

A STUDY OF CLIMATE VARIABILITY ON *SCAEVOLA*  
*TACCADA* (NAUPAKA) [Kōṅṅat] ON MAJURO ATOLL,  
MARSHALL ISLANDS

A THESIS SUBMITTED TO  
THE GLOBAL ENVIRONMENTAL SCIENCE  
UNDERGRADUATE DIVISION IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE OF

BACHELOR OF SCIENCE

IN

GLOBAL ENVIRONMENTAL SCIENCE

MAY 2015

*By:*

Umeyo Momotaro

*Thesis Advisor:*

Dr. James T. Potemra

## ABSTRACT

Majuro atoll in the Marshall Islands is one of many low-lying atoll communities that are impacted by extreme events influenced by climate change. One of the extreme events focused on this paper was high inundation events, which are influenced by seasonal and climate variability and geophysical parameters. A question that derived from these events was whether erosion of the shoreline played an important factor and if so, how can we mitigate these occurrences? Based on traditional Marshallese knowledge, native coastal vegetation can exhibit mitigation characteristics against events in the past. A particular native coastal plant was chosen for this study, which is *Scaevola taccada* (naupaka) [Kōṇṇat]. This littoral plant is commonly found in coastal zones throughout the Pacific where it acts as a barrier for coastal erosion, salt spray, and also acts as a wind break. The hypothesis is that due to its native characteristics, *Scaevola taccada* tolerates climate variability based on the El Niño Southern Oscillation (ENSO) in Majuro, and therefore can mitigate against coastal erosion and extreme events. The study was done by extracting tide gauge readings, analyzing severity of inundation events, correlating *Scaevola taccada* species distribution and shoreline accretion using computer program ArcGIS, and conducting literature review on various sources. The result yielded that *Scaevola taccada* is an effective mitigation control for coastal erosion and extreme events.