

Estuaries

Does erosion of the sand in estuaries erode faster than sand at beaches or in fresh water sources/rocky shores?

Michael Gumataotao, P5, 3-8-16

Populations

- Fish
- Palm Trees
- Turtles
- Birds
- Small Worms
- Plankton
- Phytoplankton
- Shellfish

Land Features



Food Web



Problem

- Does erosion of the sand in estuaries erode faster than sand in beaches or sand in fresh water sources/rocky shores?

Observation

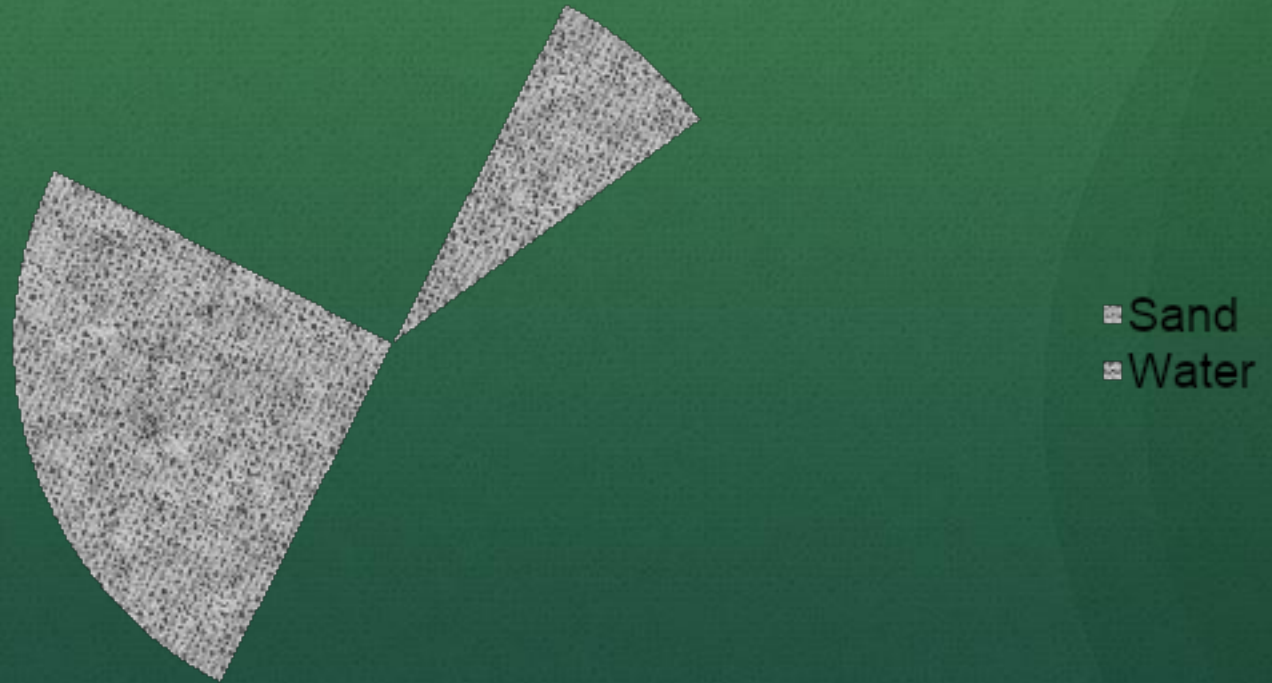
- I observed that the water in estuaries had lots of particles of sand in a sample bottle opposed to ocean water at beaches, or regular fresh water, and that it impacts the shore harder than both of the other waters, so I believe that the way the water in estuaries impact the shore make the sand in estuaries erode faster than sand at beaches or ponds/rocky shores.

Hypothesis

- If sand erodes faster in estuaries, then it must have something to do with the way the water impacts the sand opposed to regular water impacting sand, or ocean water because I believe the water in estuaries impact the shore harder than beaches or fresh water/rocky shores.

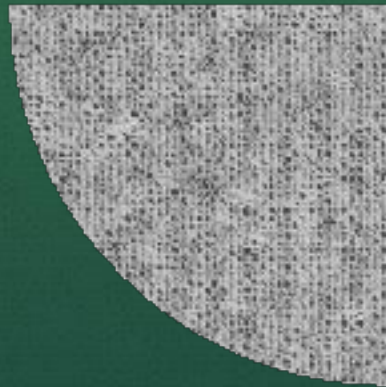
Data Charts

Estuaries Water Sample



Data Charts

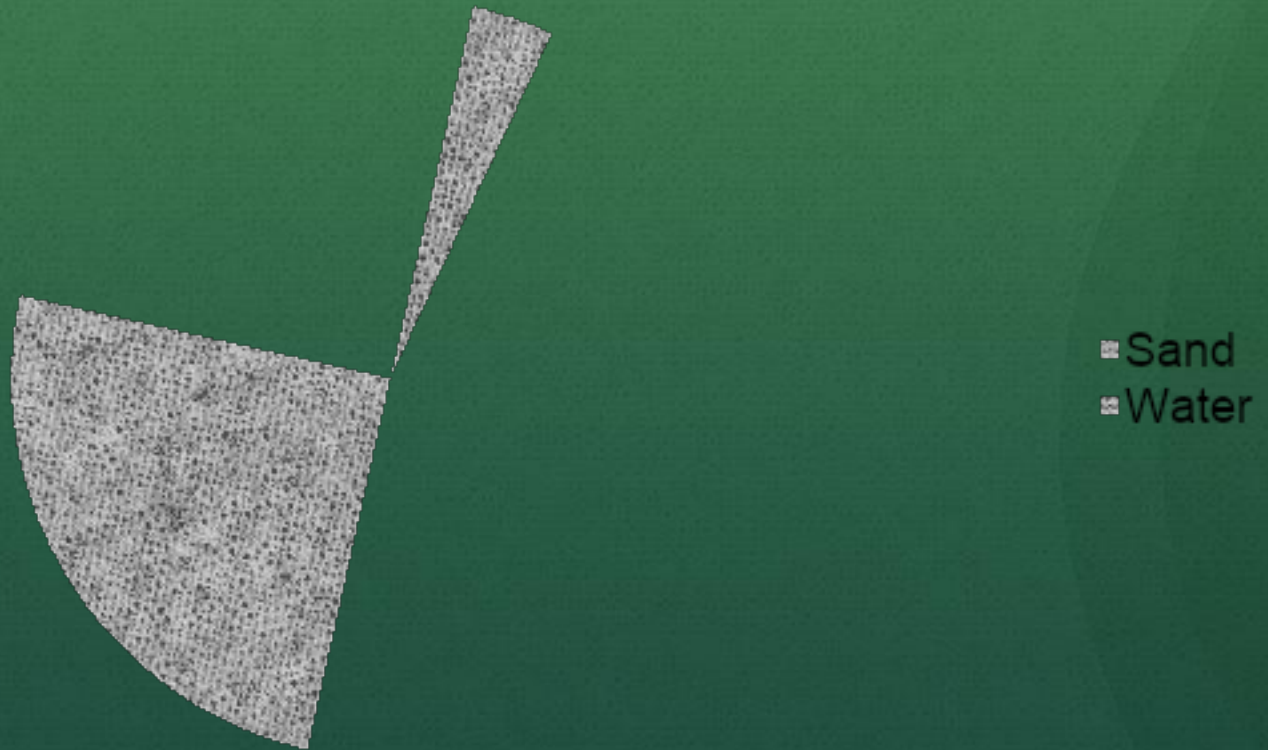
Fresh Water Sources/ Rocky Shores



- Sand
- Water

Data Charts

Beaches



Data

- Estuaries waves pound harder on the shore than beaches or fresh water sources/rocky shores.
- Estuaries water contains many particles of the sand due to the excessive impact from waves.
- Estuaries sand erodes faster than the sand beaches and fresh water due to the fact that many particles of sand have been found in estuaries water opposed to ocean water and fresh water.
- Talofofu Bay is one of the four places in the world with black sand.

Data

- Laws have been passed that people can't collect sand from Talofoto Bay since it is one of four places that have black sand, as well as the fact that the sand is being eroded faster than its deposition on the shore.
- The measurements from the shoreline to the wave impact zone is approximately 10 feet.

Conclusion

- The data that I have collected did support my hypothesis because of the samples from the estuaries water and the observations of the excessive wave impact on the shoreline of the estuaries. So in conclusion, estuaries sand does erode faster than the sand in beaches or fresh water, because of the force of impact from the waves and the excessive impact from the waves.

Reflection

- I learned that my ecosystem is a very rare spot on Guam and in the whole world. I learned that a way the government chose to protect it was to prohibit the poaching of black sand in the estuary of Talofofo Bay. This fieldtrip has helped me understand the ecosystem I chose even more by making me find out how we can help prevent fast erosion of Talofofo Bay, and to help me understand that the shore of Talofofo Bay erodes faster than other beaches on Guam and fresh water sources on Guam.

Bibliography

Picture	Talofofu Bay- http://momvoyage.hilton.com/wp-content/uploads/2014/10/Talofofu-Bay-Guam-940x564.jpg 3/6/16
Picture	Talofofu Bay- http://photos.wikimapia.org/p/00/01/17/88/07_big.jpg 3/6/16
Picture	Estuaries Food Web- http://33.media.tumblr.com/e57ce111979317c1d17e90c26de44490/tumblr_inline_n47omg755l1rmczs7.gif 3/6/16