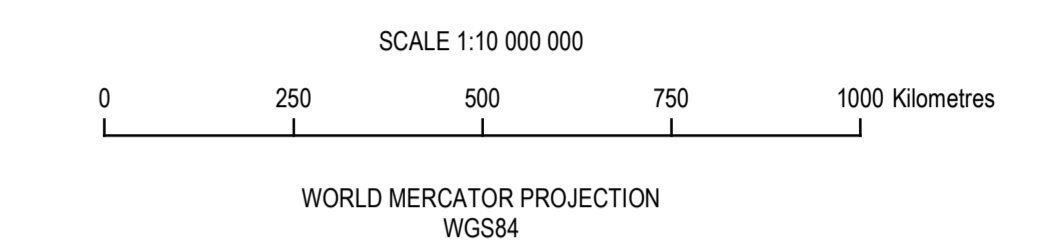


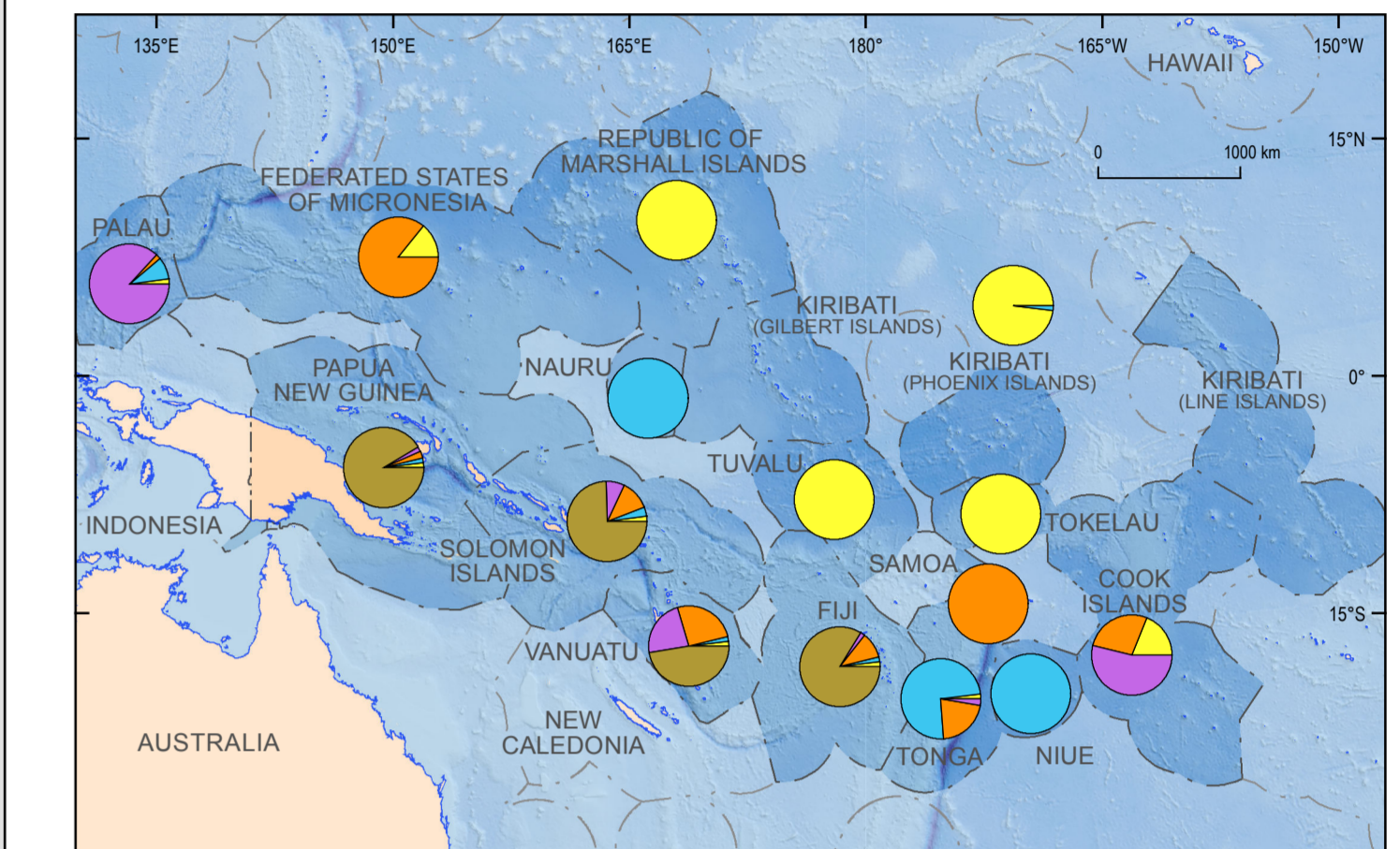
HYDROGEOLOGICAL ISLAND TYPES IN THE PACIFIC REGION

SHEET 5 OF 7

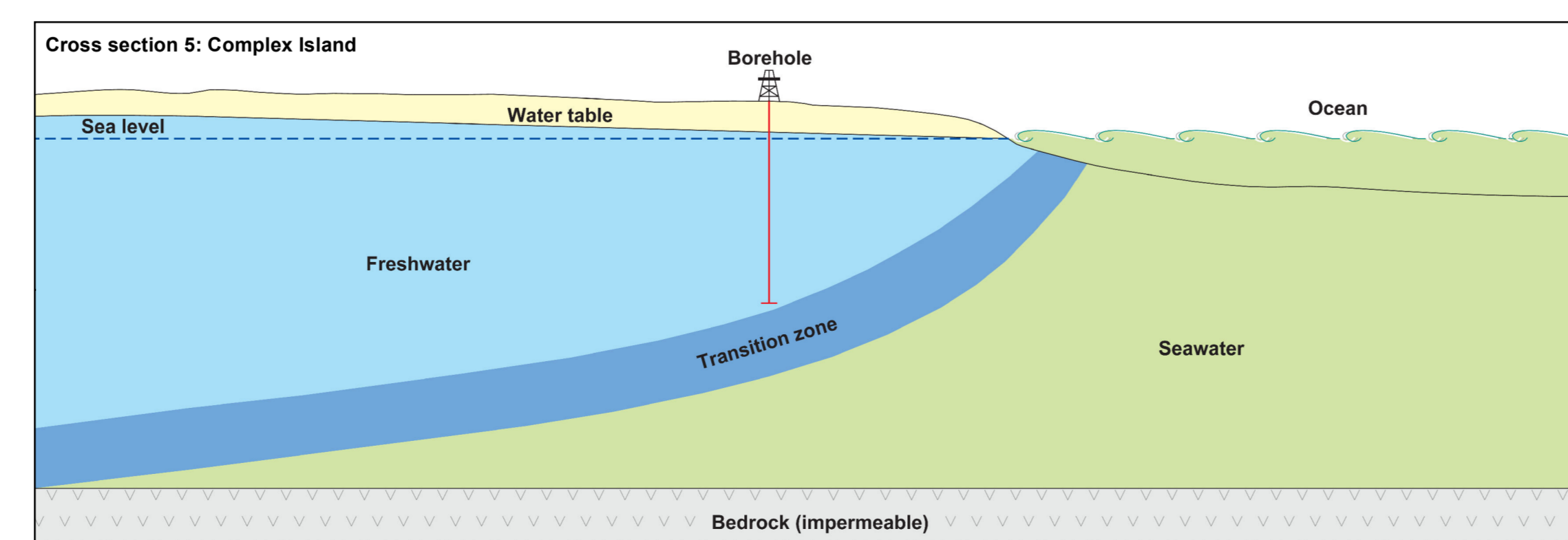
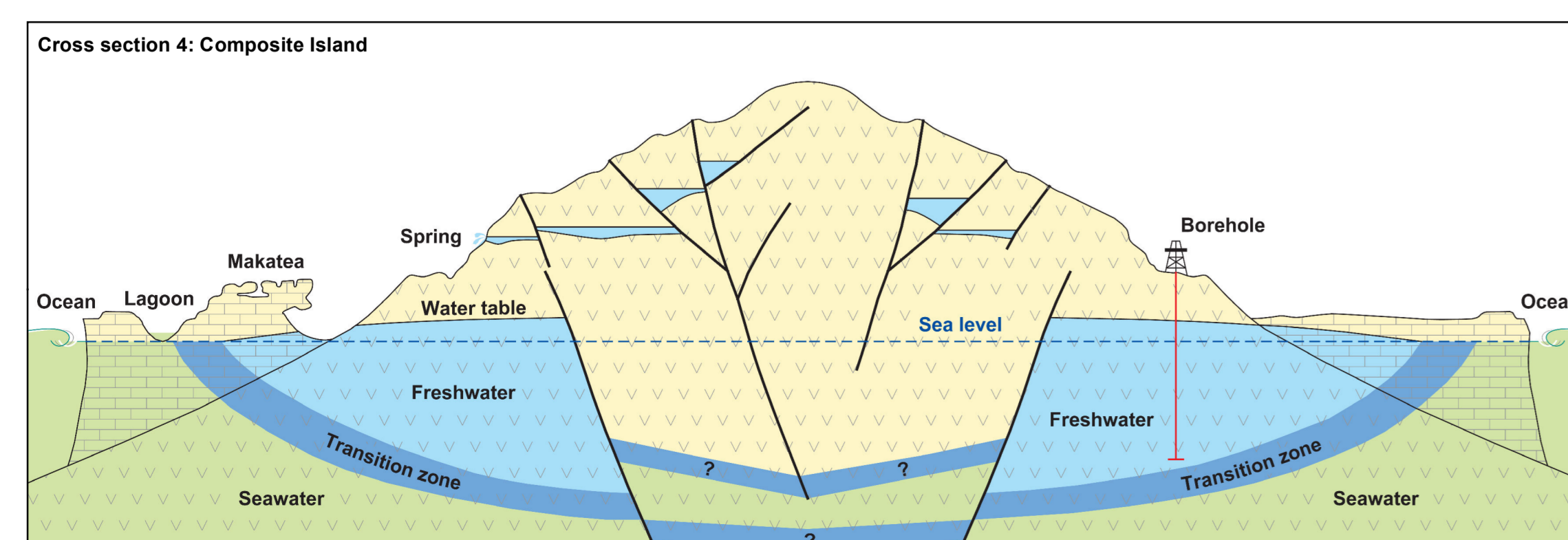
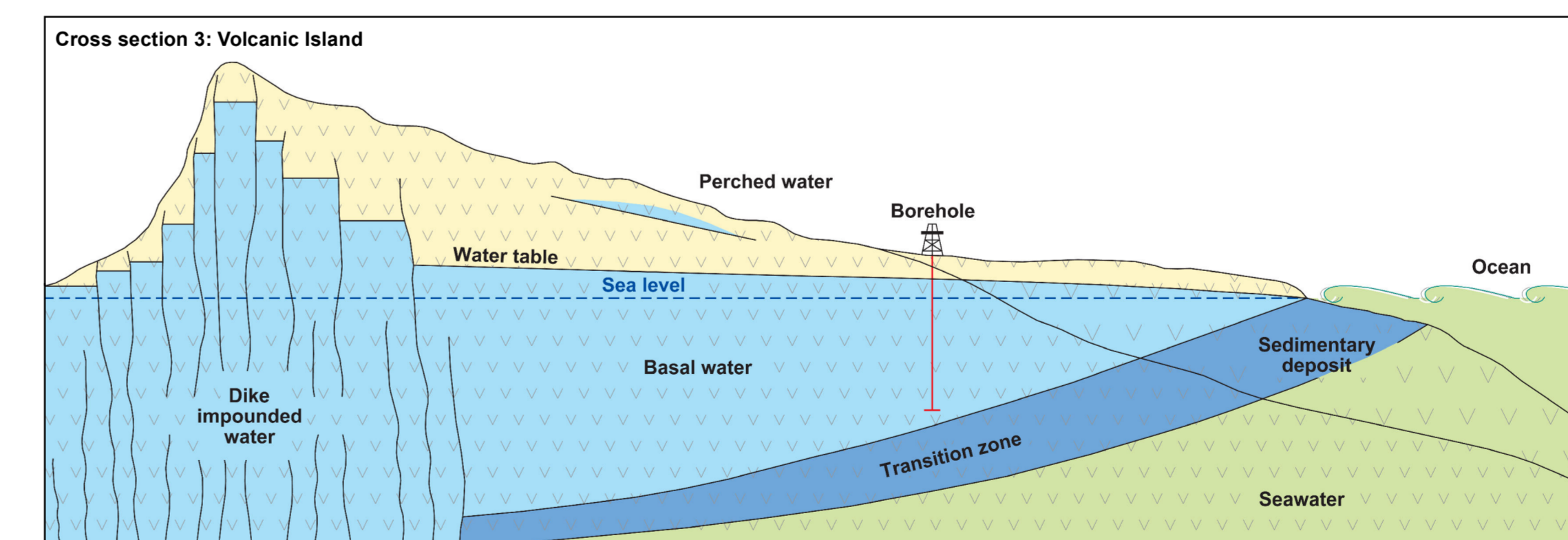
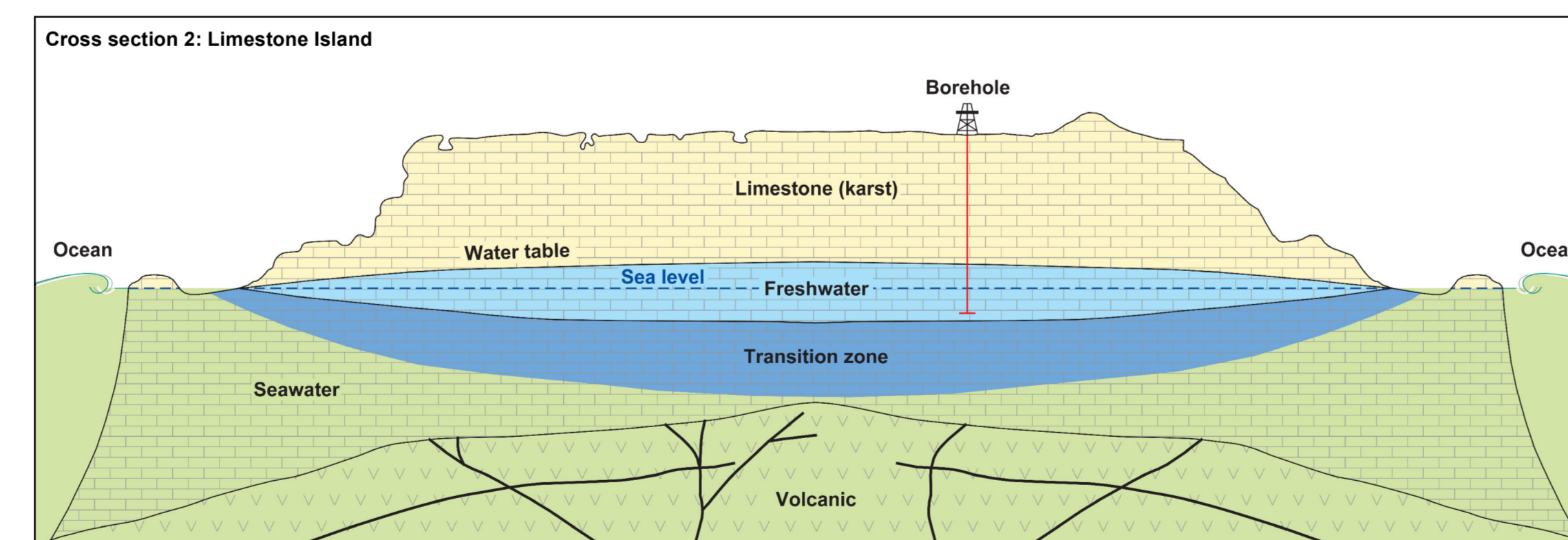
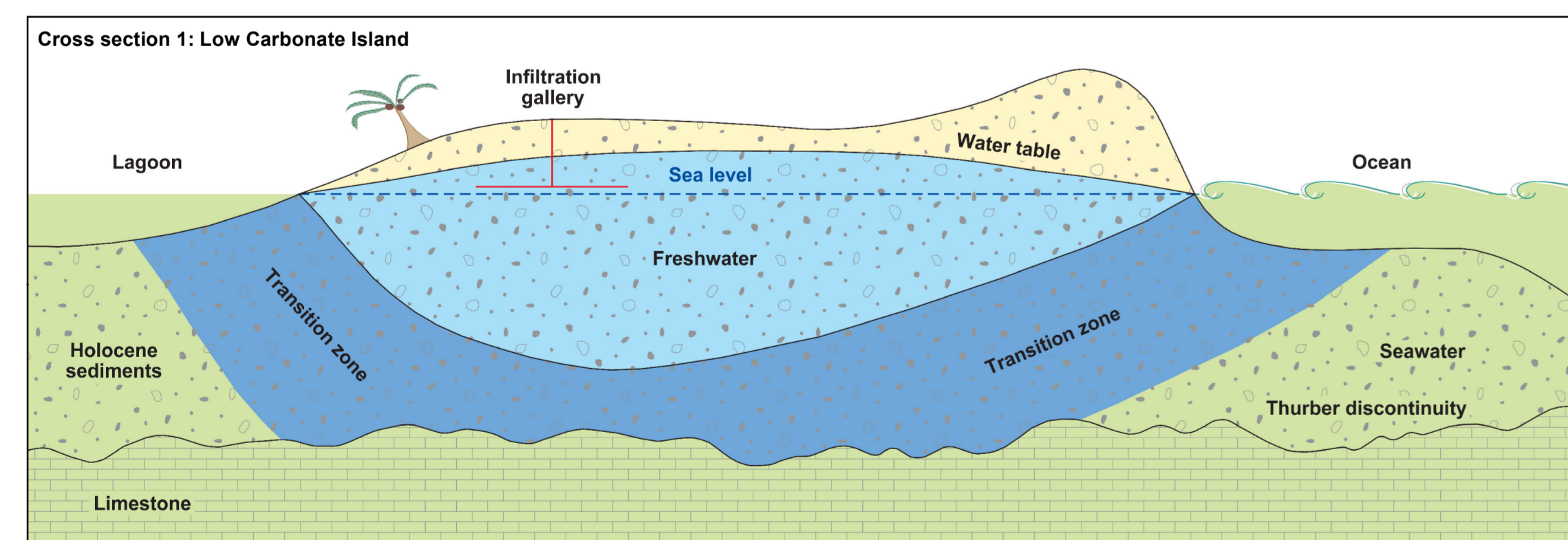
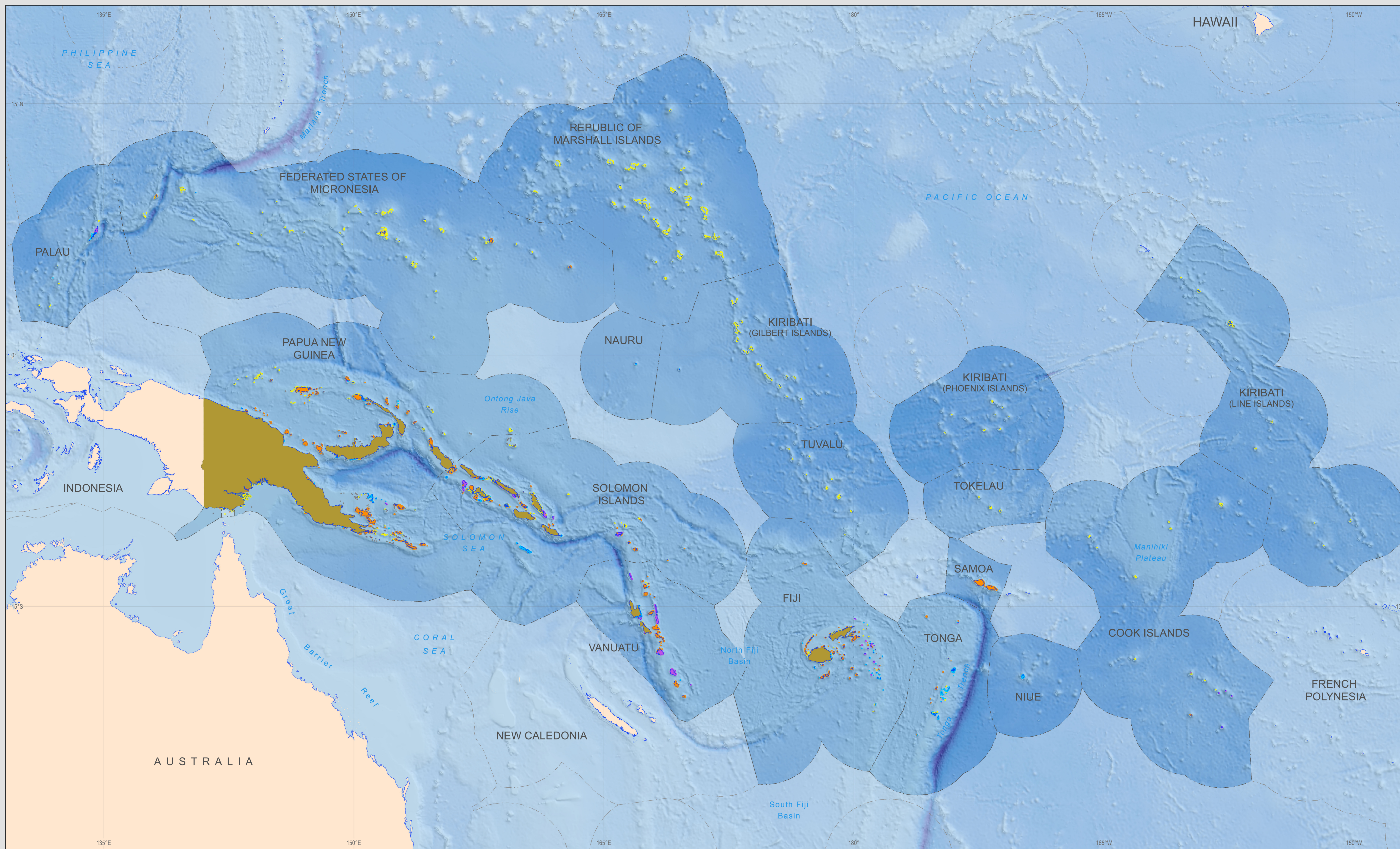
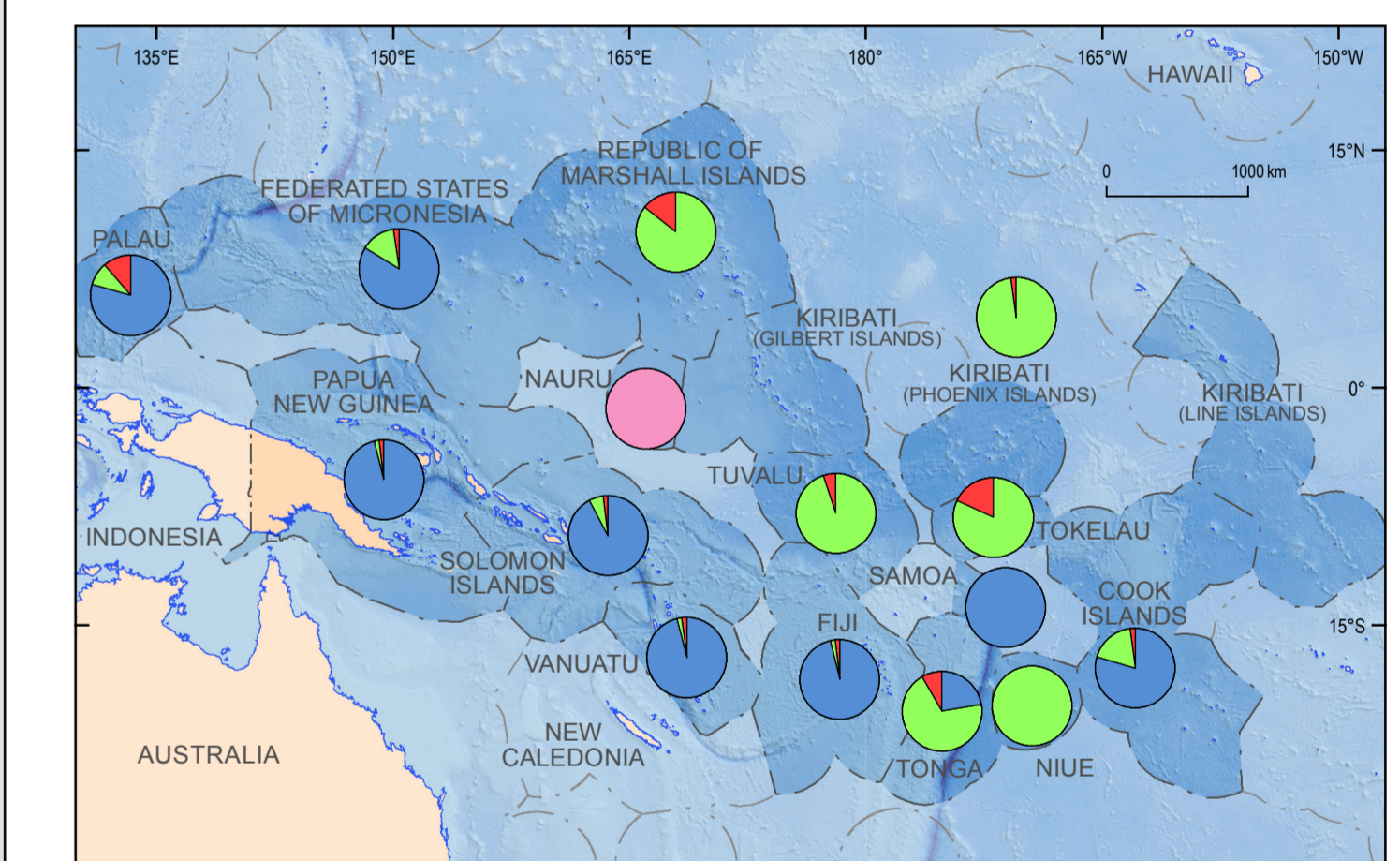


EXPLANATORY NOTES:

Hydrogeological Island Types:
This map shows the distribution of island types based on the hydrogeological characteristics of islands in the Pacific region. Data from Dahl (1998–2006), multiple literature sources and expert opinion.



Potential for Fresh Groundwater and Surface Water:
This map shows the distribution of potential for permanent fresh groundwater and surface water in each country as a proportion of island area. This provides an indication of the availability of natural freshwater in each country, but does not account for actual volumes of available fresh groundwater and surface water, or the relative dependence on these water sources.



Hydrogeological Features of the Island Types

- Cross section 1: Low Carbonate Island**
Depicts the dual-aquifer system on a typical Low Carbonate island, whereby recent (Holocene) unconsolidated carbonate sediment overlies older (Pleistocene) consolidated karst limestone. The low permeability of the unconsolidated upper aquifer (intergranular) allows freshwater to accumulate; the higher permeability of the consolidated lower aquifer (fractured karst) permits easy mixing of freshwater and seawater.
- Cross section 2: Limestone Island**
Depicts the freshwater lens in the consolidated karst limestone aquifer (fractured karst) of a typical Limestone island.
- Cross section 3: Volcanic Island**
Depicts the basal freshwater aquifer (fractured) and perched freshwater aquifer (localised) in the volcanic rock of a typical Volcanic island.
- Cross section 4: Composite Island**
Depicts the basal freshwater aquifer (fractured) and perched freshwater aquifer (localised) in the volcanic rock core and the karst limestone aquifer (fractured karst) in the consolidated limestone rim of a typical Composite island.
- Cross section 5: Complex Island**
Depicts the coastal freshwater aquifer of a typical Complex island.

BIBLIOGRAPHIC REFERENCE:
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>

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Background bathymetry image is derived from W.H.F. Smith and D.T. Sandwell, Global Seafloor Topography from Satellite Altimetry and Ship Depth Soundings. Science v.277, pp. 1956–1962, 26 September 1997.

Exclusive economic zone dataset is derived from Exclusive Economic Zones of the World - version 8. VLIZ (2014). Maritime Boundaries Geodatabase, version 8. Available online at <http://www.maritimeresources.org/> Consulted on 2014-04-10.

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