



**VIDA MARINA FOUNDATION**  
DRAKE BAY, COSTA RICA  
3-006-385985

## Case Description

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### I. INTRODUCTION

*“A very special place”*

#### Overview

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. Such condition provides the Costa Rican Pacific waters with a very unique scheme of biological richness.

Drake Bay is located on the north side of the Osa Peninsula, in the southwest section of the Pacific Coast of Costa Rica. The surrounding areas are part of a fragile ecosystem, both on land and at sea. In fact, it is part of possibly the most biologically intense place on Earth: The Osa Peninsula. Home to numerous micro-climates, the Osa harbors a great diversity of habitats and is surrounded by major wetlands and marine resources. Isla del Caño, Drake Bay and the surrounding waters are important breeding and feeding grounds for more than 25 species of marine mammals and sea turtles. Recent studies led by *Cascadia Research* show that Costa Rican Pacific waters are the only waters in the world that welcome humpback whales from two Hemispheres, North and South, giving a chance to genetically connect both populations.

Since 1999, *Delfin Amor Eco Lodge*, a small hotel nestled in the heart of Drake Bay, has been collecting sighting data on their dolphin and whale educational research tours. Delfin Amor's tours are conducted year round, with a higher percentage of tours in the “dry season”, December through April. During our research tours, we count and document the location of turtles, dead and alive, as well as commercial fishing boats and long lines. Also documented are the dolphins' and whales' group size, ages, and also their travel and feeding patterns and behaviors. Digital photos and video are also taken to further document and identify the dolphins, whales, turtles and commercial fishing activities. With the data analysis we have carried out, we have documented an alarming **79%** decrease in the *Olive Ridley Sea Turtle* (*Lepidochelys olivacea*) population during the last four years.

Our solid scientific database allows us to generate reports and graphs that demonstrate the variety of species found here and the need to protect them. For this reason, Delfin Amor Eco Lodge and a group of close neighbors and friends created Vida Marina Foundation, in order to conserve and promote Drake Bay, Isla del Caño and the surrounding waters as a Marine Sanctuary.



The increasing activity of the foundation makes it necessary to expand our organization with local community support and favorable relationships with leading conservation organizations, scientists, local partners and stakeholders. Vida Marina's initiative encourages the community to learn from our experience and knowledge of Drake Bay's marine life, and to join the foundation's efforts to protect and study this unique marine ecosystem.

Our major goals are:

- *Promote and support with scientific research the creation of marine sanctuaries or reserves in the area.*
- *To protect marine resources with special emphasis on marine mammals and sea turtles.*
- *To support, promote and carry out scientific studies related to marine resources, especially those related to marine mammals and sea turtles.*
- *To carry out educational projects on these animals and contribute to the creation of an environmental awareness about marine resources*
- *To create a web of information, documentation and reference on local marine life with educational purposes.*
- *To stimulate and support other organizations and institutions that may share our goals.*
- *Promote regulated eco-tourism specially oriented towards cetaceans watching in their natural habitats.*
- *To support the creation of environmental and protective laws towards marine eco-systems and its resources.*

## **II. OUR ROLL WITH THE COMMUNITY**

Vida Marina Foundation is an important local stakeholder that is actively committed and involved with the community to help protect and treasure its natural resources. An important part of our work is to contribute to community environmental education, and motivate specific groups such as boat captains and tour guides to learn from our experiences, join our research, and share their local natural history and knowledge.

One of our key rolls within the community is to promote a sense of awareness and nature loving spirit from the local people. Vida Marina Foundation invites neighbors, fishermen, boat captains, tour guides and others to participate during our educative workshops and presentations about marine life and conservation.

For Vida Marina Foundation, education and support of the people in the area means an opportunity to act against immediate threats and to help reduce negative impact on natural resources. It also enables us to work together as a community with environmental and governmental authorities to seek efficient conservation and protection methods.



### III. IMMEDIATE ACTIONS

Despite being a small organization, Vida Marina has developed an ambitious “Scientific Database Project” involving Drake Bay, Isla del Caño and the surrounding areas.

The sighting data collected by our marine biologists and volunteers on our tours is entered into the computer database. The information generated from this database, along with comprehensive knowledge of the marine resources in the area, will serve as the basis for the development of protected areas, control and protection measures, designation of local capacity building projects, and regional planning in general.

A Marine Biologist on the Vida Marina team prepared a technical interpretation of the data collected during the past years, and developed an unprecedented study of marine mammals in Costa Rican waters. The costs and resources invested in such work are a contribution from Delfín Amor Eco Lodge.

All immediate actions and studies are consistent with the Foundation’s major projects described below in section VII.



Implementing studies and conservancy actions:

- *Monitoring, data collecting and documentary*
- *Individuals Identification Project*
- *Relationship studies between humans and dolphins and whales*
- *Report and denounce illegal activities*
- *Promoting sustain85*
- *nable tourism and tour operator regulations*
- *Educating the community about their Marine Life Resources and Conservancy*
- *Promoting the establishment of a “Marine Area for Multiple Use AMUM,” for Drake Bay.*

### IV. TOURISM ACTIVITY

With the recent additions of electricity and a road to Drake Bay, tourism is growing at a faster rate. More boats are seen on the water, and more people are on the trails of the national parks in the area. It is important to establish regulations now that will protect our natural resources as tourism grows.



The majority of people who come to Drake Bay are nature lovers who want to be educated on local conservation and protection activities. Vida Marina is working on educational projects directed at both locals and tourists so that tourism can grow in a sustainable and ecological way.

Dolphin and Whale Watching is one of the fastest growing segments of eco-travel destinations. While Costa Rica is known for her rainforests and the conservation of them, not many people know that Costa Rica also harbors an incredible variety of marine life. The addition of a marine protected area in Costa Rica would increase this country's reputation as an eco-destination. However, said marine tourism would need to be monitored and governed so as to not harm or cause threat to the marine animals and/or natural resources.

## V. MARINE BIODIVERSITY

Whales, dolphins, tuna, marlin, manta rays, sea turtles, sailfish and more, congregate in this area taking advantage of this year-round thermal dome of ecologically rich waters. The Humpback Whales *Megaptera novaeangliae*, visit us from two separate hemispheres, giving us the longest humpback season in the world. From November through April, Humpbacks come from North America to breed and have their babies along our coasts. Starting in June, through November, the Southern Hemisphere Humpbacks are here. They travel from as far as Antarctica, a 10,000 mile migration, to breed and birth their calves.

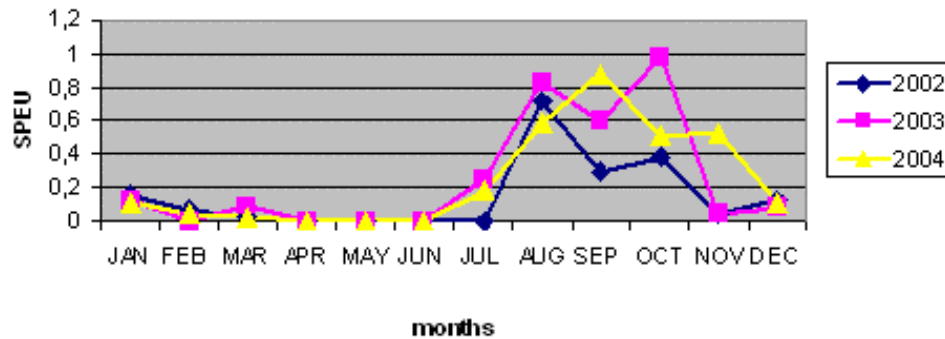


*Megaptera novaeangliae* .Humpback Whale

This is one of the longest migrations of any animal known to man. It is quite an honor that the whales travel such a long journey to be here. They have chosen our area because it provides the perfect conditions for breeding and birthing. They love the area below Isla del Caño; known as Paraiso, because it provides the shallow rocky seabeds that Humpbacks surprisingly prefer to birth, raise babies and mate.



## SPEU HUMPBACK WHALES



Thousands of dolphins populate the area. Most commonly seen are Pan Tropical Spotted Dolphins *Stenella attenuata*. Both small and large groups can be seen along the coasts, around the island and everywhere in between and beyond. Bottlenose *Tursiops truncatus*, and Rough-tooth dolphins *Steno bredanensis*, also have resident pods in the area and can be seen in large numbers on any given day.

Spinner Common Dolphins *Delphinus delphis*, Risso's Dolphins *Grampus griseus*, Pseudo Orcas *Pseudorca crassidens*, Pilot Whales *Globicephala macrorhynchus*, Orcas *Orcinus orca*, Bryde's Whales *Balaenoptera edeni*, Fin Whales *Balaenoptera physalus* and Sei Whales *Balaenoptera borealis*, are also common visitors. Some stay for several months, moving around to follow food, and others are just passing through.

The snorkeling and diving around Isla del Caño is rated as world class. Sharks, rays, turtles and a wide variety of tropical fish are seen there every day. This is a very special place indeed. But yet these waters are virtually unprotected from commercial fishing and other human activities. And these activities are taking their toll on our precious marine ecosystem.

### Mangroves

The Terraba-Sierpe National Mangroves, where you can find the largest mangrove forest in Costa Rica, was declared a World Interest RAMSAR site and extends over 16,700 Hectares. These ecosystems present a high degree of productivity and are considered of great importance for the protection of a large number of animals and vegetation. Mangroves are bearers of an unbelievable diversity of marine, estuary, fresh water micro-climates and land food chains. They are of key importance to protect coastlines from storms and wave erosion and prevent sedimentation on coral reef areas. In the Terraba-Sierpe we have a register of 81 mollusk species, 10 crustacean species, 5 shrimp species of commercial importance and several kinds of crabs and lobsters. One of the main threats that grow every year is over-fishing. Individuals that may not even be apt for reproduction are extracted mindlessly. Some other activities such as fisheries, urban expansion, roads, bridges and illegal fishing are some of those main elements threatening and causing the degradation of these ecosystems.



## Coral Reefs

Most of Costa Rica's coral reefs are found on the Osa Peninsula and Caño Island. Their importance lays on the great diversity of fishes, mollusks and crustaceans that are associated with them. This coral richness is subject to different impacts produced by human action that must be regulated and controlled. Extractions of corals and other resources associated with them such as lobster, octopuses and oysters, are depleting these populations and some other invertebrate populations. Furthermore, the increase of irresponsible and uncontrolled "ecotourism" has created a bigger impact with activities such as scuba diving, snorkeling, boat anchoring in restricted areas, unknowledgeable people in protected areas or rangers without the resources necessary to carry out their duty.

## Ictiofauna

Fish are a resource that generates great commercial activity, however in this area only few families live off private fishing. Fleets from nearby harbors, like Puntarenas, Quepos, Golfo de Nicoya and Golfo Dulce, are the one that exploit the area's resources. This fishing is undertaken illegally in Caño Island's protected waters, Terraba Sierpe mangroves, right in front of Corcovado National Park, and in coastline waters of the Osa Peninsula.

## Sea Turtles

Four out of the eight sea turtles species in the world are found in the Pacific side of Costa Rica. UICN finds these four sea turtle species to be in a critical state or in danger of extinction. The sea turtles' threats are mainly overexploitation of eggs and shells, the changing and destruction of sea turtles' natural habitats, pollution, and the incidental capture of turtles by commercial and traditional fishing boats. Through the data collected on our research tours, Vida Marina has discovered that in the last four years, the population of the Olive Ridley Sea turtle has **decreased an alarming 79%**.

# TORTUGA LORA

## *Lepidochelys olivacea*



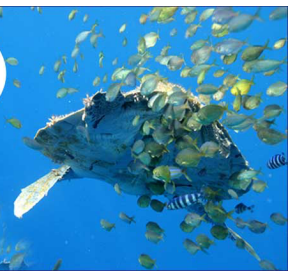


## Marine Mammals

The Costa Rican Pacific waters host more than twenty-six species of marine mammals from the Cetacean Order (dolphins and whales). Some of the species with a bigger presence in the area are the Pantropical Spotted Dolphins (*Stenella attenuata*), the Bottlenose Dolphins (*Tursiops Truncatus*) and the Spinner Dolphins (*Stenella Longirostris*). These species are distributed in a heterogeneous manner, from smaller groups with two or three individuals in coastal waters to groups of thousands of individuals in oceanic waters. Also Roughtooth dolphins, Risso's Dolphins, Psuedo Orcas, Pilot Whales, Orcas, Bryde's Whales, Fin Whales and Sei Whales are commonly seen in these waters.

### List of cetaceans seen in the area

<b>Dolphins (Delphinidae)</b>	Pan Tropical Spotted Dolphin	<i>Stenella attenuata</i>
	Bottlenose Dolphin	<i>Tursiops truncatus</i>
	Rough Toothed Dolphin	<i>Steno bredanensis</i>
	Long-snouted Spinner Dolphin	<i>Stenella longirostas</i>
	Short Beaked Common Dolphin	<i>Dephinus delphis</i>
	Striped Dolphin	<i>Stenella loerultoalba</i>
	Fraser's Dolphin	<i>Lagenodelphis hosei</i>
	Risso's Dolphin	<i>Grampus griseus</i>
	Killer Whale	<i>Orcinus orca</i>
	Pygmy Killer Whale	<i>Feresa attenuata</i>
	Melon-headed Whale	<i>Peponocephala electra</i>
	False Killer Whale	<i>Pseudorca crassidens</i>
	Short-finned Pilot Whale	<i>Globicephala macrorhynchus</i>
<b>Baleen Whales (Balaenopteridae)</b>	Humpback Whale	<i>Megaptera novaeangliae</i>
	Bryde's Whale	<i>Balaenoptera edeni</i>
	Sei Whale	<i>Balaenoptera borealis</i>
	Blue Whale	<i>Balaenoptera musculus</i>
<b>Toothed Whales</b>	Sperm Whale	Family: <i>Physeteridae</i> Name: <i>Physeter macrocephalus</i>
	Dwarf Sperm Whale	Family: <i>Kogidae</i> Name: <i>Kogia simus</i>
	Lesser Beaked Whale	Family: <i>Ziphiidae</i> Name: <i>Mesoplodon peruv</i>
	Cuvier's Beaked Whale	Family: <i>Ziphida</i> Name: <i>Ziphius cavirostris</i>
	Unidentified Beaked Whale	Family: <i>Ziphiidae</i> Name: <i>Mesoplodon sp. "A"</i>



These waters are of vital importance to Humpback Whales (*Megaptera novaeangliae*) that migrate here every season from their feeding areas in two different hemispheres to breed. All small cetacean species are extremely vulnerable to commercial and traditional fishing. Tuna fishing has a great impact on these populations due to the association between some dolphin species and tuna banks.

### Species distribution - 2004

## DISTRIBUCION ESPECIES 2004



## VI. THREATS

### Commercial Shrimp Boats

The commercial shrimp boats drag their nets along the ocean floor virtually killing and “clear cutting” everything in their path, including sea turtles, rays, eels, coral, plant life and thousands of small fish. These small fish are an intricate part of the food chain but are killed before they can grow to reproduce and become food for animals and humans alike, breaking the natural food chain. We already know our turtle population is in grave danger and our coral systems are dead or dying. Once the ocean floor is stripped in this way, **it does not grow back**. The area that the Humpback Whales (and divers) love



so much, Paraiso, is being destroyed by the shrimp boats. In fact, *for every gallon of shrimp that is harvested, over five gallons of other sea life is killed.*



### Long Lines

Another major problem in the area are the long lines. Long lines are spread out, sometimes for miles and miles, and are baited every several feet with a hook and a piece of fish. The sea turtles often will bite the bait and get hooked on the line. If the line is too far below for the turtle to reach the surface, it drowns. The ones who don't drown and are hooked on the long line at the surface, are often cut open by the fishermen in order to look for sea turtle eggs. The long lines are also harmful to dolphins and whales that cannot see them and get severely cut by the lines and

hooks, or worse, get entangled in them and drown. Twice we have seen small humpbacks with long lines and rope wrapped around their bodies. We have frequently recorded long lines spread out in the areas frequented by the dolphins, whales and turtles. Often long line gear that is tangled or unusable is left floating in the water so it continues to kill and maim even after the fishermen are done with it. Any captain traveling these waters has seen dead or even live turtles stuck in freely floating long line gear.

### Turtle Rescue

### Over Fishing

Over fishing is among the main threat to *ictiofauna*. The fishing industry uses long lines, or *trasmayos* in Spanish, and even satellite technology and ECOWAVES. There is also very poor management of marine resources, such as shrimp boats that may capture and throw away thousands of tons of by-catch, every year, including dozens of fish species with hardly any commercial value, sea turtles and even dolphins. Shrimp boats have been documented fishing in shallow waters close to the coastline and at the main deltas and river mouths.



### Tuna Boats

Large tuna boats also kill and maim thousands of dolphins each year. Some boats even use helicopters to find the dolphins. When they do, they radio the tuna boat which then puts several speed boats in the water to round up to dolphins and set a net around them to catch the tuna swimming underneath. It is now believed that more than 2000 Spinner dolphins per year or more are being killed by the tuna industry. The dolphins are not able to sustain their populations when they are killed off at this rate. This subspecies of Spinner dolphin is called the **“Costa Rican Spinner Dolphin”** because it



is only found in a 95 miles wide band off the coast of Costa Rica. If we continue to let them be killed, *there will be no more Costa Rican Spinner Dolphins.*

### **dolphin killed**



#### **Pollution**

In addition to the above issues, there is growing water pollution around the coast with fuel, oil, sewage waters, industrial waste or solid waste in general.

#### **Lack of regulations for “Whale and Dolphin Watch” Activities**

A report called Whale Watching 2001 prepared for the IFAW meeting by researcher Erich Hoyt includes a detailed, country- by-country assessment of the 87 countries and territories now offering whale watching to tourists. Painstaking research substantiates that whale watching is now a billion-dollar industry with more than 10 million people each year participating around the globe. Since 1991, when some four million people went whale watching, the number of participants has increased by 12.1 percent per year. He estimates that 10.1 million people are now going whale watching each year, spending a total of \$1.253 billion U.S. dollars in direct and indirect expenditures. This industry is taking off and outpacing global tourism growth by wide margins.

In Costa Rica this activity is relatively new and it has been increasing every year in different zones. Operators in Drake Bay have been conducting dolphin and whale tours for several years. This kind of tour attracts many tourists every year to Drake Bay to experience the wild dolphins and whales in the area.

Around the world there exists many regulations and laws about interacting with dolphins and whales in the wild. However, Costa Rica does not have any existing regulations regarding dolphin and whale tours at this time. Vida Marina aims to suggest guidelines that we feel from our extensive experience, will help to regulate and control this activity in Drake Bay, Costa Rica.

## **VII. STRATEGIC ALLIANCES**

Our marine environment presently receives little protection. The conservation of the Osa Peninsula marine life is a complex process that requires commitment, participation and coordination from all possible institutions and organizations. Vida Marina seeks cooperative efforts to support our initiative from partners and involved organizations, the private sector and government.



## VIII. MAJOR PROJECTS

**Promote the “Multiple Use Marine Protected Area” AMUM for Drake Bay - Isla del Caño and surrounding areas.**

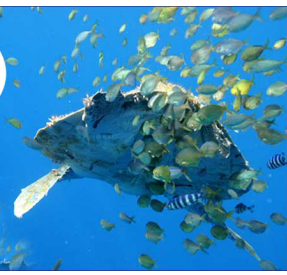
### **General goal:**

Promote and support with scientific base the creation of a “Multiple Use Marine Protected Area” AMUM. Cooperate to achieve its effective protection. The main objective of the AMUM “Multiple Use Marine Protected Area”, management category is the protection and conservation of the comprised marine areas and to assure sustainable use of their resources and habitats. Private, commercial, scientific and sport fishing, as well as tourism development and marine transportation activities, should be executed within a management plan scheme and supervision.

### **Specific goals:**

- *To preserve the representative natural environments of the area and its’ more fragile ecosystems in order to guarantee the equilibrium and continuity of such marine mega-ecosystem.*
- *To protect genetic diversity of endemic species.*
- *To guarantee the sustainable use of natural resources encouraging the active participation of local communities.*
- *To promote conservation, scientific research and study marine ecosystems biodiversity.*
- *To protect and improve natural water sources and hydrographic basins.*

The area we aim to protect is located in the south of the Pacific Ocean of Costa Rica. A “Multiple Use Marine Protected Area” AMUM, is proposed from and including Marino Ballena National Park and Caño Island to Punta Sirena.



## AMUM

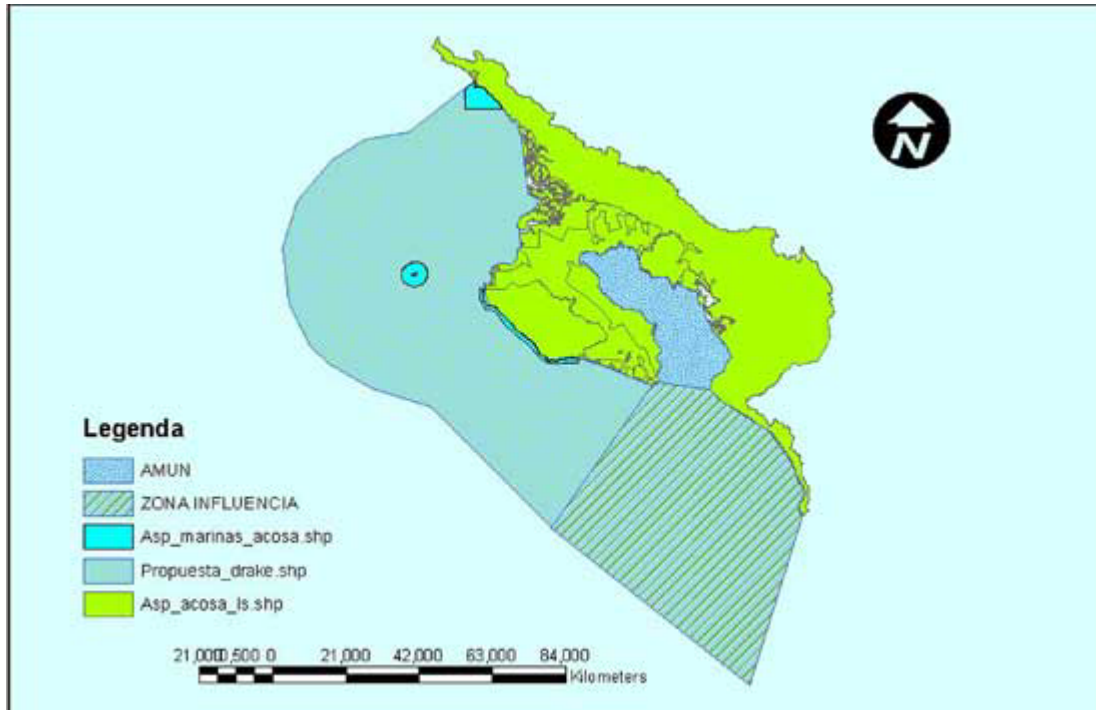


Figure 1. Proposed Area draft map

*This area comprises already protected areas (Corcovado National Park, Isla del Caño, Marino Ballena National Park and Terraba-Sierpe Mangroves); ecosystems of great relevance and unique biological characteristics. The importance of these ecosystems and their immediate and future threats, calls for real protection, coordination and control, both of their natural resources and the activities carried out within their boundaries.*

The establishment of protection, conservation and management strategies for the proposed Marine Reserve must consider a wide range of factors, threats and people that have an impact on these mentioned ecosystems. It is nearly impossible to efficiently protect marine systems if the areas directly or indirectly associated with them are not also protected. Answers to these issues have to consider all aspects involved and must begin by understanding the structure and natural functions of the ecosystems involved, their vulnerability and their workload.

The waters in Marino Ballena National Park, Corcovado National Park, Isla del Caño and Terra-Sierpe wetlands represent refuges and genetic banks of many species that may only be found in this area since outside these protected waters, their populations have been exploited and depleted in the last years.



#### **IX. The creation of a Marine Education and Research Center that will:**

- *Implement varied educative activities with and for the local community (workshops, courses, presentations of the use of new technologies, GPS, data collecting, first aid for a beached or hurt cetacean and others).*
- *Develop educational programs and informative materials for kids, tourists and research (Drake' marine mammals ID catalogs, Interaction Guidelines for Tourists, Photo Id catalogs for Research use)*
- *Carry out environmental campaigns: waste reduction in homes and hotels, beach cleaning, recycling etc.*
- *Support the certification of tour operators and tour guides involved in Whale and Dolphin watching,*
- *Contribute to the establishment of adequate whale and dolphin watching activities and to guidelines for appropriate interaction.*
- *Contribute with local capacity building*
- *Pursue the general use of sighting data in order to write scientific articles and contribute to a better understanding of marine mammals.*



**WORKSHOP AT DELFIN AMOR**

#### **X. Web of community information and promotion:**

- a. Newsletter
- b. Identification book on the area's marine species
- c. Article publication in national press
- d. Website
- e. Video documentaries