

## **Whalewatching in Hawaii Enhances Appreciation for Endangered Species and the Marine Environment**

Paul H. Forestell, Ph.D. & Greg Kaufman  
Pacific Whale Foundation, 101 N. Kihei Rd., Kihei, HI, 96753

### INTRODUCTION

Hawaii's economic association with whales goes back more than 150 years. In 1819, just 40 years after James Cook's ill-fated second visit to these islands, the first whaling ships anchored at Lahaina. Soon, hundreds of American whaling ships were putting into Honolulu and Lahaina each year. The whalers were brought to Hawaii, not by the prospect of hunting whales in these waters, but by the need to stock up with provisions and fresh water before heading out to hunt sperm whales on the so-called Japan Grounds stretching from the northwest Hawaiian Islands over to the coast of Japan.

While here, the whalers were aware of the presence of humpback whales in the near-shore waters of the Islands, and on occasion even assisted local entrepreneurs in operating small shore-based whaling ventures. Humpback whales provided relatively inferior oil, however, and Hawaii's shore-based fishery was never very successful, and occurred only sporadically over a twenty year period. The visiting whalers were generally more interested in recreational shore-based activities. With the hump-back whales, they were among Hawaii's first seasonal tourists.

The discovery of oil in 1859, and the destruction of the North Pacific whaling fleet by an early Arctic freeze in 1871 ended the flow of whaling ships through the Hawaiian Islands. During the next hundred years the entire nature of whaling changed dramatically, and the advent of new technology in shipping and hunting moved the theater of Pacific operations to the polar regions on both sides of the equator. Particularly during the early 20th century, humpback whales became a primary target for whaling efforts by pelagic factory ships. By the 1960's the North Pacific population of humpback whales had been reduced from an estimated 15,000 to fewer than 1,000. In 1966 hunting of humpback whales in the North Pacific was prohibited by international agreement. Current estimates of the North Pacific population of humpbacks ranges from 1,500 to 3,500 .

### FROM WHALE HUNTING TO WHALE HUGGING

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Biologists first documented seasonal migrations of humpback whales in the North Pacific using data from ocean-going factory ships and shore-based whaling stations. During summer, humpback whales were observed feeding throughout the Aleutian Islands, and down into southeast Alaska. In winter, it was known that humpbacks moved far to the south to three primary breeding and calving areas - the Baja coast of Mexico, the Hawaiian islands, and the southern islands of Japan. More recently, researchers have confirmed and further clarified migratory patterns using non-invasive techniques such as photo-identification, analysis of humpback whale song, and surveys by boat and air.

While in Hawaii, humpback whales are found very near to shore. Their often spectacular behaviors have become a source of tremendous fascination and interest. Since 1975, an ever-growing number of opportunistic boat owners have offered trips along the Maui shoreline to see the whales. These trips were initially infrequent, and rather informal. Interest grew rapidly, however. The calm near-shore waters favored by the whales made it possible for them to be observed close at hand by private boaters, and the more intrepid even began to seek out the whales in their own medium with the aid of SCUBA gear.

By 1979 whalewatching had become a routine business venture. Eight boats advertised regularly-scheduled whalewatches from Lahaina Harbor during the months of January to April. Over the next ten years, whalewatching literally exploded in its intensity. Today, whalewatch trips are available on all major islands throughout the day beginning as early as mid-November and continuing through May. A survey of major operators indicates that an estimated 130,000 people went whalewatching during the 1990 season, with approximately 110,000 going whalewatching from Maui alone. If one assumes the average price of a whalewatch to be \$30, and then takes into consideration additional monies spent on food, transportation and souvenirs in conjunction with whalewatching, it can be seen that whalewatching has become a multi-million dollar business in Hawaii. While Maui has traditionally been the center of whalewatching fervor, activity is steadily increasing on all other major islands.

As whalewatching has grown, so have concerns about the potential impact on the humpback whale, which is one of the most endangered of the great whales worldwide. While in Hawaii, the whales are engaging in critical breeding, calving, and nursing activities. In addition to approaches by whalewatching vessels, humpback whales must tolerate other types of activity, such as inter-island barges, private boaters, low-flying aircraft, agricultural run-off, shoreline development and extensive military

activity. Concern has grown in every quarter that the cumulative effect of this activity may threaten recovery of this endangered species.

"USER-FRIENDLY" WHALEWATCHING

Beginning in 1980, the Pacific Whale Foundation recognized the need to educate the public about the plight of humpback whales through quality natural history interpretation programs for whalewatchers. Since that time, we have developed a series of programs that serve two primary purposes. The first is to educate the public, from a scientific perspective, about humpback whales, their endangered status, and the need to ensure their survival through a variety of ocean management and protection plans. The second purpose is to encourage the whalewatching public to fund critical research and educational programs through direct financial support.

The Pacific Whale Foundation's educational programs are based on the philosophy that those of us who have an interest in the recovery of the humpback whales should become educated about their nature and habits before imposing on their life and activities, just as we might educate ourselves about the language and culture of another country before visiting it. While recognizing that tourists select recreational activities that are enjoyable and attractive, we have been conscious of the awakening interest in the environment and a general fascination with wildlife, particularly whales and dolphins. At the same time, we found ten years ago that the information provided tourists during whalewatches was often inaccurate or incomplete. Before 1980, there were no formal interpretation programs available on any regularly-scheduled whalewatches in Hawaii. Pacific Whale Foundation changed that dramatically during the past ten years.

The whalewatching public constitutes a segment of the tourist population that is well-educated, relatively affluent, and in an age group that has the potential to influence both local and global policies on environmental issues. Educational programs which target this group must take these factors into consideration.

Pacific Whale Foundation's Ocean Outreach program includes natural history interpretation programs on whalewatch boats and snorkel cruises, research internships for interested members of the public, weekly slide presentations at resort hotels, seasonal public lecture series, scientific and popular press publications, and local school presentations. By far, our greatest impact (in terms of numbers of

people reached) is through the whalewatch programs. During the past ten years, Pacific Whale Foundation has reached more than 250,000 people through its whalewatch interpretation program.

THE ELEMENTS OF AN EDUCATIONAL WHALEWATCH

Interpretation programs aboard Pacific Whale Foundation whalewatches have been developed according to a three-point approach which includes:

1. Creating a perceived need for information;
2. Providing the needed information in an informed and interesting manner;
3. Facilitating participation in follow-up activities, which incorporate the new information into a changed behavioral repertoire.

This experiential education sequence is based on concepts derived from a wide range of studies of the development of human attitudes and behavior. A key principle associated with the sequence is that "direct guided experience" (i.e. real-life exposure to a situation, in the accompaniment of an experienced guide) leads to greater increase in knowledge than either direct experience (real-life exposure without a knowledgeable guide) or guided experience (exposure to a knowledgeable guide, but not in the real-life situation) independently.

Creating a perceived need for information: A whalewatch trip can be divided into three phases: pre-contact (searching for whales), contact (in the vicinity of whales), and post-contact (returning to the harbor). The occurrence and duration of each phase varies considerably throughout the time whales are present in Hawaii. Early or late in the season, trips are sometimes comprised entirely of the "pre-contact" phase. Whales are relatively few in numbers, and may not be observed at all during a two- to three-hour trip. At the peak of the season, whales are often seen within minutes of leaving the harbor, and may be within good viewing distance throughout the entire trip, leaving little time for preparation (pre-contact) or wrap-up (post-contact) by the naturalist.

The type of information of interest to whalewatchers appears to vary as a function of the phase of the trip in effect. This can best be illustrated by a consideration of the questions whalewatchers ask throughout the trip. While this analysis of question types is not based on a systematic sampling of

whalewatch participants, it does reflect the shared perceptions of the authors, gleaned from experiences aboard whalewatch vessels over the past 12 years.

Most participants of whalewatch excursions in Hawaii are experiencing their first exposure to whales in the wild. For many, it is also the first time on a large boat in an offshore area. This precipitates a ready state of apprehension/excitement that leads to many questions about whales and the oceans during the pre-contact phase. Often, the credentials of the naturalist/interpreter are queried. Questions early in the trip generally have to do with perspective ("How big is a humpback whale?", "How deep is it here?", "Have you ever swum with them?"), safety ("Do whales ever attack boats?", "How rough does it get?", "How long have you been doing this?"), or anticipation ("How close can we get", "How long before we see them?").

The contact phase provides a dramatic counterpoint to the anticipation/apprehension of the pre-contact phase. The first sight of whales, particularly if it is associated with a spectacular behavior (eg., a leaping breach, high out of the water), or the sudden appearance of an animal in close proximity to the boat, creates an element of dynamic disequilibrium characterized by a brief period of surprise, followed by a host of questions. Once whales are observed, questions and comments begin to focus on what is actually being seen, with an eye still kept to safety and reliability of the naturalist/interpreter. Questions at this time pertain primarily to identification of specific whales ("What are those marks all over its body?", "Is that a female?"), behavioral descriptions ("Why does it lift its head out of the water like that?", "Are its eyes open when it breaches?"), verification of knowledge ("How do you know?", "Why do you think that happens?") and safety ("Are you sure they don't attack boats?").

Following observation of one or more groups of whales, two general phenomena appear - personal validation and generalization. During the post-contact phase, participants appear to contrast and compare what they knew or believed prior to the trip with what they have seen or learned during the trip. What has just been observed is compared with what was learned in school, seen on TV, or read in newspapers and magazines.

One of the most frequent patterns observed during the post-contact phase, however, is the incorporation of the whalewatch experience into a broadened vision of environmental issues. We have found a tendency for whalewatch participants to re-consider global environmental threats (eg., oil spills,

"scientific" whaling, use of drift nets, marine debris, over-development) in the context of the dynamic and personal interaction they have just experienced. Habitat degradation is no longer a general problem somewhere out on the ocean; it is a direct threat to the very whales that have just been observed.

Providing needed information: Whalewatchers constitute a large and heterogeneous group, and not all individuals react identically to each phase of the experience. However, based on our extensive experiences in the United States and Australia, and limited involvement in whalewatching in Canada and Japan, we believe the general trends we have described are sufficiently common to dictate a structured approach to providing educational whalewatches. Each phase requires a unique set of strategies and goals to move the participant through an effective learning cycle comprised of dynamic disequilibrium, formal knowledge, and follow-up activity.

Information provided during the pre-contact phase (in addition to whatever information is provided to meet Coast Guard requirements) should be skill-oriented, preparing the participant to observe whales and the interactions between them, if and when they appear. A general orientation with respect to the boat and any observable land-marks will help participants report the location of whales, or observe whales quickly when seen by others. A description of the most frequent cues that signal the presence of a whale (a blow, a distant set of flukes above the water, a splash from a high-energy activity) is often very useful. If time permits, a discussion of the geographical surroundings and the geological, oceanographic or natural history significance of the area will help remind participants they are in the natural habitat of a wild and endangered species that does not perform on cue.

An additional useful task to accomplish during the pre-contact phase is to point out ways in which the participant may assist in protecting the marine environment during the trip. Avoiding the use of styrofoam cups; saving aluminum cans for later recycling; holding on to paper and plastic materials to prevent them from blowing overboard; extinguishing cigarette butts in ashtrays on board the vessel, so they do not end up in the stomachs of fish, turtles, or birds; these are all important ways to recruit participants to become stewards of the seas.

Overall, the whalewatch experience is too brief to allow complicated or overly-detailed explanations of anatomical adaptations, physiological specializations, evolutionary principals, or behavioral dynamics. During the pre-contact phase, such information should be kept to a minimum, and generally

provided in response to specific questions. Information should be given in relatively short doses, and a period of consolidation allowed between such episodes.

During the contact phase, care should be taken to ensure that dialog is kept relevant to what the participants are actually seeing. Ideally, the naturalist/interpreter should attempt to facilitate participants' ability to distinguish individual animals, and understand the dynamic nature of social interactions. In general, there is little the interpreter can say that will add significantly to the excitement generated by a breaching whale, or a mother and calf swimming next to the boat. The most important thing for the interpreter to bear in mind is not to interfere with the opportunity for dynamic disequilibrium to occur. Again, information is best provided in direct response to specific questions from participants.

It is during the final, post-contact phase that the most significant information is to be provided to the participants. It is during this period that the important transition from the current experience to future behavior change must occur. Participants should be encouraged to recognize the connections between their own behavior and the survival of the whales they have just observed. Answers to their questions during this phase should emphasize the relationships between what they have just seen and their own knowledge and behavior in other contexts.

Facilitating follow-up activities: During the post-contact phase explicit attempts may be made to ensure new knowledge gained during the whalewatch experience will lead to new or strengthened ecologically-sensitive behavior patterns after the trip is over. Interpreters should be prepared to provide participants with a number of action alternatives aimed at furthering sound environmental goals. These should range in degree from the simple to the more complex. Simple acts like signing a petition may be as far as many participants are prepared to go. Many are willing to financially support the efforts of non-profit environmental groups. Others may wish to become advocates for or participants in specific lobbying efforts, boycotts, or other forms of demonstration. Reference materials should be available to provide many avenues of action for participants.

One of the most difficult aspects of providing educational programs through recreational activities has been the ability to monitor the effectiveness of programs. Tourists are a transient and elusive group. The use of computer reservation systems, however, provides a tremendous opportunity to conduct follow-up studies of participants in a wide range of specific activities. Studies currently underway in Hawaii and

Australia are aimed at measuring levels of environmental awareness and rates of participation in environmentally-directed activities among a variety of socio-economic groups, both before and after participation in a variety of tourist activities that vary in their degree of educational effort.

Such ambitious studies require careful systematic sampling among experimental and control groups, and are rather long-term in nature. Nonetheless, the results will tell us a great deal about the degree of success that follows from structured educational programs that guide participants through recreational activities in natural settings. We must determine the elements of such programs which ensure participants develop environmentally sound attitudes, but more importantly, which elements empower participants to action consistent with those attitudes.

### CONCLUSION

Exploitation of whales by humans in Hawaii spans a period of nearly two hundred years. During that time the basis of the exploitation changed significantly from whale hunting to whale watching. In the last ten years a second profound change has occurred in which whalewatching has become a platform of opportunity for educating the public about important environmental issues. Whales have become an indicator species associated with stronger and stronger evidence for the continuing degradation of our ocean ecosystems.

Utilizing a structured and informed approach to providing the recreational public with a guided natural experience, the Pacific Whale Foundation has developed an educational and enjoyable tourist activity that appears successful on the basis of the number of participants who seek it out. Research is currently underway to determine how successful the activity is when measured in terms of increasing environmentally-sound behaviors by participants. If the findings are favorable, the model provided can be easily applied to other marine recreational activities such as snorkeling excursions, diving trips, nature cruises, and a wide variety of marine sight-seeing expeditions.

The importance of the model is twofold. First, it incorporates a commitment to environmental protection within the context of marine tourism activities. Second, and perhaps most important, it is built on the assumption that effectiveness should be measured in terms of changes in behavior rather than simply changes in knowledge or attitudes.



**FORESTELL AND KAUFMAN: Whalewatching in Hawaii**

*Note:* The above article is based on a presentation by P.H. Forestell and G.D. Kaufman entitled "The history of whalewatching in Hawaii, and its role in enhancing the visitor's appreciation for endangered species." , which may be found in M.L. Miller and J. Auyong (Eds.) Proceedings of the 1990 Congress on Coastal and Marine Tourism, Volume II. National Coastal Resources Research & Development Institute; Newport OR; NCRI-T-91-010 (pp. 399 - 407), 1991.