

# Sustainable whale watching at Península Valdés, Argentina: An assessment by owners and captains of local whale watch companies

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## ABSTRACT

The number of tourists going on whale-watch boats to see southern right whales on their nursery ground at Península Valdés, Argentina has increased dramatically over the past 14 years. Between 1991 and 2004 the number of tourists increased almost 450% from 17,446 to 96,436. The first whale-watch regulations for Valdés were created in 1984 by adapting laws from other countries. At present, several aspects of the regulations are not applicable. This paper reports the discussions by whale-watch company owners, captains, government officials and researchers during a workshop held at Valdés in September 2004, in which owners and operators expressed their concerns and opinions based on their daily experiences. The potential for infractions is high because regulations are outdated and enforcement is virtually non-existent. Problem areas identified in the workshop include minimum distance to the whales, category of whales that can be approached, and number of boats allowed per group of whales. The demand for more boat trips during the peak of the tourist season is high and the potential impact on the whales is increasing. No studies to date have determined the carrying capacity of whale watching in the area. A Voluntary Code of Conduct was proposed as a method of regulating whale watching until more applicable laws are established. Government officials, local whale-watch captains, tour guides and researchers should all be involved in the development of new regulations if they are to reflect the present reality of whale watching at Península Valdés, and to minimize the impact of this commercial activity on the animals.

KEY WORDS: BREEDING GROUNDS; CONSERVATION; REGULATIONS; SOUTH AMERICA; SOUTHERN RIGHT WHALE; SUSTAINABILITY; WHALE WATCHING

## INTRODUCTION

Whale watching is an expanding industry worldwide with important socioeconomic values. These values include recreational, scientific, educational, cultural, heritage, social, aesthetic, spiritual, psychological, ecological services, remote viewing/vicarious experiences and financial values (Hoyt, 2001). In 2001, whale-watch operations existed in 492 communities around the world, and included almost all of the 83 species of cetaceans (Hoyt, 2001). Such diversity of locations and target species requires that laws regulating whale watching be adapted to the local needs and be scaled to minimize impact on the animals.

Península Valdés in Argentina is the nursery ground for one of the largest remaining populations of southern right whales (Payne, 1986; Cooke et al., 2001; IWC, 2001). This population has been studied since 1970 (Payne 1986). Southern right whales migrate over 2,000 km from their feeding grounds to this nursery ground (Payne 1986, Best *et al.* 1993), where adults engage in mating behavior and pregnant females give birth and rear their calves during their first three months of life (Payne 1986, Payne *et al.* 1991). On the nursery ground, the whales are distributed close to shore in shallow waters, where they can be seen predictably from June to December. For this reason, Península Valdés has become one of the best places in the world to watch the southern right whale at close range (Rivarola et al., 2001). Consequently, the demand for whale-watching tours has grown rapidly since the early 1990s and the activity has become the main tourist attraction in coastal Patagonia (Rivarola et al., 2001).

50 Several authors have described short-term changes in the behavior and swimming speed of right whales  
51 that were approached by boats at Península Valdés (Garciaarena, 1988; Alvarez Colombo *et al.*, 1990; Arias *et*  
52 *al.*, 1992; Campagna *et al.*, 1995; Rivarola *et al.*, 2001). According to Rivarola *et al.* (2001), management  
53 policies do not address these potentially adverse changes in whale behavior. Although there have been attempts  
54 to improve management, the laws regulating whale watching at Península Valdés are outdated and several  
55 aspects of the regulations are not applicable.

56 During the past decade, a number of workshops have been organized around the world to provide  
57 recommendations to improve management of whale watching. Among other contributions, these workshops have  
58 provided “a framework to guide the process of defining new rules and modifying existing rules for whale  
59 watching” (IFAW Tethys Research Institute and Europe Conservation, 1995) and have discussed “future  
60 management development and implementation frameworks to ensure both the minimisation of negative impacts  
61 and optimal sustainable tourism” (Anon., 2005).

62 At Península Valdés, a workshop was held in September 2004 to analyze the positive and negative  
63 aspects of the local whale-watch industry, evaluate problems with current regulations and their implementation,  
64 and provide recommendations that would contribute to the sustainability of the activity. This document provides  
65 current information on whale watching at Península Valdés including: statistics on the number of tourists going  
66 on whale-watch tours at Península Valdés from 1991-2004; a summary of the strong and weak points that were  
67 identified in the activity at the local level; a description of issues that whale-watch company owners and captains  
68 want addressed by new regulations; a preliminary list of variables that should be included in a proposed Code of  
69 Conduct, and the current Code of Ethics adopted by whale watch companies at Península Valdés in 2004.

70

## 71 **BACKGROUND INFORMATION**

72

### 73 **The right whale population at Península Valdés**

74 Hunting in the southern hemisphere reduced the right whale populations from an estimated 55,000-70,000  
75 animals before commercial whaling to 7,500 individuals (IWC, 2001). The the number of female right whales  
76 breeding at Península Valdés was estimated to be 92 individuals in 1971, 328 in 1990 (Cooke *et al.*, 2001), 547  
77 in 1997 (IWC, 1998), and 697 in 2000 (Cooke and Rowntree, 2003). The population is growing at a rate of 6.9%  
78 per year (Cooke *et al.*, 2001).

79 During the austral winter and spring southern right whales use the relatively protected waters off Valdés  
80 as a nursery ground (Payne, 1986). The first whales begin to appear in April – May with the peak numbers of  
81 animals being seen in late September and early October. The last whales leave the area for the feeding grounds  
82 in December (Payne, 1986). Female right whales typically calve once every three years, and stay on nursery  
83 grounds such as Valdés with their calves for two to three months post-partum (Payne, 1986, Best and Rüter,  
84 1992, Cooke *et al.*, 2001).

85 The spatial distribution of right whales around Península Valdés has changed over the last three  
86 decades (Rowntree *et al.*, 2001). The Eastern Outer Coast of the peninsula was an important nursery area for  
87 right whales in the 1970’s (Rowntree *et al.*, 2001). At the time, this area held the highest proportion of females  
88 with calves (Payne, 1986). In the 1980’s right whales abandoned the Outer Coast and gradually moved to Golfo  
89 Nuevo and Golfo San José (to the South and North of the peninsula, respectively). By the 1990’s Golfo Nuevo  
90 had the highest proportion of females with calves and few whales were seen along the Eastern Outer Coast  
91 (Rowntree *et al.*, 2001), a pattern that has continued to the present. Interestingly, the center of the growing  
92 concentration of mother-calf pairs in Golfo Nuevo is located along its northern shore less than 10 km from  
93 Puerto Pirámide, the hub of the whale-watch industry in Valdés.

94

### 95 **Legal status of right whales and their habitat in Argentina**

96 Southern right whales were declared a “National Natural Monument” by the Argentine Congress in 1988 (Law  
97 23094). However, the Provincial governments have not ratified this law, and therefore, it does not apply to whales  
98 in waters under Provincial jurisdiction. This includes Golfos Nuevo and San José in the Province of Chubut.

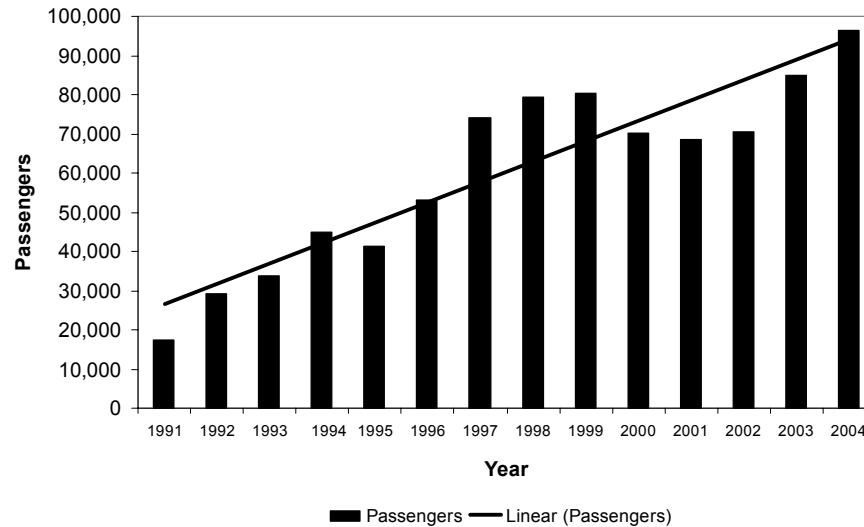
99 Golfo San José was declared a Provincial Marine Park by Provincial Law 1238 in 1975. The aim of the  
100 law was to protect one of the main calving areas of this southern right whale population. The law was later  
101 modified in 1979 by Decree 1713, which made Golfo San José a Multiple Use Natural Area. In 2000, Provincial  
102 Law 4617 created the Provincial System of Protected Natural Areas in Chubut, and Provincial Decree 1814  
103 designated the *Organismo Provincial de Turismo* as the application authority of Law 4617. In 2001, the

104 Península Valdés Protected Natural Area was created by Law 4722 and a Management Plan was approved.  
 105 Península Valdés was declared a World Heritage Site by the United Nations in 1999.

106

### 107 Past and present of whale watching at Península Valdés

108 Whale watching at Península Valdés began as a commercial activity in the early 1970's. However, the first  
 109 records of the number of tourists that went on whale-watch tours begin in 1987. In that year, 5,214 passengers  
 110 bought boat tickets. The Province of Chubut has made official reports of whale-watch activities since the early  
 111 1990's. In 1991, 17,446 people participated in boat-based whale watching. Since then, the number of whale  
 112 watchers increased annually at a mean of 5,200 passengers (annual cumulative rate of 14%). In 2004, 96,436  
 113 passengers went on whale-watch tours at Península Valdés (Fig. 1).



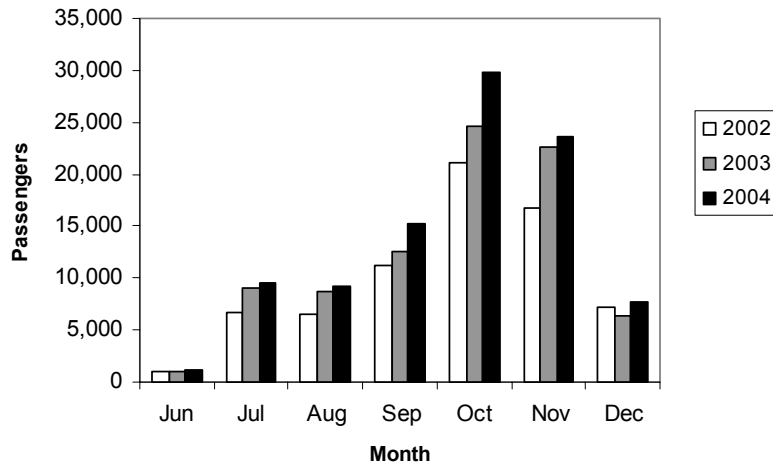
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115 **Figure 1:** Number of passengers who went on whale-watch tours at Península Valdés from 1991 to 2004 and  
 116 linear trend. **Source:** *Prefectura Naval Argentina - Puerto Madryn* and *Secretaría Turismo Chubut*

117

118 The official whale-watch season at Península Valdés extends from June to December. Six private  
 119 whale-watch companies are allowed by the provincial government to operate in Puerto Pirámide. They pay a \$5  
 120 Argentine pesos “whale fee” (approximately USD1.75) per passenger to the government, although there are  
 121 exceptions to this. Each company can own several boats, but they are not allowed to have more than one boat in  
 122 the water at any one time. An exception to this rule occurs during the long weekend around October 12, when  
 123 the demand for whale-watch tours is highest and the six companies are each allowed to operate two boats  
 124 simultaneously. The maximum allowed capacity for the boats is 70 passengers. The six companies vary greatly  
 125 in the way they operate. Some companies carry more passengers than others and consequently, the number of  
 126 trips per company during the whale season is different.

127 The whale-watch season coincides with the right whale nursery season. The demand for whale-watch  
 128 tours is not uniform throughout the season (Fig. 2), with nearly 55% of the total demand occurring in warmer  
 129 weather at the end of the nursery season in October and November (53,488 tourists in 2004). The majority of the  
 130 tourists are Argentines. For example, in 2004, 62% of the tourists were Argentines while the remaining 38%  
 131 were foreign visitors, mainly from Europe, the Mercosur nations (Brazil, Uruguay and Paraguay) and the USA.



**Figure 2:** Number of passengers per month who went on whale-watch tours at Península Valdés from 2002 to 2004. **Source:** Prefectura Naval Argentina - Puerto Madryn and Secretaría Turismo Chubut

The number of boat trips (rather than the number of tourists) is perhaps a better indicator of the impact the activity can have on the whales. Table 1 shows the number of boat trips for the period 2001-2004. The rate of increase in the number of trips for the period 2003-2004 was lower than rate of increase in the number of tourists for the same period. The number of tourists (Fig. 1) increased at a higher rate than the number of trips (Table 1) between 2003 and 2004. Although the sample period is short, this indicates that the use of boat capacity was more efficient in 2004, which could reduce the impact per tourist on the animals. Boat trips in October and November represented 50% of the total for the season.

MONTH	2001	2002	2003	2004
Jun	113	85	83	86
Jul	360	264	336	323
Aug	366	288	393	383
Sep	473	435	465	574
Oct	745	647	768	885
Nov	570	519	719	759
Dec	243	282	286	310
<b>TOTAL</b>	<b>2,870</b>	<b>2,520</b>	<b>3,050</b>	<b>3,320</b>

**Table 1:** Number of whale-watch boat trips per month at Península Valdés for the period 2001-2004. **Source:** Prefectura Naval Argentina - Puerto Madryn and Secretaría Turismo Chubut

**Current whale-watch regulations in Chubut Province**

Whale watching at Península Valdés is under the regulation of the Province of Chubut. The regulations are summarized below from Carlson’s (2004) review of whale-watch guidelines and regulations around the world.

Provincial Law 2381/84 (modified by Provincial Law 2618/85): Forbids approach and/or harassment, sail, swim and diving with any marine mammal species and their calves, inshore and offshore, in provincial waters during the whole year. The Law was modified by Provincial Law 2618/85 and now states “within provincial waters during the entire year without a provincial Department permit”. The regulations for permitted operations include: (1) a minimum distance of 100m between whale watchers and whale while engines are on; not less than 50 m with engines off; (2) stopping the engines near the animal; (3) only one boat per individual whale; (4) avoid harassing or chasing the animals; (5) avoid sudden changes in boat speed; (6) do not drive the

158 boat in circles around the animals; (7) avoid flying lower than 150m over whales; (8) do not approach mothers  
 159 with calves; (9) avoid any activity that would alter the behavior of the whales; (10) avoid entering the water in  
 160 the vicinity of whales.

161 Provincial Regulation Decree 916/86 (modified by Provincial Decree 1127/91): (1) Designates the  
 162 authorities in charge to enforce Law 2381. (2) Creates the provincial Whale Watching Tour Operators Register  
 163 and establishes the minimum requirements for their inscription. (3) Allows no more than two boats per permitted  
 164 operator. (4) Creates the Provincial Field Naturalist register and establishes a minimum requirement for their  
 165 inscription. (5) Regulates the tour operator's qualifications for carrying out whale-watch activities. (6)  
 166 Designates Provincial Wardens as supervisors of all whale-watch activities. The Provincial Decree 1127/91  
 167 establishes the number of licenses for Golfo Nuevo and the length of time each license is valid.

168

## 169 **WORKSHOP DISCUSSIONS AND RECOMMENDATIONS**

170

171 An evaluation of whale watching at Península Valdés was conducted during a two-day workshop held in Puerto  
 172 Pirámide in September 2004 (Instituto de Conservación de Ballenas, 2004). Owners and captains of the six  
 173 whale-watch companies voiced their opinions and suggested changes to the current laws based on their daily  
 174 experiences. Government officials also attended the workshop and expressed their commitment to work jointly  
 175 to update regulations and to improve management of whale watching by enforcing the regulations more  
 176 effectively.

177

### 178 **Benefits of whale watching at Península Valdés**

179 Attendees to the September 2004 workshop identified the following benefits of whale watching at Península  
 180 Valdés:

- 181 • Attracts national and foreign tourists to the Province of Chubut.
- 182 • Whale watching supports the local economy by generating jobs and revenue for private companies, the  
 183 Provincial Government (through a "whale fee" and the entrance fee to the Peninsula) and the National  
 184 Government (through taxes).
- 185 • Provides a unique opportunity for people to see right whales from boats and from shore. Right whales  
 186 can be seen predictably off Valdés during at least seven months of the year (June to December) close to  
 187 shore (a few meters in some areas). Whale sightings are virtually guaranteed on every trip and travel  
 188 time to the animals is very short (a few minutes in most trips) compared to other sites in the world. This  
 189 reduces costs of whale watching and improves customer satisfaction.
- 190 • The excellent conditions for whale watching at Peninsula Valdés help to promote the area in the media  
 191 and wildlife documentaries as an exceptional site to observe the rare southern right whale.
- 192 • Whale watching contributes to the conservation of whales because it is an economically viable  
 193 alternative to whaling and has high educational potential.
- 194 • Offers a platform to conduct research that can provide relevant data to improve our knowledge of whale  
 195 biology and behavior.

196

### 197 **Inadequacies of current regulations and recommendations for improvements**

198 Participants at the workshop identified inadequacies in the current regulations that are incompatible with the  
 199 conditions for whale watching at Valdés. We provide comments made by whale-watch operators, government  
 200 officials, researchers and conservationists regarding how management should be changed.

201 One of the biggest conflicts with the existing laws regulating whale watching at Valdés relates to the  
 202 age class of whales that can be approached during the tours. The law forbids boats from approaching mothers  
 203 with calves. In actuality, mother/calf pairs are approached regularly because they are the most abundant whales  
 204 on the nursery ground (about 2/3 of total), stay relatively close to shore, and tourists want to see right whale  
 205 mothers with their infants. Rivarola *et al.* (2001) showed that mothers and calves were the selected target in 49%  
 206 of the trips they observed in 1993. The captains pointed out that as mothers and calves are the last animals to  
 207 leave the area, the whale-watch pressure on these animals increases toward the end of the season. In fact,

208 virtually all trips observed by Rivarola *et al.* (2001) in November were targeted at the few mothers and calves  
209 that still remained in the area.

210 Two other aspects of the current law that need regulating include: the minimum distance to the animals  
211 and number of boats per group of whales. Participants agreed that in most cases they follow the 100m minimum  
212 distance rule while engines are on. However, whales are approached in such a way that, once the engines are off,  
213 the boats drift toward the animals, which is facilitated by the typical strong Patagonian winds. Because this close  
214 approach offers a better view to the tourists on board and companies compete to attract tourists, this practice has  
215 become very common but is incompatible with the law and may increase the impact on whale behavior. Also,  
216 the “one boat per group of whales” rule is not always followed. In some cases, up to six boats have been  
217 observed around the same animals (Rivarola *et al.*, 2001). It was recommended that once the laws are updated,  
218 these variables should be monitored and enforced with corresponding fines where applicable.

219 Current whale-watch laws in Chubut were modified from regulations and guidelines in other countries.  
220 Government officials acknowledged that new regulations need to be created specifically for whale watching at  
221 Península Valdés. A first step to do this is to clearly define what can and cannot be done when approaching right  
222 whales in this nursery ground to minimize adverse effects. To date, no systematic impact study has been  
223 conducted at Península Valdés to evaluate the effects of whale watching on relevant biological variables such as  
224 whale survival and breeding success (IFAW Tethys Research Institute and Europe Conservation, 1995), although  
225 Rivarola *et al.* (2001) summarized potentially adverse short-term responses of whales to the presence of boats.  
226 The responses include whales moving away from boats that encircle or follow them or approach them directly  
227 (Rivarola *et al.*, 2001), and solitary individuals and groups other than mother/calf pairs swimming faster within  
228 the whale watching area in Golfo Nuevo than in the protected Golfo San José (Garciaarena, 1988; Alvarez  
229 Colombo *et al.*, 1990; Arias *et al.*, 1992; Campagna *et al.*, 1995).

230 Studies to evaluate the effects of whale watching on survival rates could take many years to complete in  
231 a long-lived and slowly reproducing species like the right whale. A clear cause-effect link may be impossible to  
232 show because of other confounding variables. Government authorities at the workshop stated that the studies  
233 should have been done two decades ago. However, they will seek support to conduct such an investigation, they  
234 will create new laws according to the findings of the studies, and train park rangers to enforce them. The carrying  
235 capacity of whale watching in the area is unknown. At present, authorities are working on a management plan to  
236 restrict the access to Península Valdés to a maximum of 200,000 visitors a year with 80,000 to 100,000 tourists  
237 going on whale-watch trips.

238 Current regulations establish that only one boat per company can operate at any one time, and a  
239 minimum time of 1h 15min should elapse between successive boat trips. However, participants said that  
240 exceptions to these rules are requested by companies during periods of high demand (long weekends, the arrival  
241 of large cruise ships, mornings when the concentration of tourists is higher). In these cases, the Precautionary  
242 Principle (Foster *et al.*, 2000) is not applied, potential impacts are ignored, commercial pressure receives  
243 priority, and as a consequence, tourist demand is driving whale watching at Península Valdés (Rivarola *et al.*,  
244 2001). These exceptions generate conflicts among whale-watch companies and between companies and the  
245 government. It was recommended that all parties involved (captains, company owners, authorities, researchers)  
246 should be integrated in the process of decision making to minimize these conflicts, and that conservation issues  
247 should prevail over commercial interests.

248 Tourists that arrive to Península Valdés receive little information on right whale biology and  
249 conservation needs. There is no interpretation center in Puerto Pirámide where visitors could learn about the  
250 whales and local marine environment before boarding. People arrive with unrealistic expectations to watch  
251 whales perform the most dramatic behaviors at close range during their short visit in the whales’ habitat. All  
252 participants agreed that it is important to change this attitude with better educational strategies for the general  
253 public. Captains recommended that they should receive information and training so they can improve the  
254 educational experience they give to visitors during the whale-watch trips. Authorities said they will work to  
255 compile the available information so that they can provide a standardized training to captains and naturalists on  
256 board.

257

#### 258 **A draft of a Voluntary Code of Conduct and the current Code of Ethics**

259 Participants agreed that the process to update the law based on impact studies could take a long time. They  
260 proposed creating a Voluntary Code of Conduct that would be in effect for the short term until the Government  
261 agencies change the regulations. Because the Code of Conduct is not a law, it cannot be enforced. Therefore, its  
262 success depends on its voluntary acceptance by all the local companies. Once accepted, the whale-watch  
263 operators themselves will follow its guideline to supervise the activity for their common benefit. The Whale

264 Watching Guide Association (under formation) volunteered to lead the process to create the Voluntary Code of  
265 Conduct.

266 It was not possible to reach an agreement during the workshop on all the points that should be included  
267 in the Code and its final form. The process to create the Code is currently under way. A preliminary list of points  
268 that should be in the Voluntary Code of Conduct include: (1) no more than one boat per group of whales; (2) no  
269 drifting toward the animals with engines off closer than (...) m for mother-calf pairs and (...) m for other age  
270 classes; (3) always approach whales from their side or back and never from in front; (4) do not chase whales  
271 when they begin to swim away from the boats; (5) do not approach a breaching whale closer than 100 m; (6)  
272 restrict the maximum time with each individual or group of whales to 15 min; (7) leave the whales only when  
273 their location relative to the boat is certain; (8) do not exceed 10 knots when returning from a trip. It was agreed  
274 that the Code should be realistic and include a set of rules that all captains could follow, while maintaining a  
275 minimum impact on the whales. The Code of Conduct will be printed and distributed to visitors at the entrance  
276 to the Peninsula Valdés Natural Area so they will understand the captains decisions and can be part of enforcing  
277 the Code.

278 The Whale Watching Advisory Commission includes owners of the six whale-watch companies and  
279 government representatives. This Commission proposed that a Code of Ethics be created that would be part of  
280 the contracts between the companies and the government. The Code of Ethics was approved on 1 September  
281 2004. It contains 13 common sense articles that regulate the conduct of whale-watch operators during whale-  
282 watch trips, meetings and in their relationship among themselves and with the government.

283 Following are the 13 articles of the Code of Ethics: (1) participants at the Advisory Commission  
284 meetings should follow the rules of courtesy and good manners; (2) do not use the loudspeaker during whale  
285 watch trips in such a way that it affects the experience of passengers in other boats; (3) good manners and an  
286 appropriate language should be used during the trips; (4) seamen etiquette should be followed at all times; (5)  
287 never maneuver boats in a risky way; (6) do not interfere with the whale watch trips of other operators; (7) do  
288 not cause excessive wake by driving at high speeds in the vicinity of other boats, especially when passengers are  
289 embarking or disembarking; (8) do not place the boat between a whale and another boat; (9) drive at slow speed  
290 in the vicinity of other boats when close to a whale; (10) reduce speed when approaching or leaving a whale that  
291 is 350m away or closer; (11) do not use electronic devices (sonar, radar, etc) that could affect the behavior of  
292 whales or other operator's activities; (12) do not sell more tickets than are allowed by the contracts relative to  
293 maximum boat capacity, and comply with the 1h 15min minimum time rule between successive boat trips; (13)  
294 report the name of the captain and the number of passengers to the Coast Guard by radio contact at the beginning  
295 of each trip.

296

### 297 **Final remarks**

298 Appropriate, common sense codes of conduct are an integral component of management systems. When whale  
299 watch operations are complemented by effective enforcement, surveillance and the opportunity for scientific and  
300 education programs, they help bring the message of cetacean and marine conservation to the public while  
301 promoting cetacean safety and maximum socioeconomic benefits from whale watching activities. Participants at  
302 the workshop recommended that the process of modifying the current regulations should be inclusive and  
303 integrate the knowledge and experience of whale watch captains and operators, government officials and  
304 researchers. Potential impact of whale watching on the normal behavior of the animals should be minimized to  
305 ensure the long-term sustainability of whale watching at Península Valdés.

306

### 307 **List of participants at the Workshop**

First Name	Last Name	Organization
Mariano	Coscarella	Director of Conservation - Organismo Provincial de Turismo de Chubut
Hector	Casin	Technical Dept - Organismo Provincial de Turismo de Chubut
Natalia	Leske	Technical Dept - Organismo Provincial de Turismo de Chubut
Sergio	Casin	Technical Dept - Organismo Provincial de Turismo de Chubut
Susana	García	Technical Dept - Organismo Provincial de Turismo de Chubut
Pepe	Monteoliva	Technical Dept - Organismo Provincial de Turismo de Chubut
Jorge	Depascuali	Park Ranger at Península Valdés
Diego	Conchillo	Park Ranger at Península Valdés
Rosana	Conchillo	Park Ranger at Península Valdés

Sebastián	Romero	Bottazzi Whale Watching
Tito	Bottazzi	Bottazzi Whale Watching
Diego	Moreno	Hydrosport Whale Watching
Karina	Katella	Hydrosport Whale Watching
Rafael	Benegas	Hydrosport Whale Watching
Sofía	Benegas	Hydrosport Whale Watching
Jorge R.	Schmid	Punta Ballena Whale Watching
Angel Daniel	Rossitto	Punta Ballena Whale Watching
Sergio	Fernandez	Punta Ballena Whale Watching
Oscar	Molina	Whales Argentina Whale Watching
Pinino	Orri	Whales Argentina Whale Watching
Pablo	Martin	Whales Argentina Whale Watching
Carole	Carlson	International Fund for Animal Welfare
Mariano	Sironi	Instituto de Conservacion de Ballenas
Luciano	Valenzuela	Instituto de Conservacion de Ballenas
Diego	Taboada	Instituto de Conservacion de Ballenas
Roxana	Schteinbarg	Instituto de Conservacion de Ballenas
Carolina	Ragazzo	Instituto de Conservacion de Ballenas
Alejandra	Varisco	Instituto de Conservacion de Ballenas
Vicky	Rowntree	Whale Conservation Institute / Ocean Alliance
John	Atkinson	Whale Conservation Institute / Ocean Alliance
Luciana	Pozzi	Fundación Patagonia Natural
Alejandro	Carribero	Ecocentro
Daniel	Pérez	EcoCentro
Rodolfo	Werner	EcoCentro
Fabián	Roman	Plan 21
Alexis	Fioramonti	Eubaleana Producciones
Angel Daniel	Velez	Imagen Natural
Juan	Curti	Motel ACA
Claudio	Barbieri	Cota Cero Diving
Sebastián	Leal	Cota Cero Diving
Daniel	Casielles	Patagonia Scuba
Daniel	Sanchez	Pronatura
Carlos	Lambertucci	Sur Marino
Annie	Farris	Wash Alaska Hawaii
Oscar	Comes	Enpeninsulavaldes.com
Silvia	Resnik	Huellas y Costas Tours

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309

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311

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316 the Workshop. The International Fund for Animal Welfare provided advice throughout the phases of this  
317 meeting and financial support to hold the workshop.

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## 322 REFERENCES

- 323 Alvarez Colombo, G., Arias, A. and Garcarena, D. 1990. A possible effect of whale watching on right whales  
324 (*Eubalaena australis*). *IV Reunión de Especialistas en Mamíferos Acuáticos de América del Sur*, Valdivia, Chile.  
325 [Abstract]
- 326 Anon. 2004. Report of the Workshop on the Science for Sustainable Whalewatching. Breakwater Lodge. Cape  
327 Town, South Africa. 30pp. [Paper SC/56/WW12 Available at the Office of the *J. Cetacean Res. Manage.*]
- 328 Arias, A., Alvarez Colombo, G. and Garcarena, D. 1992. Observaciones de reacciones a corto plazo en ballenas  
329 francas, *Eubalaena australis*, ante el acercamiento de embarcaciones. *V Reunión de Especialistas en Mamíferos*  
330 *Acuáticos de América del Sur*, Buenos Aires, Argentina. [Abstract]
- 331 Best, P.B. and R  ther, H. 1992. Aerial photogrammetry of southern right whales, *Eubalaena australis*. *J. Zool.*,  
332 London 228:595-614.
- 333 Best, P.B., Payne, R., Rowntree, V.J., Palazzo, J.T and Both, M.D.C. 1993. Long-range movements of South  
334 Atlantic right whales, *Eubalaena australis*. *Mar. Mamm. Sci.* 9:227-234.
- 335 Campagna, C., Rivarola, M., Greene, D. and Tagliorete, A. 1995. Watching southern right whales in Patagonia.  
336 Report for the Marine Mammal Action Plan of the United Nations Environment Program. 95pp. [Available from:  
337 *customerservices@earthprint.co.uk*]
- 338 Carlson, C. 2004. A Review of Whale Watch Guidelines and Regulations around the World. Version 2004.  
339 *International Fund for Animal Welfare*. Yarmouth Port MA 02675 USA.
- 340 Cooke, J.G., Rowntree, V.J and Payne, R. 2001. Estimates of demographic parameters for southern right whales  
341 (*Eubalaena australis*) observed off Península Vald  s, Argentina. *J. Cetacean Res. Manage.* (Special Issue  
342 2):125-132.
- 343 Cooke, J.G. and Rowntree, V.J. 2003. Analysis of inter-annual variation in reproductive success of South  
344 Atlantic right whales (*Eubalaena australis*) from photo-identifications of calving females observed off Pen  sula  
345 Vald  s, Argentina, during 1971-2000. SC/55/023.
- 346 Foster, K.R., Vecchia, P. and Repacholi, M.H. 2000. Science and the Precautionary Principle. *Science* 288: 979-  
347 981.
- 348 Garcarena, D. 1988. The effects of whale watching on right whales in Argentina. *Whalewatcher* 22(3):3-5.
- 349 Hoyt, E. 2001. *Whale Watching 2001. Worldwide Tourism Numbers, Expenditures and Expanding*  
350 *Socioeconomic Benefits*. IFAW, Yarmouth Port, MA, USA. i-vi+158pp.
- 351 Instituto de Conservaci  n de Ballenas. 2004. Reporte del Taller sobre Turismo Sustentable de Avistaje de  
352 Ballenas. Puerto Pir  mide, 27-28 September 2004. 25pp [Available from: *icb@icb.org.ar*]
- 353 International Whaling Commission. 2001. Report of the Workshop on the Comprehensive Assessment of Right  
354 Whales: A Worldwide Comparison. *J. Cetacean Res. Manage.* (Special Issue 2):1-60.
- 355 Payne, R. 1986. Long term behavioral studies of the southern right whale, *Eubalaena australis*. *Rep. Int. Whal.*  
356 *Comm.* (Special Issue 10):161-167.
- 357 Payne, R., V.J. Rowntree, J.S. Perkins, J.G. Cooke and K. Lancaster. 1991. Population size, trends and  
358 reproductive parameters of right whales, *Eubalaena australis*, off Pen  sula Vald  s, Argentina. *Rep. Int. Whal.*  
359 *Comm.* (Special Issue 12) :271-278.
- 360 Rivarola, M., Campagna, C. and Tagliorette, A. 2001. Demand-driven commercial whalewatching in Pen  sula  
361 Vald  s (Patagonia): conservation implications for right whales. *J. Cetacean Res. Manage.* (Special Issue 2) :145-  
362 151.
- 363 Rowntree, V.J., Payne, R.S. and Schell, D.M. 2001. Changing patterns of habitat use by southern right whales  
364 (*Eubalaena australis*) on the nursery ground at Pen  sula Vald  s, Argentina, and in their long-range movements.  
365 *J. Cetacean Res. Manage.* (Special Issue 2):133-143.