Final Report

Communicating Marine Science to Alaskan Communities through Discovery Labs

Kachemak Bay Research Reserve

March 25, 2016

Summer visitors learn about the Estuaries during a
July 2015 “Estuaries – Where the River Meets the Sea” Discovery Lab

OASLC Funding Summary:

Kachemak Bay Research Reserve (KBRR) received funding for 1.75 months of educational programming from the OASLC. This funding was for programming that took place in November of 2014, May of 2015, and July of 2015. This serves as the final report.

Method and Delivery:

A Lab description was developed (see below) and advertising was conducted via electronic calendars, through radio PSAs, on Facebook, in the newspapers and with flyers. The NPS was listed as a sponsor of the lab in all advertising, and a banner stating "this Discovery Lab was funded by the NPS" was on display at each lab.

A total of 1,223 people participated in the following 22 coastal science programs:

Dates	Program Title	Audience	Attendance
July 19,18 and 19, 2014	"*Estuaries- Where the River Meets the Sea*" public Discovery Lab	Visiting public	394
Nov 5, 2014	"*Estuaries- Where the River Meets the Sea*" public Discovery Lab	Local public	42
Nov 6 – 14 (5 programs)	"*Estuaries- Where the River Meets the Sea*" student Discovery Labs (4 programs)	Grades K - 12	238
April 24	"*Estuaries- Where the River Meets the Sea*" student Discovery Labs in Port Graham (2 programs)	Grades K - 12	37
May 5, 2015	*"Estuaries- Where the River Meets the Sea"* student Discovery Lab in Nondalton (2 programs)	K - 12	23
May 6, 2015	*"Estuaries- Where the River Meets the Sea"* student Discovery Lab in Newhalen (3 programs)	K - 12	38
May 13, 2015	"*Estuaries- Where the River Meets the Sea*" student Discovery Labs in Nanwalek (3 programs)	Grades K - 12	160
July 22, 24, 25, 29,31, Aug 1 2015	"*Estuaries- Where the River Meets the Sea*" public Discovery Labs (6 programs)	Visiting public	467

Deliverables Overview:

- **Discovery Labs in General:**

The Education department at KBRR offers environmental education programs for students in grades K – 12, and for adults and area visitors. All KBRR education programs follow our highly successful Discovery Lab format, and utilize a fully equipped laboratory classroom. Programs were delivered by KBRR education staff in four villages that are off the road system; Port Graham, Nanwalek, Nondalton, and Newhalen.

KBRR's Discovery Lab programs are subdivided into eight different tables. Each table contains interesting factual information, and scientific investigations presented in multiple ways to appeal to a variety of ages and learning styles. Most tables include hands-on activities, and incorporate the use of dissecting scopes, close-up examination of live marine invertebrates, experiments that learners can conduct, and craft activities. Research Reserve education staff draw upon the expertise of area scientists and current research findings as they develop these learning labs. Partnering agencies and organizations like the Center for Alaskan Coastal Studies, the US Fish and Wildlife Service, and Homer's Pratt Museum often provide staff to assist with the design and presentation of these informative labs.

During the school year we feature one research topic per month, and build our Discovery Labs around this topic. On the first Wednesday of each month, October – May, we open the lab to the public and provide staffing to inform our visitors on a diversity of topics from salmon biology to invasive species. Over the following days these topics are modified to meet the learning objectives of K-12 students who come into the lab with their teachers and classmates during the rest of the month. When funding allows we package up the lab activities and fly KBRR education staff across Kachemak Bay to deliver these labs to village schools beyond the road system.

In the summer we offer three days of public programming per week (Wednesdays, Fridays and Saturdays) for six weeks, and cover a new research topic each week. These summer programs are well attended and appeal to the visiting public, families with children, and area residents who have family visiting from out of town. All Discovery Lab programs are free to the public.

- **OASLC Discovery Labs:**

Through the generous funding support provided by OASLC we were able to offer educational programming during the 2014/2015 school year, and a week of public programming during July of 2014 and two weeks in July of 2015. Total participation for these programs was 1,399 people.

The July, 2015 "Estuaries – Where the River Meets the Sea" Discovery Lab was presented at Islands and Ocean Visitor Center was attended by 394 area visitors. It was then presented to a local audience on November 4th, 2014 with 42 people in attendance. Lab content was then reorganized to prepare for visiting school groups. Students in grades K- 12 came for two-hour programs over the next two weeks, with a total of 238 students participating in the labs. This lab was then packed up and staff flew over to Port Graham, Nanwalek, Nondalton and Newhalan and KBRR education staff presented the program to all students in grades K-12 with 258 students participating. This very popular lab was repeated for

Homer area visitors and locals for a total of 6 public programs between July 22 – August 1, with a total attendance of 467.

It is worth noting that this lab topic was one of the most popular labs that we've ever given - so much so that we offered it for a second summer with no decline in numbers.

Example of a flyer for the Public Discovery Lab:

- **Outline of *Life in Our Estuaries***

  - Invertebrates and the rocky intertidal
  - Estuaries and salmon
  - Bears, sedges and clams
  - Whales and other marine mammals
  - Coastal and marine birds
  - Human uses of estuaries
  - Estuaries in peril in the lower 48 states
  - Treats to estuaries in Alaska

- **Evaluations**

KBRRR conducts teacher evaluations for each Discovery Lab program, and the results from these provided the following insights:

All participating teachers gave high ratings to the following questions:

- The presenter was well-prepared
- The presenter engaged the students and provided content appropriate for the grade level/abilities of my students
- The program's atmosphere was positive, i.e. participatory and interactive.

The fact that we included live sea stars, urchins, crabs, and other small ocean animals for students to hold and learn about was a big hit with all the students, especially students in the Lake Clark district, as they don't live adjacent to the ocean and have little opportunity to see or hold these animals. One teacher suggested that we start out the program with the animals as a way to "hook" the students, rather than provide a lecture before bringing the animals out.

All teachers felt that the program was a good use of class time and supported the educational standards they teach to. Another teacher suggested that we find language that is more appropriate for the youngest children – something we will strive harder to do in the future.

Following are a few examples of the teacher evaluations and thank you notes from students:

Kachemak Bay Research Reserve & National Park Service

2015 Coastal Science Education Programs

EVALUATION FORM

Date of Program: 4/22/15 **School/Group:** Mandalton / 7th – 12th

Teacher/Lead Instructor: DAVID PADORAC **Grade:** _____

Program Name: Estuaries: Where Rivers Meet the Sea

KBRR/AMNWR Instructors: Jessica / Rebekah

Circle the number which best matches your experience in today's program.	*Strongly Agree* 4	*Agree* 3	*Disagree* 2	*Strongly Disagree* 1
1. The presenters were well-prepared.	(4)	3	2	1
2. The presenters engaged the students and provided content appropriate for the grade level / abilities of my students.	(4)	3	2	1
3. The program's atmosphere was positive, i.e. participatory & interactive.	(4)	3	2	1

My students will use what they learned in this program by… understanding that estuaries are actually important to them.

The best portion of this program for my kids was: hands-on with the live creatures.

because …
Hands-on = engagement.

Comments and suggestions: I would start with the hands-on with the live creatures… that will "hook" the students' attention into the rest of the program better.

THANK YOU!

Please return to: Jessica Ryan, KBRR, 95 Sterling Hwy. – Ste. 2, Homer, AK 99603

Kachemak Bay Research Reserve & National Park Service

2015 Coastal Science Education Programs

EVALUATION FORM

Date of Program: 4/23/15 **School/Group:** Pre-K/K/1st Newhalen

Teacher/Lead Instructor: _____ **Grade:** K 1

Program Name: Estuary Workshop 9:55 - 10:30

KBRR/AMNWR Instructors: _____

Circle the number which best matches your experience in today's program.	*Strongly Agree* 4	*Agree* 3	*Disagree* 2	*Strongly Disagree* 1
1. The presenters were well-prepared.	(4)	3	2	1
2. The presenters engaged the students and provided content appropriate for the grade level / abilities of my students.	(4)	3	2	1
3. The program's atmosphere was positive, i.e. participatory & interactive.	(4)	3	2	1

My students will use what they learned in this program by... applying learned info to future science/real life situations in Alaska.

The best portion of this program for my kids was:
"hands on" activities and examples were great!

because ...
they kept the kids engaged and interested in topics.

Comments and suggestions: Maybe language used with really little kids could be adapted a bit more (which is SOOO difficult with some concepts & science.) So overall, excellent job adapting to 5, 6 & 7 yr olds.. THANK YOU!

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Kachemak Bay Research Reserve & National Park Service

2015 Coastal Science Education Programs

EVALUATION FORM

Date of Program: 4/23/15 **School/Group:** Newhalen

Teacher/Lead Instructor: Mary Jantz **Grade:** 2-5

Program Name: Estuaries

KBRR/AMNWR Instructors: Jessica & Rebecca

Circle the number which best matches your experience in today's program.	*Strongly Agree* 4	*Agree* 3	*Disagree* 2	*Strongly Disagree* 1
1. The presenters were well-prepared.	(4)	3	2	1
2. The presenters engaged the students and provided content appropriate for the grade level / abilities of my students.	(4)	3	2	1
3. The program's atmosphere was positive, i.e. participatory & interactive.	(4)	3	2	1

My students will use what they learned in this program by... writing & drawing pictures about presentation

The best portion of this program for my kids was: hands on w/ sea creatures, putting hands in cold water, touching eagle wings

because ... it was something they can't normally do, tho they are familiar

Comments and suggestions: Wonderfully presented. Kept kids engaged, & got them interested in future jobs in coastal science.

THANK YOU!

Please return to: Jessica Ryan, KBRR, 95 Sterling Hwy. – Ste. 2, Homer, AK 99603

Kachemak Bay Research Reserve
& National Park Service

2015 Coastal Science Education Programs

EVALUATION FORM

Date of Program: 4/23/15 **School/Group:** Newhalen

Teacher/Lead Instructor: MR. Brunn **Grade:** 10th-12th

Program Name: Estuaries

KBRR/AMNWR Instructors: Jessica + Rebecca

Circle the number which best matches your experience in today's program.	*Strongly Agree* 4	*Agree* 3	*Disagree* 2	*Strongly Disagree* 1
1. The presenters were well-prepared.	(4)	3	2	1
2. The presenters engaged the students and provided content appropriate for the grade level / abilities of my students.	(4)	3	2	1
3. The program's atmosphere was positive, i.e. participatory & interactive.	(4)	3	2	1

My students will use what they learned in this program by… Knowing how important estuaries are, what organisms they support, and how to find estuaries.

The best portion of this program for my kids was:
Birds and Mammals

because …
It's an area my students knew some about, but they enjoyed learning even more!

Comments and suggestions: Great Session! Thank You (

THANK YOU!

Please return to: Jessica Ryan, KBRR, 95 Sterling Hwy. – Ste. 2, Homer, AK 99603


Michelle Gust
I ♥ Starfish &
Brown Bear
Thank's


I ♥ Starfish
I ♥ Brown Bear

Due to the Research Reserve's transition from the Alaska Department of Fish Game (ADF&G) to the University of Alaska Anchorage in the midst of this funding cycle, I do not have exact figures on what was spent, but understand that there is a balance of ~6,000 that was unspent. I understand that final figures and closeout for this funding cycle have been handled by ADF&G.

A sincere thanks for the continued support of these Discovery Lab Programs, and a special thanks to Rebekah Jones and her supervisors at Lake Clark National Park who worked so effectively with us to co-develop and deliver this program.

Final report prepared by: Jessica Ryan, Reserve Manager/Education Coordinator

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Kachemak Bay Research Reserve

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