

# Recommendations for Whale Watching Guidelines in the Blue Whale Feeding Area of Southern Chile

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## I. INTRODUCTION

Whalewatching has grown into a major tourist attraction and is promoted as a strong tool for the conservation of cetaceans (whales, dolphins and porpoises), particularly through the non-lethal use of these marine mammals. It also has proven to be one of the most successful and adaptable types of tourism in the world, offering economic returns and solid community, educational, research and conservation benefits. This activity, resilient to economic and political instability, attracts foreign visitors from distant locations and is surprisingly adjustable to widely varying cultures and infrastructure levels. Over the past few years, whale watching has experienced particularly strong growth throughout Latin America (Hoyt, 2006).

However there are increasing concerns that this recreational activity could have serious impacts on the animals being observed (Garrod & Fennel, 2004). Impacts of whale watching on cetaceans may be measured by short-term behavioral reactions or long-term effects. Short-term impacts may, for example, include changes in surfacing, ventilation, dive patterns, swimming speed, direction of travel, surface activity, heart rate and vocalization rate (Bejder *et al.*, 1999; Bejder *et al.*, 2006a; Bejder *et al.*, 2006b; Buckstaff, 2004; Constantine *et al.*, 2004; Corkeron, 1995, 2004; Erbe, 2002; Lusseau, 2003a; Lusseau, 2003b; Richter *et al.*, 2006). Long-term effects include negative changes in reproductive success (Bejder, 2005; Lusseau *et al.*, 2006a; Lusseau *et al.*, 2006b), physiological conditioning, survivability and major shifts from critical areas of habitat (Lusseau, 2005). To date, the assessment of long-term cumulative impacts remains a challenge for future research. In the absence of scientific data, it is critical that whale watch operations are managed to minimize short-term impacts to cetaceans and that the activity be continuously monitored to understand the risks and measures that need to be taken (IFAW, 1995; Carlson, 2004).

In the case of the blue whales (*Balaenoptera musculus*) of southern Chile, any possible negative impacts generated by whale watching activities may be intensified as the population is already endangered due to past exploitation and therefore more vulnerable to any anthropogenic disturbances and changes in ocean conditions.

Scientific evidence shows that the blue whale population found in southern Chile exhibit seasonal site fidelity to certain areas of their feeding ground, with prolonged visits occurring in the same area year after year (Cabrera *et al.*, 2006). While this specific site or area dependency enhances the possibility of the development of whale watching activities, it also could increase vulnerability of the population to possible disturbances.

It is critical that whale watching does not generate undue stress or harm to cetacean individuals or populations (Carlson, 2004). The endangered status of blue whales and the possibility of generating negative impacts through whale watching operations justifies that the activity is developed under the best practices currently in place, with a precautionary approach and flexible guidelines that allow to adapt the activity as new scientific information is collected.

The development of whale-watching activities with blue whales in Chile, if planned responsibly and implemented effectively, may enhance environmental tourism, strengthen local economies, increase environmental education, promote non lethal research initiatives and position the country as an emerging international destination for whale watching.

## **II. ABOUT THE PROPOSED GUIDELINES**

The intention of the proposed guidelines is to provide a framework that allows people to observe blue whales and other cetacean species in a way that does not represent a threat to the animals or their ecosystem and ensure that operators and visitors will act responsibly when observing the animals in the wild. They also seek to serve as a baseline to be discussed among governmental authorities and other stakeholders for agreeing a set of regulations for the whale watching of blue whales in Chilean waters.

The proposed guidelines are based on the scientific data collected since 2004 by Centro de Conservacion Cetacea under the Alfaguara (blue whale) Project, the collection of social information through a cooperative work with several coastal communities and fishing associations from Isla de Chiloé; a review of existing national regulations for marine activities; consultations with national maritime authorities and international specialists; and a review of all the existing regulations, codes of conduct and guidelines for whale watching around the world (Carlson, 2007).

The proposed guidelines include activities such as observations from land, water and air, swimming, diving, feeding, touching and making noise in the vicinity of whales. They also refer to application for permits, special permits, active approaches by vessels (commercial and non commercial) and set minimum distances and principles that should be followed in order to guarantee the safety of the animals and the visitors.

For the safety of people and animals, the proposed guidelines should not be applied in situations where whales and dolphins are in distress (stranded, entangled, sick or injured). It is also relevant to note that for the purpose of the proposed recommendations the term “whale watching” encompasses both commercial and non-commercial whalewatching activities.

## **III. DISTURBANCE**

Since cetacean species are difficult to observe as most of their activities occurs underwater; the behavior at the waters surface is only a sample of how the animals are reacting to a vessel or human presence (Lien, 2001). The behavioral disturbances that may be a consequence of human presence and activity include the following (GBRMPA 2000):

- a. changes in swimming speed or direction;
- b. changes in dive depths or duration;
- c. changes in breathing rates;
- d. increased dive frequency and time;
- e. changes or cessation of particular activities such as vocalizing, feeding, resting, nursing, socializing;
- f. movement away from the vessel and/or leaving an area;
- g. beginning or ceasing aerial behaviors such as lob-tailing, flippering, or breaching; and
- h. aggressive behaviors such as tail slashes and trumpet blows.

Some of the potential problems generated by the disturbance of animals include: disruption of behavior to guarantee their survival, such as feeding, nursing, mating, migrating, etc; displacement from or avoidance of critical habitat areas (feeding, resting, mating, etc); stress; injuries; increased mortality; and reduced breeding success (NRMCC, 2005). Any of these signs should be interpreted as disturbance of the animals and vessels should immediately move away from the vicinity of the whales.

#### IV. VESSELS

It is important to manage vessels appropriately in order to minimize possible negative impacts generated by whalewatching activities.

- a. Vessels, engines and other equipment should be selected, maintained, and operated to reduce, as far as practicable, adverse impacts on the blue whales and their environment.
- b. Certain vessels, such as personal motorized watercraft (jet skis, underwater scooters, etc), parasails, remotely operated vehicles, wing-in-ground effect craft and hovercraft should be prohibited from conducting operations in the area designated for whale watching activities, or should not approach closer than 500 meters to any cetacean species.
- c. If a prohibited vessel incidentally moves to within this distance it should slow down and avoid the whale or dolphin, moving away from the animal at a no wake speed to at least 500m.

#### V. OPERATION OF VESSEL IN THE VICINITY OF BLUE WHALES OR OTHER CETACEAN SPECIES

Blue whales are frequently observed in feeding or traveling behaviors and on several occasions extremely active behaviors such as high-speed chases and breaching have been recorded (Galletti Vernazzani *et al.*, 2006). Given the size, weight and strength of large cetaceans, such groups should be avoided in order to minimize the risk of accidents between whales and whale watching vessels.

Additionally, it is important to keep in mind that whale watching vessels, by direct approach or pursuit, can prevent animals from carrying out life processes such as feeding, resting, communicating and socializing. Long term negative impacts could be generated if such disruptions to life processes occur to a particular segment of a population, or to a significant number of individuals within a population (Lien, 2001).

##### a. General Considerations for Blue Whales and other large baleen whales

- i. Use best practice to operate vessels so as not to disrupt the normal movement or behavior of the whales or other species observed.
- ii. Post a dedicated lookout in addition to the captain to observe the position and behavior of the cetaceans.
- iii. Do not approach an individual whale or group of whales involved in extremely active behaviors, such as high-speed chases and breaching, to reduce probability of serious accidents.
- iv. Do not approach any marine mammal or groups of marine mammals under sail. Cetaceans rely on sound to orient themselves in the marine environment and it is important that the whales are able to locate the vessel through sound in order to avoid collisions and safeguard the well being of the visitors and the animals observed.

##### b. Approach (see Figure 1)

###### i. Caution zone: area within 500m of whales:

1. Avoid having more than two vessels within the caution zone.
2. If more than one vessel is in the caution zone, they should be in radio communication to coordinate their movements around marine mammals.
3. Reduce speed to no faster than the slowest animal or group of animals in the vicinity.

**ii. Close approach procedure to 300m of the whales:**

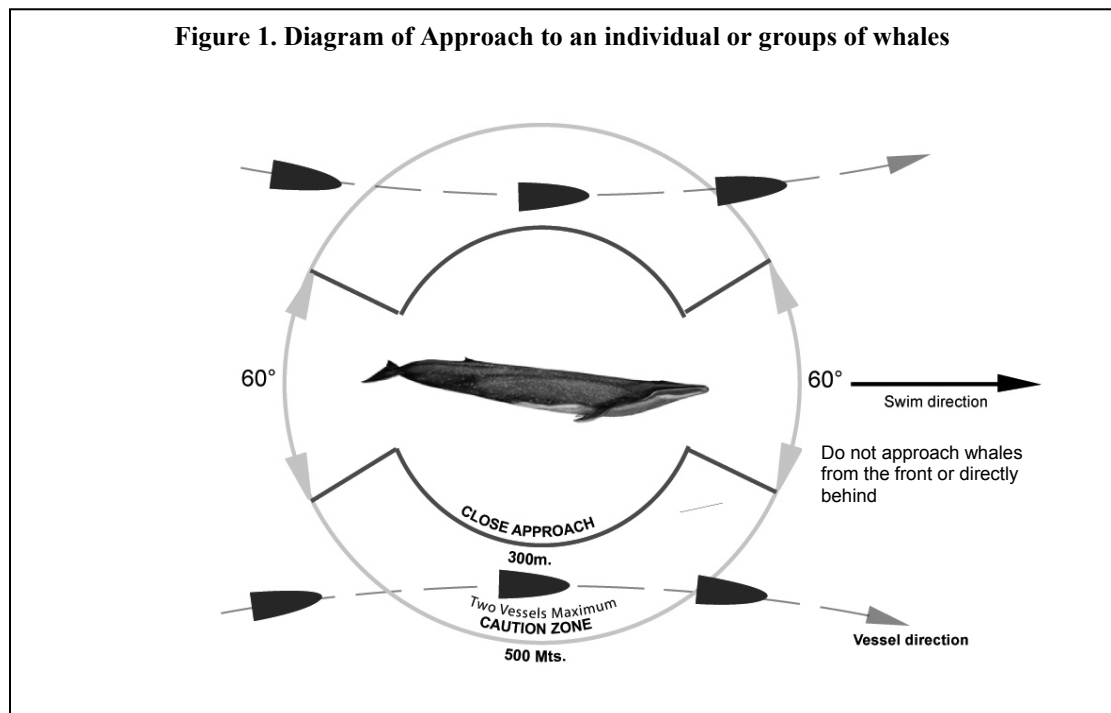
1. Approach slowly and cautiously from behind and in an angle. Do not approach marine mammals from the front and stay to the side of the whales.
2. Do not approach mothers with calves or lone calves on the surface of the water.
3. Avoid sudden changes in vessel speed and direction.
4. Do not spend more than 20 minutes with any individual or group of whales.
5. Do not intentionally drift down on whales.
6. Vessels in multi-vessel approaches should maintain communication with each other (via VHF channels 9, 13, or 16 for hailing) to coordinate viewing, and where possible, with coastal monitoring stations.
7. When a vessel stops to watch an individual whale or group of whales, the engine shall be placed in neutral. Avoid using reverse gear because of cavitation noise that often results.
8. If animals show signs of disturbance (described previously), leave the area immediately at a no wake speed.

**iii. No Intentional Approach within 300m.**

1. Never approach whales to a distance less than 300m.
2. If whales approach within 300m or less of your vessel, put engines in neutral and do not re-engage propulsion until whales are observed clear of harm's way from your vessel.
3. Do not separate groups or pairs of blue whales and other whale species.

**iv. Departure Procedure**

1. Vessel departing from the vicinity of any blue whales or other cetacean species shall wait until the animal's surfaces and afterward proceed slowly at idle or no wake speed until at least 500m.
2. In order for vessels to be clear of whales before dark, vessels should cease whale watching and begin their return to port 45 minutes before sunset.



**c. Special Considerations for Dolphins:**

The blue whale feeding ground in southern Chile includes other cetacean species that can be sighted from shore or marine platforms. Some of the species identified until date in the area include: Orca (*Orcinus orca*), Peale's dolphin (*Lagenorhynchus australis*), Chilean dolphin (*Cephalorhynchus eutropia*), Risso's dolphin (*Grampus griseus*) and southern right whale dolphin (*Lissodelphis peronii*). When in the presence of these and other cetacean species, vessels should:

- i. Not proceed through a pod of dolphins or separate dolphins in a pod from one another.
- ii. Not chase dolphins. Whenever possible, let the animals approach the vessel.
- iii. Not approach within 150m of an individual or pod of dolphins.
- iv. Where two vessels approach an unaccompanied pod of dolphins, the operators/captains shall coordinate their approach via radio and maneuvers so as not to disrupt the pod or interfere with their direction of travel.

**VI. AIRCRAFT**

- i. No commercial or recreational whale watching should be conducted on board aircrafts since they may disturb whales and dolphins due to their speed, noise, shadow, or downdraft in the case of helicopters.
- ii. For helicopters flying within or the vicinity of the blue whale feeding ground, aircrafts should:
  1. Not fly lower than 500 meters (1,650 feet) within a 500m radius of the whales or other cetacean species;
  2. Avoid flying directly over, or passing the shadow of the vessel directly over the animals.
- iii. For other aircrafts (fixed wing, gliders, hang gliders, hot air balloons and airships) flying within or the vicinity of the blue whale feeding ground, aircrafts should:
  1. Not fly lower than 500 meters (1,650 feet) within a 500m radius of the whales or other cetacean species;
  2. Not land on the water to observe the cetaceans;
  3. Avoid flying directly over, or passing the shadow of the vessel directly over the animals.

**VII. SWIMMING AND DIVING**

Swimming and diving (including SCUBA and hookah gear) with blue whales and other cetacean species found in its feeding ground should be strictly prohibited.

There is a mounting body of evidence relating to the negative impacts of "swim-with" cetaceans tours (Garrod & Fennel, 2004). Studies suggest that dolphins move away from areas frequented by "swim-with" tour boats, presumably in search of quieter locations. This may have important impacts in terms of the disruption of normal feeding, breeding, resting, nursing, and other activities (WDCS, 2003; Constantine, 2003).

Cetaceans are large and powerful, capable of injuring or even, in at least one documented case, killing swimmers (Orams 2002). Swimming (including snorkeling) or diving with whales and/or dolphins may place people and animals at risk (including injuries, transmission of diseases and possible death from forceful interactions). Special attention should be taken of these aspects when considering the size of blue whales and other large cetaceans found in the blue whale feeding ground.

## **VIII. LAND OBSERVATIONS**

Watching from land causes the least disturbance to whales and dolphins. Cliffs and headlands can provide excellent vantage points for viewing many different species of whales and dolphins.

Nevertheless, it is important to be aware of the impact land-based whale watching may have on the environment, especially when is conducted in sensitive areas.

## **IX. FEEDING**

There are environmental, health and safety concerns associated with deliberate feeding of whales and dolphins. Feeding by humans has been shown to have adverse effects, sometimes severe, on the whales and dolphins concerned. For these reasons attempting to feed whales and dolphins should be strictly prohibited.

People should not deliberately feed or attempt to feed a wild cetacean, including throwing food or rubbish in the waters in the vicinity of the cetaceans.

## **X. TOUCHING**

Touching whales and dolphins should not be permitted under any circumstance.

## **XI. NOISE**

Whales and dolphins have sensitive hearing and sound plays an important role in their communication, navigation and prey location. Noise that humans introduce into the environment can mask important sounds or damage animals hearing. It is very difficult to determine how whales and dolphins may react to a particular sound or how severe the effects may be, so production of noise should be minimized.

- a. Vessels should be maintained in good condition to minimize the transfer of noise into the water.
- b. Operators should be aware of low noise options for engines when starting of expanding a whale watching business.
- c. Avoid making loud or sudden noises near whales or dolphins. If a whale or dolphin comes close to shore or your boat, remain quiet.
- d. Do not intentionally make any noise to attract whales or dolphins. This includes playback of underwater sound of recorded whale or dolphin sounds or song.
- e. The use by cetacean watching operations of sonar systems that emit noise to detect cetaceans or to bring them to the surface should not be permitted under any circumstances.

## **XII. PERMITS**

Any commercial cetacean-watching activity in the blue whale feeding ground should only be carried out under a permit granted by the appropriate authority. Permits for commercial operations should be issued by area, preferably with a restricted number of one commercial vessel operating in any given area. Permits should be renewed every three years after a compliance review process. Local and national initiatives that comply with the criteria established for obtaining permits should be given priority.

### **a. Permits should be granted when applications comply with the following criteria:**

- i. that the vessel used meets appropriate national safety standards;
- ii. that the vessel used be insured for the passengers that it carries;
- iii. that the vessel should not conflict with the conservation of the species and their habitat (4T Engines, etc);
- iv. that the whale watching operation does not disturb the behavioral patterns of the blue whales and other cetacean species found in the area;

- v. that the operator and its staff have been capacitated in general concepts of cetaceans and whale watching operations in order to recognize disturbance behaviors and be able to keep track of the whales during the encounters;
- vi. that the operator should have sufficient empirical knowledge of the local area, the sea and weather conditions;
- vii. that the whale watching operation should offer substantial educational value to participants or to the public;
- viii. that the commercial operation, when possible, facilitates the collection of scientific data and ultimately the publication of these data in a useful form; and
- ix. that the vessel be judged appropriate for whale watching.

**b. Applications should also set out relevant information regarding:**

- i. the type, speed and maximum number of vessels the operator seeks to operate at any time in any given area;
- ii. the area and base of the operation;
- iii. the duration and daily number of trips per day and their frequency;
- iv. the method of location of cetaceans;
- v. the maximum number of passengers to be taken on board;
- vi. the persons in command of the vessel and their qualifications;
- vii. the educational information and materials that will be provided to the passengers;
- viii. an outline on short and long term business plans; and
- ix. an outline of any research activities to be conducted in conjunction with the whale watching operations.

**c. Permits granted should be restricted, suspended or revoked if:**

- i. the welfare of the passengers and/or the cetaceans being observed is threatened by the activity; and/or
- ii. the operator contravenes or fails to comply with the guidelines and regulations established for the activity;

In order to effectively implement the guidelines, independent inspection of cetacean watching activities should be conducted to ensure their compliance.

**d. Special Permits:**

On occasions, activities such as non lethal research or media coverage may require individuals or vessels or aircraft to approach whales at a distance closer than stipulated. In such cases, it is suggested that special permits, issued by proper authorities be required. A special "task force" could draft criteria for the evaluation of such permits. Members of the task force should include stakeholders from the region, marine conservation organizations as well as national and international marine mammal specialists. Fees for media permits should be allocated for research and marine conservation programs.

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