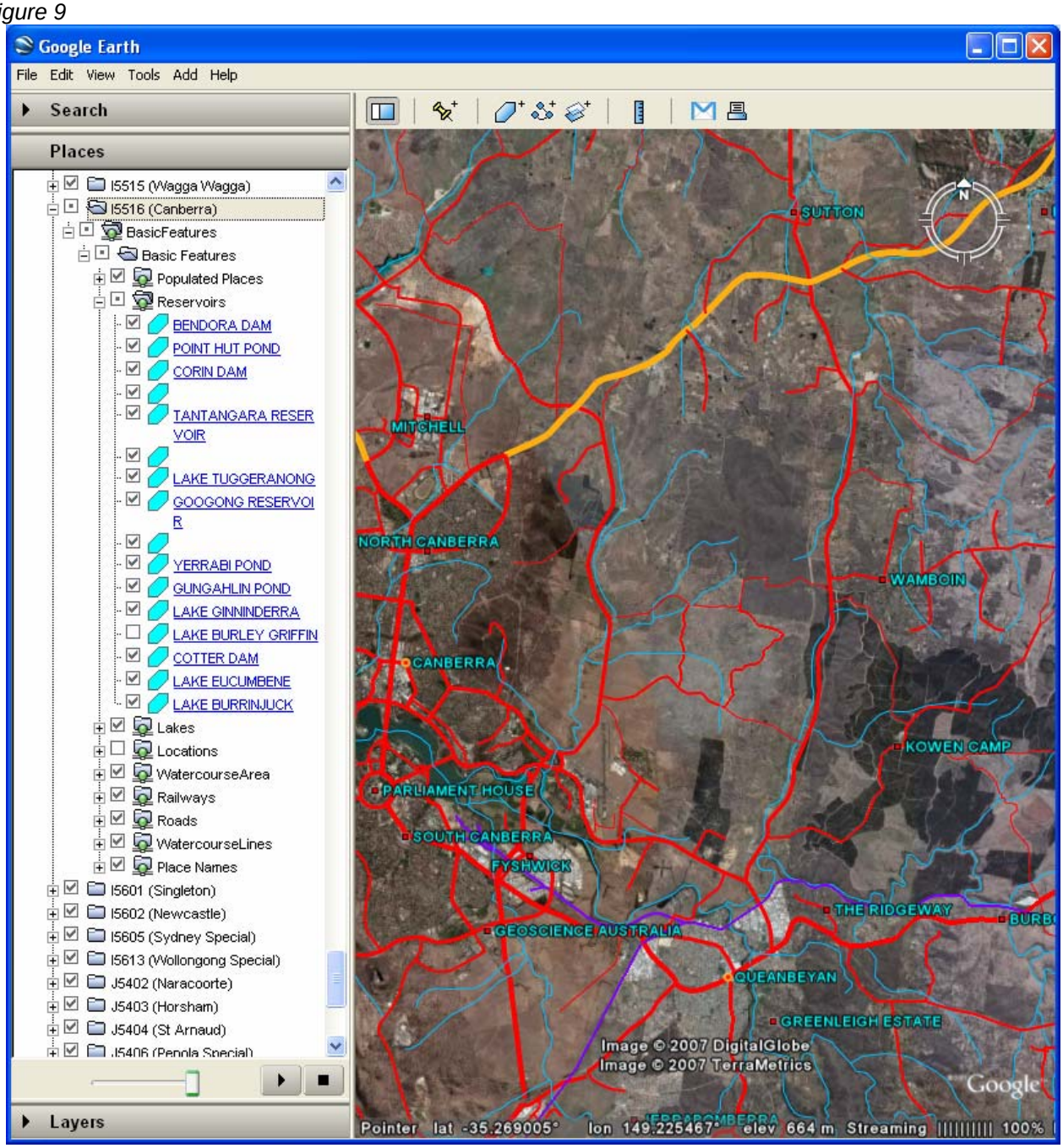
Figure 8



11. **Turning Off/On the display of GEODATA TOPO 250K Series 3 for Google Earth Features.** In List View, scroll down and locate the highlighted folder for the map being viewed in the 3D Viewer (e.g. I5516 Canberra). Expand the folder and sub folders under it. Identify the folder for the features to be turned Off/On. Clicking on the check box next to the feature's folder removes/reinstates the tick mark. Remove the tick to turn off display of all the features in the folder. Reinstating the tick mark in the check box will turn on display of all the features in the folder.

    Features within the folder can also be turned On/Off individually, by clicking in the check box for any feature/features. For example, removing the tick mark from the check box next to the Locations folder turns off all the Locations, and removing the tick mark from the check box next to a lake feature (e.g. LAKE BURLEY GRIFFIN) under the Reservoirs folder turns off that single Lake feature, as shown in Figure 9.

Figure 9



12. **Customising features (advanced users only).** Users may add or modify features and save them as KML files. This user guide does not provide details on this process. For more information visit the Google Earth web site.

13. **Drifting continuously.** If you want to drift continuously in any direction, hold the left mouse button down. Then, briefly move the mouse in the desired direction and release the button, as if you are "pushing" the scene. Click once in the 3D viewer to stop motion. The scene will pause for a couple of moments when it crosses from one tile to another whilst Google Earth loads data for the next tile.

14. **Exiting Google Earth.** In GE Viewer, Left click **File** > **Exit** or click on **X** in the top right hand corner. A 'Google Earth' question window will come up (Figure 10). Select **No** in the GE question window.

Figure 10

If you chose **Yes** in step 14, the topographic data will be saved in the **My Places** folder and when you launch GE next time, an error message window similar to the one shown below (Figure 11) will appear.

Figure 11

To remedy the problem close all the error message windows (by clicking on each Stop button). Then delete the contents of **My Places** folder as described in step 4 and open an appropriate view (.kmz) file as described in step 6.

Please follow step 14 each time you exit Google Earth.