



## **Cetacean Report 2000 Drake Bay, Costa Rica**

Submitted by  
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## Introduction

Costa Rica enjoys one of the most biologically diverse ocean ecosystems in the world. This is mainly because the heart of a vast habitat known as the Costa Rican Thermal Convection Dome (named for its proximity to this country), lies here. Shallow, warm waters lie on top of low-oxygen cold water, creating the perfect ecosystem for a vast variety of marine life. The dome off the coast of Costa Rica is the only one in the world that is constant. Whales, dolphins, tuna, marlin, manta rays, sea turtles, sailfish and more all congregate near the Costa Rican coasts, taking advantage of this year-round dome of ecologically rich waters.

The Costa Rican Thermal Convection Dome is basically one of the areas of upwelling (apparently the most productive) within the large arena of the warm water lens sitting on top of a relatively shallow thermocline that stretches over a massive area of the eastern tropical pacific. The lens itself is generated by a confluence of collision between northern and southern equatorial Coriolis effects (which go in different directions) and Eckman (wind and surface current driven) transport of nutrient-rich waters from places like Peru. This creates a vast shallow (in some areas less than 20m deep) water relatively warm (above 24 degrees C) lens of water that fails to transmit its heat vertically because of a thermocline separation from colder, higher salinity, less productive water below. The ETP is a relatively permanent feature - its boundaries may shift somewhat from year to year - but its always there - in El Nino years, because of the change of winds at the equator, transport of nutrients, current impacts all change significantly, effecting the temperature and the productivity of the warm water lens. In normal years, the lens concentrates productivity, and results in a relatively dense (though not necessarily diverse) assemblage of sea life - including huge numbers of dolphins. Throughout the lens, depending upon bottom topography and deep water current effects, upwelling occurs in a number of areas - including for example the so called Costa Rica Dome, and another major feature in the Gulf of Tehuantepec. Apparently (according to Longhurst and Pauley - the gods of tropical ocean ecology) the Costa Rica dome is the most productive of the upwellings - so it supports dense concentrations (including blue whales) of marine life.<sup>1</sup>

Delfin Amor Eco Lodge and Marine Education Center has been in the Drake Bay area since November of 1998. We came to this area to protect, research and provide education about the incredible amounts of marine life found here. Before arriving, we had no idea of the amounts and varieties of cetaceans, and are constantly delighted with our findings during our tourist/research tours.

Below is a partial list of cetaceans that have been found in this area. Names in italics are cetaceans we have personally seen since our research began. The other dolphins and whales listed have been reported by other researchers/boat captains in this area. We have also designated if the cetaceans can be found inshore (I) or offshore (O). Inshore designates from Drake Bay to Cano Island, offshore designates anything past Cano Island. We have indicated the abundance of sightings with (1) Abundant, (2) Common, (3) Rare.

## **Dolphins**

*Pan Tropical Spotted Dolphin (I&O) (1)*

*Bottlenose Dolphin (I&O) (2)*

*Rough Toothed Dolphin (I&O) (2)*

*Long-snouted Spinner Dolphin (O) (2)*

*Short Beaked Common Dolphin (O) (2)*

*Striped Dolphin (O) (3)*

*Fraser's Dolphin (O) (3)*

*Risso's Dolphin (O) (3)*

*Killer Whale (I&O) (3)*

*Pygmy Killer Whale (O) (3)*

*Melon-headed Whale (O) (3)*

*False Killer Whale (I&O) (3)*

*Short-finned Pilot Whale (O) (3)*

## **Baleen Whales**

*Humpback Whale (I&O) (2)*

*Bryde's Whale (O) (3)*

*Sei Whale (O) (3)*

*Blue Whale (O) (3)*

## **Toothed Whales**

*Sperm Whale (O) (3)*

*Dwarf Sperm Whale (O) (3)*

*Lesser Beaked Whale (O) (3)*

*peruvianus*

*Cuvier's Beaked Whale (O) (3)*

*cavirostris*

*Unidentified Beaked Whale (O) (3)*

"A"

## **Delphinidae**

*Stenella attenuata*

*Tursiops truncatus*

*Steno bredanensis*

*Stenella longirostas*

*Dephinus delphis*

*Stenella loerultoalba*

*Lagenodelphis hosei*

*Grampus griseus*

*Orcinus orca*

*Feresa attenuata*

*Peponocephala electra*

*Pseudorca crassidens*

*Globicephala macrorhynchus*

## **Balaenopteridae**

*Megaptera novaeangliae*

*Balaenoptera edeni*

*Balaenoptera borealis*

*Balaenoptera musculus*

Family:Physeteridae Name: Physeter macrocephalus

Family: Kogidae Name: Kogia simus

Family: Ziphiidae Name: Mesoplodon

Family: Ziphiidae Name: Ziphius

Family: Ziphiidae Name: Mesoplodon sp.

Numerous cetaceans can be found in this area year round. We have one of the longest seasons of humpback whales in the world, if not the longest, as we get both a northern and southern migration. December through March brings the humpback whales from the north (Mexico, California) and July through October brings the humpbacks from the South (traveling from Peru; exact times are not known as very little research has been done on these southern humpbacks). The Pan Tropic Spotted Dolphins are here year round and can be found on almost any day. We have seen both large groups (1000+) and small groups in every month of the year. The Spinner dolphins travel north in the rainy season. We did not see them this year after the last week of April. So far, we have seen the Rough Toothed Dolphins at least once every month since our first sighting of them, December 5, 1999. We have seen the bottlenose in almost every month of the year, but much more frequently and in larger numbers during the dry season. There are always exceptions to these rules, as we have recently seen large numbers of bottlenose, and even orcas in the bay. We have come to expect the unexpected here. Since we have only been

conducting research for a short time, we will be able to assess the comings and goings of all species more accurately in the future.

We are privileged to be out in these cetacean rich waters around 20 days per month (except in the height of the rainy season). We have been rewarded with sightings of the rare Unidentified Beaked Whale (only 30 other reported sightings in the world; we have seen them twice within two weeks and recorded both sightings on video). We have identified and established a relationship with a resident group of Rough Toothed Dolphins (described as rare and unapproachable in the identification books, yet we have photos of them directly approaching us underwater) and have photo identified many of the Pan Tropic Spotted Dolphins who make the Drake Bay area their home (whom we have named “Los Primos). We have also encountered a baby humpback whale and her mother, only hours after she was born, once again confirming Drake Bay as a Humpback Whale birthing and nursing ground (first verified by the Cascadia Research team). We named her Baby Osa, and look forward to seeing her and her mother again on their return visit next year.

Besides the vast amount of marine mammals found here, this area also boasts a large amount of sea turtles, including the Green Sea Turtle, Hawksbill Turtle and Olive Ridley Turtle. We have counted up to 102 sea turtles in a single day, and 23 mating pairs in a single day. Unfortunately, we also come across many sea turtles caught in ocean trash such as long lines and plastic bags. Some we are able to save, some are already dead. We also come across many turtles who have drowned, more than likely in shrimping nets and long lines.

### **Fundacion Delfin de Costa Rica**

We have recently become a non-profit foundation, Fundacion Delfin de Costa Rica (Fundelfin). This foundation was previously based in San Jose, and now is based in Drake Bay. Our Mission Statement is as follows:

**We seek to provide research data and other educational materials to assure the protection and survival of the dolphins and whales and their natural habitats, specifically Drake Bay, Costa Rica, including monitoring and photo identifying the whales and dolphins who frequent this area. We seek to educate the local people about the marine life and solicit their support in protecting and preserving the bay. We seek to further research and understand the strong bond between humans and marine mammals, specifically dolphins and whales. We seek to provide understanding into the human/dolphin/whale relationship and the healing and joyful affects reported by persons who encounter dolphins and whales.**

Our present and future projects are as follows:

- ◆ Educational presentations to local schools, visitors, and other groups about the dolphins and whales and other marine life
- ◆ To have Drake Bay/Osa Peninsula named as a national marine sanctuary/protected area
- ◆ Build a marine education and research center for scientists and tourists

- ◆ Research to document characteristics of the dolphins' and whales' daily life and habitat, breeding and migration patterns, etc. for publication and presentation
- ◆ Resource materials for reference and educational presentations
- ◆ Develop a dedicated team of marine biologists, psychologists, scientists and others to execute research and publications
- ◆ Video documentaries, including “the making of a marine sanctuary”, on Rough Toothed Dolphins, and an instructional video on the proper approach and interaction techniques with cetaceans, spinner/tuna connection.
- ◆ Student Internship and field study opportunities
- ◆ Information sharing and networking with local boat captains, guides, scientists, visitors and other agencies and organizations
- ◆ Recommendations and guidelines for boats and people entering the dolphins' and whales' home territory
- ◆ Guided boat excursions into areas most likely to encounter dolphins and whales, accompanied by knowledgeable interpretive guides for research purposes and to help defray the costs of research
- ◆ Research with sound/music and marine mammals' response and reaction to it
- ◆ Construct and maintain a turtle “nursery” , including monitoring and local education
- ◆ Create a national and international certification program for operators of cetacean tours

We are seeking the support of the owners, operators and boat captains of the other hotels in the area to participate in our research gathering. We have been collecting data since January 1999 and our goal is to have the whole area excited about our project and have each and every boat captain carrying a log sheet to help our data be more complete.

We aim to involve and inform local residents about our on-going research, and work with local boat captains in developing the most respectful and effective techniques for observing the dolphins and whales in their home territory. We will share scientific and educational information with the local guides, community members and the world at large (mostly through our website and other publications).

We carry both a topside and underwater video camera with us on all trips. This has allowed us to collect identification shots and observe behaviors we missed while the interaction was actually happening. We plan to use these cameras to further document behaviors, identifications and collect footage for our documentaries.

A team of Costa Rican biologists have recently submitted a research plan, which will begin to be implemented in November 2000. There will be a full time biologist living at the Marine Education Center and will accompany all tours to collect data. The turtle nursery will be built in time for the next turtle season.

Our goal is to build a marine education and research center which will attract marine scientists and photographers from around the world, not to mention tourist who will come to Costa Rica and the Drake Bay area specifically to visit this center and go on tours with cetaceans.

## **Dolphin and Whale Interactions**

Our staff has a combined 30 years experience in interacting with wild cetaceans and we feel that over this time, we have developed techniques for encountering cetaceans that does not disturb or interfere with their natural behavior.

We always proceed with caution when approaching dolphins and whales. It is not our wish nor our intention to frighten these animals nor alter their natural behavior. We want to interact with them in a harmonious way so that others can experience their magnificence, without negatively affecting them in any way. We believe there is a balance and proper way to interact.

Dolphins and whales have been interacting with humans since recorded history; there are many verified incidents of dolphins saving humans from dangerous situations and guiding boats through high seas. Time and time again the dolphins directly approach our boat as we enter their area (we have this clearly demonstrated on video). *It is part of their nature to interact with us* and therefore this aspect of their behavior warrants further scientific study and cannot be discounted. In-the-water interactions that are by the dolphins' and whales' choice, provide a window into their true life that cannot be duplicated in a laboratory or with captive/semi-tame dolphins.

We are offering people an opportunity to interact with these beings in their natural habitat where they are free to swim and live their lives as they should while we conduct research (*which also pays for our research*). It gives so much to the people who encounter them and these people go home with a greater understanding and respect for the dolphins and whales, and pass that on to others.

In our hundreds of hours on the water with dolphins and whales, we have been convinced that they actively seek encounters with us and delight in playing with the wake of our boat and with those in the water. And we believe that responsible encounters with wild dolphins and whales can hardly have the adverse effects (death, maiming) that the commercial fisherman we see on a daily basis, including large fish factory boats, have.

We also know from experience that if dolphins and whales do not want to interact, they will simply disappear. We have had groups of over 1,000 dolphins disappear from sight, letting us know that the interaction was over and they were off to do other things.

## **Guidelines for Dolphin and Whale Encounters**

It is important that persons wanting to conduct and participate in cetacean encounters remember that they are visitors in the dolphins' and whales' home. In order to approach and interact with dolphins and whales intelligently and non-intrusively, it is imperative that people educate

themselves about the habits and behaviors of whales and dolphins. Ignorance about their biological and physiological aspects and life patterns, can and does affect them adversely.

We have seen an unfortunate example of this happen in Bimini, Bahamas. A few companies quietly operated tours with the dolphins around the island of Bimini. It was a perfect relationship, with respect on both sides. Then more and more people heard about it, more people came to run tours, and not everyone had the dolphins' best interests in mind. It became a competition to find the dolphins, with only a few boats still respecting the dolphins' natural behaviors. We have recently heard from several sources that the dolphins are very scarce this year. A similar thing happened in Hawaii when swimming with the dolphins became competitive and the dolphins were not treated with respect. They stopped coming and didn't return until the people started to behave in a respectful manner towards them.

However, forbidding people to swim with dolphins and whales only results in "pirate operations" and loss of control of rules and regulations. We believe it will also result in the loss of valuable scientific information. Not only does in the water encounters provide invaluable insight into the true behaviors and lifestyles of dolphins and whales, there is an undeniable attraction between humans and dolphins that we feel deserves a lot more research. Why do people feel so happy and joyful after encountering dolphins and whales? Why do autistic children say their first words after encountering dolphins? Why do people claim to be healed of chronic and life threatening diseases after swimming with dolphins? Why do dolphins and whales repeatedly approach boats and people in the water when they could easily swim away and disappear? Why do people spend their life savings on a vacation to Costa Rica that allows them to encounter dolphins and whales? A much more appropriate solution, instead of banning all in the water encounters, is to educate operators and swimmers and control and/or forbid access when necessary.

We believe a well-monitored certification program, a "dolphin seal of approval" program, is appropriate. In this program, operators who want to conduct tours with dolphins and whales will be instructed in the proper boating and swimming techniques in order to maintain a harmonious and non-intrusive relationship with the dolphins and whales. We believe that a fee should be paid to the certification program, which will help pay for monitoring costs and show a commitment on the part of the operator wanting to conduct the tours. We feel that non-certified operators should not be allowed to operate tours with dolphins and whales.

Another option, in order to ensure proper encounter techniques, is to allow only those conducting research with dolphins and whales to operate tours. This will eliminate those operators who are out to only make a buck and ensure, to some extent, that proper techniques are being used around the dolphins and whales. At the very least, all operators should be required to have an educational program along with their tours and have well-trained guides and captains.

There is also a safety issue to consider here. Many things can happen out in the open ocean and tour operators need to be trained in basic emergency procedures. Boats need to be equipped with safety equipment. Guides need to know when it is likely that sharks are in the area (such as during a feeding frenzy) or when other dangers exist.

We recommend the following guidelines (still under revision) for interactions with dolphins and whales:

1. At any time no more than two boats should be engaged in interactions with dolphins and whales.
2. Never feed dolphins or whales.
3. When entering within 100 yards of an area where there are dolphins and whales, slow boat speed to no more than 8 miles per hour.
4. When entering within 50 yards of the dolphins and whales, slow boat speed to no more than 5 miles per hour.
5. Boats and swimmers should never chase, block, crowd or box cetaceans or approach them from the front or back or from a perpendicular angle.
6. Any time a dolphin or whale changes course to move away from the boat, even if you are approaching correctly, never pursue them.
7. Approach slowly from the side or in a parallel manner, letting the dolphins or whales make the decision whether or not to approach the boat. Never separate group members by running through the middle. By leaving plenty of space for the dolphins or whales to approach the boat on their own, you are showing respect and creating the kind of conditions that could lead to a very successful encounter.
8. Observe the dolphins and whales to determine if they are feeding, resting, traveling, playing or engaged in some other behavior. Determine if a further approach is appropriate. (This determination should be made by a certified guide only).
9. Engine noises should be as quiet as possible since cetaceans are acoustically sensitive. If dolphins or whales approach your boat, slow down, then stop, and turn your engines off if you are with dolphins, or in neutral if you are with whales. (This is because whales do not have the same echo-location that dolphins do and become started by your boat if they do not know you are there)
10. Do not change direction or speed, or make sudden movements with your boat if dolphins or whales are riding in your bow wake.
11. If it is determined that the dolphins are interested in the people on the boat and are inviting an interaction, and a qualified guide gives the okay, no more than two persons at a time should quietly slip into the water. If the dolphins stay around, and more people enter the water, the group should stay together as much as possible letting the dolphins move around freely.
12. It is best to approach cetaceans from the side at a parallel angle rather than directly or chasing them from behind.
13. Never try to touch or grab cetaceans. Swim with arms at your sides or behind your back.
14. As with any polite guest, it is important to know when to leave. If the dolphins or whales begin to show disinterest, it is necessary to discontinue the encounter at once letting them leave at will.

### **Further Recommendations**



Drake Bay and the surrounding areas are part of a fragile ecosystem both on land and at sea. In fact, it is possibly the most biologically intense place on earth. Further development in Drake Bay will ensure a death sentence in the future for many of the plants and animals that inhabit this area, some which are found no where else in the world. There are few places in the world that can boast the amount of cetaceans found here.

We highly recommend that all boats in this area, when economically feasible, switch to four stroke motors, which cause less oil pollution, use less gas and are quieter. The gas and oil in the Aguijitas River continues to be a pollution problem. Development of trail systems to the beaches has led to the erosion of the land into the water during heavy rains causing silt build up. Further development will cause an overabundance of waste and trash, lead to pollution of fresh water sources and destroy the natural beauty, remoteness and serenity of Drake Bay.

Jet skis should be illegal for use in Costa Rica. Jet skis have caused irreparable damage to ecosystems in Florida and other areas where they are used extensively. Jet skis also kill and maim cetaceans, not to mention create noise pollution.

In our “dream sanctuary,” commercial fishing will be limited to areas more than 200 miles offshore. We realize this is a very large area to protect, and that fishing interests will fight such a restriction. However, to truly protect this area, which is also believed to be a birthing ground for Blue Whales (which are found more than 100 miles offshore), such a large area is needed. If we only designate a small portion for a sanctuary, while a great start, it will not truly protect the cetaceans found in it. For instance, if we protect the area from Cano Island to shore, that will certainly help local fishing interests and dolphins and whales inside the area, but as soon as the whales or dolphins travel outside, they are once again in danger of long lines, fishing equipment left in the water, trash, and purse seining nets.

We feel strongly that a large area needs to be protected, but if this is not possible, we recommend that commercial fishing be restricted to no less than 50 miles offshore of Cano Island. While this is a much smaller area than is recommended, it will, to a certain extent, protect most of the dolphins and whales that we have been researching and that tourists can view on tours.

We have seen on a daily basis the harmful ramifications of commercial fishing in this area. This includes long lines left drifting in the water (which entangles and kills sea turtles and other animals), destruction of sea beds and environments by shrimpers, other trash dumped by commercial fishermen (we have seen on several occasions commercial fishing boats dumping their trash into the water and daily come upon plastic bags, milk cartons and other rubble), and dolphins and whales harmed or killed by drift nets and long lines. We have had many tourists appalled by the amount of trash in the water and who agree to give up some of their tour time to help us pick up the trash.

On September 15, 2000, the various lodges in the area were excitedly calling each other on the radio because three humpback whales were cruising by the coast. We got in the boat and were sad to find a long line stretched out no more than 1 kilometer from the coast, and the humpbacks (which included a mom, baby and escort) swimming dangerously close to the long line. Luckily, this time, the whales avoided the long line, but it is only a matter of time before something unfortunate happens.

We have been in the water (approximately 10 miles offshore from Cano Island) with a large group of Spinner dolphins when a helicopter from a large commercial fishing boat started to circle us. Their job is to find the dolphins and then call the large boat to come and set up a net around the dolphins to catch the tuna swimming underneath. This type of netting kills and maims thousands and thousands of dolphins every year and depletes the fish population.<sup>ii</sup> Studies show that between 1940 and 1948, 80% of the Costa Rican Spinner dolphin population was depleted by “dolphin sets” (purse seining for tuna by encircling the dolphins).<sup>iii</sup> It is now believed that more than 2000 Spinner dolphins per year are being killed by the tuna industry.<sup>iv</sup> This is not a sustainable mortality rate and the Spinner dolphins are not recovering. This type of Spinner dolphin is called the “Costa Rican Spinner Dolphin” because it is only found in a 95 mile wide band off the coast of Costa Rica. If we kill them off, there will be no more Costa Rican Spinner Dolphin. What a shame for the people who would spend thousands and thousands in tourist dollars to come and see them. The tourists who were with us that day were visibly shaken, and vowed to write letters to the Costa Rican government that this sort of activity should not take place in a country that is so concerned about protecting its wildlife, especially in plain view of the tourists.

Costa Rica is known world wide for their protection of the rainforest. We think that Costa Rica has the opportunity to set another world standard for protection of her waters. Unfortunately, in our preliminary research on creating a marine sanctuary here, we have learned that the fishing interests, INCOPECA, has more power over the laws governing Costa Rica’s waters than the government and MINAE. This situation will need to change if true protection can happen here.

Even if Costa Rican boats are made to follow stricter rules and regulations, a major problem exists with “pirate boats” from Panama and Nicaragua, and even more so, with the giant Japanese factory fishing boats. These boats are equipped with helicopters as described above and bring huge drift nets and purse seine nets, killing whales, dolphins, manta rays, sailfish, marlin, tuna, mahi mahi, wahoo and other wide varieties of sealife. Locals report that these boats come in at night as close inshore as they wish. We have seen them less than 12 miles offshore. Costa Rica is trading instant profits in deals made with Japan and other fishing countries, for future tourism dollars.

**If commercial fishing boats are allowed to suck the ocean dry of fish, there will be no more world class sport fishing tourism in Costa Rica in the future. There will be nothing left to fish.**

We recently learned that an oil company plans to conduct seismic blasting to test for oil in this area in November. (They started this testing on the Caribbean side, but it was stopped and the matter is now in the courts). We are trying to get more information now, but if this is true, we will be forced to start an international campaign to have it stopped, which will include going to wildlife protection agencies to ask for help from their members in a letter writing campaign. We will announce it on our website. We will circulate petitions. This will not look good for Costa Rica's reputation of caring for their wildlife. Who can imagine allowing this kind of testing in an area so delicate and full of life? Does Costa Rica really want to become known as an oil producing country instead of an eco-tourism country?

On a recent tour, there were 12 shrimping boats and four long liners just outside of Cano Island. Unfortunately many people do not realize the harmful effects of the shrimping industry. One study says that for every 500 grams of marketable fish, over seven kilograms of undersized fish and bottom living animals were killed. Other studies have shown that this type of fishing (dragging nets across the bottom of the ocean) leads to dense floating algae replacing native aquatic plants. Lobsters, crabs, mussels and other bottom-dwelling animals disappear, usually forever. Overfishing also removes the species which eat algae, leading to the suffocation and death of coral reefs.<sup>v</sup>

On September 25, 2000, the people in this area were subjected to a shrimp boat trolling within half a kilometer of the coast, all night, with their lights shining bright. The next morning we called the Coast Guard in Golfito, but of course, the boat was long gone by then. And the patrol never came anyway.

Shrimp boats can be found inshore in this area, trolling the bottom, killing off Drake Bay's present and future sealife. **This will lead to an eventual loss of tourism as we will no longer be able to boast about world-class SCUBA diving and snorkeling. There will be nothing left to see.**

More cetacean research needs to be conducted here to better understand migrations, breeding and birthing areas and habits and to document the species and numbers of cetaceans in Costa Rica. Precious little research has been conducted up until now, even though the amount of cetaceans found here certainly warrants it. This kind of research will hopefully lead to a greater interest in protecting these waters.

Once the areas are protected, a system of enforcement needs to be developed and consistently used. The areas around Cano Island and in front of Corcovado National Park are protected, yet on any given day, fishing boats can be seen there. They have no fear of being caught, because there is no one patrolling the protected areas. Helicopters and/or small planes are needed to sufficiently patrol the waters and enforce the laws.

### **Cetacean Tours and Eco-Tourism**

Approximately ninety five percent of the guests who come to Delfin Amor Eco Lodge come specifically to see dolphins and whales. We do not attract the average tourist who comes to Costa Rica to see the rainforest. We attract people seeking to encounter dolphins and whales and then choose Costa Rica as a destination to do that. Our website is a dolphin and whale website, not a Costa Rica website. We estimate that in our twenty one months of business, we have brought in over 350 people to Costa Rica who would not have come here otherwise. They came specifically to see the dolphins and whales. We believe if promoted and executed properly, cetacean tours could become a major tourism draw for Costa Rica. No where else that we know of can offer the incredible tours with cetaceans (we have seen up to five different species in a single day), along with lush rainforest and beaches all in one amazing package. We know the traveling public will feel the same.

However, if cetacean tours are allowed to exist without strict rules and regulations, the same thing will happen here as happened in the Bahamas and Hawaii. The dolphins and whales will leave the areas where they are being harassed.

A tourist market could definitely be built around cetacean tours, but we feel strongly that these tours should be required to educate the participants about protection and conservation, and/or be run only by responsible research organizations. There is a whole other market of tourists available who will come to Costa Rica to volunteer as part of a cetacean research team. Cascadia Research has been working with the Elderhostel program and brings volunteers to Drake Bay three weeks per year in order to assist with their data recordation. We have plans to do the same in the future.

Yes, cetacean tourism can benefit Costa Rica greatly, but only if it is conducted in a responsible and respectful manner and Costa Rica takes a strong stand to protect these cetaceans and their incredible ocean home.

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<sup>i</sup> Information obtained from Dr. Paul Forestell, Director of Research, Pacific Whale Foundation; Professor at Southampton College, Long Island University

<sup>ii</sup> Scott, Michael D., senior scientist with the Dolphin Program of the Inter-American Tropical Tuna Commission, The Tuna-Dolphin Controversy, 1996, Whalewatcher

<sup>iii</sup> Amador Salas, Karla, La Proteccion al Delfin en la Pesca del Atun en e Pacifico Oriental Tropical, San Jose, Tesis para optar por el titulo de Licenciada en Derecho, Facultad de Derecho de la Universidad de Costa Rica, 1997

<sup>iv</sup> Zuniga Rodriguez, Gloria, Proteccion a Delfin en Costa Rica, San Jose, Historia del Derecho, Facultad de Derecho, Universidad de Costa Rica, 1998

<sup>v</sup> Clover, Charles, Environmental Editor, The Daily Telegraph, London, The Fisheries Effect, for World Wildlife Fund