

# 2015 Oceanography Program Kaktovik, Alaska

prepared for



U.S. Fish & Wildlife Service  
Fairbanks, Alaska

By

Carolynn Harris and Ken Dunton  
The University of Texas Marine Science Institute  
750 Channel View Drive  
Port Aransas, TX 78373



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## Program Summary

The annual Kaktovik Summer Oceanography Program was taught at the Kaktovik Community Center in Kaktovik, AK from 10-15 August 2015. The University of Texas Marine Science Institute (UTMSI) and the U.S. Fish and Wildlife Service (USFWS) sponsored the camp. Cliff Strain, an ocean sciences middle school teacher from Port Aransas, TX served as the lead instructor. Carolynn Harris, a UTMSI graduate student and Greta Burkart, Aquatic Ecologist from USFWS, coordinated the program. They were assisted by several other instructors, including William Daniels (Brown-MBL grad student), Allyssa Morris (ANWR Outreach Coordinator), Christina Bonsell (UTMSI grad student), Levi Simmons (undergraduate volunteer from Toolik Field Station), and Ken Dunton (professor of marine science at UTMSI). In addition, Claire Montgomery (USFWS) led a guest lesson on eider egg dissection and Craig Connelly (UTMSI) led a guest lesson on ground water.

Students
Doe Doe Sittichinli
JD Tikluk
Kim Burns
Maddy Gordon
Melanie Tikluk
Thea Lampe
Tracy Burns
Wayne

In 2015, we focused our program on upper middle school and high school level students. Our theme was “Life as an Oceanographer”; we hoped to give students first-hand experiences of how an oceanographer might spend their days as well as teach them basic oceanographic techniques. Our goal was to demystify a career in science and show students that it is a viable career path for them. We took advantage of our unique location on an Arctic barrier island and used Kaktovik lagoon as a natural classroom. As we discovered in 2014, it is difficult to

engage this age range because many of them work jobs during the summer or wanted to enjoy their last few days of vacation before the start of the school year. As an attendance incentive, all students who attended the camp at least 3 days were entered into a drawing to win a handheld Etrex GPS (which the students learned to use during the week). On average, 5 students attended the camp each day and 4 were eligible to enter the GPS drawing. Eight students in our target age range (12+) attended the program for at least one day (Table 1).

	<b>Main Activities</b>
<b>Monday</b>	Biology + Chemistry Day – fieldwork at lagoon; aquarium set up, lab tests and discussion in classroom
<b>Tuesday</b>	Geology Day – coring at lagoon, core descriptions Eider group guest lesson
<b>Wednesday</b>	Comparison Day – field work on ocean side of lagoon Bluff erosion survey
<b>Thursday</b> (afternoon only)	Ground water guest lesson, Lagoon – ocean comparison discussion
<b>Friday</b> (afternoon only)	Fish-printing on program t-shirts
<b>Saturday</b>	Culture Day – taste testing and spoon craft

During our Biology Day, students learned to pull a seine net to capture fish and invertebrates at the lagoon. Students later identified these critters and set up an aquarium tank in our classroom so they could observe the fish and mysids and amphipods throughout the week. On Chemistry Day, students learned to use a data sonde to collect water quality measurements from the lagoon water column as well as to use nutrient test kits to make sure our aquarium animals

enjoyed a healthy habitat. On Geology Day, students tested the hypothesis that Kaktovik Lagoon used to be a freshwater lake (many thousands of years ago), by comparing a sediment core they collected from the lagoon to one from a local freshwater pond. On our Comparison Day, the students became the field leaders, and they executed all the techniques they learned earlier on the ocean side of their island to see if there were any differences between the two environments.

On our very last day, we invited students of all ages to a Culture Day activity, led by Allyssa Morris, an outreach coordinator for ANWR. Allyssa and the kids discussed the importance of local food sources, such as fish and whales, to the village of Kaktovik. Allyssa then shared foods that are vital to other Alaskan native communities and many kids tried foods they had never eaten before, such as King crab, baby octopuses, sockeye salmon, and home-made blueberry rhubarb jam.

Overall, although our program was small, we engaged approximately 1/5 of our target demographic (ages 12+) located in Kaktovik. We taught a lot of basic principles of biological, chemical, and physical oceanography as well as geology over the course of the program, though it was difficult to make connections between these disciplines because we often had a different group of students each day. Continuity with our lessons was difficult and did not go exactly as planned.

## **Future Recommendations**

We recommend that the 2016 Oceanography Program should again be focused on upper middle school and high school aged students (12+). We suggest that our cooperation with the Harold Kaveolook School be strengthened and reinforced by working with science teacher, Pam Sobey, to bring interaction, marine-themed lessons to her classroom that complement her curriculum. These lessons would be most useful to the teachers of the Harold Kaveolook School if they take place during the first week of school, typically the second week of August. We also recommend that future programs investigate the possibility of taking a select group of older students on overnight “field sampling trips”, during which time they could demonstrate all of the water, sediment, and animal sampling techniques they have mastered.

The movie night and cultural exchange for younger students were very well received in 2015, and we highly recommend they be repeated in 2016. We suggest repeated the attendance reward as an incentive for students to attend camp every day, however, this reward should be better advertised. As was initiated last year, flyers advertising the program and the attendance prize should be distributed to students at the Harold Kaveolook School beginning in the early spring.

**Photos**



**Group picture outside the Community Center**



**Doe Doe, Kim, Thea and JD are ready for fieldwork!**



**Cliff Strain teaches students to pull a seine net at the lagoon**

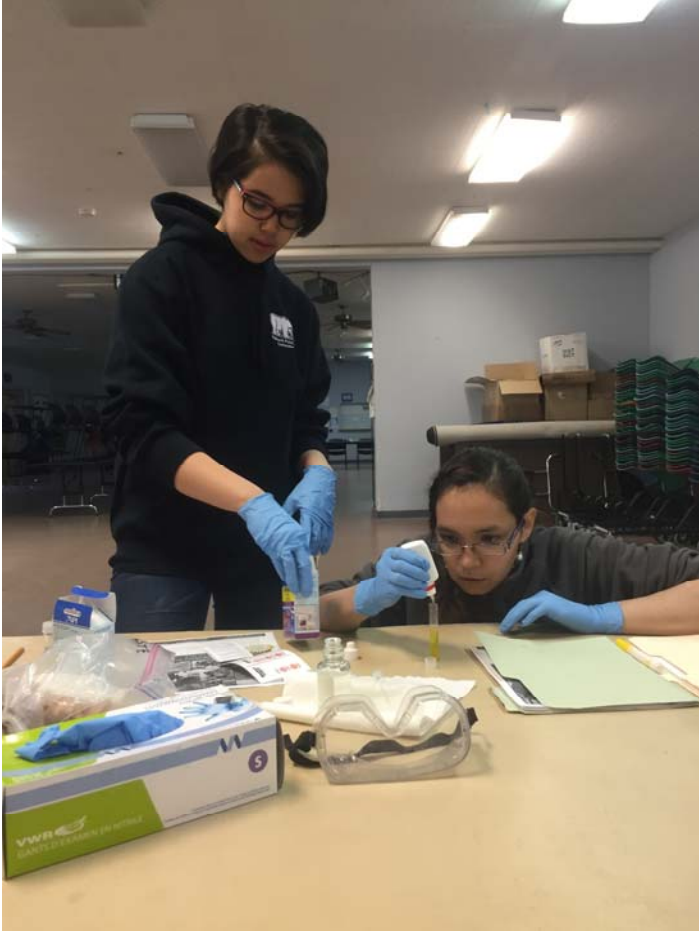


**Carrie Harris helps students take a sediment core**



**JD, Thea, Doe Doe, and Kim with a sediment core and gear**





**Water quality testing**



**Ken Dunton leading water quality discussion**



**Cliff helps Kim and Doe Doe set up an erosion transect**



**Allyssa Morris passes out food on Culture Day**



**Paul tastes baby octopus for the first time!**