MARINE SKILL REPORT SUBMITTED TO THE

UNIVERSITY OF HAWAII MARINE OPTION PROGRAM

Evaluating the Possibility of Making Turtle Watching an Ecotourist Attraction

Duration

November 01, 1993 - June 12, 1994

Project Leader

Tricia A. Rebelo

Advisor

George H. Balazs

Zoologist and Leader, Marine Turtle Research

National Marine Fisheries ServiceSWFSC-Honolulu Laboratory

Report Date

December 13, 1994

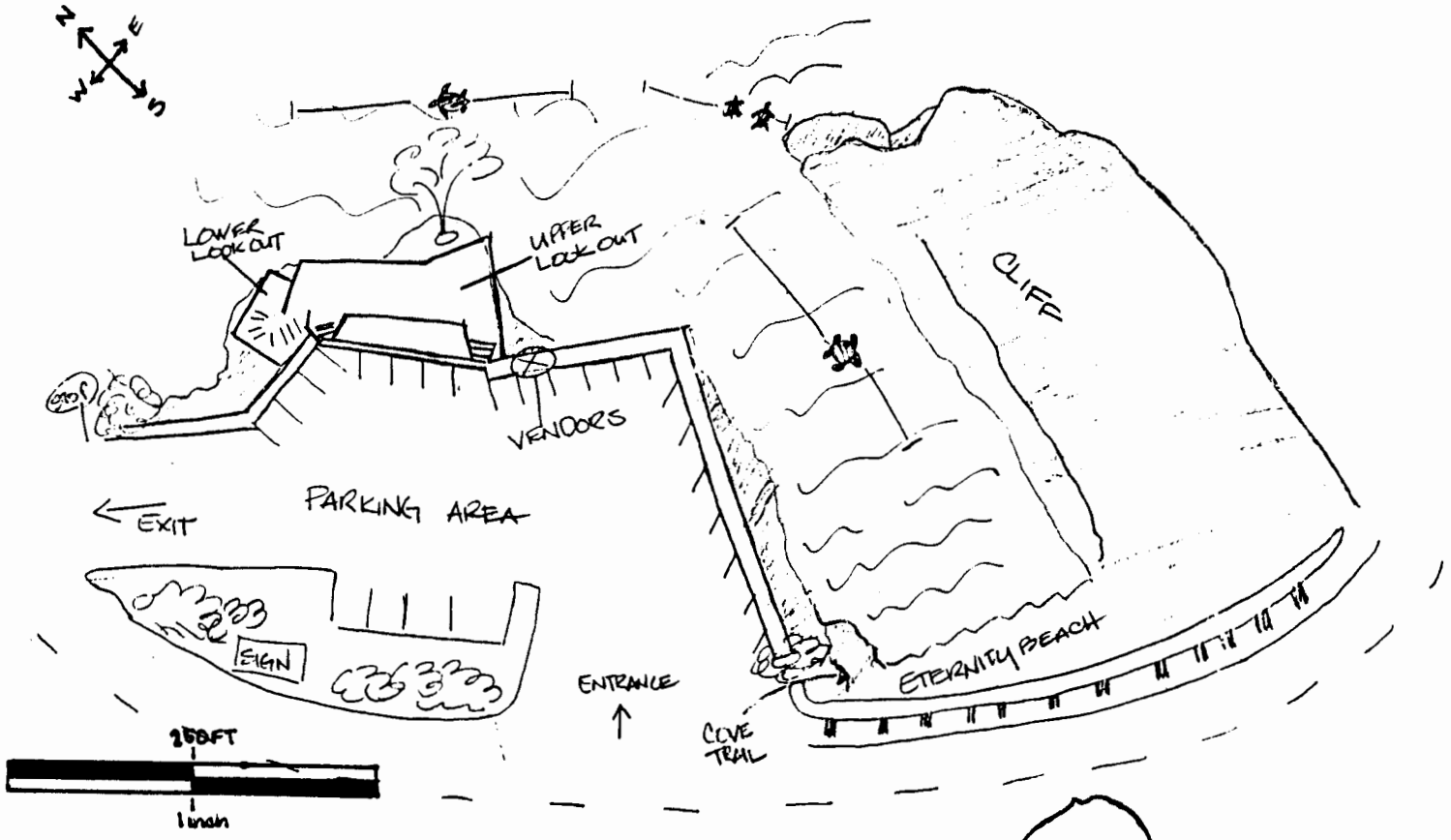
Introduction

Protected since 1978 under the U.S. Endangered Species Act, the green sea turtle, *Chelonia mydas*, has become more common in Hawaii's nearshore waters. As Hawaii's green turtle population grows, it will become increasingly difficult to justify further protection from people still interested in harvesting this animal. Development of a greater appreciation of the living green turtle is necessary to ensure that they will always be protected. Ecotourism may be an answer to developing this appreciation. Ecotourism is a tour industry which promotes the education and enjoyment of living and non-living things in the natural environment. Part of the State of Hawaii's ecotourism agenda should be to promote the scenic character of the green turtle in places where it can easily be seen from shore. To substantiate why the state should spend money promoting this, I conducted questionnaire surveys (Appendix 1-2) with tourists on Oahu (Fig. 1 and Fig. 2) who visited the Halona Blowhole and Sheraton beach. The questionnaires were devised to test my primary hypothesis, H1: Most tourists are interested in watching for sea turtles in their natural habitat; and secondary hypothesis, H2: There will be more tourists at the Blowhole interested in turtle watching than at Sheraton beach.

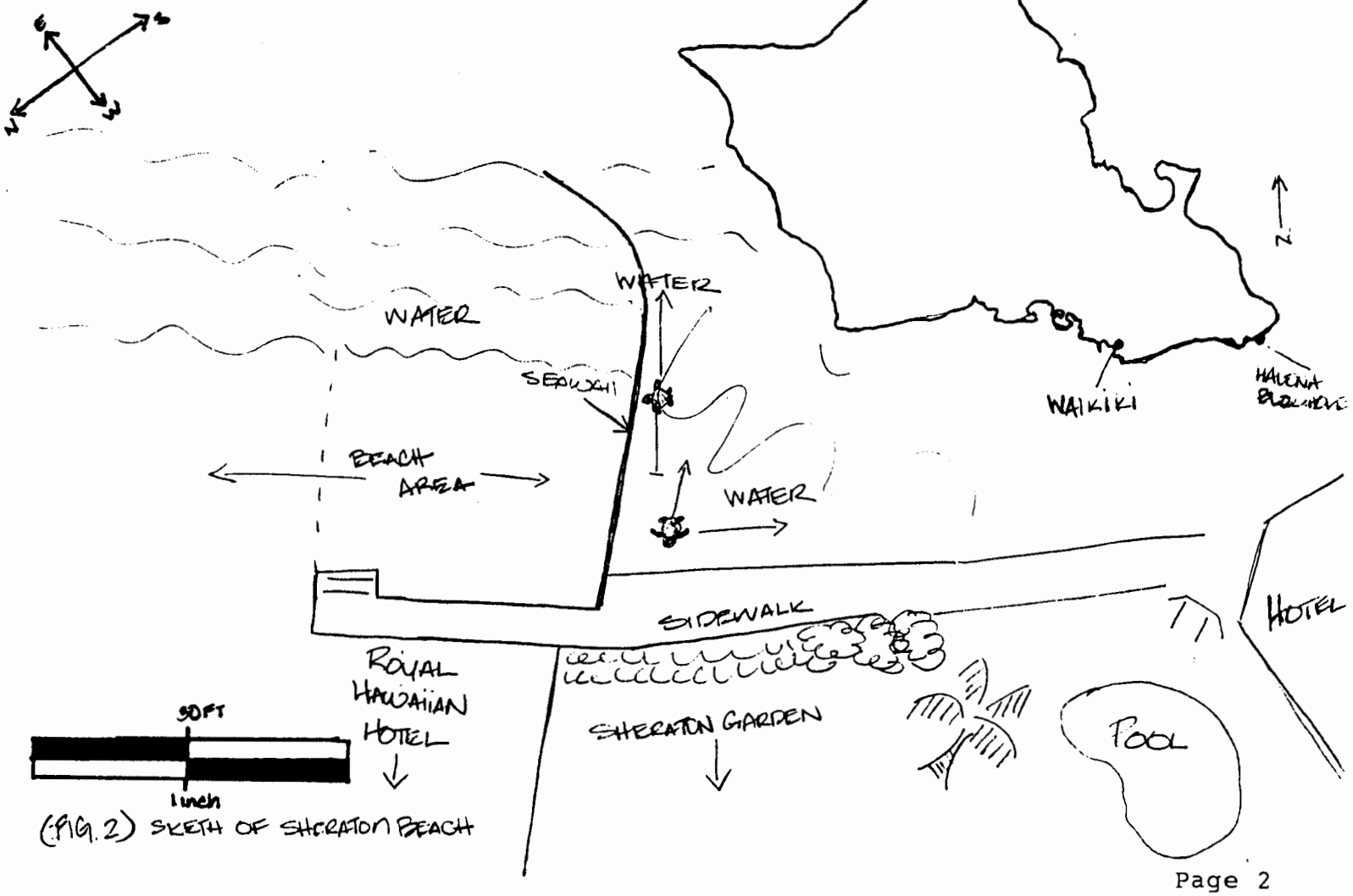
Site Description

The decision to use the Halona Blowhole and Sheraton beach for this study came from recommendations made by George Balazs, a zoologist with the National Marine Fisheries Service and authority on Hawaii's green sea turtle. They were applicable for this study, providing reliable opportunities for seeing turtles nearshore, and a high visitation rate by tourists.

The Blowhole is an area adjacent to a short channel of water leading into a small cove. There is a large parking area for both cars and tour buses. Visitors are able to watch the Blowhole spout from two platform levels. Providing service to visitors is a group of Hare Krishna vendors selling T-shirts, snacks, and cold drinks



(FIG. 1) SKETCH OF HALONA BLOWHOLE



(FIG. 2) SKETH OF SHERATON BEACH

along one stretch of sidewalk. I included the cove into my site area because the turtle's swim down the channel often in close proximity to the swimmers. I observed sunbathing, snorkeling, scuba diving, or body surfing at every visit to the Blowhole. Most visitors, however, seem to watch the Blowhole and depart after 15 minutes.

Sheraton beach is smaller than the Blowhole. It is located at the west end of Waikiki beach. There is a sea wall which starts from the sidewalk fronting the Sheraton Hotel's garden and extends into the water. The sidewalk, a good vantage point, is elevated about ten feet above the shore break. The total range of beach used to question tourists did not go beyond the steps at the end of the sidewalk (See Fig. 2).

Materials and Methods

In order for the results of the survey to properly represent the interests of Hawaii's tourists, otherwise known as the representative sample, a minimum sample size was needed. The formula used, $n=Npq/[(N-1)D+pq]$, comes from the 1991 Hanauma Bay Baseline Survey developed by Elizabeth Reynolds (Reynolds,1991).

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 a proportion (tolerance or precision) 5%. p is assigned the value of 0.05 making p=q. $D=B/A=(.0025)/3.84=0.0006533$

$n=(1,000,000)(.50)(.50) / [(999,999)(0.00065)+(.50)(.50) = 250,000/650.25 = 384.46$ (round up to 385)

The minimum number of tourists needed is 385, however, I chose to collect a total of 400 so I could administer an even 200 surveys at each site. The accessibility, via motor vehicle to the Blowhole and by walking to Sheraton beach, ensured that I was able to collect all 400 surveys within a two month period. Because each site is predominantly used for either sightseeing or beach recreation, gathering surveys from the Blowhole and Sheraton beach provided a good cross section of tourists visiting Hawaii's coastal areas.

To ensure the majority of tourists approached could participate, I had the surveys printed in both English and Japanese. Each tourist was presented a multiple choice questionnaire on a clipboard and provided a pencil to circle answers. Some questions have two parts totaling 12 questions on the Blowhole survey and 10 questions on the Sheraton beach survey. The surveys are basically the same except for a few questions relevant to each place. In fairness to the tourists, the survey is designed to be completed within 5 minutes.

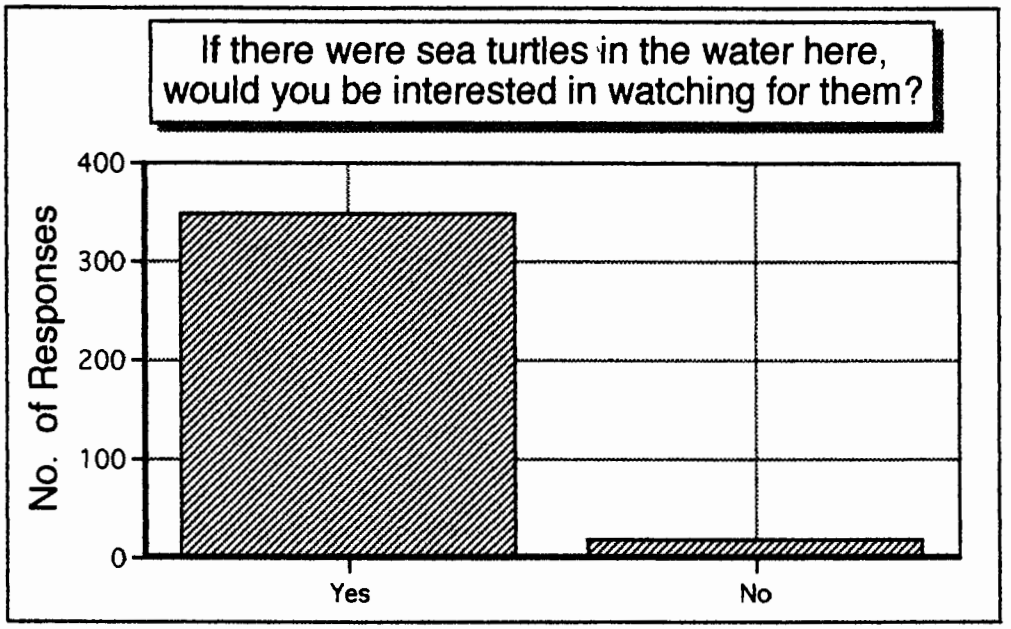
Sampling was not random. The decision to solicit all available tourists was based on my preliminary visits to each study site. At the Blowhole, there was an inconsistent flow or tourist traffic. I was unable to determine any peak visiting times. At Sheraton beach, tourists were less willing to participate during the morning than in the afternoon. Also, the turtles were easier to see in the late afternoon when higher tides allowed them to feed along the sea wall. Late afternoon surveying provided less tourist traffic and daylight hours. Under such circumstances, it seemed prudent to collect as many surveys as possible.

The first two-hundred surveys were administered at the Blowhole and completed within the month of May. Generally, sampling occurred on weekends from noon until 3pm or 5pm. May is the beginning of the high tourist season, but it fell within the school year making traffic a factor in keeping to weekend surveying. From the ending of May and through June, the next two-hundred surveys were completed at Sheraton beach. Because the times of collection, 4pm - 7pm, coincided

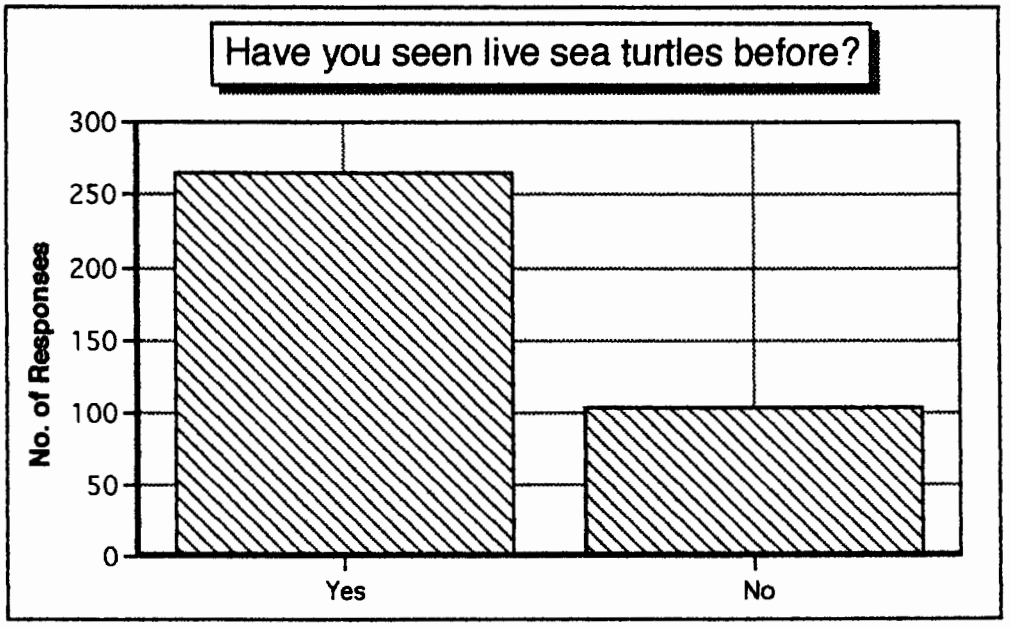
with the turtles feeding along the sea wall, I was careful not to point them out before or while a tourist was taking the survey. This would bias the question, 'have you seen live sea turtles before?'

Questionnaire Results

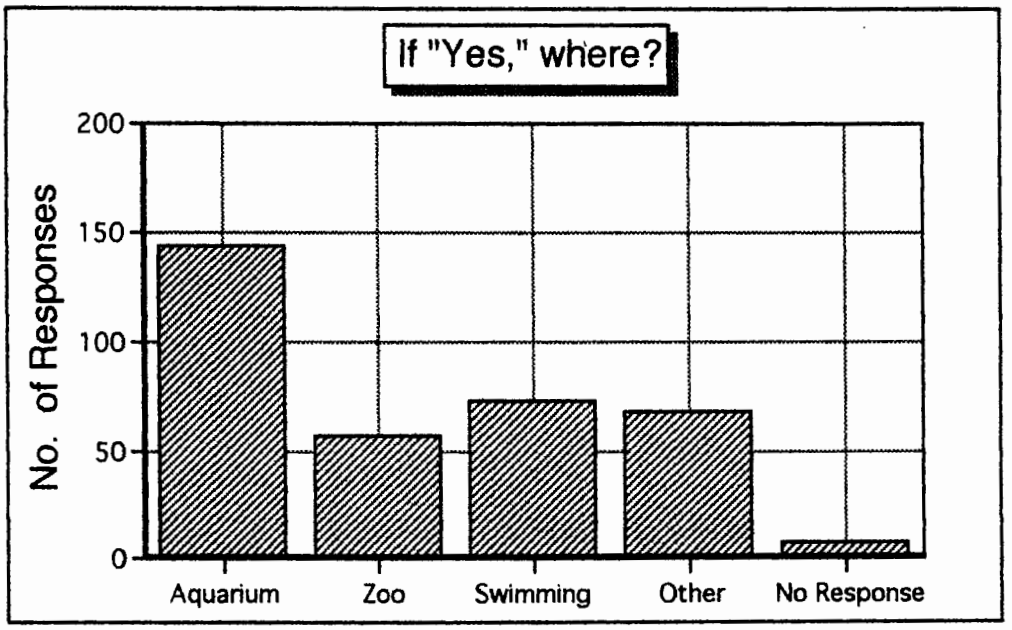
Of the 408 tourists asked to take the survey, a total of 368 completed one. This is less than was determined to be statistically significant. However, I still feel my results are valid and consistent with the attitudes of Hawaii's tourist population. If done over, I would expect the same outcome. What was surprising was the high rate of Japanese speaking tourists who refused to participate. This may mean that their opinions are under represented by this survey. These facts should be kept in mind when analyzing the data.



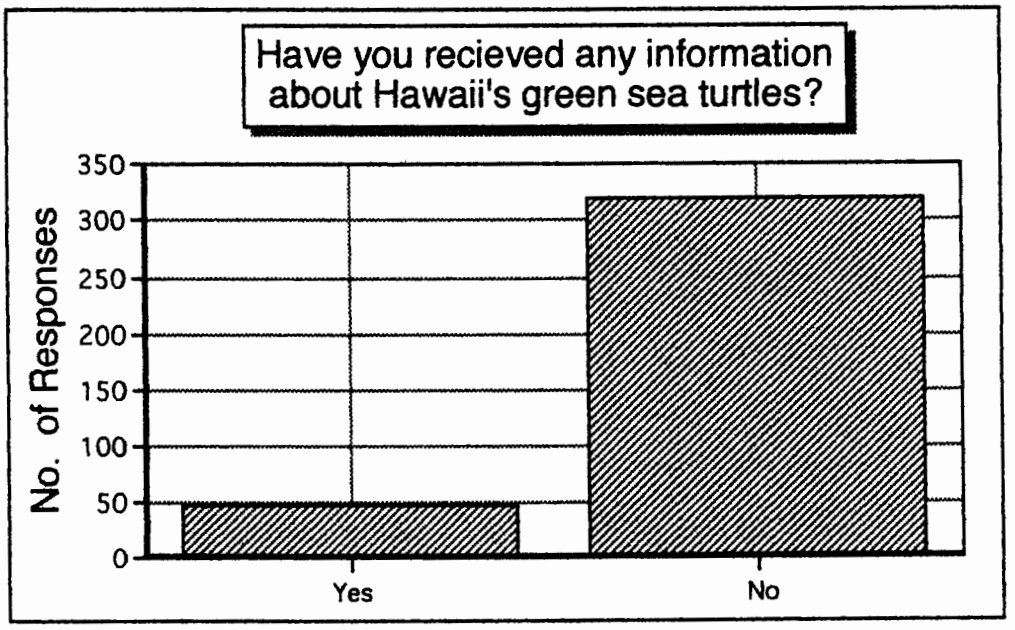
(FIG.3 Blowhole Q, 4 & Sheraton Beach Q, 3)



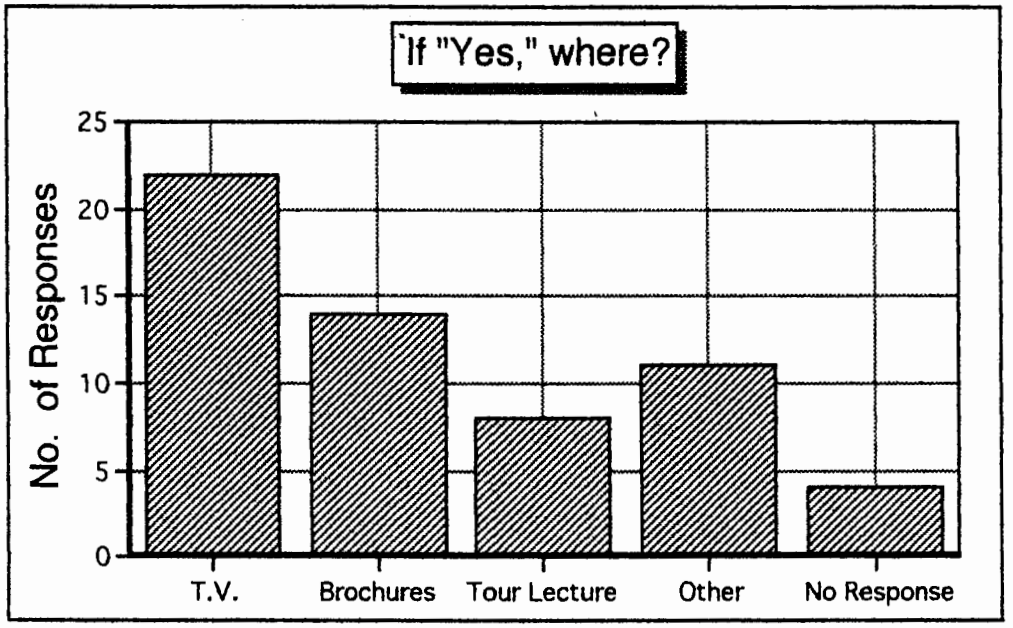
(FIG.4 Blowhole Q, 5a & Sheraton Beach Q, 4a)



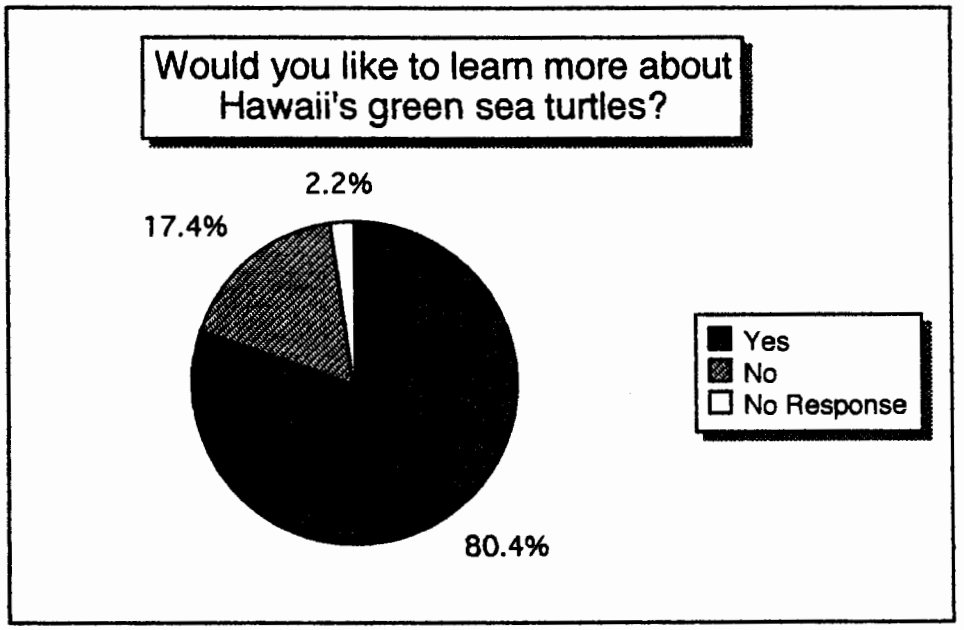
(FIG.5 Blowhole Q,5b & Sheraton Beach Q, 4b)



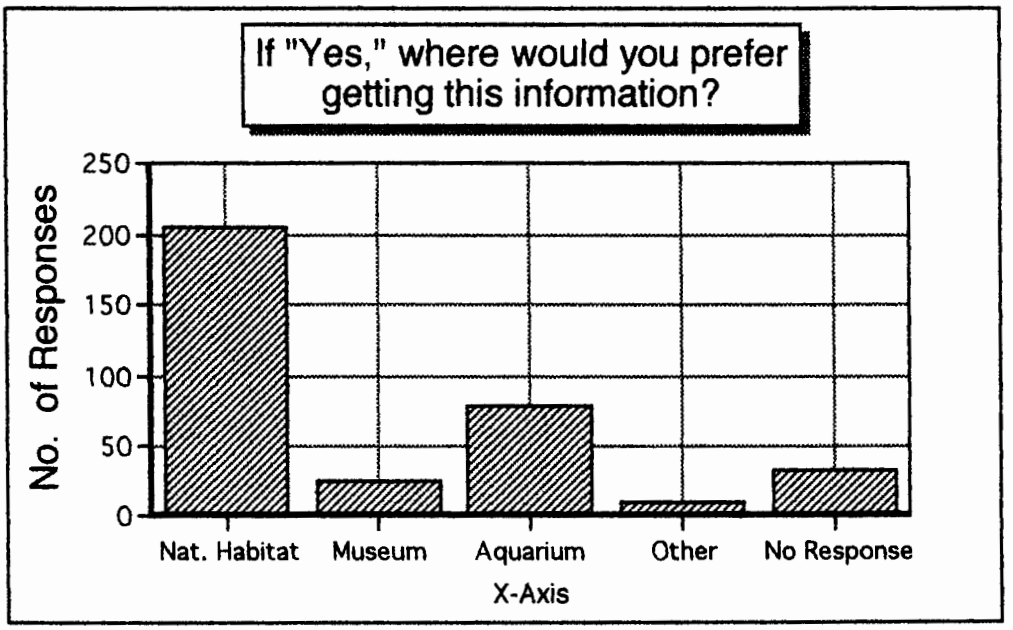
(FIG.6 Blowhole Q, 6a & Sheraton Beach Q, 5a)



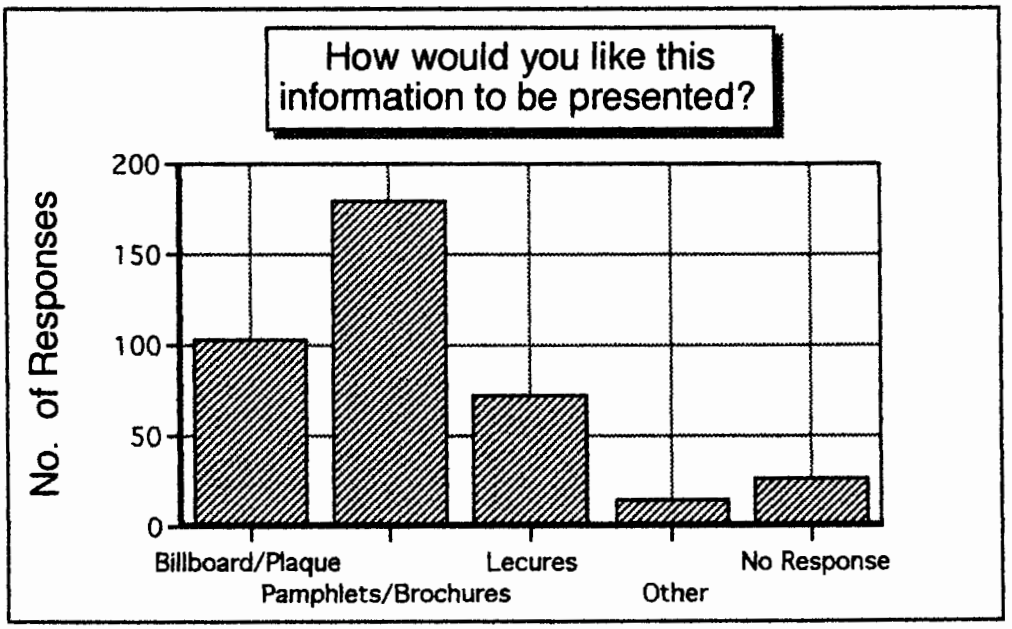
(FIG.7 Blowhole Q, 6b & Sheraton Beach Q,5b)



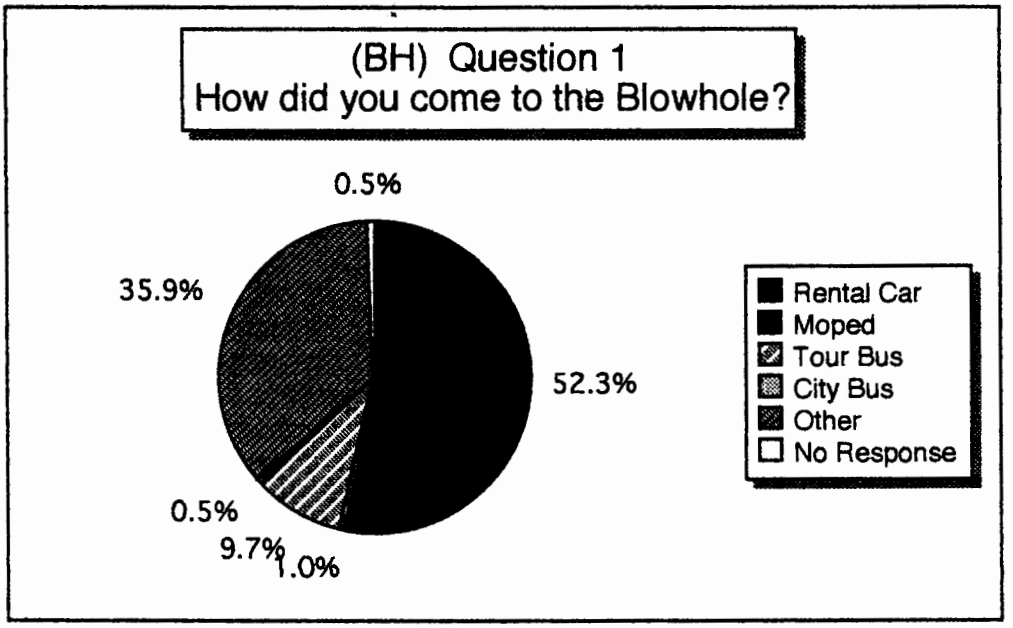
(FIG.8 Blowhole Q,7a & Sheraton Beach Q, 6a)



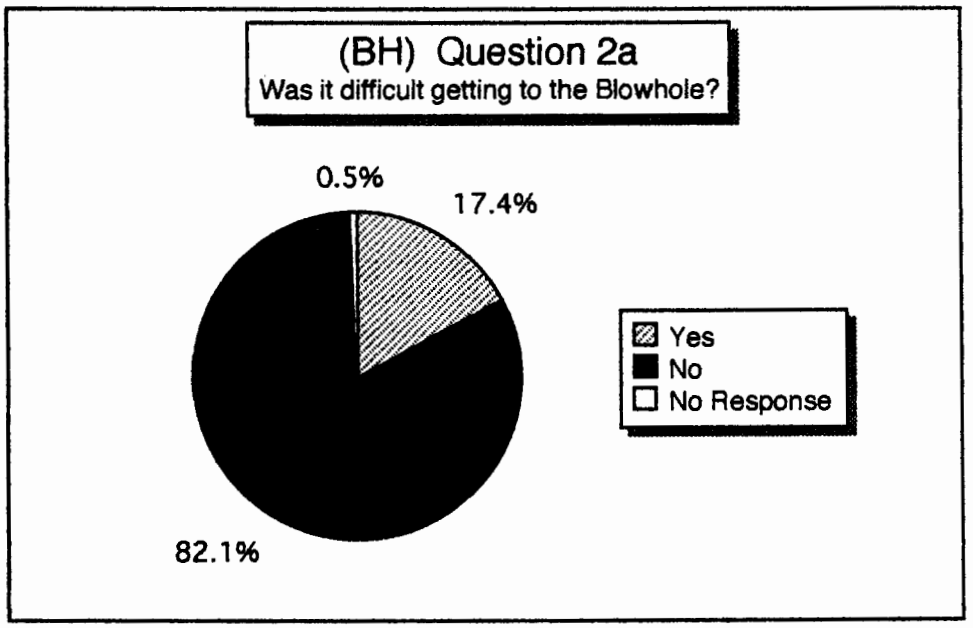
(FIG.9 Blowhole Q, 7b & Sheraton Beach Q,6b)



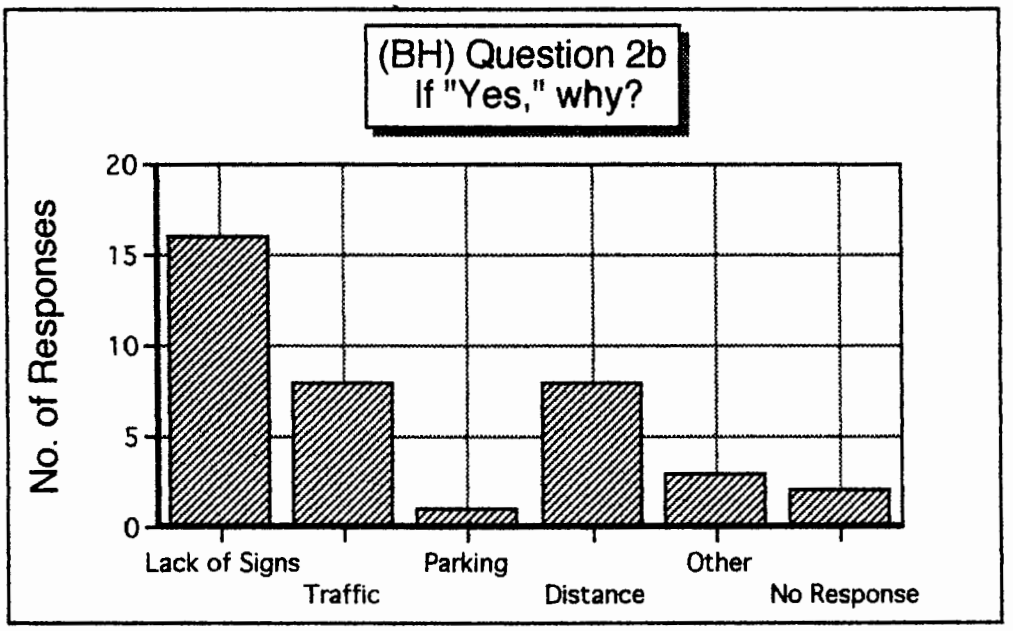
(FIG.10 Blowhole Q, 8 & Sheraton Beach Q, 7)


(BH) Question 1
How did you come to the Blowhole?
0.5%
35.9%
52.3%
0.5%
9.7%
1.0%
Rental Car
Moped
Tour Bus
City Bus
Other
No Response

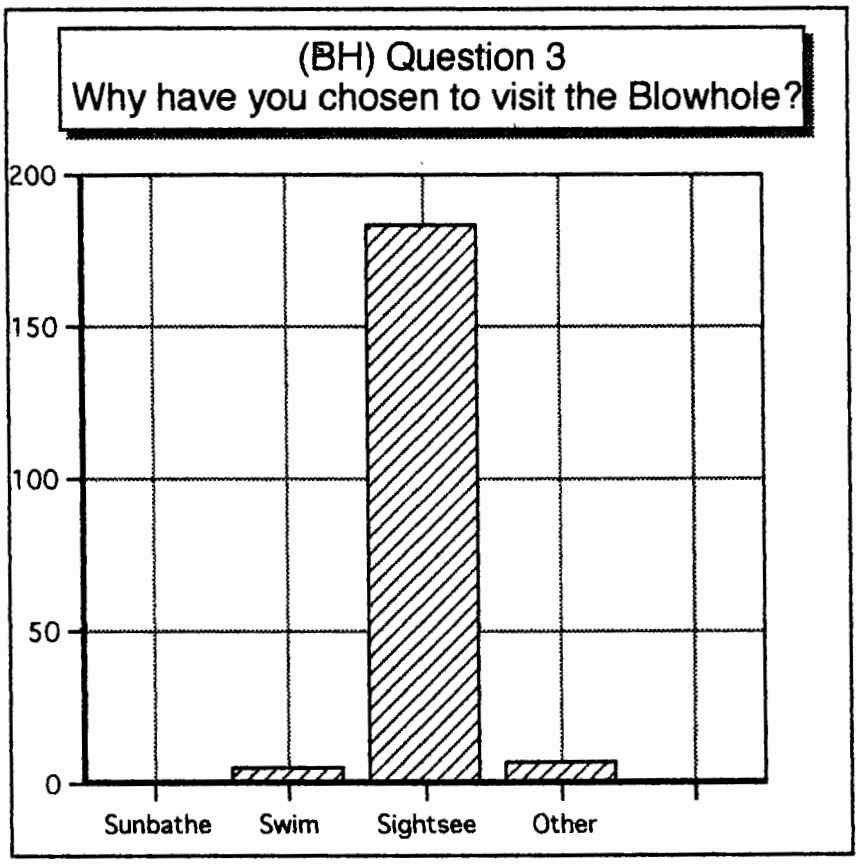
(FIG. 11)


(BH) Question 2a
Was it difficult getting to the Blowhole?
0.5%
17.4%
82.1%
Yes
No
No Response

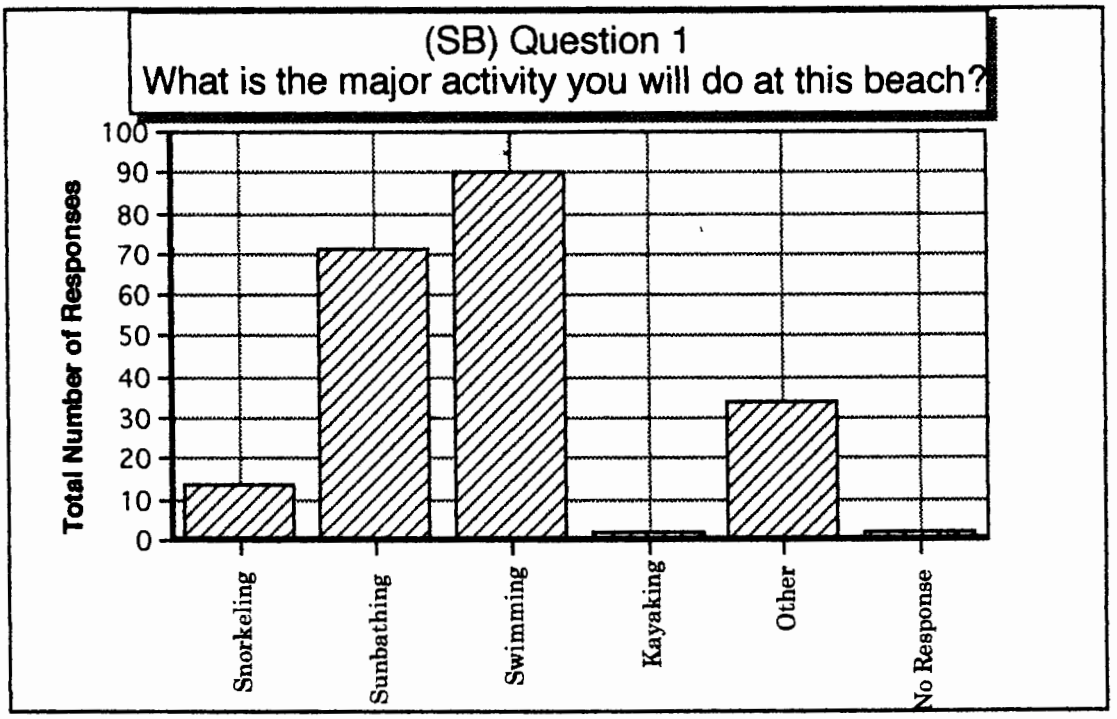
(FIG. 12)


(BH) Question 2b
If "Yes," why?
No. of Responses
20
15
10
5
0
Lack of Signs
Traffic
Parking
Distance
Other
No Response

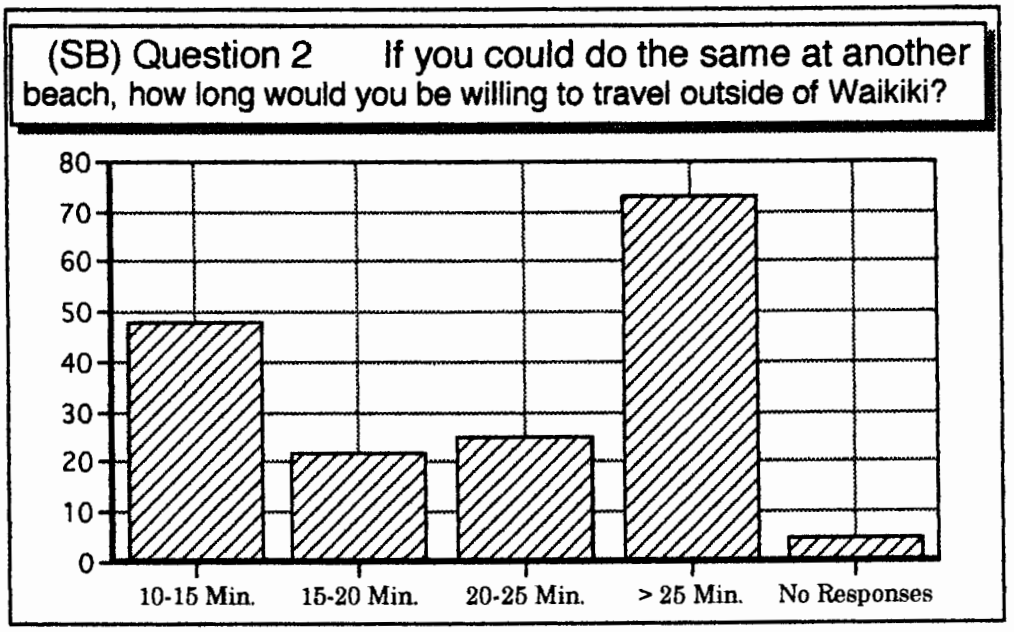
(FIG. 13)


(BH) Question 3
Why have you chosen to visit the Blowhole?
200
150
100
50
0
Sunbathe
Swim
Sightsee
Other

(FIG. 14)


(SB) Question 1
What is the major activity you will do at this beach?
Total Number of Responses
100
90
80
70
60
50
40
30
20
10
0
Snorkeling
Sunbathing
Swimming
Kayaking
Other
No Response

(FIG. 15)


(SB) Question 2 If you could do the same at another beach, how long would you be willing to travel outside of Waikiki?
80
70
60
50
40
30
20
10
0
10-15 Min.
15-20 Min.
20-25 Min.
> 25 Min.
No Responses

(FIG. 16)

Discussion

The results show that 94.5% of those tourists who completed the survey said *"Yes"* they would be interested in watching for sea turtles. This supports the primary hypothesis, H1: Most tourists are interested in watching for sea turtles in their natural habitat. However, there are limits to questions which try to measure future actions. Thus the question, "Have you seen live sea turtles before?," was added to the survey. Seventy two percent said they had in some capacity. I feel that an individual's experience in seeing sea turtles depended, in part, on their own conscious choice to do so. The positive response to this question helped measure the likelihood that tourists are truly interested in watching for turtles when presented with the opportunity.

The secondary hypothesis, H2: There will be more tourists at the Blowhole interested in turtle watching than at Sheraton beach, is also supported by my findings of 95% against 94%. I expected to find it a much greater margin since the survey confirmed that visitors to the Blowhole are sightseers and most swim or sunbathe at Sheraton beach. I theorized that people do not go to the beach to sightsee and are therefore not concerned with exploring the environment. Based on the 1% difference, it seems that traditional beach activity does not have much of an effect on tourists' interest in watching for turtles. The difference could be contributed that Sheraton beach tourists had a much higher rate of tourists not wanting to participate in the survey (N/R). A few may have felt pressured and therefore responded negatively.

Despite circulating information in travel guides, pamphlets printed by conservation authorities, or dive tour advertisements that show turtles, 86.9% indicated they never received any information about Hawaii's green sea turtle. Of those who had, they indicated t.v. as the primary source of exposure. It would be interesting to compare tourists's awareness of the turtles with that of humpback whales for the sole purpose of image association. By this, I mean what people expect

to find when vacationing in Hawaii and what they will remember when they leave. Maybe those who had some knowledge about the turtles came expecting to see them but couldn't because they did not know where to look. Sure whale watching is exciting, but it costs a lot of money to get close to the humpbacks. It does not cost anything to walk along Waikiki to get to Sheraton beach or much to stop at the Blowhole in a rent-a-car(88.2% surveyed arrived by car). There was only one tourist at the Blowhole who knew about the "giant" green sea turtles out there because of a Budget rent-a-car travel guide. I feel that being an inexpensive activity is advantageous to promoting turtle watching as an ecotourist attraction. Why should everything tourists do cost money? What they don't spend on a guided tour, they will spend to pick up a t-shirt with a turtle print or film to photograph the turtles which will then be processed at a 1-hour photo lab etc. The money will come into Hawaii's economy in other ways. Attaching a direct price tag may result in higher expectations by tourists.

The majority of tourists do not know about Hawaii's green sea turtle, but 80.4% expressed an interest in learning more about them. Of those wanting more information, 69.2% preferred knowing "about" the sites of the turtle's natural habitat. Although the choice was phrased, "at the site of the turtle's natural habitat," most tourists want the information in pamphlet or brochure form. The logical choice to the last question, "How would you like the information about Hawaii's green sea turtle to be presented?," would be billboard/plaque. This bias was built into the survey so there would be a substantial request for billboard/plaque. George Balazs (pers. comm) suggested putting a sign at the Blowhole, but there has not been any studies to strongly support his interests here. An unbiased approach would look like:

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

   If "YES," what information should be provided?

   a. Diet b. Habitat locations c. Illustration d. Biology

   e.Other_____

8. How would you prefer the information to be presented?

   a. Billboard / Plaque b. Pamphlet / Brochure c. Lecture

   d.Other_____

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

Tourists may have preferred pamphlets because they can be made more accessible and can make good souvenirs for scrapbooks.

Negative impacts on the green turtle biology present limitations to developing turtle watching as an ecotourist activity. Tumors called fibropapillomas (Balazs and Forsyth 1991) may have profound effects on juveniles and their survival success to reproductive maturity (Sea Turtles 1991). "In severe cases, individual turtles become debilitated from starvation and die from secondary causes (Balazs et. al. 1992)." Encouraging tourists to go to places where there are afflicted turtles (Fig. 17), an estimated 50% in Kaneohe Bay (Balazs and Pooley 1991), is like saying 'come and see Hawaii's few sick turtles.' Fibropapillomas not only threaten the green turtle population, but also the cosmetic factor, unsightliness, of turtles which will affect the enjoyment of turtle watching.

The development of turtle watching as an ecotourist activity at both the Blowhole and Sheraton beach is quite viable. There is a high interest from tourists as well as a good number of healthy turtles. Both sites are easily accessible to visitors, and each provide a unique setting for viewing green turtles. As Hawaii's tour industry looks toward developing ecotourism, turtle watching should be given consideration for it is a low impact and inexpensive activity which helps promote the awareness of Hawaii's natural environment.

(Fig. 17)Turtle Afflicted with Fibropapillomas
Honolulu Advertiser Aug. 21,1994
(B 1)

Recommendations

One limitation of this survey is that it only tested to see if tourists would engage in turtle watching as a secondary activity. Would tourists rent a car or take a tour and stop somewhere, besides the Blowhole, to turtle watch? Knowing whether such an activity can be primary or secondary helps determine how to promote it. For example at Punaluu beach park on the Big Island, the turtles come up to people in knee deep water, and there are so many of them, it is not hard to imagine being able to promote turtle watching as a primary activity. I do not advocate it at this place because of other circumstance, however, under other conditions, turtle watching may be a good primary activity.

At least at the Blowhole and Sheraton beach, interpretive signage should be put up so that visitors are aware of the presence of turtles. The information should include a picture of a green turtle, where they breed, they are protected under Federal and State laws, and that they are herbivores and therefore do not pose a threat to people swimming (like Jaws). This inclusions are based on questions tourists asked me when I conducted the survey.

The last suggestion is that there be greater circulation of the *Hawaiian Sea Turtles* pamphlet published by the National Marine Fisheries Service. It provides information and pictures of Hawaii's turtles and where, geographically, the largest population resides. A good addition to it would be to list location in the islands, such as the Blowhole and Sheraton beach, where they can easily be seen.

Acknowledgements

I thank the Marine Option Program of the University of Hawaii, specifically Sherwood Maynard and Steve Russell, for allowing me to do this project. They have supported me through all my revisions and have generously funded my work. To George Balazs Lead Zoologist in marine turtle research at the National Marine Fisheries Service, South West Fisheries Science Center, Honolulu Laboratory, thank

you for your key advice and patience throughout the duration of this project. Without it I would still be at square one. To my friends, Dennis, Hope, Lynelle, and Lareina Koyama for coming out to collect surveys. You were all troopers. Special thanks to Hope Koyama for reminding me that my ideas are good and that this is a great accomplishment. Thank you for never doubting me.

Personal Evaluation

Prior to starting this project, I had never seen live sea turtles in the wild or known that they are fairly common in accessible nearshore places on Oahu. This experience has increased my awareness of Hawaii's marine environment and by doing this survey I have made a few tourists more aware also. Part of the rewards of conducting the survey was that there were visitors and locals who thanked me for doing this project and wished me success. Local people care about the well being of the turtles and do enjoy going to the Blowhole and Sheraton beach to seen them. One gentleman named the two males that forage along the Sheraton sea wall Oscar and Alfredo.

While in the field, I always felt an affinity for the turtles. I recently learned that the sea turtle is my Aumakua or spiritual guardian. This project started as an attempt to show that the green sea turtle is a scenic resource that needs continued protection, but it has also become a form of cultural preservation.

LITERATURE CITED

Balazs, G. H. and Robert Forsyth. 1989. Species profiles: Life histories and envionmental requirements of coastal vertebrates and invertebrates Pacific Ocean region. National Marine Fisheries Service, NOAA, Southwest Fisheries Science Center, Technical Report El-89-10. 20 pages.

Balazs, G.H. and S.G. Pooley. 1991. Research plan for marine turtle fibropapilloma. U.S. Department of Commerce, NOAA Technical Memo, National Marine Fisheries Service, NOAA-TM-NMFS-SWFSC-156. 113 pages.

Balazs, G.H., and Harold F. Hirth, Paul Y. Kawamoto, Eugene T. Nitta, Larry H. Orgen, Richard C. Wass, and Jerry A. Wetherall. 1992. Interim recovery plan for Hawaiian sea turtles. Southwest Fisheries Science Center, Administrative Report H-92-01.

Sea Turtles. Hawaiian green turtle. 1991. National Oceanic Atmospheric Administration, Technical Memorandum, Southwest Fisheries Science Center. 165 pages.

Hawaiian Sea Turtles. National Marine Fisheries Service. August 1991.

Reynolds, E. 1991. Hanauma bay baseline survey. University of Hawaii, Sea Grant, CP-91-01. 68 pages.

Appendices

HALONA PT. - BLOWHOLE 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 the Blowhole?
   a. rental car b. tour bus c. moped d. city bus
   e.other_____

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_____

3. Why have you chosen to visit the Blowhole?

   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_____

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 the information about Hawaii's green sea turtles to be presented?
   a. billboard/plaque b. pamphlets/brochures c. lecture

   d.other_____

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

ハロナ湖吹き穴(Halona Pt. Blowhole)アンケート

ハワイ大学マノア校　海洋学プログラム

私たちは、ハワイ大学マノア校海洋学プログラムの学生で、ハワイの海ガメ(Hawaii green sea turtle~*Chelonia mydas*)研究プロジェクトの関係で次のアンケートを行います。　つまり、このプロジェクトは海ガメの観光目的としての有用性を調べるのです。　恐れ入りますが、できるだけ大勢の観光客のご意見を聞きたいと思っておりますので、皆様のご協力をお願い申し上げます。

1. ここハロナ湖吹き穴(ブローホール)へは何でいらっしゃいましたか。

   a. レンタカー　　b. ツアーバス　　c. モペッド、バイク等

   d. 市営バス(TheBus)　　e. その他_____

2. ここへのご来遊は、難しいと思われますか。　　はい／いいえ
   「はい」の場合は、なぜですか。　(適切な理由をいくつか示してください。)

   a. 交通標識が少ない　　b. 交通がひどい　　c. 駐車場が不便

   d. ホテルから遠い　　e. その他_____

3. どういう目的でハロナ湖吹き穴にいらっしゃったのでしょうか。

   a. 日光浴　　b. 水泳か、その他の水上活動　　c. 観光　　d. その他_____

4. もしここの海に海ガメがいるとしたら、「かめ観察(タートルウォッチング)」をなさると思われますか。
   はい／いいえ

5. 生きている海ガメをご覧になったことがありますか。　はい／いいえ
   「はい」の場合は、どんな場面でしたか。

   a. 水族館　　b. 動物園　　c. 海で泳いで　　d. その他_____

6. ハワイの海ガメについては、何かインフォメーションを聞いていらっしゃいますか。
   はい／いいえ
   「はい」の場合は、どんな関係ですか。

   a. テレビ　　b. パンフレット　　c. ツアー中の説明　　d. その他_____

7. ハワイの海ガメについて、もっと習いたいと思われますか。　はい／いいえ
   「はい」の場合は、そのインフォメーションを受取るにはどこがいいでしょうか。

   a. 海ガメの見える自然の本場　　b. 博物館　　c. 水族館　　d. その他_____

8. (7)で示した場面では、どのような説明方法がいいでしょうか。

   a. 掲示板等　　b. パンフレット等　　c. 講義　　d. その他_____

どうもありがとうございました

SHERATON 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. What is the main activity you will be doing at this beach?
   a. snorkeling b. sunbathing c. swimming d. kayaking

   e. other_____

2. If you could do the same at another beach, how long would you be willing to travel outside of Waikiki?

   a. 10-15 min. b. 15-20 min. c. 20-25 min. d. more than 25 min.

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

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

   If " YES", where? (circle all that apply)
   a. aquarium b. zoo c. swimming d. other_____

5. 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_____

6. 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_____

7. 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 !!!

シェラトンビーチ(Sheraton Beach)アンケート

ハワイ大学マノア校　海洋学プログラム

私たちは、ハワイ大学マノア校海洋学プログラムの学生で、ハワイの海ガメ(Hawaii green sea turtle~*Chelonia mydas*)研究プロジェクトの関係で次のアンケートを行います。　つまり、このプロジェクトは海ガメの観光目的としての有用性を調べるのです。　恐れ入りますが、できるだけ大勢の観光客のご意見を聞きたいと思っておりますので、皆様のご協力をお願い申し上げます。

1. このビーチでは、どんな活動をなさいますか。

   a. スノーケル　　b. 日光溶　　c. 水泳

   d. カヤック　　e. その他_____

2. もし、別のビーチで同じような活動ができるとしたら、そのビーチへ行くのに不便と思われない時間は次のどれでしょうか。

   a. 10-15分　　b. 15-20分　　c. 20-25分

   d. 25分以上かかってもかまわない

3. もしここの海に海ガメがいるとしたら、「かめ観察(タートルウォッチング)」をなさると思われますか。
   はい／いいえ

4. 生きている海ガメをご覧になったことがありますか。　はい／いいえ
   「はい」の場合は、どんな場面でしたか。

   a. 水族館　　b. 動物園　　c. 海で泳いで　　d. その他_____

5. ハワイの海ガメについては、何かインフォメーションを聞いていらっしゃいますか。
   はい／いいえ

   「はい」の場合は、どんな関係ですか。

   a. テレビ　　b. パンフレット　　c. ツアー中の説明　　d. その他_____

6. ハワイの海ガメについては、もっと習いたいと思われますか。　はい／いいえ
   「はい」の場合は、そのインフォメーションを受取るにはどこがいいでしょうか。

   a. 海ガメの見える自然の本場　　b. 博物館　　c. 水族館　　d. その他_____

7. （8）で示した場面では、どのような説明方法がいいでしょうか。

   a. 掲示板等　　b. パンフレット等　　c. 講義　　d. その他_____

どうもありがとうございました

Appendix 5

Blowhole Data Table 1A

Total Surveys = 200
Total Respondents = 195
Total N / R = 5

Question 1	Responses	
A. Rental car	102	
B. Tour bus	19	
C. Moped	2	
D. City bus	1	
E. Other	70	Most of these were 'private vehicle'
N / R	1	

Question 2a			Question 2b	Responses
Yes	34		A. Signs	16
No	160		B. Traffic	8
			C. Parking	1
			D. Distance	8
		(*)	E. Other	3
			N / R	2

(* Construction on Kanlaneanaole Hwy)

Question 3	
A. Sunbathe	0
B. Swim	5
C. Sightsee	183
D. Other	7
N / R	5

Question 4	
Yes	185
No	10
N / R	5

Blowhole Data Table 1B

Question 5a			Question 5b	
Yes	131		A. Aquarium	70
No	64		B. Zoo	28
			C. Swim	31
		(*)	D. Other	30
			N / R	7
		(* Seen in other places of the world)		

Question 6a		Quesiton 6b	
Yes	19	A. T.V.	8
No	176	B. Brochure	2
		C. Lecture	3
		D. Other	4

Quetion 7a		Question 7b	
Yes	162	A. Nat. Habt.	121
No	26	B. Museum	13
N / R	7	C. Aquarium	32
		D. Other	3
		N / R	28

Question 8	
A. Billboard/Plaque	60
B. Pamphlet/Brorch	103
C. Lecture	41
D. Other	7
N / R	22

APPENDIX 6

Sheraton beach Data Table 1A

Total Surveys = 208
Total Participants = 173
Total N / R = 35

Question 1	Responses
A. Snorkeling	14
B. Sunbathing	71
C. Swimming	90
D. Kayaking	2
E. Other	34
N / R	2

Question 2	
A. 10-15 min.	48
B. 15- 20 min.	22
C. 20- 25 min.	25
D. > 24 min.	73
N / R	3

Question 3	
Yes	163
No	10

Question 4A	
Yes	134
No	39

Question 4B	Responses
A. Aquarium	74
B. Zoo	29
C. Swim	41
D. Other	38

Question 5A	
Yes	29
No	144

Question 5B	
A. T.V.	14
B. Brochure	12
C. Lecture	5
D. Other	7
N / R	2

Sheraton beach Data Table 1B

Question 6A

Yes	134
No	38
N / R	1

Question 6B

A. Nat. Habt.	84
B. Museum	12
C. Aquarium	46
D. Other	6
N / R	5

Question 7

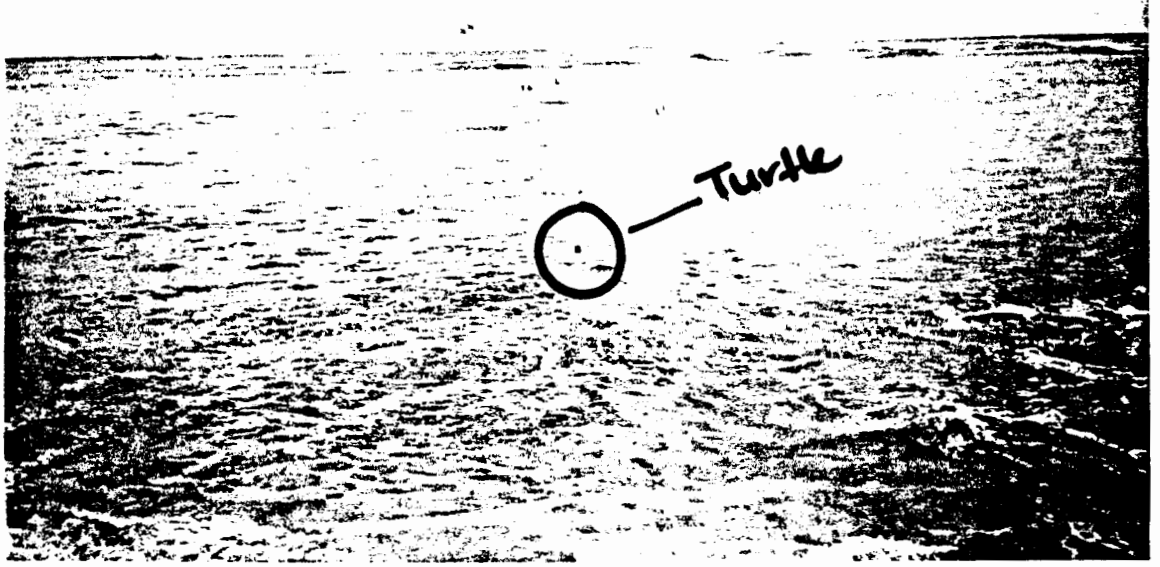
A. Billboards/Plaques	43
B. Pamphlets/Brochures	77
C. Tour Lecture	31
D. Other	8
N / R	6

(Fig. 18)
Lower Level Blowhole

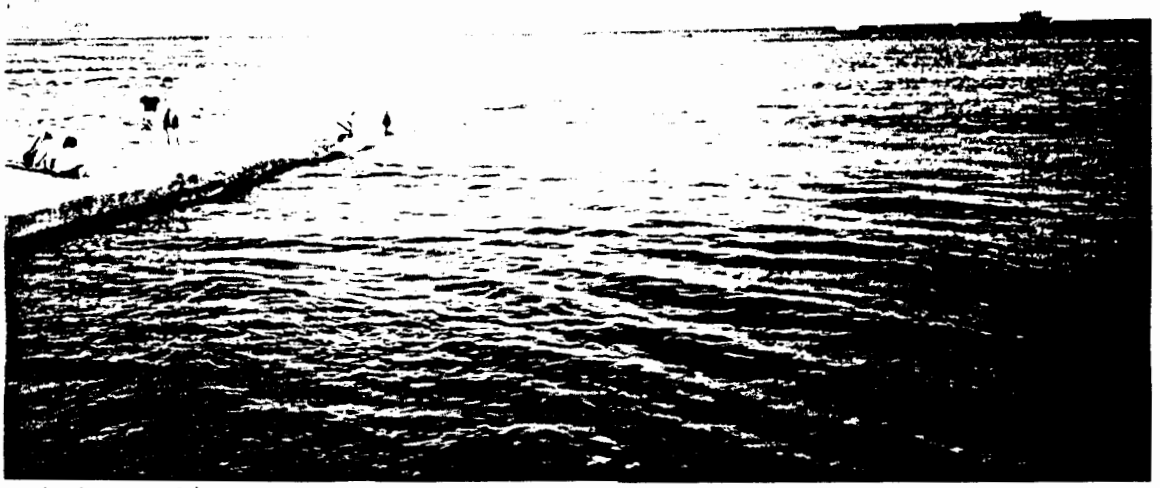
(Fig. 19)
Upper Level Blowhole

(Fig. 20)
View of Channel/Cove Looking Towards Blowhole

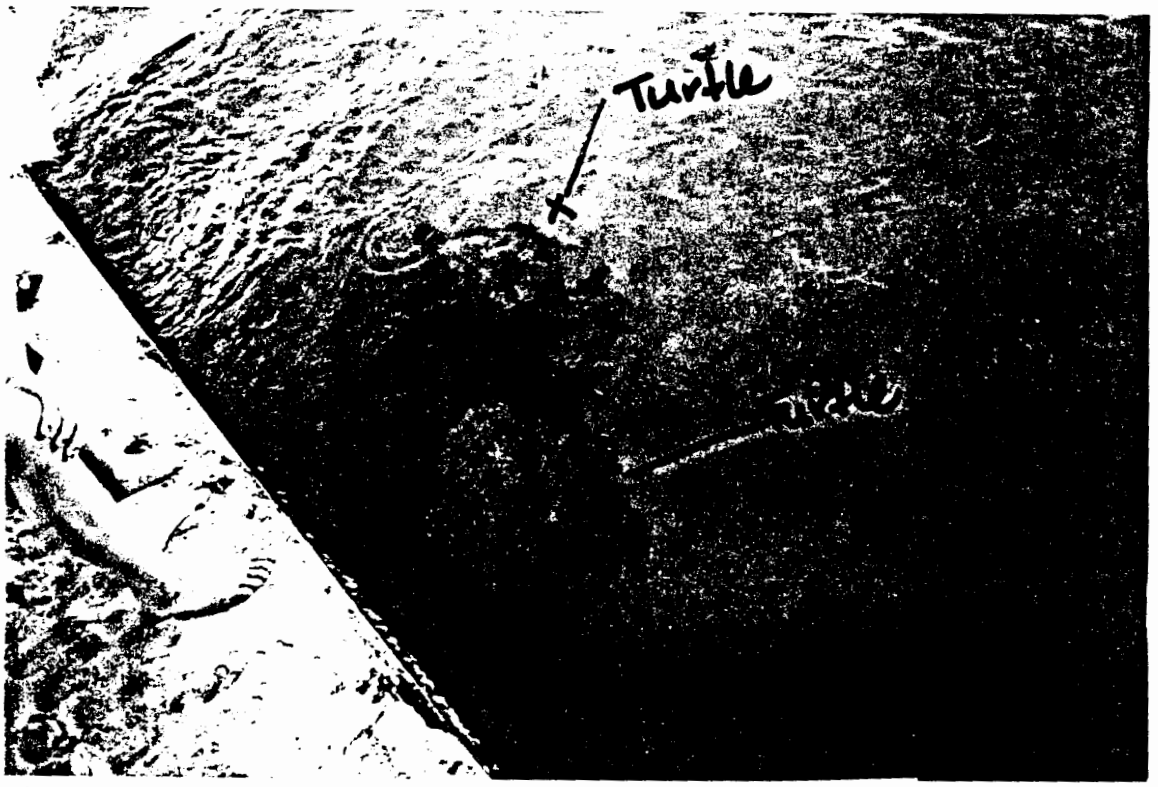
(Fig. 21)
View From Upper Level Blowhole into Channel/Cove



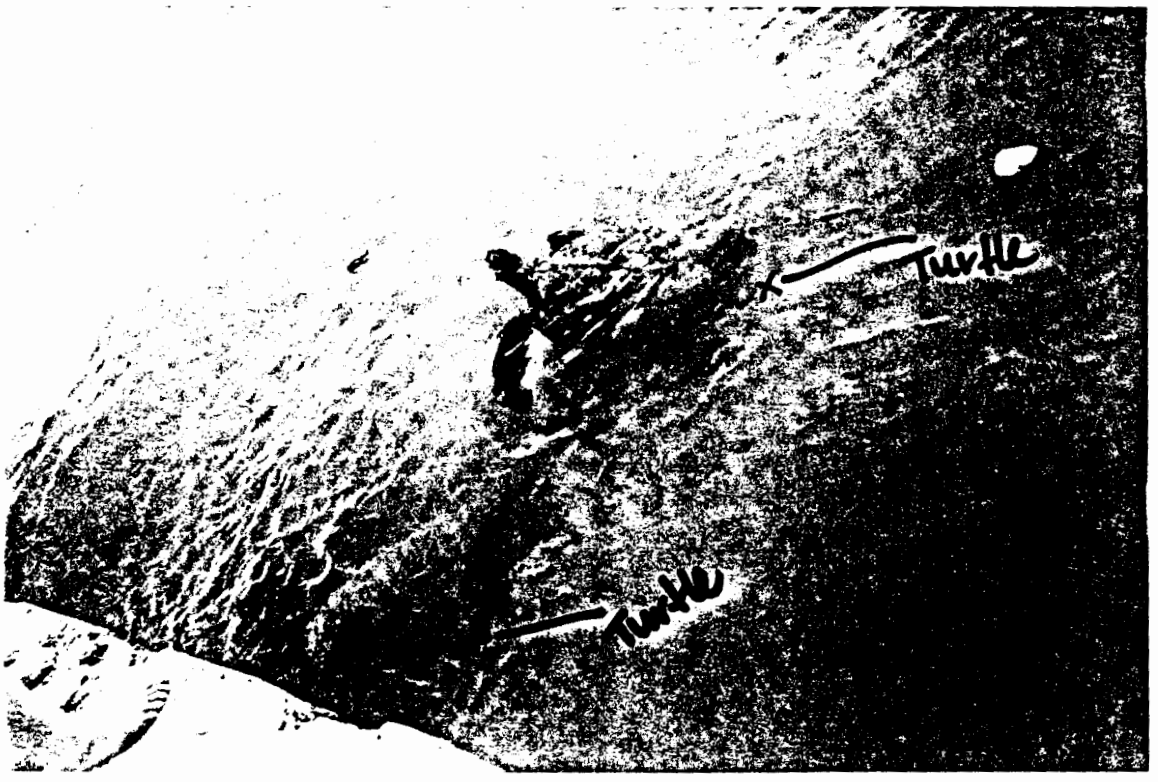
(Fig. 22)
Turtle in Water Front of Sheraton Hotel



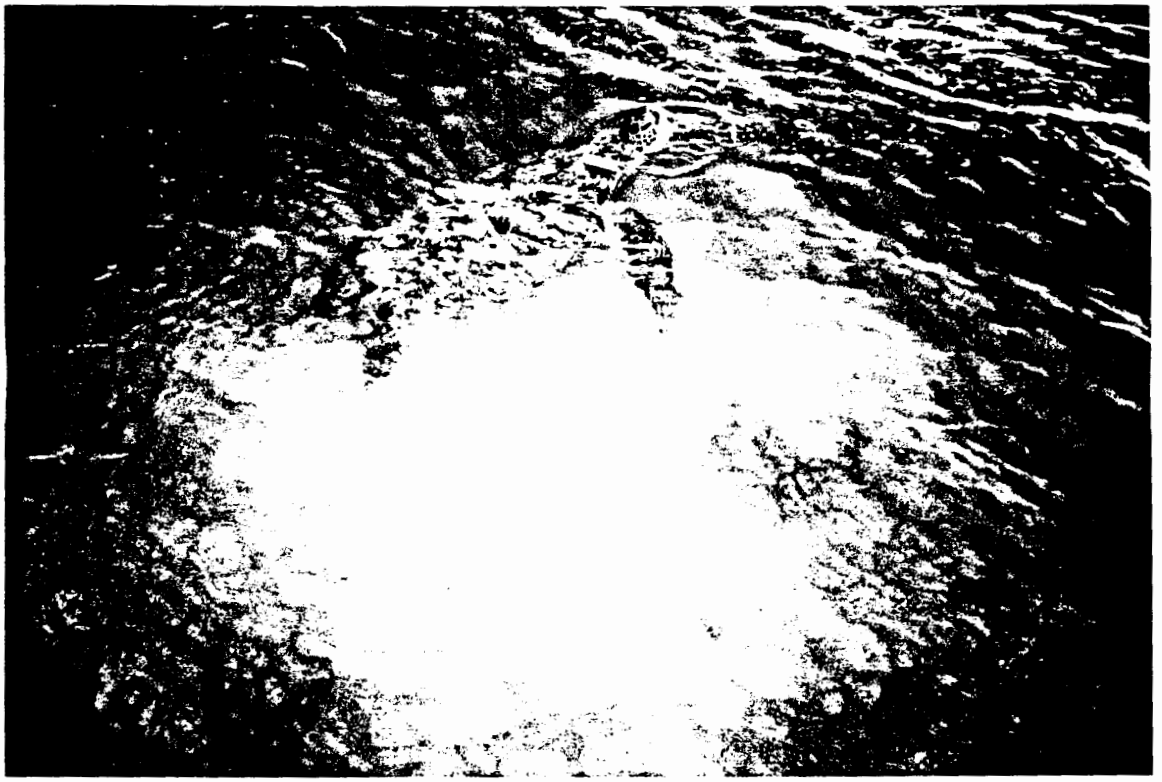
(Fig. 23)
View from Sidewalk at Seawall
Sheraton Beach



(Fig. 24)
Two turtles along Sheraton Beach Seawall



(Fig. 25)
wo Turtles in Water Sheraton Beach



(Fig. 26)
Turtle in water Sheraton Beach