

Instructionally Related Activities Report Form

SPONSOR: R. Cartwright / C Wyels

PROGRAM/DEPARTMENT: Biology / Maths

ACTIVITY TITLE: Habitat Choice in Hawaii's Humpback whales

A field based research and service learning opportunity for Science Majors.

DATE (S) OF ACTIVITY: March 14th-21st, 2015

(1) PROVIDE A DESCRIPTION OF THE ACTIVITY

In our fifth trip, 9 current undergraduate students and 2 instructors traveled to Maui, Hawaii, to work with a local non-profit research organization, the Keiki Kohola Project, and participate in a long term study of the behavioral ecology of humpback whales. The protected waters along the western coastline of Maui constitute critical breeding habitat for humpback whales; the Keiki Kohola Project aims to provide the information required to ensure adequate and appropriate management of this critical region.

Each year, a key specific issue is chosen as the focus for the trip. Having completed our initial study of patterns of habitat use in maternal females in the region, our attention has now turned to the impact of whale-watching vessels on female-calf behavior. Students were engaged in all aspects of the research project, from background research, the development of testable hypotheses and design of data collection protocols prior to the trip, through the actual field work and subsequent data analysis. On returning, students presented their initial findings at the Sage research forum and then travelled to the Society of Marine Mammalogy Biennial Conference, held in San Francisco, and presented a full analysis of these results at the conference

In response to previous feedback from students, along with their participation in the research, students also spend some time exploring the island and its culture, through a number of field excursions, group activities and attendance at local cultural events. Time is also allocated each evening for reflective writing and journaling.

(2) HOW DID THE ACTIVITY RELATE TO A COURSE(S) AND/OR LEARNING OBJECTIVES?

The work covered in the course complements a range of biology and general science courses, including Behavioral Ecology (Biol 407), Marine Biology (312), Science and Public Policy (Biol 345) Quantitative Methods in Biology (Biol 203), Conservation Biology (ESRM / Biol 330)

(3) WHAT DO YOU SEE AS THE STRENGTHS OF THE ACTIVITY?

This activity provides students with the opportunity to engage in a week long field experience. The key strengths of this experience fall into two areas. Firstly, the students gain at the personal level, building skills such as the ability to collaborate effectively, communicate with their peers, solve problems and think critically. The students are placed into a new situation, where they need to rely on their own abilities to navigate this group setting. Academically and intellectually, participating students benefit from hands-on experience gathering field data, following the research process from design to execution and then analysis, and finally, from critiquing their work. For many students, the experience is transformative; two or three students in each group seem to find a new career path or potential vocation through this experience.

As part of this activity, students are provided with the opportunity to work as part of federally permitted research team, and contribute to ongoing efforts for the conservation of a federally listed, endangered species. This is a truly unique opportunity, and is especially useful for those students planning a career in this field. Additionally, I believe students benefit greatly from the experience of working out problems in a real world setting. Leaving the students to decide on issues such as methods of recording data, handling field notes, interpreting data recorded by other students, liaising with other group members and generally meeting the challenges of undertaking field work in an often inclement and challenging environment provides students with the opportunity to build life skills that then translate across their subsequent studies. Students build on their abilities to communicate, mediate amongst their peer group and function as a team member. Additionally, over the several years that this course has now been running, students who may not excel in the more traditional educational environmental have emerged as group leaders within this unique setting. Particularly for these students, the experience seems especially impactful and formative, and certainly a key component of their university education.

(4) WHAT WOULD YOU SAY ARE/WERE THE ACTIVITY'S WEAKNESSES?

One challenge that we face each year is the limited group size. In 2015, 10 students participated, however we received over 60 applications for the class, which means a lot of very keen students do not get to participate. However, moving forward, we hope to implement related studies of local cetacean populations here in Californian waters, working with the Channel islands Boating Center and also making use of some of the potential opportunities offered through the Santa Rosa Island Field station. These activities will be designed to build on the enthusiasm and expertise developed on our Maui program, but will allow for greater participation in terms of overall numbers of student participants. A second challenge is maintaining a balance between the many island activities, and the actual research work that the students are involved in. Early morning starts and long days on the boats mean that evening lectures are not necessarily possible; however, this year we did set aside one day for alternate cultural activities and this proved very popular with the students.

(5) HOW WOULD YOU IMPROVE THIS ACTIVITY FOR NEXT TIME?

One of the key changes we made this time was in the scheduling of time spent on the water. Essentially due to boat logistics, students took just a half day boat trip and then spent time organizing and analyzing data. This actually improved their engagement in the data analysis portion of the class. Additionally, the inclusion of mathematics faculty and students worked very well, as their skill set was very complementary to the more traditional science students. Finally, the incentive to present the data at the Marine Mammalogy Conference in December further promoted extended engagement with data analysis.

(6) WHAT DID YOU LEARN FROM THE PROCESS?

1. Students need to be encouraged to allocate specific time for pre-trip preparation and post trip data analysis within their weekly schedule. 2. The more students are exposed to the process of research, the better they become at developing their skills in areas such as experimental design, problem solving and independent organization. 3. Given the opportunity, students from our classes still surprise me with their dedication and commitment to the stewardship of our natural resources.

(7) WHAT ARE STUDENT RESPONSES TO THE ACTIVITY? ATTACH STUDENT EVALUATIONS OR ASSESSMENTS (IN ACCORDANCE WITH FERPA RESTRICTIONS YOU MUST REMOVE ALL PERSONALLY IDENTIFIABLE STUDENT INFORMATION)

Attached

(8) GIVE A SUMMARY OF EXPENSES FOR THE ACTIVITY.

IRA Travel Activity Budget

Habitat Use in Hawaii's humpback whales

2014-2015

Number of Students Participating: 10

Number of Faculty: 2

Expenses:	Totals
Airfare	8800
Ground Transportation	197
Lodging	6600
Meals (included)	1435
Cultural Activities	487
Vehicle/Van Rental	880
vessel running costs	3000
additional vessel hire	4000
vessel insurance + survey	2835
Total	28234
Costs paid by students as course fees	5500
Costs covered by IRA	22734

**B. ON SEPARATE DOCUMENT, PLEASE ATTACH ATTENDEE LIST
(PERSONALLY IDENTIFIABLE INFO REMOVED)**

Attached as a separate excel file

**C. PLEASE INCLUDE UP TO 6 IMAGES AS ATTACHMENTS TO YOUR
SUBMISSION**

Images also attached





California State
University

**INSTRUCTIONALLY
RELATED
ACTIVITIES**

C H A N N E L
I S L A N D S



Habitat preference in Hawaii's humpback whales
Post trip student survey – Trip dates March 14th-21st, 2015

Major: Biology
Graduation date: 2016

1. Provide a brief overview (100-200 words) describing your experience as a participant on this field trip.

This field trip was one of the best trips I have even been on. The accommodations were really nice. I liked that we were so close to the harbor and the shops that we could just walk down there and explore. I loved being able to be a part of Dr. Cartwright's research team. Doing the different jobs on the research boat was a great experience and training for the future. It was amazing seeing whales for the first time in the wild and it is something that I will never forget. It was also my first time every going to Hawaii and Maui was an incredibly beautiful island.

2. Describe the aspects of the course that you found most valuable:

a) From academic/career perspective

It has been valuable learning about different research that has been done on whales. As well as being able to do data analysis and being able to present the findings at Sage.

b) From a personal perspective

Going on this trip made me fall even more in love with marine biology and I have an even greater want to become a marine biologist.

3. What were your favorite components of the trip? Comment on research activities vs. extra-curricular activities, such as exploring the island, surfing etc.

My favorite part of the trip was being on the boat and gaining research experience and meeting some of the people who have helped with this project for a long time.

Having free time to explore the island, snorkel, and visit the marine sanctuary was a great experience.

4. Trips and experiences such as this provide opportunities to learn about our own strengths and weaknesses in terms of personal growth. What did you learn about yourself on this trip? Comment on anything you saw in yourself on this trip with regards to your personal self-confidence, your ability to adapt to a new situation, your roles within a group and as a team player.

I learned that I can handle long days out on the water. I learned that I can be thrown into any situation and be able to work well and adapt to the situations. My role within a group is the organizer making sure that everyone is doing well and staying on task.

4. Please provide any recommendations for future trips.

Maybe before students go on the trip you can have a team builder exercise and ice breaker games for the group to get to know each other better.

Habitat preference in Hawaii's humpback whales
Post trip student survey – Trip dates March 14th-21st, 2015

Major: Environmental Science and Resource Management
Graduation date: May 2016

1. Provide a brief overview (100-200 words) describing your experience as a participant on this field trip.

Participating in this trip to Maui has been the pinnacle of my experience at CSUCI thus far. Gaining experience outside of the classroom in the field in a real research setting is an extremely valuable experience, and I consider myself very lucky to have gotten to participate. Working on a project that is something I am interested in and passionate about gives me drive and a purpose for the rest of my undergraduate career here at CSUCI.

2. Describe the aspects of the course that you found most valuable:

a) From academic/career perspective

I gained important research experience that I can add onto and build from throughout the rest of my undergraduate degree. Also, I think I found my niche in the world of marine conservation and management, and I know that I want to pursue a career in this field.

b) From a personal perspective

Working closely with a research team that I did not know very well before ended up being an amazing experience. I met some good friends in the process that I wouldn't have done if I didn't go on this trip and participate 100%. As a transfer student it is harder to meet people, get involved, and make connections than other students that started as freshman but this trip made that happen for me.

3. What were your favorite components of the trip? Comment on research activities vs. extra-curricular activities, such as exploring the island, surfing etc.

Extra-curricular activities, such as snorkeling and surfing, were very fun however I had the most fun being on the boat and with the whales. I can go to Hawaii at any time to do those things, but being part of a research team and being that close to the whales while learning about their behavior is an experience that meant more to me than surfing or snorkeling or going to Maui just for fun.

4. Trips and experiences such as this provide opportunities to learn about our own strengths and weaknesses in terms of personal growth. What did you learn about yourself on this trip? Comment on anything you saw in yourself on this trip with regards to your personal self-confidence, your ability to adapt to a new situation, your roles within a group and as a team player.

Before this trip I did not have any close friends or people I could hang out with at school, partly because I am a transfer student. This trip got me to really open up to new people, something I haven't done in a while, and make new friends in the process. It also increased my self-confidence because I learned that graduate school is really possible for me and research is something I can do. One day when I was on the boat with the whales early in the morning, I had a realization that I am on the right track in my life, and this is what I am supposed to be doing with my career. After changing majors many times, spending many years at community college, and basically having a tumultuous undergraduate experience thus far – that was a very important realization to me.

4. Please provide any recommendations for future trips.

I think every undergraduate student at CSUCI should get the opportunity to go on a trip because it's also what makes our school special. Friends I have that went to other CSU's or UC's do not get the

opportunity to participate in trips like these, and it's an amazing part of CSUCI. Whether it's to Maui, New Orleans, or any other IRA funded trip, the knowledge gained from the experiences of these trips are priceless.