Translocation of Heavy Metals in *Scaevola taccada* and *Scaevola plumieri*

Amelia Suter

Faculty Sponsor: Susan Swensen Witherup

Abstract

On the Island of Vieques, Puerto Rico from 1943 to 2003, the United States Navy did training with artillery missiles. This lead to higher than normal concentrations of heavy metals in the soil of surrounding areas. Exposure of heavy metals to organisms can cause many adverse effects. For example, heavy metals can interfere with the function of important cellular processes in organisms and can act as carcinogens. The presence of heavy metals has been increasing in ecosystems around the world due to human activities such as agriculture, industrial processes, and mining to name a few. Plants are often used as a bioindicator of metal concentrations in an area. To reduce the damage caused by heavy metals, plants have developed techniques of coping with elevated heavy metal concentration including cellular level processes, and transporting these metals to other organs of the plant. I am specifically going to compare the translocation of heavy metals in coastal dune plants *Scaevola taccada* and *Scaevola plumieri* by analyzing the translocation factors of the roots, leaves, and shoots of these two plants. Using this data, I can compare what organs *Scaevola taccada* and *Scaevola plumieri* transport the metals to. I am interested to see if there will be a difference between these two species because different species of plants often have different coping techniques. If *Scaevola taccada* and *Scaevola plumieri* grow in heavy metal contaminated soil then, they will take up these metals and move them to the roots and leaves to try to reduce damage of other parts of the plant.