

Marshall Islands: Island Nation Vulnerable to Rising Sea Levels and Drought, Affecting Drinking Water and Crops

The Republic of the Marshall Islands (RMI) consists of 29 atolls and five islands. The average elevation of the country is approximately two meters, making it one of the most vulnerable areas to saltwater intrusion. Repeated droughts strain drinking water supplies and crop production.



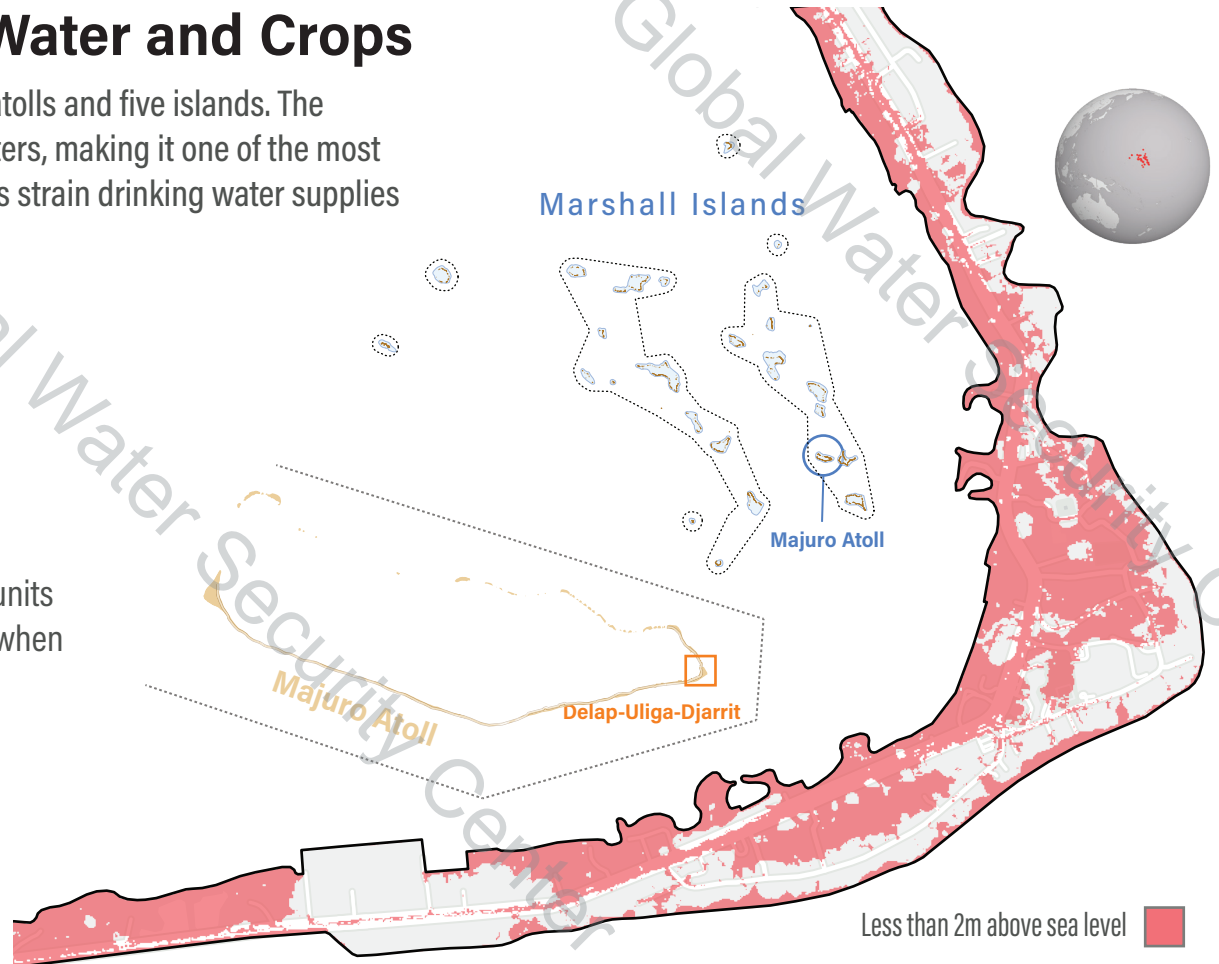
The sea level rose **196mm** since 1993 in the Marshall Islands.



Many islands lack operable reverse osmosis units and only have two-four week water supplies when in drought.



Freshwater recharges slowly. Only **50%** of rainfall in Majuro contributes to recharging the freshwater lens.



Much of Delap-Uliga-Djarrit is below two meters above sea level

Pathway to Impact

Sea levels are expected to continue to rise, upwards of 160mm by 2030. With an average elevation of two meters, the islands will lose approximately 0.15% of elevation per year due to sea level rise.

La Niña and El Niño events could lead to dramatic shifts in sea levels. Exacerbated by waves, flooding is expected and could lead to erosion and saltwater intrusion of freshwater sources.

Crops and drinking water are affected during saltwater intrusion and drought. Small groundwater supplies and slow recharging of freshwater lens make droughts and saltwater intrusion difficult to recover from.

Sources:

Sea Level Rise:

Mulhern, Owen. "Sea Level Rise Projection Map - Marshall Islands." Earth.Org, Earth.Org, 6 Aug. 2020, https://earth.org/data_visualization/sea-level-rise-by-2100-marshall-islands/

Map Data

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Text Sources

International Federation of Red Cross and Red Crescent Societies. (2022). Marshall Islands: Drought Response - Emergency Plan of Action (EPoA), DREF Operation n° MDRMH002. <https://reliefweb.int/report/marshall-islands/marshall-islands-drought-response-emergency-plan-action-epoa-dref-operation>

Basemap Source:

Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community. [Vector tile layer]. Scale Not Given. "Community Map". November 4, 2022. (November 8, 2022).

Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap, and the GIS user community. Scale Not Given. "World Hillshade". February 10, 2022. https://services.arcgisonline.com/arcgis/rest/services/Elevation/World_Hillshade/MapServer. (August 16, 2022).

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