GIS:
Getting to the point!

By: Nathan Angui

Finding information on swimming areas has never been more accessible and exciting through online mapping publications. With a click of a button you can gather valuable information about the different points available on your map using Geographic Information System (GIS) applications.

Hafa Adai and Tirow, my name is Nathan Angui, I am a student at the Northern Marianas College (NMC), pursuing a degree under the Natural Resources Management (NRM) program. This summer I received the opportunity to work with the Enforcement section under the Division of Coastal Resources Management, through the Coral Reef Initiative Summer Internship. My project focused on creating maps for swimming zones located in our lagoon. Location to be mapped depends on the places where swimming takes place frequently and if there is any recreational activities taking place in or near the area.

On the field we would deploy our Unmanned Aerial System (UAS) or Drone. While taking aerial shots, a flight pattern is created depicting a rectangular prism of the areas where swimming takes place. Global Positioning System (GPS) points are gathered at each corner point of the rectangular prism. After gathering all data needed for this project, the data is inputted into an excel sheet. GIS Specialist, Rodney Camacho, assisted me with inputting the data into ArcGIS program and creating the map. It took a few trials and errors, till I got comfortable with the program.

This project is important because "GIS technology interfaced with a relational database provide an effective method for analyzing and displaying the impacts of extension education and outreach projects" (JOE). When completed we want this document to be accessible to the public so they are able to use it to determine areas where it is safe to swim and there is no high risk of commercial operation in the area. A great example would be the area in between Hyatt and Fiesta Resort, where there is high activity of boats coming in and out the lagoon near the potential swimming zones.

At this time, all three (3) mapping projects: swim zone, major siting and coral head formation are ongoing and hope to complete them by the end of this internship and ready for the public. Through the help and guidance of my mentors, I would not have gotten this far. This internship was a great experience and has definitely expanded my knowledge in the NRM field.

References:

(JOE), The Journal of Extension. "GIS, GPS, and Remote Sensing Technologies in Extension Services: Where to Start, What to Know." *The Low-Income Single Parent*, www.joe.org/joe/2005june/a6.php.

Shoreline Monitoring

By: Ryan Gabule

Over the past years, I did not know what I wanted to be or do in life. However, working as a Coral Reef Initiative intern this summer has really opened up my mind about our environment and the problems that we face here in the CNMI. As an intern, I was stationed under the Division of Coastal Resources Management's Shoreline Monitoring Program. This team heads out to different locations and takes measurements of beach shape and width. By comparing results over time, we can determine whether a beach is accreting (gaining sand), eroding (losing sand), or remaining stable. We are most concerned about the beaches that are eroding and therefore most likely to grow smaller over time.

As an intern, I heard different views from coastal planners on the beaches that are eroding. Some gave their opinions or ideas on how we could save our beaches. One particular idea was to create a seawall out of cement. I learned that in this case we might protect buildings and roads along the shoreline, but we are still likely to lose part of the sandy beach because the sand after the cement will still be eroded by the water. If our objective is to save our beach, then what can we do? I did my own research about the different ways we can protect and save our beach.

I learned that seaweed and grass can act as a natural fence to help protect our beach (Alvera-Azcarate, Ferreira, Nunes 2003). Why seaweed, you may wonder?

Seaweed and grass have roots that run deep within the sand or soil. This causes the sands to clump beneath the grass or seaweed. They both act as a barrier when it comes to strong winds or when there is rough waters. With grass as fence, it can also lead to dune stabilization which also helps the beach from being eroded. With both acting as natural fences, this can cause accretion in the beach.

Although my internship is ending soon, I recently switched my major from Nursing to Natural Resource Management to help further research more ways of saving our beach and protecting our environment. Thanks to this internship, my journey to saving the reef and the environment has just begun. With the guidance and help from my peers and mentors, I can spread the knowledge and one day be a role model to others, just as they were role models to me. I hope future interns will see the importance of our reef and the environment.

References:

Alvera-azcarate, A., Ferreira, J., & Nunes, J. (2003). Modelling eutrphication in mesotidal and macrotidal estuaries. the role of intertidal seaweeds. Estuarine, Coastal and Shelf Science, 57, 4th ser., 715-724.

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