Australian Government
Geoscience Australia

APPLYING GEOSCIENCE TO AUSTRALIA'S MOST IMPORTANT CHALLENGES

National Coastal Maritime Navigation Lights Database

Metadata Statement

Last updated in 2012

Geocat Number: 75063

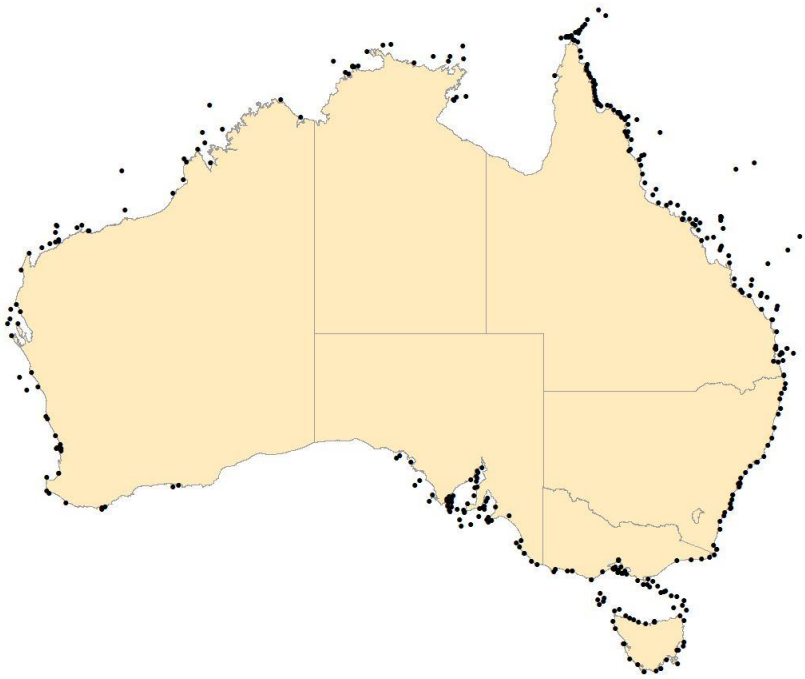
Use Constraint:

Keywords:
Lighthouse, Maritime Navigation Aid

Definition:
For the purposes of this dataset a Coastal Maritime Navigation Light is defined as: *A structure exhibiting a light to aid marine navigation.*

Abstract:
The National Coastal Maritime Navigation Lights dataset presents the spatial locations; in point format, of all known coastal maritime navigation lights within Australia.

National Map of Facilities:



Lineage Statement:

The coastal maritime navigation lights were digitized in 2012 from the library of imagery held within Geoscience Australia. Imagery used ranged from 0.15m to 2.5m resolution. RAN Hydrographic Charts were used when imagery was not available.

The first version of this database was subsequently released on the GA website in March 2015.

Source Information:

The primary information sources used to identify and attribute the national coastal maritime navigation lights was the Australian Lighthouses and the Lighthouses of Australia Inc publicly accessible websites:

1. Australian Lighthouses
   http://www.lighthouses.net.au

2. Lighthouses of Australia Inc.
   http://www.lighthouses.org.au

Where required the primary information sources were supplemented with existing Geoscience Australia (GA) spatial data.

Positional (Spatial Confidence) Accuracy:

Accuracy of the spatial data varies depending on the geographic location of the coastal maritime navigation lights and the accuracy of the imagery used to digitize the features.

The 'Spatial Confidence' attribute is a GIS specialist's estimation/interpretation of the location accuracy of the digitized feature without taking into account the planimetric accuracy of the imagery used during the process. Values range from 1 to 5 and are assigned based on the following criteria:

5	Feature positively identified from imagery (expert ID) and, along with reliable reference material, feature located with 100% certainty; or expert ID from imagery or reliable reference material and individual knowledge sufficient to be 100% certain of location
4	Feature positively identified from imagery (expert ID) but reference material insufficient to be 100% positive
3	Feature placed on location of full address / known coordinates but can't be positively identified from imagery; or feature placed on suspected location of facility identified from imagery, within a known, more general, location (such as a hospital grounds)
2	Feature placed on street / general facility site
1	Feature placed in the centre of district / town

Attribute Accuracy:

The accuracy of the attribute information is reliant upon the sources outlined above. Where required, Geoscience Australia staff sought clarification from online sources to validate information.

Logical Consistency:

Geoscience Australia used a Validation and Testing methodology to ensure the quality and compliance of the coastal maritime navigation lights dataset.

Testing is carried out using a mixture of computer programs and proprietary GIS packages (such as ArcGIS). Many of the tests are automated, using customised computer programs. These are supported by a detailed on-screen visual inspection of the digital data against available imagery and reference material for logical consistency and attribute accuracy.

Where feature populations are small, or the validation tests are particularly important, the full population will be tested. Where feature populations are large, or a less stringent tolerance applies, a Statistical Subset or Sample (Area) test may be used. Statistical Subset tests are a random selection of features from the whole population, whereas Sample tests assess features within a selected geographical area.

Statistically acceptable procedures are adopted for tests that require sampling. The sampling procedures adopted are based on the Australian Standard AS1199-1988: "Sampling procedures and tables for inspection by attribute". The Acceptable Quality Level (AQL) is in the range of 0% to 5% against a defined technical specification.

Completeness:

All coastal maritime navigation lights listed in the primary information sources (refer to Source Information) have been digitised. However, this database should not be regarded as an authoritative and accurate record of all Australian Lighthouses and/or Navigation Lights on the Australian coastline.

Attribute information fields have been populated where data was available. Where there is no data available, incomplete fields are assigned a <Null> value. Attribute fields will be updated or populated during future scheduled maintenance cycles if new information or updated information is identified and publicly available.

Data Dictionary:

Attribute Name	Attribute Alias	Description
OBJECTID_1*	Object ID	Automatically generated system ID
SHAPE*	Shape	Geometry type (Point)
FEATURETYPE	Feature Type	Type of feature (Coastal Navigation Light)
NAME	Name	Name of the navigation light
REF_NUM	Reference Number	Reference number corresponding to the publication – Admiralty List of Lights and Fog Signals, Vol K.
CODE	Code	Maritime navigation facility type – refer to list of attribute Codes beneath this table.
STATUS	Status	Operational status of facility
STATE	State	State or territory name
HEIGHTABOVESL_M	Tower Height (ASL) Metres	Height of coastal navigation light (ASL) in metres
TOWERHEIGHT_M	Tower Height (AGL) Metres	Height of coastal navigation light (AGL) in metres
LIFESPAN	Life Span	Year the lights were commissioned and/or decommissioned
FEATURERELIABILITY	Feature Reliability	Capture date of image used to digitize feature's position
FEATURESOURCE	Feature Source	File name of image used to digitize feature's position
ATTRIBUTERELIABILITY	Attribute Reliability	Currency date of source material used to attribute feature
ATTRIBUTESOURCE	Attribute Source	Name of source material used to attribute feature
PLANIMETRICACCURACY	Planimetric Accuracy	Planimetric accuracy of imagery used to capture or digitize the feature
SPATIALACCURACY	Spatial Accuracy	Confidence rating of the accuracy of the feature's spatial location (5 high – 1 low)
METADATACOMMENT	Comments	General comments field
METADATALINK1	Link 1	A hyperlink which can be activated in an ArcMap Session to a separate document or Website
REVISED	Last Revised	The date the feature was last revised

Attribute Name **– CODE**
The following is a list of Codes (bold type) for the types of Maritime Navigation Facilities:

A Traditional lighthouse tower with internal stair and revolving lantern
B As above but with a fixed light such as a leading light
G Glass Reinforced Plastic Hut, usually solar panelled with quartz light (GRP Hut)
L Lattice metal tower, usually with a GRP hut on top
W In the water, i.e. a pile light or channel marker
Z Accommodation available – check with State Parks & Wildlife Office
O Other, usually white square masonry tower or some other oddity
S Lightship

Data Maintenance:

The next revision of this database will be determined by Geoscience Australia's work program. This timeframe ranges between 1 and 5 years or by formal written agreement with Geoscience Australia.

Known Limitations of the Data:

None

Revision Dates and Descriptions:

February 2015	• Full metadata statement update
	• Added Data Dictionary on Page 3 of this document
	• Added Definition on Page 1 of this document
	• Added Geocat Number on Page 1 of this document
	• Changed contact email to GA client services
	• Added Use Constraint
	  • Logo - © Commonwealth of Australia (Geoscience Australia) 2014
	  • Creative Commons Attribution 3.0 Australia Licence

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