Pacific Island Groundwater Vulnerability to Future Climates Dataset

Metadata

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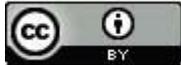Geoscience Australia

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Metadata

Type   Polygon: ESRI Shapefile /comma-separated values file (.csv)
Scale   1: 250,000
Projection   World Mercator Projection, WGS84 with central meridian 180 degrees longitude, standard parallels at 0 degrees latitude.

Abstract	Data package containing an ESRI shapefile and associated comma-separated value table (.csv) of the Pacific islands, including the countries of Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Nauru, Niue, Palau, Papua New Guinea, Republic of Marshall Islands, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu. The ESRI shapefile contains polygons of the islands and has been adapted from the World Vector Shoreline dataset, with original scale suitability of 1:250,000 (reference: Soluri, E.A. & Woodson, V.A. 1990. World Vector Shoreline. International Hydrographic Review LXVII(1)). See lineage for more information. The .csv file contains tabular data associated with the island polygons. The file has been adapted to suit the purposes of the companion report by Dixon-Jain et al. (2014). The island polygon shapefile and .csv file can be joined using the common UniqueID field.

The attribute fields within the .csv file include island hydrogeological and physical characteristics. Relative ratings for components of the potential vulnerability framework are included for the two projection periods (2035-2064 and 2070-2099), for each climate hazard (low rainfall periods and mean sea-level rise). See the field list within lineage in the Data Dictionary for more information on the source of each attribute.

The full bibliographic reference for the companion report (catalogue number 79066) is: Dixon-Jain, P., Norman, R., Stewart, G., Fontaine, K., Walker, K., Sundaram, B., Flannery, E., Riddell, A., Wallace, L. 2014. Pacific Island Groundwater and Future Climates: First-Pass Regional Vulnerability Assessment. Record 2014/43. Geoscience Australia, Canberra. http://dx.doi.org/10.11636/Record.2014.043 |
| **Lineage** | Island polygon coverage for the Pacific region was originally derived from the World Vector Shoreline dataset at a spatial resolution of 1:250,000 in the World Geodetic System 1984 (WGS84) coordinate system (reference: Soluri, E.A. & Woodson, V.A. 1990. World Vector Shoreline. International Hydrographic Review LXVII(1)). This dataset was quality checked and verified against ESRI National Geographic base maps (ESRI. 2012. National Geographic World Map - Basemap. USA: ESRI), Google Earth aerial photography as well as Google international borders and coastlines (Google Inc. 2012. Google Earth (Version 6.2.2.6613)). This dataset was further checked and some areas re-digitised against a number of larger and smaller-scale (ranging from 1:10,000 to 1:1.5 million) hydrographic charts, specifically for the countries of Niue, Tonga, Tokelau, Western Samoa and parts of Cook Islands (reference: New Zealand Hydrographic Authority. 2012. Various charts. New Zealand: Land Information New Zealand (LINZ)). The resulting polygon dataset was projected into the World Mercator projection in order to generate island areas and for consistency with other datasets. The number of islands represented in the database is 5,644. |

	The main island of Papua New Guinea (east New Guinea) has been sub-divided into three areas based on its hydrogeology. For the analysis of relative potential vulnerability, and the components of the vulnerability framework, east New Guinea was treated as three separate regions. A single polygon of the entire island has been included in the database for assigning an island type, maximum elevation and maximum width. The total number of records represented in the database is 5,647.
Access	All restricted data have been removed from the final product. The dataset is available under a Creative Commons Attribution 3.0 Australia License.
Use Limitations	The dataset has been designed to provide a first-pass regional overview of the relative potential vulnerability of Pacific Island groundwater systems to future climates.
Positional Accuracy	Positional accuracy is considered to be high due to the correlation of the island locations with multiple external datasets.
Attribute Accuracy	Attribute accuracy is dependent on the source of the data – see the Data Dictionary for details on the accuracy of each attribute.
Logical Consistency	Generally consistent for the full dataset. Island maximum elevation data was collated from various sources. The method used to assign maximum elevation values to individual islands was dependent on the data source (see the data dictionary for a full description).
Completeness	The island outlines for the region are considered to be complete (5,644 islands). Attribute completeness For islands which had a known island type, and were assessed to have groundwater or surface water (1,811 islands), the dataset is considered complete for the available data. Of these, elevation values were not available for 27 islands, and 383 islands did not have sea-level exposure data. Less emphasis was placed on ensuring all attributes were complete for islands which were not assigned an island type (2,021 of all islands), or which were assessed as unlikely to have groundwater or surface water. Of these, 1,091 were not assigned a maximum elevation value. Population density information was assigned to all islands where data were available. 372 islands have no population data.
Format	Data package containing an ESRI Shapefile and a comma-separated values file (.csv).
Projection	World Mercator Projection, WGS84 with central meridian 180 degrees longitude, standard parallels at 0 degrees latitude.