
Climate Change and Migration in the Pacific Region

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- Pacific people are uniquely vulnerable to environmental change.
- Pacific may be the world's 'test case' for climate migration.



- What will environmental / Climate Change migration look like?
- The same - but just a bit more so.
- Initial fears of Climate Refugees overblown.



No need to fear wave of Climate Refugees -

- Environmental change will be one of a group of migration motivators.
- Increase existing streams.
- Same destinations.
- Same methods.
- Same type of people.



- Migration motivations and methods remain the same.
 - Jobs, family, education.
- Will intensify and add to existing streams or movement - more of the same type of people moving to the same type of place.



What about extreme events?

- Not particularly important for long-term migration
 - Tend to move short distances, return.
 - Circular Migration even under very adverse conditions.



- What does this mean for Hawai'i?
- Steady increase in migration.
 - Perhaps punctuated by extreme events.
- Existing communities will grow.
- Change will be gradual.
- May not be acknowledged as climate change driven.



Addendum – Additional Research

Climate, Health, and Migration in Pacific Islands

- Project Staff –

1. Laura Brewington – Research Fellow, East-West Center (Principle Investigator).
2. Daniel Ervin - Project Specialist, East-West Center.
3. John Marra – Director, Regional Climate Services for the Pacific Region, NOAA.
4. Matthew Widlansky – Associate Director, University of Hawai'i Sea Level Center.

- Project Funding

- The National Oceanic and Atmospheric Administration (NOAA).



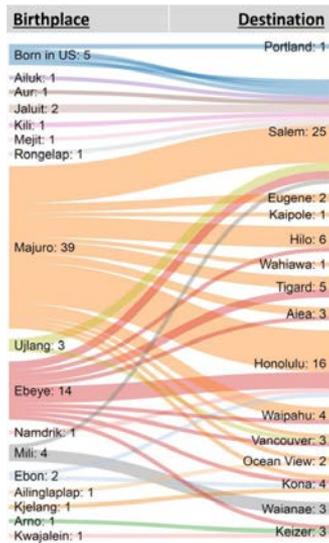
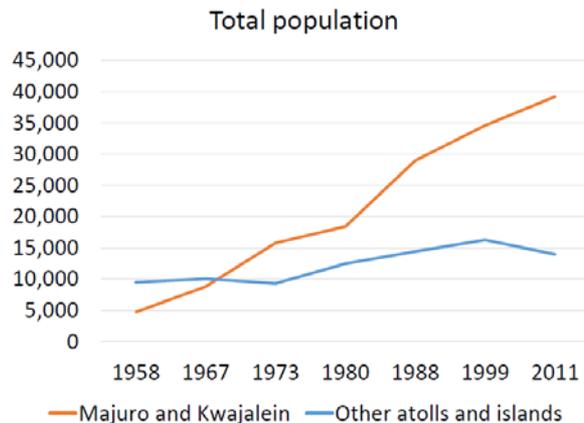
Climate, Health, and Migration in Pacific Islands

- Project Background – Need for services arose from previous research project by Pacific RISA and UH.
- Climate, Health, and Migration in Pacific Islands
- Project Goals –
 1. Provide climate information and services to the Marshall Islands health sector.
 2. Track and map migration flows from the Marshall Islands through analysis and publication of existing climate and migration data.
 3. Provide information and promote partnerships in the Hawai'i healthcare sector.
- Project Activities
 - Workshops in the Marshall Islands interviews with healthcare professionals, administrators, and policy makers.
 - Specialty conference on Pacific migrant health in Hawai'i (Feb. 13-14, 2020).

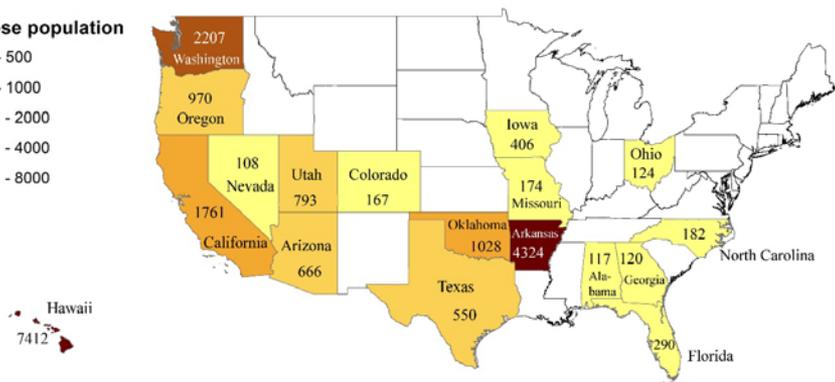
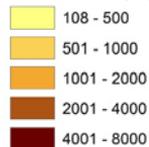


Climate, Health, and Migration in Pacific Islands

- Pacific Islanders have a long tradition of migration.
- Environmentally and socially vulnerable nations.
- Close connections / relationships with developed nations.
- Environmental change
- Has resulted in very high levels of internal and international migration.

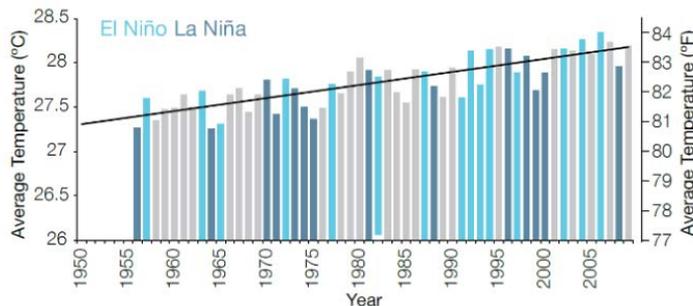


Marshallese population



Climate Trends and Disaster Events in RMI

Event	Years
Severe drought	1998, 2007, 2013, 2016
Tropical storms, typhoons	1988, 1991, 1992, 1997, 2015
Sea swells, king tide	1979, 1994, 2013, 2015



From Marra and Kruk 2017 State of the Pacific report (NOAA)

- Annual number of hot days has **increased 2,500% since 1950**
 - Annual number of cold nights = 0 for the past 15 years
- Annual coral bleaching expected by **2055**
- Average rainfall has steadily decreased since the 1950s, with extreme low rainfall during El Niño
- Future sea levels expected to be **20 to 30% higher** than the global mean
- The frequency of minor coastal flooding will increase with SLR, extreme events, and erosion

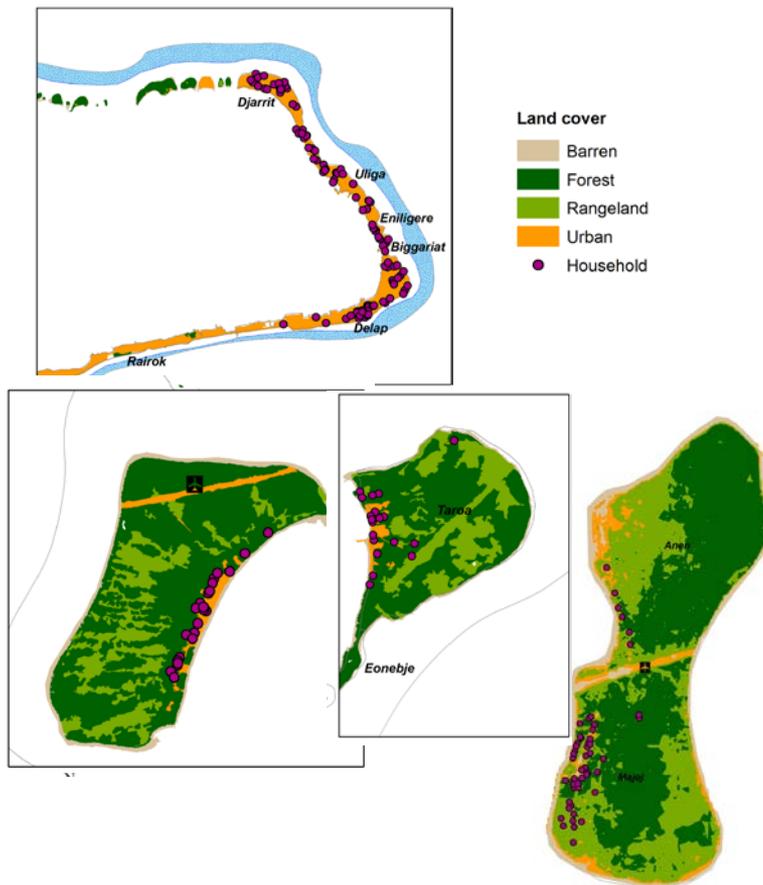
WHO: Climate-Related Health Risks in Pacific Islands

Table 3. Highest priority climate-sensitive health risks in individual Pacific island countries (with each country's highest priorities indicated by "x").

Climate-sensitive health risk	Country												
	Cook Islands	FSM	Fiji	Kiribati	Marshall Islands	Nauru	Niue	Palau	Samoa	Solomon Islands	Tonga	Tuvalu	Vanuatu
Direct effects													
Health impacts of extreme weather events ^a	x	x			x	x	x	x	x	x	x	x	x
Heat-related illness ^b	x					x	x			x			x
Indirect effects													
Water security & safety (including water-borne diseases) ^c	x	x	x	x	x	x	x	x	x	x	x	x	x
Food security & safety (including malnutrition & food-borne diseases) ^d	x	x	x	x	x	x	x		x	x	x	x	x
Vector-borne diseases ^e	x	x	x	x	x	x	x	x	x	x	x	x	x
Zoonoses ^f		x	x		x			x					
Respiratory illness ^g	x	x			x	x	x	x		x		x	x
Disorders of the eyes, ears, skin, and other body systems ^h			x		x		x			x		x	x
Diffuse effects													
Disorders of mental/psycho-social health ⁱ		x	x		x	x		x		x		x	x
Non-communicable diseases (NCDs) ^j		x	x		x		x	x	x	x	x	x	x
Health system deficiencies ^k			x	x									
Population pressures ^l				x									

- Pacific Island countries are highly vulnerable to the health impacts of climate change
 - Unique geography, demographics, and socioeconomics – **plus** weather and climate patterns
- Top health concerns in RMI
 - Extreme events, food & water, vector-borne disease, mental health, NCDs

Survey Results: Majuro, Maloelap, & Mejit



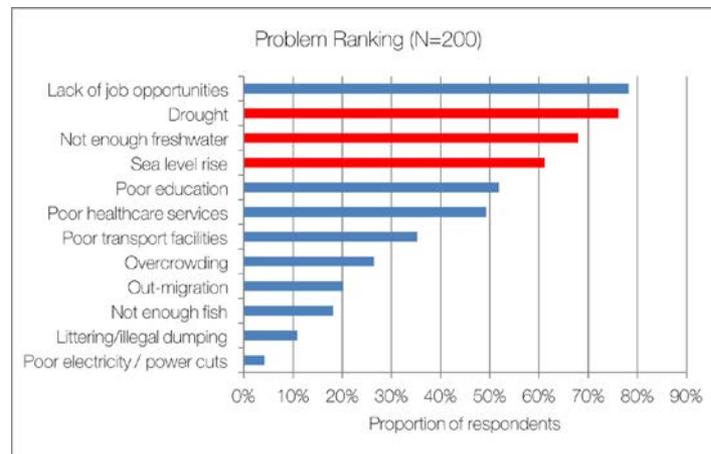
	Majuro N=99	Maloelap N=50	Mejit N=50
Household size	7.2	6.1	5.9
Education (HH head)			
Primary school	11%	16%	18%
High school	53%	60%	74%
College	37%	24%	8%
Income (annual)			
< \$2,000	22%	57%	86%
\$2,000 - \$5,000	8%	35%	14%
> \$5,000	72%	8%	0%
Event (last 5 years)			
Drought	88%	94%	96%
Heat wave	33%	40%	82%
King tide	35%	44%	36%
Typhoon/storm surge	16%	16%	28%

RMI Survey Results: Problem Rankings & Rationale for Migration

Rationale for Migration

	N=40
Better education and schools	32
Spouse or family network	28
Better health care	29
Better economic opportunity	28
Poor environment in RMI	13
Threat of sea level rise	12
Threat of disasters	10

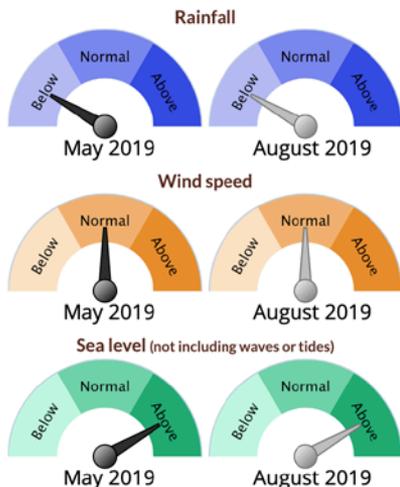
- 80% migrated to Hawai'i for education
- 70% with spouse or to a family network
- 72.5% for better health care



Climate Early Warning Systems (CLEWS) for Health

- What a CLEWS does:
 - Provides easy access to well-researched, localized information at a variety of timescales to assist with both short and long term planning

This quarter (updated monthly)



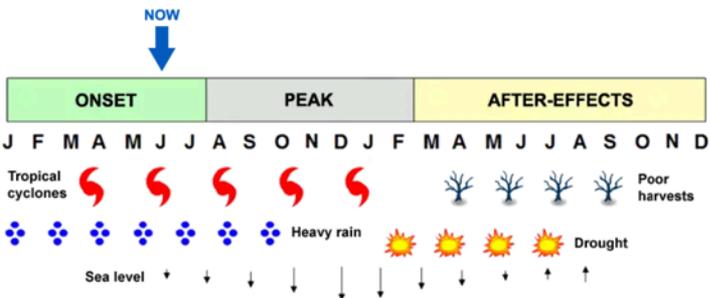
For more detail on the above information see the [Marshall Islands Climate Outlook](#) and the Pacific ENSO Applications Center (PEAC) [bulletin](#).

Daily information on inundations is available for [Kwajelein](#) and [Majuro](#). For daily information on storms and inundations, stay tuned to radio or the 'chatty beetle.'

This year (updated monthly)



- What is the [El Niño/La Niña pattern](#)?
- How does El Niño affect the [agroforestry calendar](#)?
- [Prepare](#) for possible storms.
- Wet weather will affect your crops during the El Niño year—[care for them](#).
- [Plan ahead](#) for drought after the El Niño year.



Conclusion and Challenges

- Pacific people are uniquely vulnerable to environmental change.
- Pacific may be the world's 'test case' for climate change adaptation.
- Climate change will intensify existing migration streams.
- Unique challenges in project execution.
 - World Bank "Rule of two".
- Members of the Compact of Free Association (COFA) states may face future legal challenges to migration to the US