

Proceedings of the 5th International Coastal & Marine Tourism Congress

Balancing Marine Tourism, Development and Sustainability

11-15 September 2007
Auckland, New Zealand



CMT2007

COASTAL & MARINE TOURISM CONGRESS

Edited by Michael Lück Marc L. Miller
Alice Gräupl Mark B. Orams
Jan Auyong

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**ORIGIN AND DEVELOPMENT OF WHALEWATCHING IN THE
STATE OF ARAGUA, VENEZUELA: LAYING THE
GROUNDWORK FOR SUSTAINABILITY
(Working paper)**

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ABSTRACT

Whalewatching potential in Venezuelan waters is considered to be “*moderate to considerable*” by experts. Since 2001, the local non-governmental organization (NGO) Sociedad Ecológica Venezolana Vida Marina (*Sea Vida*) has been promoting responsible whalewatching in the “*Municipio Ocumare de la Costa de Oro*”, State of Aragua. Here, we review the origin and development of whalewatching in *Ocumare de la Costa de Oro*, as detailed below. **1) Scientific research.** Research effort dates back to 1996-1998, when researchers of the Ministry of Environment evaluated the status of cetacean populations in this area. Since 2000-2001, research efforts have been accomplished by *Sea Vida*’s teams and independent researchers. Target species include Atlantic spotted (*Stenella frontalis*) and bottlenose (*Tursiops truncatus*) dolphins and Bryde’s whales (*Balaenoptera edeni*). The encounter rate with cetaceans is approximately 70%. **2) Regulatory framework.** No specific regulations exist in Venezuela for whalewatching. Currently, a proposal presented by *Sea Vida* for the enactment of regulations at the national level is being reviewed by the MINAMB. **3) Participation and development of local communities.** Local stakeholders participating in these efforts include business owners, naturalist guides, fishermen, educators, community leaders, and governmental agencies. **4) Building of capabilities.** Since 2003, six training courses on whalewatching and ecological aspects of local cetaceans have been organized by *Sea Vida*, with support from national and international organizations. **5) Environmental education.** Activities to increase awareness include talks and ecological activities in local schools. To date, more than 300 children and their teachers have participated in awareness raising activities. **6) Code of conduct.** In the absence of a regulatory framework, a voluntary code of conduct is being negotiated between *Sea Vida* and stakeholders. On the basis of these accomplishments and other guidelines, progress is being made to promote the development of sustainable whalewatching in *Ocumare de la Costa de Oro*.

Keywords: Responsible whalewatching, State of Aragua, Venezuela, Guidelines, Sustainable Tourism

INTRODUCTION

Tourism has grown rapidly over the last 50 years. It is now considered to be the world's largest industry, contributing over 10% of world gross domestic product and employing more than 10% of the global workforce (Bruce *et al.*, 2001). Ecotourism is reputed to be the fastest-growing sector of the world tourism industry, with growth estimates ranging between 10 and 30% per annum (Garrod *et al.* 2001; Bruce *et al.*, 2001). There is no overall estimate of the value of marine tourism (Hoyt, 2005). Nevertheless, it has been estimated that at least “10.1 million people are now going whale watching a year spending 1.253 billion USD” (p. 6. in Hoyt, 2001).

As whalewatching (WW) has grown, concerns about the welfare of natural populations have increased (IFAW *et al.*, 1995; Orams, 2000; Whitt & Read 2006). Since 1996, a number of guidelines and regulations have been established in order to ensure the industry's sustainability (see, for example, IWC, 1997; Carlson, 2007; Parsons *et al.*, 2006). For the purpose of this paper, “sustainability” is defined as ...“*the characteristic of development that allows for the fulfillment of society needs of the present generation without compromising the needs of future generations*” (Brundtland Commission, 1987).

Recently, Hoyt (2001, 2005, 2007) introduced the term “*high quality whalewatching*” which could arguably be equated with “*sustainable whale watching*” or “*sustainable marine ecotourism*”. Accordingly, Hoyt (2007) provides a number of practical tasks of what needs to be done to ensure the successful development of such “*high quality whalewatching*”. Parsons *et al.* (2006) similarly outline definitions and criteria for “*whale ecotourism*” that include efforts to minimize environmental impacts, as well as impacts on targeted species, contributions to conservation and whale research by operators, compliance with local whale-watching codes of conduct and regulations, and benefits -financial or in kind- to local communities.

In the case of Venezuela, it is also necessary to consider that the framework for the policies for conservation and sustainable use of biological diversity was established in the document *National Strategy on Biological Diversity and its Action Plan* (ENDBPA) published by the National Office of Biological Diversity (ONDB) of the Ministry of the Environment (now known as MINAMB)(MARN 2001).

Interest in conservation of and research on cetaceans in Venezuela has increased remarkably during the last decade. In particular, research efforts related to field research and dolphin-watching have been pursued to evaluate the current status of cetaceans off the coast of Aragua (Bolaños-Jiménez *et al.*, 1998; González-Fernández, 2000; Bolaños-Jiménez & Villarroel-Marín, 2003; Silva-Hernández, 2007) and the interactions between dolphin groups and small boats (Herrera-Trujillo, 2007). All of these projects setup the foundation for the orderly development and monitoring of whalewatching. Also, in the Mochima National Park, in northeastern Venezuela, attempts have been made to gather biological and ecological information on local cetaceans (Bolaños-Jiménez & Villarroel-Marín, 2005; Balladares *et al.*, 2006) and the socio-economic impact of undergoing dolphin-watching operations, as well as the perceptions of tourists regarding the quality of the dolphin-watching experience (Bolaños-Jiménez *et al.*, 2007).

In this paper, we present a review of the way WW has evolved in the municipality of Ocumare de la Costa de Oro, State of Aragua, in the central coast of Venezuela. The specific objectives are to:

1. Review the scientific background on biological and ecological information on cetaceans off the coast of the State of Aragua;
2. Update this scientific background on the basis of the results of occasional field surveys made between 2000-2007 (Bolaños-Jiménez & Villarroel-Marín, unpublished data);
3. Review the legal and regulatory framework applicable to protection of cetaceans;
4. Review and analyze the origin and development of whalewatching in the State of Aragua, in the context of compliance with international and national guidelines and regulations; and
5. Present some precautionary guidelines for regulation of whalewatching, tailored to local conditions.

THE STUDY

Study area. “Ocumare de la Costa de Oro” is located in north-western Aragua, in the central coast of Venezuela (Figure 1), covering approximately 25 km of the coastline. Three fishermen villages –*La Boca de Ocumare*, *Bahía de Cata* and *Cuyagua*- are in a good position here to offer WW. During weekends, commercial trips to tourists are routinely offered by fishermen to *Catica Beach* and *La Ciénaga*. aboard small boats powered with outboard engines. These boats are known locally as “*peñeros*” and average 9m in length. All of the survey effort was made aboard *peñeros*.

Scientific background

Research efforts in the *Ocumare de la Costa* region date back to 1996-1998 (Bolaños-Jiménez *et al.*, 1998; González-Fernández, 2000). Those preliminary surveys found the presence of Atlantic spotted (*Stenella frontalis*) and bottlenose (*Tursiops truncatus*) dolphins and Bryde’s whales (*Balaenoptera edeni*), with an encounter rate of approximately 70%, measured as “*days with encounters over total days of field trips*” (Bolaños-Jiménez *et al.*, 1998; González-Fernández, 2000). Dolphins were present in the area throughout the year and whales were found only during October-February (Bolaños-Jiménez *et al.*, 1998; González-Fernández, 2000). Also, between the years 1996-1998, a recognized juvenile Atlantic spotted dolphin (JBJ-SF-03) was photographed and videotaped at least on three occasions (Bolaños-Jiménez *et al.*, 1998; González-Fernández, 2000).

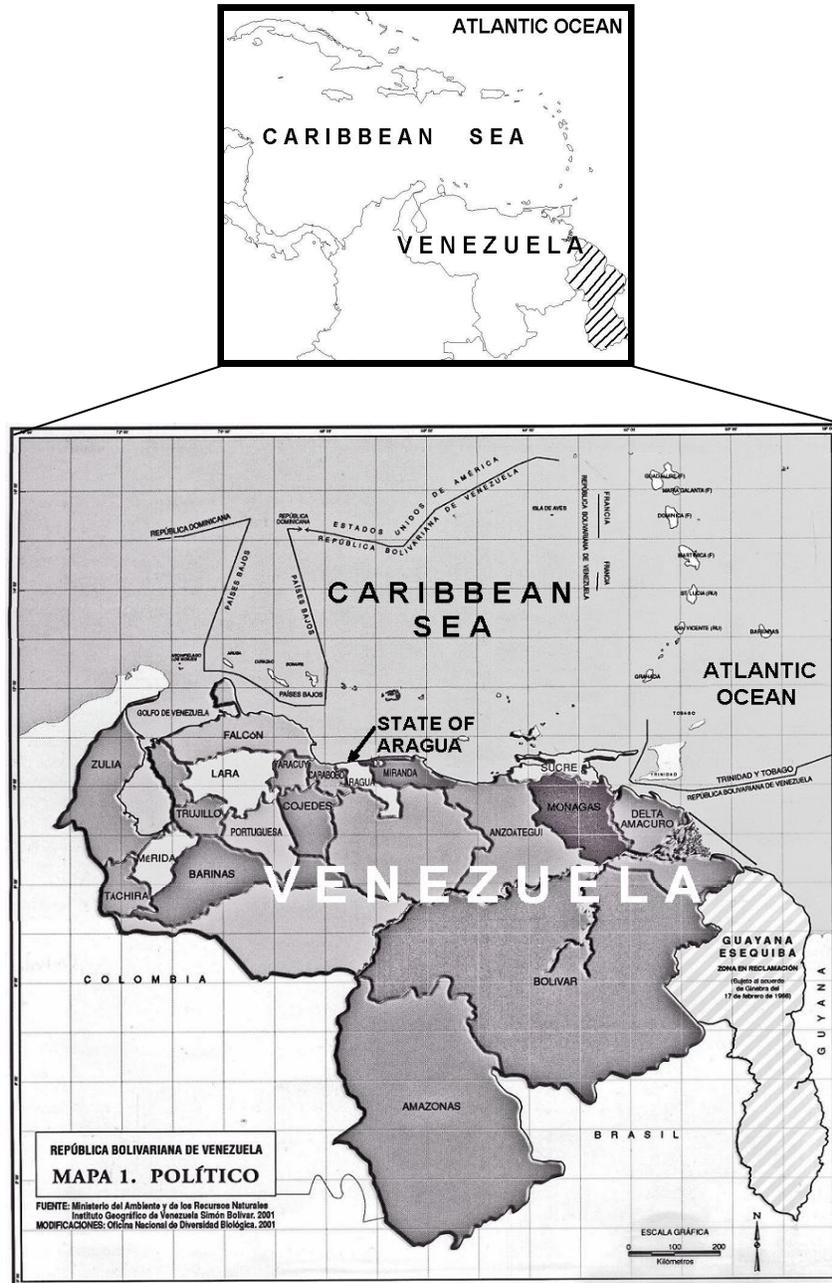


Figure 1. Study area. State of Aragua, central coast of Venezuela.

In 2001, on the basis of these results, the local environmental non-governmental organization (NGO) “*Sociedad Ecológica Venezolana Vida Marina (Sea Vida)*” started a process to increase awareness of local cetaceans and promote whalewatching as an alternative for local sustainable development (Bolaños-Jiménez & Villarroel-Marín 2003, 2006; Villarroel-Marín *et al.*, 2005).

Scientific update

33 occasional surveys were made between June 2000 and April 2007, totalling 79.9 hs of research effort (range: 04-4 hgs, average: 2.5 hs per survery \pm s.d. 0.9). In a general sense, it is the same methodology previously used in the region by Bolaños-Jiménez

et al. (1998) and González-Fernández (2000). Basic information, recorded by at least 2-3 observers, included group size and composition, presence of calves and juveniles, sea condition and inter-species interactions. During this time, forty-two cetacean sightings were recorded and the main results are detailed below.

The Atlantic spotted dolphin (*Stenella frontalis*) is the most common and abundant species found in the region. Of 33 dolphin sightings, this species accounted for 52% -including a single sighting of a group mixed with bottlenose dolphins. Group size ranged from 5-500 individuals (mean= $126 \pm$ S.D. 137). Calves and juveniles were seen throughout the year. A newborn with fetal folds was photographed in September 2005, indicating at least one birth in the region. Photographic recaptures of individual JBJ-SF-03 (Bolaños-Jiménez *et al.*, 1998; González-Fernández, 2000) were made on 1998 and 2000, suggesting some degree of site fidelity between years. To date, this seems to be the only case of long-term site fidelity confirmed for cetaceans in Venezuelan waters. This individual is easily recognizable because of a snout and mandible malformation, diagnosed as a probable case of fibrous osteodystrophia (see acknowledgements). Recently, Herrera-Trujillo (2007) and Silva-Hernández (2007) recorded photographic recaptures of several other dolphins, with re-sighting incidents separated by a few days to several months, reinforcing the idea of residency of at least a proportion of the population.

The common bottlenose dolphin (*Tursiops truncatus*) accounted for 33% of the sightings. Group size ranged from 4 to 30 individuals (mean= $14.7 \pm$ S.D.12.3). Calves and/or juveniles have been recorded during March, June, November, and December. Mixed aggregations with *Stenella frontalis* was reported only one occasion. Recently, Herrera-Trujillo (2007) and Silva-Hernández (2007) found some level of differentiation in habitat preference for these two species in the region, with bottlenose dolphins preferring coastal waters over the 100 m isobath, and Atlantic spotted dolphins preferring deeper waters around the 200 m contour.

Moreover, during this study, unidentified large whales (*Balaenoptera* sp.) were seen only during one day (November 15, 2000). Six sightings recorded that day were probably of 1-2 individuals. The only balaenopterid whale positively identified and recorded in this area has been the Bryde's whale (González-Fernández, 2000; Herrera-Trujillo, 2007; Silva-Hernández, 2007). These whales are found between October-February and these results are consistent with claims made by local fishermen regarding seasonality in the whale presence in the region's coastal waters (Bolaños-Jiménez *et al.*, 1998, González-Fernández, 2000). Herrera-Trujillo (2007) and Silva-Hernández (2007) confirmed the presence of such whales in this region between October-March and, on the basis of interviews with fishermen, postulated that abundance of whales is high during May, but the whales can be found in offshore, deeper areas.

Regulatory framework

Despite the existence of a legal and regulatory framework to protect wildlife and biological diversity, there are no specific regulations for whalewatching in Venezuela. Nevertheless, three main Acts and two Presidential Decrees deal with protection of cetaceans and other wildlife and compliance with all of them is important for responsible management of whalewatching.

Ley de Protección a la Fauna Silvestre (LPFS, Wildlife Protection Act). A civil act passed in 1970 to protect wildlife, including cetaceans and other marine mammals.

Ley Penal del Ambiente (LPA, Criminal Environmental Act). A criminal act that makes it a felony to take (kill, injure, or capture) cetaceans.

Ley de Diversidad Biológica (LDB, Biological Diversity Act). This law sets up the foundation for the *National Strategy on Biological Diversity and its Action Plan* (ENDBPA) produced in response to the Convention on Biological Diversity. This plan was released in 2001 (MARN, 2001).

In addition, Presidential Decree 1485 forbids the take of species considered to be “vulnerable” and Presidential Decree 1486 designates great whales (Bryde’s whale, *B. edeni*, fin whale, *B. physalus* and humpback whale, *Megaptera novaeangliae*) and sperm whales (*Physeter catodon* = *P. macrocephalus*) as “Endangered” (at great risk of extinction).

Currently, a proposal presented by *Sea Vida* in 2004, and renewed in 2005, for the enactment of specific regulations for whalewatching at the national level, is being reviewed by the Ministry of the Environment (See Table 1).

Participation and development of local communities

Sea Vida started efforts to promote whalewatching in 2001 only on the basis of research projects and results. In 2004 -in compliance with the Strategic Lines of the ENDBPA- efforts were initiated to try to involve local communities in a more active way. Currently, local stakeholders participating in these efforts include business owners, naturalist guides, fishermen, educators, community leaders, students and governmental agencies. The current strategy promoted by the MCT, Fundacite Aragua and *Sea Vida* includes a series of activities designed to increase empowerment of local stakeholders at an economic, psychological, social and political level (see Garrod *et al.*, 2003).

Capacity building

Since 2003, six training courses about whalewatching, ecological aspects of local cetaceans, and the design of sustainable projects have been organized by *Sea Vida*, with support from local, national and international organizations. These courses have been attended by at least 130 people -mostly locals- including entrepreneurs, business owners, educators, fishermen, students, and tourism and environmental authority representatives. Topics taught include general aspects of responsible whalewatching, biology and ecology of the cetaceans found in the region, species identification, legal aspects, criteria for sustainability, sighting protocols, as well as human relationships and leadership.

Environmental education

Activities to increase environmental awareness include ecological talks and activities in five local elementary and high schools. To date, more than 300 students and their teachers have participated in these activities (Bolaños-Jiménez and Villarroel-Marín, 2006; Villarroel-Marín and Bolaños-Jiménez, 2007; see also Hoyt, 2007). Additional awareness activities included the design and printing of brochures and posters, designed jointly with community members, that promote responsible whalewatching.

Code of conduct

To date, national environmental authorities have failed to provide specific regulations for whalewatching. Though regulations are essential, it has been found that –in some places of the world- the codes of conduct provide valuable guidelines when regulations are absent or in the process of being enacted as law (p.13 in Hoyt, 2007). In the present case, and as a short term feasible, and precautionary, alternative, a voluntary code of conduct is being promoted and negotiated by *Sea Vida* and stakeholders in order to try to ensure good environmental and commercial practices are followed.

Compliance with national and international development guidelines and standards_

As can be seen in Table 1, the development of whalewatching in Aragua is currently in accordance with several guidelines and proposals for the sustainable and responsible whalewatching practices such as IWC (1997), MARN (2001), Hoyt (2001, 2005, 2007), Parsons *et al.* (2006) and Sea Vida's premises 2001-2007.

Proposed guidelines for management of the activity

During 2006, no more than 15-20 commercial trips were made by small local operators (Bolaños-Jiménez and Villarroel-Marín, unpubl. data). Currently, due to the active participation of the MCT and Fundacite Aragua, it is expected that -in the short term- the local communities and operators will be in a more favourable position to offer WW at a commercial level. On the other hand, it must be noted that support from scientific authorities will be paramount to increase awareness regarding the need to provide the legal framework for regulating WW on the part of environmental and tourism authorities. Remarkably in this case local stakeholders agree that no whalewatching could have occurred without scientific research as the main foundation for the program. As a precautionary measure, suggested interim whalewatching guidelines are listed below:

1. Whalewatching operators and stakeholders should attend short courses on whale and dolphin biology, behaviour and conservation and sustainable whalewatching development.
2. Whalewatching operations should provide both educational materials to tourists and assist with research and monitoring of the whale and dolphin population. As a minimum, every commercial trip should include a local host to provide educational and local natural history information and allow an onboard researcher.
3. A maximum of three boats should be authorized to operate commercial whalewatching in the area.
4. Authorized boats should allocate appropriate space for a research team and their equipment.
5. There should be “*rest period*” of one or two days a week during which there is no whalewatching activity, to allow the dolphins to have some period of time undisturbed.
6. Authorised whalewatching operators must use and comply with any codes of conduct or regulations required of them, and comply with required educational programs.
7. Encounters with dolphins should not last more than 30 min.

8. Advertising campaigns for dolphin-watching activities should be based on marketing studies and including data from questionnaire surveys of tourists.
9. For safety reasons, for both human beings and cetaceans, no in-water activities should be permitted, except for scientific research.
10. According to Constitutional requirements, detailed regulations must be negotiated jointly between local and national authorities, stakeholders and NGOs.
11. The Code of Conduct should be validated by environmental authorities and appropriate experts.

CONCLUSION

Because of compliance with most national and international guidelines and standards and on the basis of scientific research efforts, progress is being made promoting the sustainable development of a whalewatching industry in Ocumare de la Costa de Oro, on the State of Aragua's coast. At present, this development is occurring, moreover, with a high level of appropriate oversight. The experience gained during this process has potential application in search for sustainability of commercial whalewatching operations in the Mochima National Park and other regions of Venezuela.

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Table 1. Compliance of whalewatching in the State of Aragua, Venezuela with whalewatching development guidelines and standards.

INTERNATIONAL WHALING COMMISSION PRINCIPLES (IWC, 1997)	HIGH QUALITY WHALEWATCHING (Hoyt, 2001, 2005, 2007)	STRATEGIC LINES NATIONAL STRATEGY ON BIOLOGICAL DIVERSITY AND ITS ACTION PLAN (MARN, 2001)	SEA VIDA'S PREMISES (2001-2007)	WHALE ECOTOURISM (Parsons <i>et al.</i> , 2006)	REMARKS FOR WHALEWATCHING IN THE STATE OF ARAGUA
Manage the development of whalewatching to minimize the risk of adverse impacts	Attention to conservation	To promote the sustainable use of biological diversity		Actively assist with the conservation of the resource	Undergoing efforts being performed
Design, maintain and operate platforms to minimize the risk of adverse effects on cetaceans, including acoustic disturbance		To promote <i>in situ</i> conservation			
Allow cetaceans to control the nature and duration of 'interactions'					

	Scientific input and output	To know, to value, and to disseminate (information on) biological diversity	Scientific research and monitoring	Co-operating with research groups and other scientists and research projects	Undergoing efforts being performed. Scientific research should be required via regulations
		To promote the knowledge, conservation and sustainable use of marine, coastal and island biological diversity.		Allowing vessels to be used by scientists as platforms of opportunity	
	Educational input and output	To incorporate knowledge of biological diversity in formal and informal educational processes and training of human resources.	Environmental education and public awareness	Providing appropriate, accurate and detailed interpretative/educational materials or activities for their clientèle about the cetaceans viewed and their habitats	Undergoing efforts being performed
	Focus on people (local and visitors) and community relations	To ensure and promote participation of society in the management of biological diversity	Participation and development of local communities	Provide some benefits for the host community within which the company operates. Such benefits could include a policy of preferential employment of local people, selling local handicrafts, or supporting (either financially or in kind) local community-based conservation, education, cultural or social projects or activities.	Undergoing efforts being performed
Reduction of the costs of whalewatching		To prevent, to mitigate, and to control the environmental impact of human activities on biological diversity, with emphasis on economic activities	A voluntary code of conduct negotiated with stakeholders	Minimizing their environmental impact.(such as reducing emissions or disposing of refuge appropriately)	Undergoing efforts being performed More effort is needed for enactment of the Code of Conduct and release of regulations at national and local levels
				Adhere to whalewatching regulations or an appropriate set of guidelines, in no specific regulations are available for the area	

