

Table S1: Distribution of LRIs by country derived from GRID.

Country	Islands (n)	Country	Islands (n)	Country	Islands (n)
Indonesia	4,762	Yemen	129	Jamaica	23
Japan	4,203	United Arab Emirates	127	Cocos Islands	22
French Polynesia	3,308	India	113	Wallis and Futuna	21
Philippines	1,609	Tokelau	113	Anguilla	20
Bahamas	1,587	Brazil	108	Mayotte	20
Marshall Islands	1,448	Haiti	101	Singapore	20
Australia	1,340	Taiwan	101	Palmyra Atoll	19
Maldives	1,272	Vanuatu	94	Trinidad and Tobago	19
Puerto Rico	1,009	Seychelles	87	Cambodia	16
Micronesia	886	Bermuda	84	Saint Lucia	16
Panama	813	Colombia	83	Iran	14
Papua New Guinea	781	Oman	75	Phoenix Group	14
Solomon Islands	774	Mauritius	71	Aruba	13
Tanzania	765	Guadeloupe	64	Johnston Atoll	13
Saudi Arabia	664	British Indian Ocean Territory	63	Spratly Islands	13
Fiji	554	Tuvalu	61	Comoro Islands	12
Madagascar	438	Costa Rica	60	American Samoa	11
Belize	394	Qatar	59	Glorioso Islands	9
Hawaii	390	Martinique	55	Cayman Islands	5
New Caledonia	378	Nicaragua	54	Ile Europa	5
Palau	327	Egypt	53	Barbados	4
Eritrea	326	Sudan	51	Curaçao	4
Kiribati	315	Grenada	50	Kuwait	4
Mozambique	286	Turks and Caicos Islands	48	Wake Island	4
Conflict Zone	249	Andaman and Nicobar	44	Bangladesh	3
Vietnam	238	Galapagos Islands	44	Bonaire	3
Cook Islands	224	Bahrain	43	Bassas da India	2
Venezuela	223	Saint Vincent and the Grenadines	42	Howland Island and Baker Island	2
Tonga	217	Northern Saint-Martin	41	Trindade	2
China	206	Samoa	41	Clipperton Island	1
Cuba	203	Antigua and Barbuda	39	Ile Tromelin	1
Myanmar	195	Pitcairn	33	Jarvis Island	1
US Virgin Islands	189	British Virgin Islands	32	Jordan	1
Mexico	166	Paracel Islands	32	Juan de Nova Island	1
Somalia	165	Northern Mariana Islands and Guam	30	Montserrat	1
Malaysia	150	Dominica	29	Réunion	1
Thailand	150	Djibouti	28	Saint Kitts and Nevis	1
Kenya	145	Sudan/Egypt	28	Sint-Eustasius	1
Honduras	137	Sri Lanka	25	Sint-Maarten	1
United States	130	Dominican Republic	24		
				World Total	34,404

Table S2: Variables used in island vulnerability index (IVI) calculations for LRIs in the GRID.

Variable of LRIs	Data source	Functional relationship	Relationship description
Population	Worldpop	Positive	Coastal development and human pressure increase erosion risk and reduce natural island resilience (Webb and Kench, 2010).
Land area	GID2	Negative	Larger islands tend to be more geomorphically stable and less sensitive to episodic events (Ford, 2013).
Length of coastline	GID2	Positive	More perimeter increases the area exposed to wave attack and storm forces (Kench and Brander, 2006).
Mean elevation	AW3D30	Negative	Higher elevation reduces inundation, overtopping and groundwater salinization (Storlazzi et al., 2018).
Circularity	GID2	Negative	Compact islands maintain more even sediment redistribution and are less erosion-prone when compared to elongated or irregular shaped islands (Kench and Brander, 2006).
Mean annual wave height	World Ocean Waves (1888-2015)	Positive	Higher wave energy increases erosion, overwash and shoreline retreat (Callaghan et al., 2008).
Mean tidal range	DTU10	Positive	Higher tidal ranges can enhance sediment mobility and shoreline instability in mixed-energy systems (Stutz and Pilkey, 2011).
Proportion of surrounding reef (relative wave exposure)	UNEP-WCMC Global distribution of Coral Reefs	Negative	Islands with a greater proportion of surrounding reef platform receive more natural wave attenuation, lowering hydrodynamic energy at the shoreline and reducing vulnerability (Ferrario et al., 2014).
Tropical storm exposure	IBTrACS (1851-2022)	Positive	Higher cyclone frequency increases the likelihood of extreme wave events, overwash, flooding and drastic shoreline change, raising island vulnerability (Duvat, 2019).
Projected rate of sea-level rise	IPCC AR6 SSP 3-7.0	Positive	Faster sea-level rise increases flooding, erosion and salinisation risks while reducing the time available for islands to naturally adjust or accumulate sediment (Storlazzi et al., 2015).

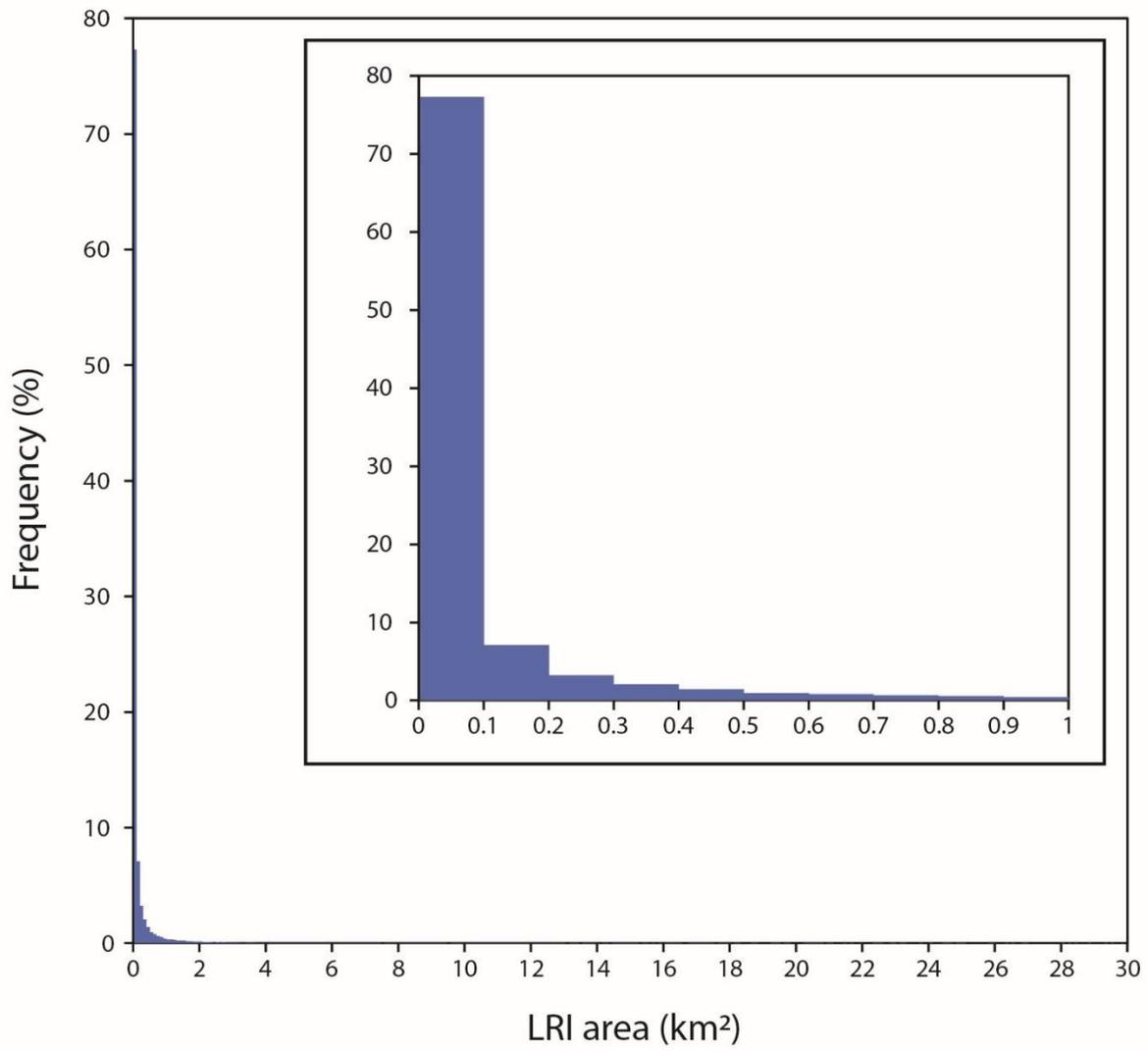


Figure S1: Frequency distribution of LRI area (km²).

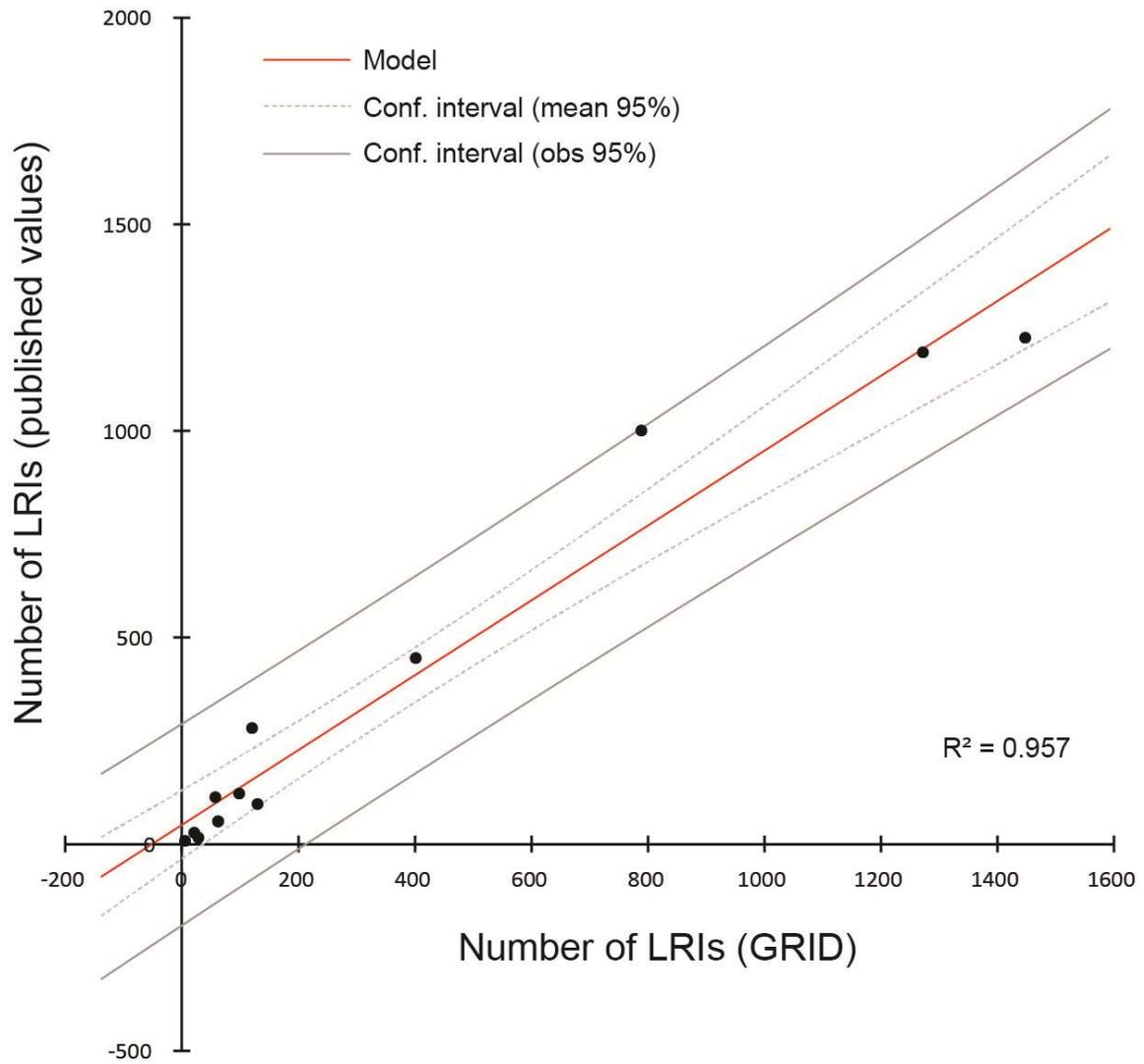


Figure S2: Number of LRIs contained within GRID versus the number of LRIs published in scientific literature.

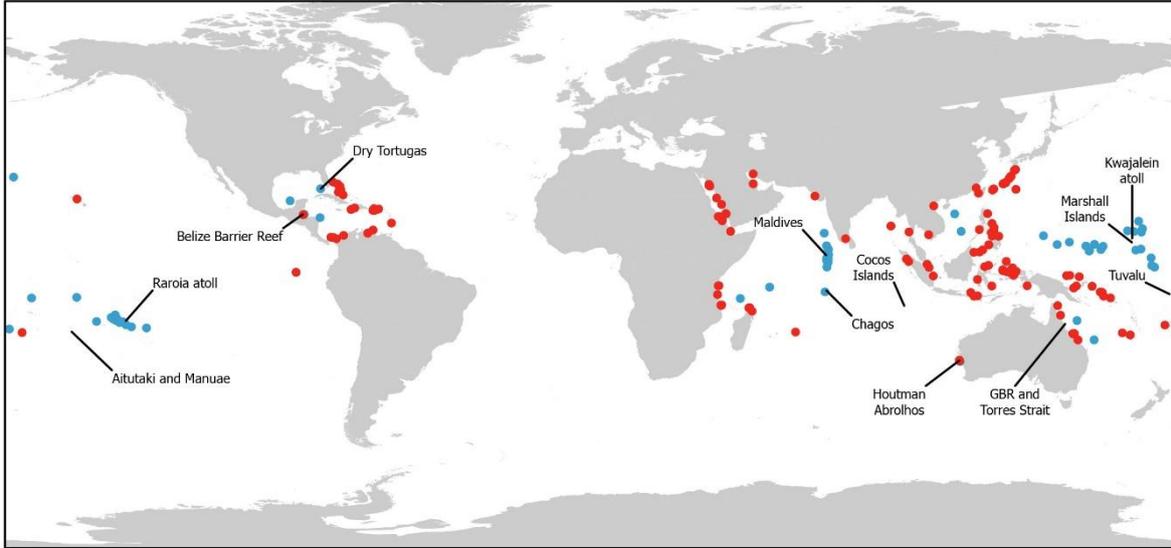


Figure S3: Location of randomly selected reefs used to compare number of LRIs observed from Satellite imagery and number of LRIs contained within GRID. Red dots are barrier/fringing reefs ($n=141$) and blue dots are atolls ($n=59$). Named locations are those given in Table 3 of the manuscript and used for validation of GRID against published studies.

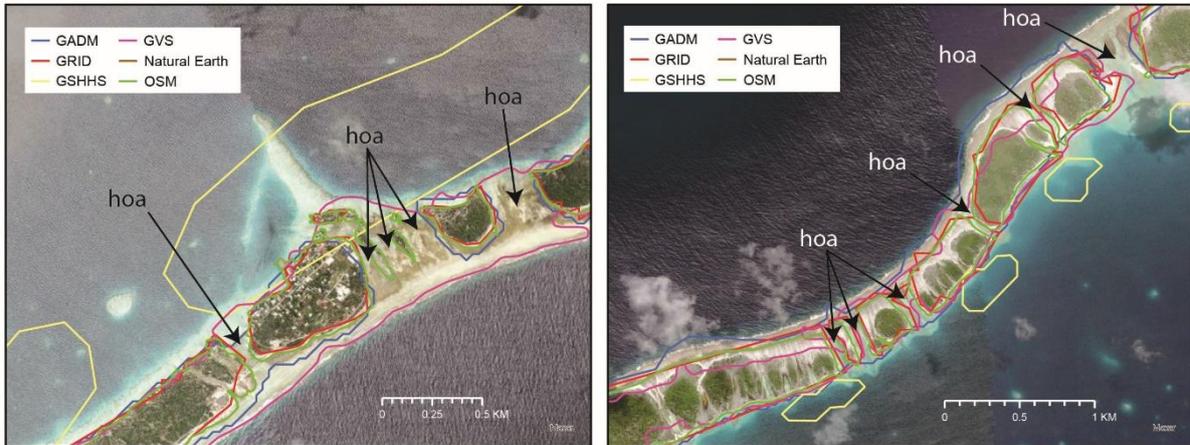


Figure S4: Example images of how shoreline datasets often fail to identify hoa (shallow channels between LRIs on mid-ocean atolls). Satellite imagery created using ESRI ArcGIS® Base Maps | Powered by Esri.

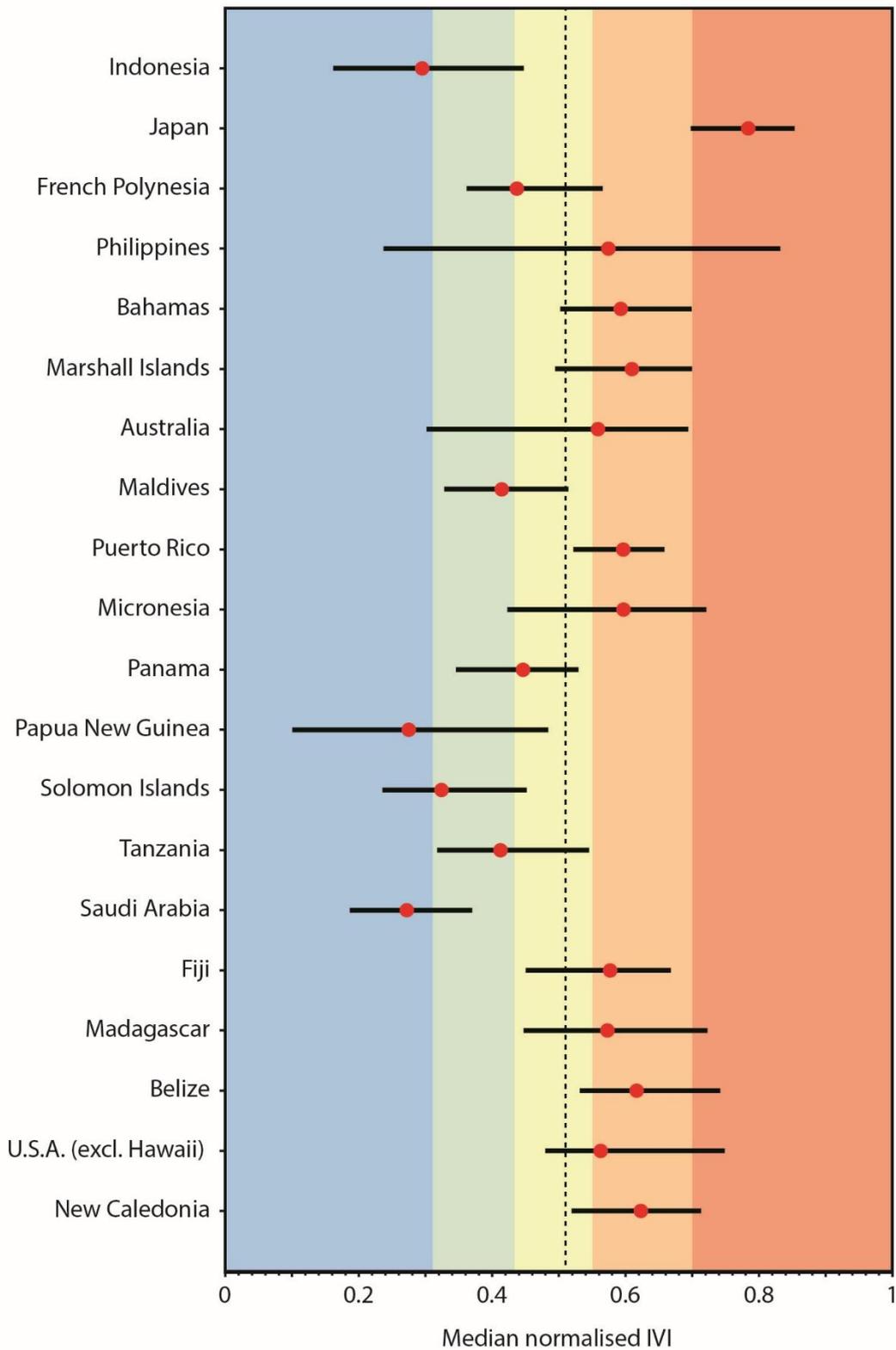


Figure S5: Relative Island vulnerability to climate change for the top 20 countries by number of LRIs. Dots and horizontal lines represent the median and range of normalised island vulnerability index (IVI) for LRIs in each country, respectively. Colour gradations from blue to red represent the five scales of island vulnerability (very low, moderately low, moderate, moderately high and very high).

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