



MATTAMUSKET LODGE

Place Based Education, Essential Standards, Citizen Science and Contributing to APNEP Conservation Outcomes and Informing Place Based Management

NCDENR Contract # 4589  
Grand Period 4/16/2012-9/30/2012

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The first crab marked. Little girl unknown big girl Megan McSherry Duke Undergraduate working on protocols.



## Summary

The goal of this project was to develop place and heritage based education augmentation to address the common core. The biology and heritage component is blue crabs and their role in local ecosystems including the human dimension and water quality. We developed formal working relationships with Lake Mattamuskeet Schools in Hyde county and Cape Lookout School in Carteret County. We engaged a nature education specialist to develop lesson plans. We purchased materials to enable the schools to capture crabs and measure water quality including, temperature, pH, salinity, DO, and turbidity. Over the summer, Rittschof worked with 3 high school students (one from Virginia and two from Carteret county) two Duke undergraduates and a DePauw University intern to develop protocols for middle and high school students teachers and students. We overcame teacher turnover (new principle, new vice principle, loss of two science teachers, and turmoil related to school charter renewal) and have a program in Mattamuskeet that has been functioning since school began this fall. With new funding from Oak Foundation and Disney World Wildlife Fund we will restart the Carteret County program and continue the Mattamuskeet program and extend our work with school children to Texas blue crabs and whooping cranes.



Mrs Cahoon and Turbidity

Preparing to catch

Caught crabs

## Project scope of work

- project deliverables completed by Rittschof

Rittschof applied for and obtained permits from Lake Mattamuskeet National Wildlife refuge, NC DOT, North Carolina Fish and Game and the Division of Marine Fisheries. In Hyde County three measurement sites were chosen: the South Culvert on Highway 94; the new bridge over the outfall canal in MNWR and the outfall canal control structure. In Carteret county the three sites are the 17<sup>th</sup> street public access site on Calico Creek; the 20<sup>th</sup> street public walk over Calico Creek; and the Barbour Road Bridge over Calico Creek.

With the aid of 3 high school student volunteers, two Duke undergraduate students and a DePauw University Undergraduate, Rittschof developed protocols for capturing crabs, taking pictures, and performing measurements of temperature, salinity, dissolved oxygen, pH and turbidity. After we trained her, Cape Lookout lost its lead science teacher and has been in chaos since it appealed and got its charter renewed. Mattamuskeet lost its trained high school science teacher. However, we also trained middle school teachers at Matamuskeet. Those teachers then succeeded in training their students to collect data and to meet the objectives of their common core. Because, of specific learning objectives the teachers taught students to record data in data books and did not teach students to upload data to specific sites.

However, digital photography data were downloaded to the laptop we provided and these will be stored on the Duke Project FLIKR site and will be transferred to the APNEP FLIKR site. Water quality data will be transcribed from the notebooks to Xcel and eventually uploaded to the APNEP Xcel water quality measures spread sheet available from the web site.

Rittschof working with Amy Sauls, is taking the lead on organizing a visit to the Duke Marine Lab this spring and developing a teacher workshop on blue crabs, water quality and the common core at the Marine Laboratory after school gets out.



Citizen Scientists



Water quality measures



Mr. Perry 7<sup>th</sup> grade teacher



A bonus. Teacher assistant and bus driver Ms. Flowers on left.

### **Leverage committed in RFP/Scope**

- **Final leverage reported**

We did not commit to any leverage in the RFP/Scope. However, we succeeded in obtaining funding from Disney Worldwide Conservation Fund (24,750) with a comparable match from the Oak Foundation (24,750, Total 49,500) for the upcoming year of research, education and outreach.

- **Match committed in RFP/Scope**

Rittschof committed about 6,000 in match to the project in the form of his time, that of Amy Sauls. Funds were also set aside for teachers. However, because of the turnover in the teachers in the schools we did not spend those funds. These funds have been committed to Amy Sauls to develop lesson plans and to write a proposal to NC Sea Grant to run a teacher workshop on blue crabs summer of 2013.