

STUDENT PROJECT PROPOSAL TO THE
UNIVERSITY OF HAWAII MARINE OPTION PROGRAM

Assessing the Potential Scenic Value of Hawaii's Green Sea Turtles

DURATION

December 1, 1993 - June 31, 1994

PROJECT LEADER

Tricia A. Rebelo

ADVISORS

George Balazs

National Marine Fisheries Service

Gary Fuller

Professor of Geography

University of Hawaii

PROPOSAL DATE

November 23, 1993

FINAL REPORT DEADLINE

August 31, 1994

INTRODUCTION

This project will assess the Hawaii green sea turtle's potential role as a scenic resource in tourism. I define *scenic resource* to be the pleasure of seeing live turtles in their natural habitat. This turtle species, *Chelonia mydas*, is currently protected by federal and state laws which prohibit any harvest of these animals. I believe, because the turtles receive little public attention, support for their continued preservation will cease. If a greater value can be placed on their living aspect, then there is justification for keeping them protected. I want to know if there are a significant portion of tourists who visit Hawaii that are interested in seeing or watching green sea turtles in their natural habitat; are they a scenic resource?

With the advisement of George Balazs, a zoologist at the Southwest Fisheries Science Center, the Blowhole and Sandy Beach on the southeast shore of Oahu are the sites where this research will be conducted. Reliable sightings of green turtles from shore make both sites applicable for my research. I have determined, that before a comprehensive assessment may be made, the data must answer the following: (1) the number of turtles seen regularly (2) the health of turtles are good (are there tumors present) (3) frequency at surface (time between dives/ time floating) (4) Accessibility to sites by motor vehicle (5) what are principal reasons for visiting sites (6) do visitors know of turtles in area (7) if yes, how (8) what is their knowledge of turtle's (fear/ respect) (9) is viewing the turtles in the water an activity they would engage in?

I believe three main groups will benefit from my research (1) Hawaii's tour industry (2) tourists (3) the green sea turtle population. Turtles are a natural part of Hawaii's physical environment. If it can be determined that there is a strong potential scenic value, Hawaii's tour industry shall have an opportunity to modify the state's image currently "bombarded with a variety of non-authentic, commercialized forms of Hawaiiiana (Jokiel 1983)." Plastic ~~fl~~ and exotic drinks are not all Hawaii has to offer. Secondly the tourists benefit because of the pleasure of

participating in the activity as well as a new image they will get from visiting Hawaii. Most of all the turtles shall benefit as a greater value will be placed on its living aspect thus founding the rationale for ^{their} its continued protection.

Materials / Methods

The principle method which will be used to evaluate the scenic value of Oahu's sea turtles is questionnaire surveys presented to people at the Blowhole and Sandy Beach. Collection of data will run from December 1993 through June 1994. The development and analysis of the questionnaire survey will be under the guidance of Gary Fuller, a geography professor at the University of Hawaii Manoa campus. A draft questionnaire is attached (article 1). I want qualitative as well as quantitative data. Tourist surveys, in Japanese and English, will be analyzed quantitatively while qualitative data will be collected from local visitors and tour operators. The reason for the separation is that the overall question, which will be answered by tourists, is whether or not there is a significant portion of tourists interested in seeing turtles in their natural habitat. This has to be quantified as the question addresses significance of the portion studied over the total number of tourists visiting Hawaii. I want local visitors and tour operators to provide me with more insight on things which will make or not make the turtles a viable scenic resource. Ideas for personal interviews will come from the *Manual of Sea Turtle Research and Conservation Techniques* (1983) which provides a sample questionnaire.

Testing of the tourist survey or instrument for biases and clearness will only be done with English speaking visitors. This introduces a known bias into the overall survey. It is unfortunate but unavoidable since the cost of translation and typesetting in a foreign language is expensive. The final draft will be no longer than 10- 15 questions long.

The method of sampling is to solicit every fifth person from the last surveyed to keep it as random as possible. One questionnaire will be used at both the Blowhole and Sandy beach. For the purpose of comparing and contrasting the places to see

student?
do it

Honolulu?

which has more interest in viewing turtles, I need to measure the same things in the same way. The representative sample size will be determined by the equation used in the 1991 Hanauma Bay Baseline Survey: $n = Npq / [(N-1)D + pq]$.

where

$$D = B / A$$

n= required sample size

N= population size of Hawaii(1,000,000)

p= the population proportion

$$q = (1-p)$$

and

A= the table value of chi-square for 1 degree of freedom at the desired 5% significance level. B = the bound on the error of estimate expressed as a proportion (tolerance or precision) 5%. p is assigned the value of 0.50 making p=q.

$$D = B / A = (.0025) / 3.84 = 0.00065$$

$$\begin{aligned} n &= (1,000,000)(.50)(.50) / [(999,999)(0.00065) + (.50)(.50)] = \\ &= 250,000 / 650.25 \\ &= 384.46 \text{ (round up to 485)} \end{aligned}$$

Hanauma
The final portion will be to analyze the data gathered from the questionnaire surveys and to provide my conclusions. The second most important question I want answered by this survey is at which site are there more tourists interested in watching for turtles? I am assuming that there are different reasons for tourists visiting each site and want to see if there is a correlation between wanting to see turtles and reason for being at site. This will be measured by using the Pearson's Product Correlation Coefficient. For example, if I find that fewer tourists at Sandy Beach are interested in watching for turtles than at the Blowhole, and notice most are there for sunbathing, I want to test for the significance in the correlation between sunbathing and interest in watching for turtles. If the correlation is

significant, it helps me understand why , hypothetically speaking, at the Blowhole the scenic potential of the green sea turtles is greater. Provided in the conclusion will be suggestions and recommendations to enhance the study sites for turtle watching.

Tentatively, I intend to present part of my work in March 1994 at the Mop Symposium. This will be determine by the amount of data that can be collected in December thru February. Color slides of my work will be shown as a supplement to my speech.

Budget

Stipend.....\$500.00

Mileage from home to sites: aprx. 25 miles; survey 4x's a mo.;

duration 7 mo. 28 x 25 = 700miles; 700 x \$0.28 =\$196.00

Slide film Kodak Ektachrome 36exp. 200 asa (3 x \$8.40).....\$25.08

Kodak color print film 24exp. 200 asa (1 x \$4.02).....\$4.02

Development 1) Kodalux for slides (3 x \$5.87).....\$17.61

2) Fuji for color prints (1 x \$6.13).....\$6.13

Xeroxing \$0.07/page x 500pages.....\$35.00

Translation Estimate \$0.80/word x 200.....\$160.00

(estimate by PR Japan)

Total = \$443.84 *excluding stipend*

Other anticipated supplies: Clipboards, pens, 35mm camera, binoculars, MOP T-shirt
for my personal identification.

Draft Questionnaire Survey

1. What form of transportation did you come in?
a. car b. tour bus c. moped d. other _____
2. Was it difficult to come here? yes / no
3. If you said "NO", why?
a. lack of signs b. traffic c. poor roads d. parking e. distance from hotel
4. Why have you chosen _____ to visit?
a. sunbathing b. swimming (including all other water activities)
c. sight seeing d. other
5. Have you ever had encounters with living sea turtles? yes / no
6. If you said "YES" , how?
a. aquarium b. zoo c. swimming d. others _____
7. Do you know something about sea turtles from ...
a. literature (Fairy tales) b. periodicals c. television d. none
8. How would you prefer learn more about sea turtles? (brief answer)
9. If you knew that there were turtles in the water here, would you be interested in looking for them? Yes / No
10. If you said 'YES' , why?
because... a. I'm already here b. I like wildlife c. other _____

(Article 1)

Curriculum Vitae

Name: Tricia Rebelo

Social Security No:

Birthdate: September 18, 1971 Place: Honolulu, Hawaii Sex: Female

Phone: 455-1956 or 456-7080

Post High School Academic Background

Degree earned: Bachelor of Arts in Geography August 8, 1993

Spring 1992 - Summ 1993 Attended the University of Hawaii Manoa campus

Fall 1989 - Fall 1991 Attended Leeward Community College

Degree earned: Associate of Arts in Liberal Arts

High School

1985 - 1989 graduated from Pearl City High School June 1989

Work Experience

Costco Wholesale November 11, 1989 - current date

Coursework and Grades Relevant to Proposed Project

Completed:

1. Science 320 The Atoll (B)
2. Ocean 331 Living Resources of the Sea (B)
3. Geography 385 Research Methods in Geography (C)
4. Zoology 200 Marine Biology (B)
5. Volunteer for the monitoring of Hawksbill turtles: Hawaii Volcanoes National Park, Resources Management Division

References

Jokiel, Lucy. 1983. Tourism, the keeper of the culture. *Spirit of Aloha* vol. 18 No. 4. p52.

Pritchard, Peter C. H. et al. 1983. Manual of sea turtle research and conservation techniques. Pages 81-84 in Karen A. Bjorndal, ed. *Proceeding of the Symposium on Sea Turtle Research in the Western Central Pacific*. San Jose, Costa Rica.

Reynolds, Elizabeth. 1991. Hanauma Bay baseline survey. UNIHI-SEAGRANT-CP-91-01, Honolulu, Hawaii. Page 8.

4/99

SANDY'S BEACH QUESTIONNAIRE SURVEY
MARINE OPTION PROGRAM, UNIVERSITY OF HAWAII

This is an independent study which attempts to assess the potential scenic value of Hawaii's green sea turtles. Your participation in this survey is greatly appreciated.

1. How did you get to Sandy's beach?
 - a. rental car b. tour bus c. moped d. city bus
 - e. other _____

2. Was it difficult getting to Sandy's beach? YES / NO

If "YES", why?

 - a. lack of signs b. traffic c. parking d. distance from lodging
 - f. other _____

3. Why have you chosen to visit Sandy's beach?
 - a. sunbathing b. swimming (or another water activity)
 - c. sightseeing d. other _____

4. If there were sea turtles in the water here, would you be interested in watching for them? YES / NO

5. Have you seen live sea turtles before? YES / NO

If "YES", where? (circle all that apply)

 - a. aquarium b. zoo c. swimming d. other _____

6. Have you received any information about Hawaii's green sea turtles? YES / NO

If "YES", where?

 - a. television b. brochures c. tour lectures d. other _____

(CONTINUED ON NEXT PAGE)

7. Would you like to learn more about Hawaii's green sea turtles? YES / NO
If "YES," where would you prefer getting such information?
a. at the site of turtle's natural habitat b. museum c. aquarium
d. other _____
8. How would you like this information to be presented?
a. billboard/plaque b. pamphlets/brochures c. lecture
d. other _____

Mahalo for taking the time to complete this survey !!!

7/99

HAWAII GREEN SEA TURTLE QUESTIONNAIRE SURVEY
MARINE OPTION PROGRAM, UNIVERSITY OF HAWAII

1. How did you get to the Blowhole?
 - a. rental car
 - b. tour bus
 - c. moped
 - d. city bus
 - e. other _____

{This question relates to my project in that it will describe the kind of tourist traffic most commonly going through the Blowhole or Sandy beach. One assumption of this project is that tourists visiting Sandy beach are there for individual recreation. Tourists at the Blowhole are there mostly for sightseeing and come on tour buses. This is not to suggest sightseers only travel by paid tours, but I do expect to see a difference between main use of both sites.}

2. Was it difficult getting to the Blowhole? YES / NO

If "YES", why?

- a. lack of signs
- b. traffic
- c. parking
- d. distance from lodging
- f. other _____

{This question is based on the assumption that the harder it is to get somewhere the less attractive the site. If tourists are interested in watching for the turtles in the water and find it difficult to reach the site, either something has to be done to ease access to the site or find a more feasible site.}

3. Why have you chosen to visit the Blowhole?
 - a. sunbathing
 - b. swimming (or another water activity)
 - c. sightseeing
 - d. other _____

{Question 3 is valid in that it will show the recreational preferences at each site. I believe such preferences differ at Sandy beach and the Blowhole. Who will be more interested in turtle watching the swimmers; the sightseers? Maybe the Blowhole is better for turtle watching?}

4. If there were sea turtles in the water here, would you be interested in

watching for them? YES / NO

{This is the most important question of the survey. Above all, how much interest is there for turtle watching?}

5. Have you seen live sea turtles before? YES / NO

If "YES", where? (circle all that apply)

a. aquarium b. zoo c. swimming d. other _____

{I don't expect to find that many people have seen live sea turtles. Which tourists take interest in watching for the turtles, those who have or have not seen them before?}

6. Have you received any information about Hawaii's green sea turtles?

YES / NO

If "YES", where?

a. television b. brochures c. tour lectures d. other _____

{I suspect that there is little or no information about the presence of the turtles in Oahu's coastal waters. I am sure with advertising tourist interest will abound.}

7. Would you like to learn more about Hawaii's green sea turtles? YES / NO

If "YES," where would you prefer getting such information?

a. at the site of turtle's natural habitat b. museum c. aquarium
d. other _____

{I expect that those who answered YES in question 6 will do the same in question 8. I believe those answering YES in this question would find it more stimulating where they could also watch for the turtles. My assumption is that seeing a living creature in its natural habitat has the greatest value to a tourist.}

8. How would you like the information about Hawaii's green sea turtles to be presented?

a. billboard/plaque

b. pamphlets/brochures

c. lectures

d. other _____

{In order to enhance the attraction of turtle watching, materials must be distributed for greater tourist awareness. Like any market(attraction), advertisement is the greatest propaganda.}

THANK YOU VERY MUCH FOR TAKING THE TIME TO FILL OUT THIS QUESTIONNAIRE!!!

Russ - Sharon → GHB
To: George Balazs
Fr: Tricia Rebelo
Re: Progress Report

June 14, 1994

This past weekend, 6/11 - 6/12/94, I finished collecting all 200 surveys from the beach immediately fronting the Sheraton Waikiki Hotel. Now all 400 surveys are in from both sites. I am currently reviewing the responses and will be able to present you with the results in two weeks.

Thank you for encouraging me to take surveys in front the Sheraton. The turtles come right up to the beach wall during high tide to feed on the algae. Two large males in particular. The surveys helped tourists' awareness of their presence. Even those who refused to take the survey became excited when a turtle was spotted.

One couple reported that a few curious people had jumped in to touch the turtles. It would be great if a sign could be posted 1) to inform the public that there are turtles in the water 2) to give more historical/biological information on the turtles 3) to explain what harassment is and that it is illegal.

I will talk to you soon about my making recommendations to have signs posted.

To: George Balazs
Fr: Tricia Rebelo
Re: Progress on my project

The project is going well. I have collected all 200 surveys from the Blowhole. I am analyzing the data now. This weekend, 5/21/94, I will start collecting surveys from the beach fronting the Sheraton Waikiki Hotel.

The responses are positive towards the interest in turtle watching, as well as the desire to learn more about green sea turtles. One tourist wrote, "A fascinating precious resource—I hope you can protect it."

I will be getting back to you again soon.

