Abstract

- Sea level rise (SLR) is predicted to be between 0.20m to 0.24m by 2050 and is expected to accelerate. [1]
- Pacific atolls predicted to have severe impacts in this decade and be uninhabitable in perhaps 30 years due to inundation. [2]
- SLR is expected to continue past 2100 regardless of emission policies. Accommodation and retreat (migration) should parallel defensive measures. [3]
- International Organization of Migration projects between 25 million to 1 billion climate refugees by 2050. [4]
- The U.S. military will face existential threats in next 20 years due to vulnerabilities in nuclear and power infrastructure exacerbated by climate factors. [5]
- Pacific ALLIES is a confidence building activity with international partners which draws attention to challenges on Ebeye Island, in Kwajalein Atoll.

Pacific ALLIES

- Pacific ALLIES is an internship program that explores climate change implications to national security through project-based learning in the Marshall Islands.
- ALLIES stands for Alliance Linking Leaders in Education and the Services, a civil-military relations group which provides opportunities for civilian college students and cadets at service academies to interact with one another and discuss pertinent national security issues.
- The third iteration of the internship took place in the summer of 2019 with MIDN Yixin Ye, CDT Ani Phelps, CDT Elaine Weaver and Whitman College graduate Sky Goedert as participants.
- Pacific ALLIES intends to promote international collaboration by engaging, as interns, students and cadets from regional partners such as Singapore, Philippines, Japan and China.

ALLIES Projects

1. Google Streetview – to get Ebeye on the world map, document the effects of climate change and erosion, and empower Marshallese students.
2. What3Words (w3w) – to provide the people of Ebeye an address that they can utilize, beyond a P.O. Box number.
3. Coastal Community Human Security Survey (CCHSS) – proof of concept for a mobile app that enables students to update demographic data and establish living conditions baselines using only localized resources, as demonstrated in Figure 2.

A Day in the Life

- Before heading over to Ebeye, Honolulu acted as the staging ground for the interns. We met our partners and mentors from UH-Manoa, INDOPACOM, Pacific Disaster Center, Coast Guard District 14 and the Fish and Wildlife Service by day, and did plans and logistics by night.
- Pacific ALLIES happens in conjunction with the Ebeye Spartan Camp, a month-long STEM summer camp for Marshallese high school students. We worked with local and Guamanian teachers in order to strike a balance between classroom teaching and ALLIES projects. See Figure 3.
- When we were not with the students, we interacted with the local government and traditional leaders to understand pressing issues.
- We were also able to interact with U.S. government and military personnel in the neighboring U.S. installations as seen in Figure 4.

Personal Takeaways

- Diplomacy in the Marshall Islands is multi-faceted. We interacted with local government and traditional leaders as midshipmen and cadets representing the U.S. and Singapore.
- People tend to be friendly and trustworthy because as midshipmen and cadets we represent the military but we are also students.
- The Marshall Islands is heavily reliant on the U.S. for funding, and will have to seek alternatives if funding ends with COFA in 2023.
- Keeping these human connections important as we not just dealing with a climate crisis from sea-level rise, but also a potential humanitarian disaster from the thinning of the freshwater lens on these islands.
- Getting to Ebeye itself was an opportunity for personal development, with lessons learnt from overcoming bureaucratic obstacles and pushing the envelope.

Attributes of a USNA Graduate: Adaptable - individuals who understand and appreciate global and cross-cultural dynamics.

References

2. Stratford, C., et. al., 2019, Most atolls will be uninhabitable by the mid-21st century because of wave load due to accelerating wave-driven flooding. Science Advances, 4, https://doi.org/10.1126/sciadv.aat0741

Conclusions

- Pacific ALLIES can develop future military leaders by deepening their understanding of the impacts of climate change on local communities and national security.
- STEM education is an excellent vehicle to empower the next generation of Marshallese leaders.
- International collaboration is critical to meet the challenges in the coming decades, and building strong personal and professional relationships is key to making the collaboration possible.

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Figure 1. Visual representation of geographic location of Kwajalein Atoll and Ebeye Island.

Figure 2. Marshallian high school student interacting with students about their living conditions, using the CCHSS app and the address from What3Words.

Figure 3. Marshallese high school student using w3w to interact with classmates.

Figure 4. Marshallese high school students on the Marshall Islands, 2019.