

The State of Whale Watching in Latin America

by Erich Hoyt
and Miguel Iñíguez

The State of Whale Watching in Latin America

**by Erich Hoyt
and Miguel Iñíguez**

**WDCS
IFAW
Global Ocean**

Citation: Hoyt, E. and Iñíguez, M. 2008. The State of Whale Watching in Latin America. WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60pp.

© Erich Hoyt and Miguel Iñíguez 2008

Design and layout by Roman Richter.

Front cover photographs: Fernando Trujillo, Duncan Murrell, José Martins, Jr., Miguel Iñíguez

This report is also available in Spanish and French.

For more information or a downloadable PDF of this report in English, Spanish, or French, contact erich.hoyt@mac.com.

ISBN: 1 901386 32 5

Spanish version: 1 901386 43 0

French version: 1 901386 68 6

WDCS, the Whale and Dolphin Conservation Society

Brookfield House
38 St. Paul Street
Chippenham, Wiltshire SN15 1LJ
United Kingdom
www.wdcs.org

WDCS is a company registered by guarantee. Registered in England No. 2737421. Registered Charity No. 1014705. WDCS also has offices in Argentina, Australia, Germany and USA.

International Fund for Animal Welfare (IFAW)

International Headquarters
290 Summer Street
Yarmouth Port, MA 02675-1734
USA
www.ifaw.org

IFAW has offices in Australia, Belgium, Canada, China, Dubai, France, Germany, India, Japan, Kenya, México, the Netherlands, Russia, South Africa, and the United Kingdom. IFAW's Latin American office is Tecoyotitla No. 274, Colonia Florida, Delegacion Alvaro Obregon, CP 01030, México DF, México.

Global Ocean is a non-profit organisation based in the UK
www.globalocean.eu

Contents

Executive Summary	4
Senior Author's Note and Acknowledgments	5
Guide to Terms Used and Explanations of Data Presented	7
Part 1: Whale Watching in Latin America: The Big Picture	9
Introduction	9
Boat-based Whale Watching	9
Land-based Whale Watching	11
Whale Watch Communities	11
Whale Festivals	12
Whale Watch Workshops	14
Regional Economic Impact Assessment	18
Part 2: Country by Country Assessments throughout Latin America	20
México	20
Case Study 1. Whale Watching in the Lagoons of Baja	24
Guatemala	25
Belize	26
El Salvador	27
Honduras	28
Nicaragua	29
Costa Rica	30
Panamá	32
Colombia	33
Venezuela	35
Ecuador	37
Perú	40
Case Study 2. The Peruvian Experiment: Blueprint for Creating New Whale Watching in Coastal Perú	41
Bolivia	43
Guyana	43
Suriname	44
French Guiana	45
Brazil	45
Uruguay	48
Argentina	49
Case Study 3. Puerto Pirámides, Argentina: Wind-swept Whale Watch Town	52
Chile	53
Case Study 4. Antarctic Whale Watching Tourism: Capturing the Antarctic Market	55
Conclusion	57
References	58

Executive Summary

In local communities throughout Latin America, whale watching is making a vital socioeconomic contribution. It has been nearly 10 years since whale watching has been assessed throughout this region (for the year 1998, in Hoyt 2001), although individual countries and communities are making their own important assessments in Argentina, México, Costa Rica and Venezuela. The present study has collected and analyzed data from a wide variety of sources, including surveys, to present a detailed picture of whale watching numbers, expenditure and socioeconomic benefits in each country within the region.

In summary, whale watching in Latin America has shown strong, steady growth since 1998, increasing at an average rate of 11.3% per year (1998-2006). This is three times the rate of world tourism and 4.7 times the rate of Latin American tourism over approximately the same period. Currently, 885,679 people per year are going whale watching in Latin America, spending USD \$79.4 million in direct expenditure (ticket prices) and USD \$278.1 million in total expenditure.

However, according to surveys conducted by Marisol Rivera and her colleagues (2007) at four key whale watch locations in México, tourists would be willing to pay substantially more for their whale watch tours. These "willingness to pay" studies are important in terms of identifying the "consumer surplus" which is a way to estimate how valuable whale watching is, beyond the basic tourist expenditure. At Laguna San Ignacio, for example, whale watchers said they were willing to pay USD \$100 for a tour that only cost them USD \$40, giving a substantial consumer surplus of USD \$60 per whale watcher. A consumer surplus of more than twice the actual cost of a whale watch trip was also found in Massachusetts, USA, in 1996.

The tourist expenditure on whale watching goes to 91 communities in 18 countries, nearly all of which are outside the main cities and industrial centers of Latin America. In 1998, there were only 56 communities offering whale watching in 8 countries attracting 376,484 people, so the 2006 numbers show strong, steady growth. There are at least 786 whale watch operations using a minimum of 1,189 boats of all sizes, an average of 1.5 boats per operator.

In addition to whale watch tours, whale festivals and workshops are being held all across Latin America. There are currently 12 annual festivals in 5 countries, attracting 46,000 people and bringing in an estimated USD \$1,995,200. In 2006-07, 22

workshops related to whale watching were also held, costing USD \$216,433.

Argentina currently has the most whale watchers, 244,432 per year, followed by Brazil (228,946), México (169,904), Costa Rica (105,617) and Ecuador (42,900).

In the decade since whale watching numbers in Latin America were last recorded (1998), the cumulative total number of whale watchers in Latin America has reached an estimated 6.4 million people.

Five countries in Latin America experienced very rapid double digit annual growth over the period 1998 to 2006: Costa Rica (74.5%), Chile (19.5%), Ecuador (17.8%), Colombia (17.6%) and Argentina (14.3%).

In one country, Costa Rica, with 74.5% average annual increase between 1998 and 2006, growth was so rapid as to produce concerns about possible future oversupply, price wars and too many boats around whales. It will require careful management. With the exception of a few areas in Argentina, Ecuador and México, whale watching is still relatively young in Latin America and much has been learned by seeing the positive examples of Península Valdés, Argentina, and the gray whale lagoons of México, as well as the mistakes in North America and elsewhere.

The whale watch opportunities in Latin America are outstanding and diverse: blue whales off Chile and México; southern right whales nudging the shores off Argentina, Uruguay and Brazil; and rivers and nearshore waters all over the continent populated with various dolphins. Some 64 species of whales, dolphins and porpoises (cetaceans) – 75% of the 86 known cetacean species - are found around Latin America and most of them are the subject of one or more whale watch tours.

More than in most areas around the world, whale watching in Latin America is managed within marine protected areas (MPAs). All the countries have research programs, many of them photo-ID and other types of research associated with whale watch operations. Seven countries have whale watch regulations. Thirteen countries are members of the International Whaling Commission (IWC) and many of them have delegates who contribute actively on whale watching and whale and dolphin research. All Latin American countries (with the exception of the territory of French Guiana) have signed the Convention on Biological Diversity (CBD) which advocates the sustainable use of wildlife resources through whale watching and other wildlife tourism.

Senior Author's Note and Acknowledgments

The numbers presented in this report are best estimates based on data collected from operators, tourism ministries and researchers. As much as possible, multiple sources were obtained to verify numbers, although often the numbers were contradictory. The "comfort zone" with the data is that every effort has been made to present conservative numbers. Thus, the numbers reported represent a reasonable minimum estimate of the current level of whale watching activity and the gross output or turnover of the industry in Latin America.

It is important at the outset to say what this report is not. It is not intended to present the total economic value of whale watching. To do that, it would be necessary to account for costs in the industry, including expenses and loss of opportunity, termed opportunity costs, and to look at how whale watching has affected every sector of local economies. Only a few such studies have been undertaken in individual communities (e.g., in México) and they are cited. Instead this report tries to estimate the growth of whale watching in the region, benchmarked against previous reports, based on the numbers of whale watchers. In addition, as an indication of the importance of whale watching in each area, calculations are made of direct expenditure (the number of tickets sold) and indirect expenditure (considered to be the non-ticket expenditure incurred in order to go whale watching). The definition used here for indirect expenditure differs from that generally used in economic research. However, going back to the first reports on whale watching in the early 1980s, indirect expenditure has been defined in this narrow way for whale watchers. For consistency, we have kept that definition. The total expenditure from whale watchers is an indication of gross expenditure from whale watch tourists paid to operators and to the community to see whales and dolphins but it does not equate to profit arising or to net revenue.

Whale watch numbers and expenditure are easily understood gross measurements of the importance of an industry and are widely understood by the public, journalists, politicians and government ministries. They are less useful in terms of showing communities how they could increase their profits or whether it makes sense to expand capacity or raise prices. The few studies which are cited are a start but we need more socioeconomic research in the region to help whale watching become truly sustainable and as valuable as it could be for local communities, for governments eager to encourage

tourism and inflow of foreign capital, and, indirectly in terms of conservation benefits, for the whales and dolphins themselves.

Many people must be acknowledged in the research for this report. First and foremost is Miguel Iñíguez whose patience, hard work and persistence and always friendly demeanor make him the best colleague that could be imagined.

The excellent work and helpful assistance of Marisol Rivera Planter in México was absolutely essential. She went far beyond her job description to help. Thanks are also due to the many anonymous tour operators from every country who filled out survey forms and contributed substantial amounts of data.

Special thanks are also due to the following, listed alphabetically by country. Argentina: Vanesa Tossenberger, Cecilia Gasparrou, Marta Hevia, Jimena Belgrano and Cristián de Haro (Fundación Cethus), Prefectura Naval Argentina, Eduardo Iglesias, Javier Figueroa, Lorena Prieto, Cota Cero Buceo, Diego Taboada, Mariano Sironi and Roxana Schteinbarg (ICB), Gabriel Cartagena, Jorge Combina, Claudia Combina, Chantal Torlaschi, Laura Vaz, Lorena Leonett, Mauricio Failla, Milko Schwartzman, Antonio Torrejón, Daniel Pascualini and Noemí Corral (Gerencia Administradora Península Valdés), Juan Copello, Oscar Comes, Sebastián Romero, Alessandra Viggiano Marra, Fondo Argentino de Cooperación Horizontal staff. Brazil: José Truda Palazzo, Jr., Karina Groch and Audrey Correa (Projeto Baleia Franca), Jose Martins, Jr. (Projeto Golfinho Rotador), Pablo Faget, Paulo Flores, Julio Cesar, Regis Pinto de Lima, Ze Luis, Paulo Sapienza, Fabiano Stocco. In Chile: Elsa Cabrera and Bárbara Galletti (CCC), María José Pérez Alvarez and Rodrigo Moraga Zúñiga (Fundación Eutropia), Rodrigo Hucke-Gaete (Universidad Austral de Chile and Centro Ballena Azul), Raúl Herrera, Ignacio Valdés Ossa, Juan Alcayaga, Julio Carmona, Pablo Negri, Roberto Andrade. From Colombia: Fernando Trujillo (Fundación Omacha), Lilián Flórez-González, Juan Capella and Patricia Falk (Fundación Yubarta), Jimena Nieto Carrasco, Sarita Kendall, Cesar Isaza Vásquez. Costa Rica: Fundación Vida Marina, Javier Rodríguez Fonseca (PROMAR), Jenny Asch, José Joaquín Calvo Domingo, Lenin Oviedo, Mario Coto Hidalgo, Andrea Montero Cordero (Fundación Keto), Marco Loaiza "Taboga". Ecuador: Cristina Castro (Pacific Whale Foundation Ecuador), Mariela Salguero, Ben Haase, Raúl García, Michel Guerrero. El Salvador: Armando Navarrete Soriano (ICMARES). Guatemala: Franklin Herrera (CONAP), Eduardo Capmany. Honduras: Sandra

Andraka, Gabriela Pineda. México: Beatriz Bugeda and Marcela Romero (IFAW), Jorge Urbán, Astrid Frisch, José Angel Sánchez Pacheco, Lorenzo Rojas Bracho, Karel Beets Vigil. Nicaragua: Dip. Edwin Castro Rivera, María Antonieta Rivas Leclair, Raomír Manzanarez, Milton G. Camacho Bonilla. Panamá: Claudio Carrasco, Gabriel Despaigne, Katuska Martínez, José Julio Casas, Estela de Vargas, Pantaleón Fernández, Alexis Peña, Benjamín Walker (MarViva), Héctor Guzmán (Smithsonian Institute), Anna Núñez, Iker Lasa Tribaldos, Laura May Collado. Perú: Stefan Austerhmühle. Suriname, French Guiana, Guyana: Monique Pool, Carlos Drews (WWF), Marie Felix, Laurent Kelle. Uruguay: Rodrigo García Píngaro (OCC), Antonio D'Ambrosio (Ministerio de Turismo y Deporte del Uruguay). Venezuela: Jaime Bolaños (SeaVida). For Antarctica: Rodolfo Werner Kinkelin, Jim Barnes, Marisol Vereda, Ricardo Roura, Sarah Dolman, Rob Lott.

Additional thanks for important leads and other information to Gema Rodríguez (Acciónatura) and

Melissa Singh, Janna Sears and Naomi Rose (Humane Society International). Advice and support came from Nicolas Entrup. I would like to acknowledge the work of Simon O'Connor and others at Economists@Large for their excellent reports on whale watching in Australia and New Zealand.

Huge gratitude for the superb design and layout in the three language editions goes to Roman Richter. Translations were skillfully prepared by Cecilia Gasparrou (Spanish) and Anne Crowder (French).

This project could not have been undertaken without the collaboration of WDCS, IFAW and Global Ocean. For this smooth partnership, I must thank Patrick Ramage, Beatriz Bugeda and Kelvin Alie (IFAW), Melanie Salmon (Global Ocean) and Chris Butler-Stroud and Andy Bool (WDCS), and of course Miguel Iñíguez (Fundación Cethus).

Erich Hoyt

Guide to Terms Used and Explanations of Data Presented

Whale watching (WW): Commercial tours by boat, land or air to see any of the 86 species of whales, dolphins and porpoises in their natural habitat.

Country profiles for each country include data on Population, Total Area, GDP/PPP, and Real Growth Rate extracted from Infoplease, www.infoplease.com, except as noted below. All monetary sums are in US dollars (USD).

Country Name: English-language name of country with the country's own name for itself, immediately below.

Population: Latest population figures.

Total Area: Size of country.

Tourist Arrivals: Annual number of visits by air, sea, and overland. Includes both leisure/holiday and business visits, but not same-day excursions, only overnight. Please note that data on arrivals are extracted from the World Tourism Organization (WTO 2007) for the most recent year available, 2005. The percentage change is shown with comparison to the previous year, 2004. Some countries report only incomplete statistics but wherever possible preference is given to visitors by country of origin. Arrivals represent the number of visits to a country, so a single visitor re-entering a country will be counted each time as a separate arrival.

GDP/PPP: Gross domestic product, or the value of all goods and services produced within a country in a given year. GDP dollar estimates, derived from Purchasing Power Parity (PPP) calculations, are arguably more useful when comparing generalized differences in living standards on the whole between nations because PPP takes into account the relative cost of living and the inflation rates of the countries, rather than using just exchange rates which may distort the real differences in income.

GDP/PPP per capita: Gross domestic product derived from the Purchasing Power Parity divided by population of the country.

Real growth rate: The growth rate of the economy per capita.

Environmental Performance Index: The 2008 Environmental Performance Index (EPI), compiled by the Yale Center for Environmental Law and Policy (<http://epi.yale.edu/Home>) ranks 149 countries on 25 indicators tracked across six established policy categories: environmental health, air pollution, water resources, biodiversity and habitat, productive natural resources and climate change. The EPI identifies broadly-accepted targets

for environmental performance and measures how close each country comes to these goals. As a quantitative gauge of pollution control and natural resource management results, the Index offers a tool for improving policymaking and shifting environmental decisionmaking onto firmer analytic foundations.

Main WW Species: This category refers to main species watched – the species regularly seen on commercial whale watch trips. It is not a complete list of species for a country, nor is it always the most common species found in a country's waters.

Year WW began: The year whale watching with some commercial aspect started in the country's waters.

Types of WW: This category broadly defines the types of whale watching that occur, and is drawn from the following list – large whales, dolphins, porpoises, boat-based, cruise ships, air, land-based, educational, photo-ID research. Educational and photo-ID research refers to activities specifically carried on in conjunction with commercial whale watching.

WW Numbers & Visitor Expenditure: Tables for each country charting the growth of whale watching from 1991 to 2006. Larger numbers for expenditure in previous periods (1991, 1994 and 1998) included international air fares if they were part of a package price but with the emphasis of this report on impact in each country, international air fares are not included. In some cases, therefore, the total expenditure will not show as great an increase as might be expected by the increase in whale watch numbers. Statistics for the year 1991, 1994 and 1998 are from Hoyt (2001). 2006 statistics were collected for this report. 2006 currency conversions were made to US dollars (USD) using rates prevailing on Dec. 15, 2007. Please note that 1991, 1994 and 1998 expenditure was converted to dollars at exchange rates prevailing at the time the earlier data were collected.

WWs: Number of whale watchers. These are estimates based on information collected from tour operators, tourism departments, researchers, and a few published accounts. Where possible, estimates have been obtained by several routes and the most conservative or reliable result used. Please note that the numbers of whale watchers, just as the numbers of overall tourists above, represent "watches" or "visits" rather than the number of whale watchers or visitors. In other words, a person who goes whale watching twice will be counted twice. However, it is thought that the number of whale watches, or whale watch events, is only marginally higher than the

number of visitors (whale watchers). There may also be under-reporting of whale watch numbers by operators who have a financial interest in reporting low numbers, either due to possible taxation or anticipated problems with government managers, even though confidentiality was promised for this report.

Average annual growth rate %: These calculations are based on the numbers of whale watches only, not the expenditure, and reveal the average annual percentage increase over the period. This calculation produces numbers which are truer indicators of growth because they are free from inflationary factors and exchange rate fluctuations. This practice of relying upon whale watches as the most reliable indicator of consumer demand is followed by earlier reports (Hoyt 2001; IFAW 2005). Also referred to as the "average annual percentage growth rate" or "average annual rate of increase".

Direct expenditure: Estimated amounts spent on whale watch tours for the year. In most cases, these are based on minimum or average unit cost (ticket price) of the tours – the direct cost of going whale watching. However, package tours, which have all costs included and may be multi-day trips, are also considered as direct expenditure. For direct and indirect expenditure, assessments have been made for the motivation of whale watchers taking the tours, the distance and cost of travel, whether overnight stay was necessary, when they decided to take the trip (on site, the day before, or before leaving home) and how important cetaceans were in deciding to take the trip. The higher the portion of visitors representing dedicated whale watchers, the more the expenditure can be counted. In some cases, such as the Amazon, Antarctica and the Galápagos, only a percentage (10 to 50%) of the total number of visits and visitor expenditure is counted. For package whale watch tours in which all costs are included, that figure is used (minus international air fare) for the direct expenditure, plus an estimate provided by the operator of any additional visitor spend to arrive at total expenditure. In a few cases where data for calendar year 2006 expenditure were unavailable, 2005 or split year 2006-07 expenditure was used.

Indirect expenditure: Additional money spent by whale watchers in the course of going whale watching, including food, travel, accommodation, film, special clothing, and souvenirs, but not international air travel. No multipliers are used; instead, figures are collected from surveys and may be actual estimates from operators, tourism departments or calculated from current daily spends for domestic and international tourists for given

areas of a country. This is the original term used in whale watch studies since the early 1980s to describe the additional funds spent by whale watchers. In most economic studies, however, "indirect expenditure" refers to the expenditure that tour operators and other businesses make when they buy goods and services as inputs to their activities. For consistency with earlier whale watch reports, however, we use the original terminology adopted for whale watching.

Total expenditure: The sum of direct and indirect expenditure.

Minimal: This means that some whale watching activity is going on but that the amount of whale watching or the associated expenditure is small, sporadic and difficult to measure precisely.

Ops (Operators): Number of companies, cooperatives or individuals offering tours with at least some whale and dolphin watching.

Boats: Number of boats with at least some whale or dolphin watching.

% Counted: Marine nature tours or general cruises with some whale watching component are counted in the approximate percentage that whales or dolphins are a key part of the visitor motivation, attraction and experience of the trip. Some trips merit counting only in a percentage of 10-50%. In that case, the numbers of passengers as well as their direct and indirect expenditure is counted at the same percentage level.

Unit Price: Average or typical ticket price for whale or dolphin watching in USD \$.

WW Socioeconomic Profile: The socioeconomic profile reveals information on the kinds and origins of tourists going whale watching, the operators and the trips that they offer, as well as benefits that can be found in local communities. These profiles function as a series of colorful snapshots that provide sample insights into the many socioeconomic benefits from whale watching. Each socioeconomic profile distills the findings of existing socioeconomic studies that have touched upon whale watching from that area as well as the findings made through the survey and interview effort. WTO data are summarized for tourists coming from key countries and world regions (market share percentage), and some notes are given about trends from 2001 to 2005 (World Tourism Organization 2007). All items not cited are based on research for this report.

Part 1: Whale Watching in Latin America: The Big Picture

Introduction

This report focuses on the 20 countries of Latin America with whale, dolphin and porpoise (cetacean) populations along their coasts, offshore and in their rivers. It covers all of continental South America, Central America and México, but not the island nations and territories of the Caribbean. 18 of the 20 countries¹ have at least some commercial whale watching.

The interest in all aspects of whales and dolphins is deep and growing in Latin America: from local researchers, marine park and protected area managers, local and national conservation groups (NGOs), local communities and government officials and ministries at various levels. Most of the countries have laws to protect cetaceans although only 7 have specific laws regulating whale watching (Table 1). As of March 2008, 13 countries were members of the International Whaling Commission (IWC): Argentina, Belize, Brazil, Chile, Costa Rica, Ecuador, Guatemala, México, Nicaragua, Panamá, Perú, Suriname and Uruguay. 95% of all whale watching in Latin America occurs in the IWC countries; only Colombia, Venezuela and Bolivia have significant amounts of whale watching outside the IWC.

Latin America has some of the world's most outstanding yet diverse whale and dolphin watching and marine nature locations:

- The gray whale lagoons of México are unique in the world – nearly enclosed salt-water lagoons in the desert where gray whales come to mate and raise their calves in full view of spectators.
- Ecuador has the magnificent Galápagos – a good place to see dolphins and sperm whales although they are only a small part of the attraction in this natural laboratory of evolution.

- Costa Rica has whales and dolphins living on both the Pacific and Atlantic (Caribbean) sides of its coasts with outstanding tropical forest parks and protected areas in between.
- Coastal Brazil has important marine protected areas (MPAs) for humpback and southern right whales, and spinner, bottlenose and tucuxi dolphins.
- The Amazon has up to three species of river dolphins (*Inia geoffrensis*, *Inia boliviensis* and *Sotalia fluviatilis*) inhabiting interior parts of six countries: Brazil, Colombia, Ecuador, Perú, Bolivia and Venezuela.
- Argentina has the wild, rugged Peninsula Valdés, a mecca for whale watchers in search of southern right whales spyhopping and orcas hunting sea lions and elephant seals along the coast.
- The southern fjords of Chile have several species of rare, endemic South American dolphins. Chile and particularly Argentina are also gateways to the Antarctic, reaping the benefits from more than 37,000 high-paying tourists, most of whom spend several days in the country before their trip.

The goal of this report is to chart the growth of whale watching in all its different forms, and to uncover the socioeconomic value that this growth is producing in nearly every Latin American country. First we will talk about the various forms.

Boat-based Whale Watching

Most whale watching worldwide as well as in Latin America is boat-based. In 1998, 72% of the world's whale watchers used boats, while 28% was land-based and only 0.001% was aerial whale watching from planes and helicopters. In Latin America as of 2006, based on the numbers of people going whale watching, 86.3% was boat-based.

Table 1. Whale Watch Attributes of Latin American Countries

Country	Ops	Boats	Communities	MPAs with cetaceans (+ proposed)	Laws for WW	IWC member	Party to CBD
México	206	426	14	EEZ sanctuary + 5 +1 proposed MPAs	Yes	Yes	Yes
Guatemala	1	1	1	0	No	Yes	Yes
Belize	4	4	2	3 +1 proposed MPAs	No	Yes	Yes
El Salvador	1	1	0	0	No	No	Yes
Honduras	2	2	1	0	No	No	Yes
Nicaragua	4	23	1	1 MPA	No	Yes	Yes

¹ The 20 "countries" are actually 19 countries and 1 territory: French Guiana.

Country	Ops	Boats	Communities	MPAs with cetaceans (+ proposed)	Laws for WW	IWC member	Party to CBD
Costa Rica	52	76	9	5 MPAs	Yes	Yes	Yes
Panamá	81	81	6	4 MPAs	Yes	Yes	Yes
Colombia	36	125	7	2 +1 proposed MPAs	No	No	Yes
Venezuela	123	132	9	1 +1 proposed MPAs	No	No	Yes
Ecuador	119	119	6	EEZ sanctuary + 4 MPAs	Yes	Yes	Yes
Perú	10	12	3	2 +1 proposed MPAs	No	Yes	Yes
Bolivia	3	3	1	1 MPA	No	No	Yes
Guyana	0	0	0	0	No	No	Yes
Suriname	4	4	1	0	No	Yes	Yes
French Guiana	0	0	0	0	No	No	No
Brazil	44	62	13	17 MPAs	Yes	Yes	Yes
Uruguay	5	5	1	3 proposed MPAs	Yes	Yes	Yes
Argentina	32	53	9	16+1 proposed MPAs	Yes	Yes	Yes
Chile	59	60	7	proposed EEZ + 6 +2 proposed MPAs	No	Yes	Yes
Total	786	1189	91	2 EEZ sanctuaries + 1 proposed EEZ 67 MPAs + 11 proposed MPAs	7	13	19

Source: Based on data and calculations for this report; MPA (marine protected area) data are from Hoyt (2005a). EEZ = Exclusive Economic Zone; IWC = International Whaling Commission; CBD = Convention on Biological Diversity.

Whale watch boats can be divided into several developmental stages which often mirror the particular stage of whale watching in a given community. In the first stage, the boats are fishing boats or whatever boats may be locally available to be adapted for whale watching; business arrangements for the tours are often improvised. The second stage shows modifications to existing craft to accommodate passengers including seats, deck space for photographers, rain and sun cover, and toilet facilities. The third stage, as whale watching becomes more successful, is an investment in custom-built boats, usually with greater capacity, longer range and improved comfort in terms of handling the sea. These boats may be faster (to get out to the whales) and have a greater range; they may also have video, audio (including hydrophones for underwater listening) and better facilities to entertain and educate whale watchers on their way to and from seeing the whales.

There are at least 1,189 boats used for whale watching all over Latin America (Table 1). This is a conservative estimate of the Latin American whale watch "fleet". As whale watching is fairly young in most of Latin America, many boats belong to the first stage: pangas, adapted fishing boats, inflatables adapted from research use in some cases. The second and third stage boats are largely found in México, Argentina, Chile and the Galápagos. Most of the boats are owned by single operators. There are an estimated 786 operators in Latin America, with an average of 1.5 boats per operator.

Will more and/or better boats lead to greater

financial returns for owners in local communities? Not necessarily. The cost of purchasing, building, or modifying an existing boat must be taken into account, as well as the extra running costs, additional advertising needed to fill the boat, and the time it takes to do all these things as well as a consideration of what the operator could be doing instead. At Puerto San Carlos and Puerto Adolfo López Mateos, México, for example, local boat owners have repeatedly asked for the permit structure to be relaxed to allow more and larger boats to be used for whale watching. But economist Tobias Schwoerer calculated that the additional capacity would tend to drive the price down and thus not increase net benefits. Instead Schwoerer (2007) advised the community to raise the price charged to whale watchers during the peak weekends in order to maximize earnings and manage peak demand. He also advised adopting a two-tier price structure for Mexicans and foreigners as has been adopted successfully in many national parks and protected areas.

Recent studies have focused on the impacts of whale watching from boats (e.g., Bejder *et al.* 2006, Lusseau *et al.* 2006, and Report of the Workshop on the Science for Sustainable Whalewatching 2004). From the socioeconomic perspective, because boats are the main mechanism used to transport visitors to whales, full consideration must be made to mitigate any and all impacts from boats on cetaceans and the marine environment. Such matters must be raised and examined when designing and building new boats,

debating the use of multiple small boats as opposed to single larger boats, and for determining track routes – where and when to take tourists to see whales, how to approach the whales and how long to stay. Ideally, whale watch areas should be established as part of a larger zoning plan that incorporates the idea of precautionary management of whales and dolphins and the marine environment. "One third time and space" rules are recommended, whereby one third of each whale watch day and one third of the area used by the whales and dolphins are closed to whale watch boats so the animals are left alone (Hoyt 2007a, b). This precautionary approach would help ensure whales do not habituate to boats and people and are not harmed by too much boat-based whale watching.

Land-based Whale Watching

Land-based whale watching has a long tradition going back to the late 1940s when students in San Diego watched and counted gray whales from the rooftops of the University of California. By the 1980s, hundreds of thousands of whale watchers were watching from many headlands, lighthouses and lookouts along the California coast. Land-based whale watching has a considerable following in many countries: Australia, eastern Canada, South Africa and Ireland. In 1998, 28% of all whale watching worldwide was land-based (Hoyt 2001). Relatively little of this, however, was in Latin America, and even today land-based whale watching remains on a small scale in Latin America. An estimated 13.7% of all whale watching in Latin America in 2006 was land-based, most of it in Argentina.

The economic impact from land-based whale watching is much less per person than for boat-based whale watching. A frequent comment is that land-based watching is less reliable and too casual to arouse much interest or to capture significant revenue. However, in South Africa and Australia, for example, there are land-based whale watch tours with naturalist guides along with special events that can attract tens of thousands of people. Some of these are extended tours and provide opportunities for earning substantial income.

Land-based watching provides an alternative for those who don't want to go to sea and it can give many people a taste for whale or dolphin watching. It also works well in tandem with boat-based watching, extending what would be only a boat trip to an opportunity to make a package trip including both land and boat-based tours. The great advantage of land-based whale watching is that it doesn't add

to pressure on the whales and dolphins or the marine environment. In some areas, of course, large numbers of people could adversely affect the coastline, and this needs to be monitored and controlled, too, but for the most part, land-based whale watching is low-impact (Hoyt 2007a, b).

Land-based whale watching needs little investment except in some cases a vehicle to bring people to key areas along the coast. However, investment in land-based watching can reap benefits with established viewing platforms offering basic shelter, a built in hydrophone listening station (hydrophone permanently mounted offshore), telescopes, and the presence of a naturalist guide (Hoyt 2007a, b). In some areas of the world, whale watch centers have been built along the shore to offer a land-based whale watching viewing platform as well as a small museum or hands-on center with meeting room or theatre where visitors and the local community can learn more about whales and dolphins. This may not work in rural areas; consideration must be given to the kinds of tourists that are attracted and whether such a center would appeal to ecotourists. This idea has the potential to provide another "attraction" to bring people to an area.

Whale Watch Communities

The number of communities involved in whale watching in Latin America as ports or destinations has climbed from 56 in 1998 to 91 in 2006. This report provides only a starting point indication of the value of whale watching in local communities in Latin America. The value to whale watch operators is suggested in the direct and total expenditure noted as gross output, or turnover. However, there is even greater benefit to local communities as this direct expenditure spreads through the community and is re-spent (IFAW 2005).

A prime example of this can be seen in Puerto López, Ecuador. Before the early 1990s it was a quiet fishing town with up to 3,000 visitors a year coming to the area around Machalilla National Park. In 1994, humpback whale watching started to increase, attracting 1,630 whale watchers, mostly to Machalilla National Park. By 1997, there were 5 hotels, 4 restaurants and 7 whale watch operators. The humpback whale festival which began in Puerto López in 1999 is largely credited with raising the numbers of park visitors. As of 2008, there were 32 hotels, 13 restaurants and 22 whale watch operators with 30 boats. Total number of dedicated whale watchers is currently 20,000 per season with 10,000 people attending the annual festival. The park now receives 30,000 visitors per year.

There are similar stories based around Laguna San Ignacio and the twin communities of Bahía Magdalena in México's Baja peninsula (see p. 22-3) and Puerto Pirámides, Argentina (p. 51-3) and there are newer examples of rural communities that may develop in this way in Chile, Costa Rica and Brazil.

Another positive development is the number of whale watching communities located near protected areas. There are 67 MPAs with cetacean habitat in Latin America and 11 more proposed (Hoyt 2005a) (Table 1). On the evidence of Latin America, it would appear that whale watching conducted within the framework or guidance of a national or marine park or marine protected area (MPA) has the potential to be better managed, regulated, able to capture significant visitor expenditure and able to achieve higher quality in terms of the tour and visitor experience. Good examples are El Vizcaíno Biosphere Reserve and Loreto Bay National Marine Park in México, Península Valdés in Argentina, and Machalilla National Park in Ecuador.

Visitors to the National Marine Park of Fernando de Noronha, in Brazil, provide income through tourism to the people of the main island at Vila dos Remédios. Since the advent of the spinner dolphin trips in the 1980s, the community has grown tremendously with 20 new restaurants, 40 new tour companies, 20 new souvenir shops and 120 new hotels and motels serving the visiting public. None of these would exist without the popularity of the spinner dolphins.

Most whale watching communities are far outside the main economic centers of Latin America, so whale watching is effectively contributing to rural economic development and to the transfer of significant sums from foreign and urban locations to remote areas; examples include Patagonia, Baja, the southern fjords of Chile, the Amazon, and Bahía Drake, Costa Rica. The vision of rural communities as bridges to bring largely urban tourists to the sea and exposing them to whales, dolphins and the problems of the marine environment is alive in Latin America (Hoyt 2005b, c). Yet much more needs to be done to accomplish the goal of teaching people to respect and want to care for wild nature.

Whale watch communities can also offer huge benefits in terms of local educational activities. Some operators and local conservation groups have developed outreach programs in schools and the community, providing students the opportunity to see whales and dolphins, to learn sailing or other marine skills, and to experience firsthand the

feeling of stewardship of the sea. The interaction with the outside world provides the chance to practice those skills and in this way many local people become strong defenders of whales and dolphins and the marine environment.

Whale Festivals

Whale and dolphin festivals have a special place in the hearts of Latin Americans (Table 2). They are staged at various scales attracting from as few as a 75-100 people to more than 10,000. Most last a day; one, for example in Santa Catarina State in Brazil, lasts a month. At least two in Baja California have been going on annually for about 15 years. Many feature whale watch tours but others occur out of season – giving special thanks for a good whale watch year or a preview for or opening to the next season. Festivals can be a rallying point for a local community, bringing locals together to show off their whales, their location and way of life to the outside world in a relaxed, fun atmosphere. More than anything, however, they are great community celebrations based around the charismatic power of whales and dolphins.

The socioeconomic value from whale festivals is diverse and extensive. The expenditure by the organizers can range up to USD \$50,000. The expenditure by participants is typically much smaller, but the benefits from the positive shared experience and exposure to whales and whale watching can often be felt for years to come through successful "branding" of a location as a place on everyone's "must visit" list. Festivals also have the power to launch a whale watch industry, with the best sort of word-of-mouth advertising for whales and dolphins, introducing people to the fun of whale watching. They can quickly take whale watching to a new level. The Humpback Whale Festival of Puerto López, Ecuador, situated in the Machalilla National Park, began in 1999. As mentioned on p. 11, the festival boosted the numbers of overall tourists from 3,000 in the early 1990s to a current level of 30,000 or more. Currently, an estimated 10,000 people a year attend the festival with 20,000 going whale watching throughout the prime humpback season.

In all, the 12 whale watch festivals in five countries attracted more than 46,000 participants in 2006-07. Participants spent an estimated USD \$1,995,200 while organizers financed the events, spending USD \$128,200 (Table 2). Although these figures are incomplete, they suggest a substantial return on investment for local communities holding whale festivals.

Table 2. Whale & Dolphin Festivals in Latin America (2006-07)

Name	Place	Sponsors	Frequency	No. of Participants	Expenditure by Organizers USD (est. for recent festival) ²	Expenditure by Participants USD (est. for recent festival) ³
Argentina						
National Day of the Southern Right Whale	Puerto Pirámides	Town of Puerto Pirámides	Annual in Sept.	1,000-1,500	\$2,000-3,000	\$100,000
Brazil						
Humpback Whale Cultural Week	Caravelas, Bahía	Petrobras, Aracruz Cellulose, Norsul Cia. de Navegação	Annual (since 2001)	5,000	\$33,000	\$36,000
Right Whale Month	Santa Catarina State	Brazilian Right Whale Project, Petrobras	Annual	Variable	\$50,000	Not available
Ecuador						
Humpback Whales Festival	Puerto López	Puerto López – Parque Nacional Machalilla, Cámara de turismo, Gobierno Municipal de Puerto López, Pacific Whale Foundation	Annual (since 1999)	10,000 (7,000 locals; 3,000 int'l)	\$9,000	\$1,000,000
Humpback Whales Festival	Puerto Cayo	Parroquia Puerto Cayo, Cámara de turismo, Gobierno Municipal de Jipijapa	Annual	3,000 (2,000 local; 1,000 int'l)	\$4,000	\$120,000
Humpback Whales Festival	Salinas	Gobierno Municipal de Salinas, Ministerio de Turismo	Annual	4,000 (2,000 local; 2,000 int'l)	\$6,000	\$480,000
Humpback Whales Festival	Sua	Gobierno Municipal de Sua	Annual	3,000 (2,000 local; 1,000 int'l)	\$4,000	\$240,000
México						
Bahía de Banderas Festival	Bahía de Banderas, Nayarít	Nayarít State: tourism board of Bahía de Banderas county	Annual, (since late 90s) includes Whale Photo Contest	<100 (mainly local people)	minimal	Not available
International Gray Whale Festival – San Carlos	Puerto San Carlos, Magdalena Bay, Baja	Local tourism companies	Annual since 1996 (3 days in Feb.-Mar.)	6,000 (70% local; 30% int'l)	\$11,200	\$17,700
Cultural Encounter	Laguna San Ignacio, Baja	ARIC Laguna Baja (assoc. of WW groups working in the lagoon)	Started in 2008 (3 days in Apr.); may become annual	Not available	Not available	Not available

² Reported expenditure by organizers: the estimated funds that organizers and sponsors paid to arrange and hold the festival, including food, accommodation, rental of the venue.

³ Expenditure estimated by organizers based on admission fee, if any, food and souvenirs purchased during the festival, but not including the cost of travel and accommodation.

Name	Place	Sponsors	Frequency	No. of Participants	Expenditure by Organizers USD (est. for recent festival)	Expenditure by Participants USD (est. for recent festival)
International Gray Whale Festival – López Mateos	Puerto López Mateos, Estero Soledad, Baja	State Secretary of Tourism & State Govt.	Annual since 1994 (3 days in Jan.)	Reported 13,000+ (50% local; 50% int'l)	Not available	Not available
Uruguay						
7th Southern Right Whale Week and 5th National Protection Day of the Southern Right Whale	Piriapolis, Punta del Este, La Paloma	IFAW	Annual	1,500	\$4,500	\$1,500

Source: Based on data obtained for this report.

Whale Watch Workshops

Whale watch workshops, more specialized than whale festivals, also have a socioeconomic impact. In this category we are only including workshops focusing on whale or dolphin watching, organized for the benefit of whale watch operators or communities (e.g., this would include stranding workshops for communities). There are many additional workshops on various aspects of whale and dolphin research, as well as annual or biennial conferences held by Latin American marine mammal societies but these are not included here. For workshops, the number of participants is much smaller than for whale watch festivals, ranging from 22 to 150 (Table 3). Still, the best workshops, typically organized by conservation NGOs, have the power to launch or shape a whale watch industry in a community or a country, as they have done in a number of places, and to do so at a high level, ensuring that sustainable, high quality whale watching develops, that it can compete in the market, and that it is able to capture the maximum

value for the community. Whale watch operators are encouraged to train and hire naturalist guides on their boats, to offer broader, more ecological tours, to develop guidelines and regulations to protect the whales and the local environment – all provisions that enable tour operators to achieve and maintain a high quality tour product that can be sold for a higher price (Hoyt 2007a, b). In most cases, the funding for workshops has come from outside the Latin American region and is being transferred to local people which effectively provides widespread local benefits to encourage the development of sustainable tourism.

In 2006-07, 1,349 participants attended 29 workshops in 10 countries all over Latin America. Most of the workshops were free but participants often had to pay their own transportation and other costs to attend the meeting. The organization of these workshops cost the sponsors approximately USD \$216,433. In many cases, the funding came from outside of the country where funds were spent (Table 3).

Table 3. Whale & Dolphin Watching Workshops in Latin America (2006-07)

Name	Place	Sponsors	Date	No. of Participants	Expenditure by Organizers (est.) USD ⁴	Expenditure by Participants (est.) USD ⁵
Argentina						
2nd International Summit for Whale Watching Tourism Operators	Puerto Madryn and Puerto Pirámides	IWWA, Muluc Patagonia, Banco del Chubut S.A., Aluar S.A.I.C., Yenelen, Cuyun-co, Turismo SRL & local operators	Jul. 31-Aug. 4, 2006	75	\$10,000	\$35,000

⁴ Expenditure by organizers is the estimated funding that the organizers and sponsors paid to support the workshop, including participants' expenses, speaker fees, food, accommodation, rental of the venue.

⁵ Expenditure by participants: the amount each participant spent to join the workshop, including travel, food, accommodation, as well as any fee required to participate in the workshop.

Name	Place	Sponsors	Date	No. of Participants	Expenditure by Organizers (est.) USD	Expenditure by Participants (est.) USD
7th Encounter of WW Captains	Península Valdés	IFAW, ICB and Pto. Piramides Municipality	Sept. 2006	75	\$2,500	Not available
8th Encounter of WW Captains	Península Valdés	IFAW, ICB & Pto. Pirámides Municipality	Sept. 2007	60	\$2,000	Not available
Brazil						
3rd International Summit for Whale Watching Tourism Operators	Imbituba	IWWA, Embratur, local government and operators	Sept. 15-19, 2007	75	\$10,000	\$35,000
Chile						
Responsible Whale watch Workshop	La Serena	FOAR (Fondo Argentino de Cooperación Horizontal), SERNATUR, Coquimbo Town Hall, Fundación Cethus, WDCS	Dec. 2007	40	\$11,000	Not available
Guatemala						
Whale Watch Workshop	Guatemala	CONAP (Consejo Nacional de Areas Protegidas), WDCS, Fundación Cethus, FONACON, Instituto Guatemalteco de Turismo, MonteCarlo Verde Foundation	Apr. 2006	41	\$7,300	0
First Symposium on the Biology and Conservation of Cetaceans of Central America	Antigua	CONAP, WDCS, Fundación Cethus	Oct. 2006	90	\$5,320	\$8,100
Educational Whale watching Tour with Journalists	Guatemala	CONAP	Apr. 2007	30	\$1,000	0
Stranding Workshop	Guatemala	FOAR (Argentina), WDCS, Fundación Cethus, CONAP	Sept. 2007	30	\$5,200	0
México						
Bahía de Banderas Humpback Whale Symposium	Puerto Vallarta/ Nuevo Vallarta, Bahía de Banderas, Nayarít	Ecotours de México	Every 2-4 years since 2002; next one in 2008	40-100 (WW tour ops, researchers, students, govt. reps)	minimal	0
Big Whales Disentanglement Workshop	Bahía de Banderas	Nat'l Marine Sanctuaries Hawaii, Hotel Marival Nuevo Vallarta, Instituto Tecnológico de Bahía de Banderas, SECTUR Nayarít	2006	50	Not available	0
Laguna San Ignacio Ecosystem Science Program Workshop	Kuyima, Laguna San Ignacio	Marisla A.C., Pacific Life, Universidad Autónoma de Baja California Sur (UABCS), Ecoturismo Kuyimá	24 Feb. 2007	Ecotour operators, fishers, local residents	Not available	Not available

Name	Place	Sponsors	Date	No. of Participants	Expenditure by Organizers (est.) USD	Expenditure by Participants (est.) USD
Nicaragua						
Whale watch Workshop	Managua	Ministerio del Ambiente y Recursos Naturales (MARENA), WDCCS, Fundación Cethus, USAID, USA Forest Service, CLUSA, CANATUR, Budget Rent a Car	Apr. 2006	70	\$8,366	Not available
Whale watch workshop	San Juan del Sur	FOAR (Argentina), MARENA, WDCCS, Fundación Cethus	March 2007	40	\$5,000	0
Panamá						
Conference on whale watching	Ciudad de Panamá	Universidad Marítima Internacional de Panamá (UMIP), WDCCS, Fundación Cethus	Aug. 2007	40	\$5,000	Not available
Responsible Whale Watch Workshop	Ciudad de Panamá	UMIP, Autoridad Marítima Panamá (AMP), Instituto Panameño de Turismo (IPAT), ANAM, FOAR (Argentina)	Oct. 2006	40	\$5,000	Not available
Whale Watch Workshop	Bocas del Toro	Administración Nacional del Ambiente (ANAM), WDCCS, Fundación Cethus	Sept. 2006	30	\$5,000	Not available
Perú						
Informational Workshop on the Feasibility of Dolphin Watching as an Economic Alternative	Lima	Humane Society International (HSI), Mundo Azul, Perú Tourism Board, US State Dept.	Apr. 2006	40	\$9,396	0
Informational Workshop on the Feasibility of Dolphin Watching as an Economic Alternative	Trujillo	HSI, Mundo Azul, Perú Tourism Board, US State Dept.	Apr. 2006	40	\$9,396	0
Informational Workshop on the Feasibility of Dolphin Watching as an Economic Alternative	Iquitos	HSI, Mundo Azul, Perú Tourism Board, US State Dept.	Apr. 2006	40	\$3,707	0
Training Workshop on How to Conduct a Police Raid of Illegal Dolphin Meat Markets	Lima	HSI, Mundo Azul, National Police (Tourism & Ecology Dept.), US State Dept.	Nov. 2006	37	\$4,628	0
Training Workshop on How to Conduct a Police Raid of Illegal Dolphin Meat Markets	Trujillo	HSI, Mundo Azul, National Police (Tourism & Ecology Dept.), US State Dept.	Dec. 2006	37	\$4,628	0

Name	Place	Sponsors	Date	No. of Participants	Expenditure by Organizers (est.) USD	Expenditure by Participants (est.) USD
Training Workshop on How to Conduct a Police Raid of Illegal Dolphin Meat Markets	Chimbote	HSI, Mundo Azul, National Police (Tourism & Ecology Dept.), US State Dept.	Dec. 2006	37	\$4,628	0
Whale and Dolphin Watching: An Opportunity for Sustainable Coastal Development and Conservation	Lima	HSI, Mundo Azul, US State Dept.	Feb. 2007	80	\$26,864	0
Uruguay						
5th Workshop on Responsible Tourism for Whale Watching	Punta del Este	Dirección Nacional de Medio Ambiente, Prefectura Naciona Naval Punta del Este, Min. de Turismo y Deporte, Organización Conservación Cetáceos (OCC)	Sept. 2006	15	\$500	0
2nd International Workshop on the Sustainable and Non-lethal Use of Cetaceans	La Pedrera, Rocha	ICB, IFAW, OCC	Apr. 2007	150	\$52,000	Not available
Governmental and OCC Workshop for Whale Watch Captains	Punta del Este	IFAW (addressing law decree 261/02)	Jun. 2006 & Aug. 2007 (since 2002)	25/ yr. (for local WW captains)	\$500	\$1250
Venezuela						
Sea Vida's V Training Seminar on Whale Watching	Ocumare de la Costa, State of Aragua	Sea Vida, Fundacite Aragua, Ministry of Science & Technology	Nov. 2006	22 (most participants were locals)	\$4,000	\$440
Sea Vida's VI Training Seminar on WW & I Internat'l Training Seminar on WW	Maracay & Ocumare de la Costa, State of Aragua	FOAR (Argentina), Sea Vida, Fundacite Aragua, WDCS, Fundación Cethus	Sept. 2007	30 (most participants were locals)	\$8,000	\$1,200

Source: Based on data obtained for this report.

The estimated expenditure by organizers and from participants or attendees of whale watch festivals and workshops (Tables 2 and 3) hint at the "value" of these events but do not literally measure that value or the economic impact on the community. In some cases funding came partly or entirely from outside the community or a country, for example from a conservation group or foreign government

agency; in this case the infusion of outside expenditure and benefits could accrue to the community especially if it is regular (e.g., annual) and equitably distributed. Similarly, participants ranged from 100% local to, more frequently, a mix of local, national and international, with a significant portion coming from outside the local economy.

Regional Economic Impact Assessment

Over the past 15 years, whale watching has shown strong, steady growth throughout Latin America. As of 2006, there were 885,679 whale watchers (whale watch visits) in Latin America, with USD \$79.4 million in direct expenditure (ticket prices) and \$278.1 million in total expenditure. Based on the numbers of whale watches, this is an average rate of increase of 11.3% per year for the period 1998 to 2006 (Table 4). At this rate, Latin America will see its one millionth whale watcher sometime in 2008 and by 2010 there will be 1.4 million whale watchers per year (Fig. 1). The annual percentage increase between 1991 and 2006 averages 27.1% due to the very steep increases between 1991 and 1994 when the growth rate was 115.4%. This was unlikely to be sustained and would have been unhealthy had it continued at this rate. The rate since 1994, averaging 11.3% until 2006 shows strong, steady growth and is indicative of the fact that the industry is yet to become mature.

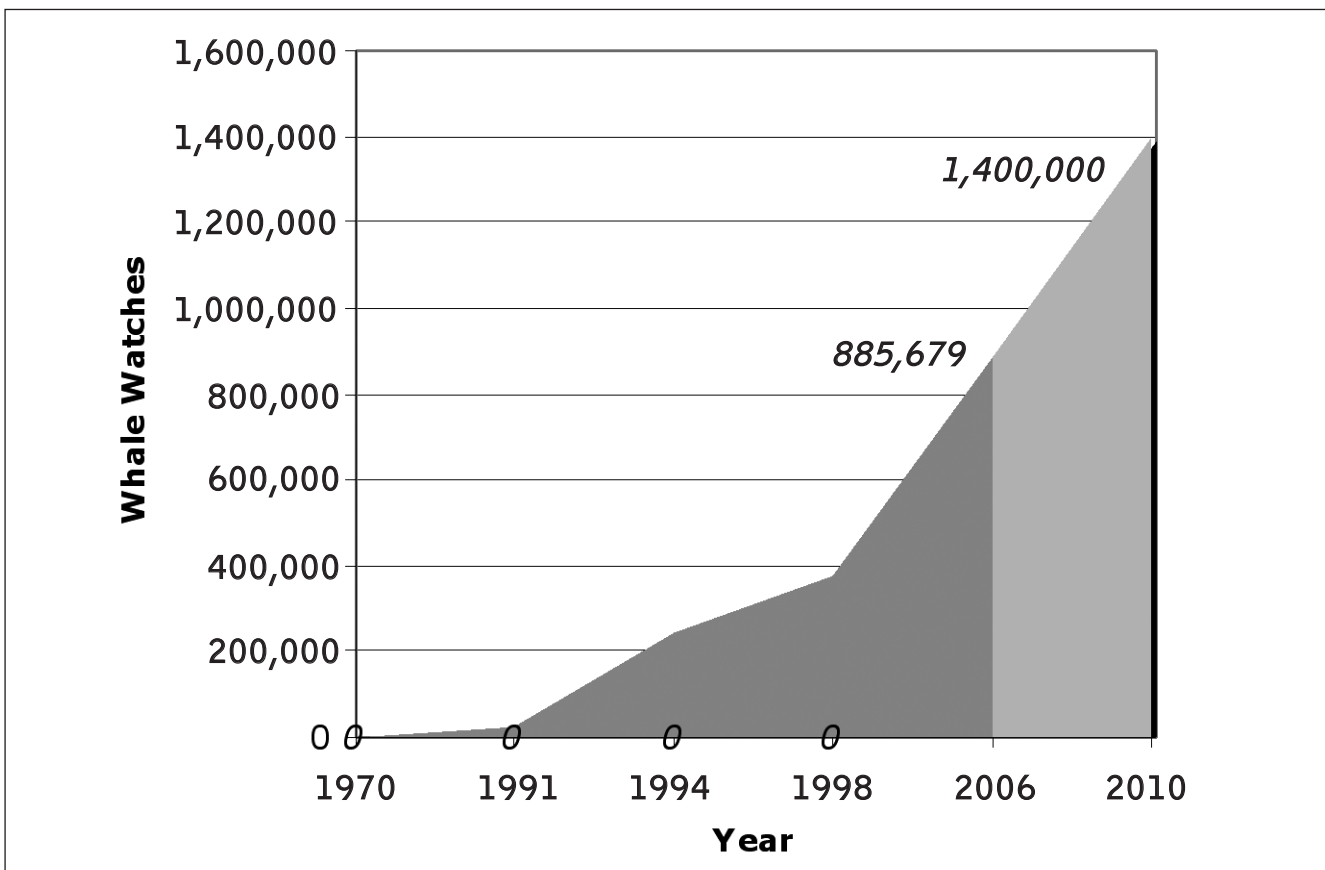
Overall tourism arrival numbers are up throughout Latin America. Among the 20 countries featured in Part 2 of this report, all except three (for which no

data were available) had an increase in arrivals from the previous year (from 2004 to 2005). Some 15 countries had 5% average annual increase or greater, more than the worldwide annual increase, and 12 countries had double digit increases. For most countries this represents a recovery from the period 2001-02, when worldwide tourism dipped due to 9-11. Over the longer period of 1998 to 2005, a similar period for which whale watching has been measured for this report, the average annual increase in overall tourism arrivals was 2.4% per year for Latin America and 3.7% for the world (UNEP 2007).

Thus Latin America's growth rate since 1998 – an average of 11.3% per year (1998-2006) – is three times the rate of world tourism and 4.7 times the rate of Latin American tourism over a similar period. The cumulative effect of such a growth rate is substantial. In the decade (1998-2007) since the last report covering whale watching in Latin America, *Whale Watching 2001* (Hoyt 2001), an estimated 6.4 million whale watches have taken place throughout Latin America.

Table 5 shows the breakdown in whale watchers for 2006 in the countries of Latin America. This summarizes the key country-by-country whale watch data in Part 2 of this report.

Figure 1. Current & Projected Latin American WW Numbers



Source: Based on data and calculations in this report (see Table 4).

Table 4. Latin American WW Numbers & Visitor Expenditure 1991-2006

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	24,418	na	18,447,000	14,445,000	32,892,000
1994	243,892	115.4	29,777,000	48,554,000	78,331,000
1998	376,484	11.5	35,310,918	101,837,082	137,148,000
2006	885,679	11.3	\$79,432,191	\$198,696,023	\$278,128,214

Source: 2006 findings based on data and calculations in this report; for 1991-1998, data are from Hoyt (2001).

Table 5. Latin America WW Numbers, Growth Rate & Expenditure, by Country

Country	WWs	Avg. annual growth rate % ⁶	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
México	169,904	5.8	9,077,843	76,401,220	85,479,063
Guatemala	800	na	104,000	48,000	152,000
Belize	368	1.0	155,000	39,000	194,000
El Salvador	minimal	na	minimal	minimal	minimal
Honduras	minimal	na	minimal	minimal	minimal
Nicaragua	8,832	na	719,808	1,324,800	2,044,608
Costa Rica	105,617	74.5	5,318,487	15,842,550	21,161,037
Panamá	17,711	na	448,025	2,692,350	3,140,375
Colombia	35,000	17.6	3,125,000	5,400,000	8,525,000
Venezuela	9,757	na	240,034	758,625	998,659
Ecuador	42,900	17.8	50,229,000	10,053,700	60,282,700
Perú	586	1.2	120,632	114,800	235,432
Bolivia	400	na	76,000	90,000	166,000
Guyana	0	-	0	0	0
Suriname	1,906	na	88,292	9,530	97,822
French Guiana	0	-	0	0	0
Brazil	228,946	4.0	6,316,288	25,190,550	31,506,838
Uruguay	4,800	na	26,000	99,750	125,750
Argentina	244,432	14.3	2,218,339	59,346,765	61,565,104
Chile	13,720	19.5	1,169,443	1,284,383	2,453,826
Total	885,679	11.3	\$79,432,191	\$198,696,023	\$278,128,214

Source: Based on data and calculations in this report.

As of 2006, the top five whale watch countries in the region in terms of numbers of whale watches are: Argentina (244,432), Brazil (228,946), México (169,904), Costa Rica (105,617) and Ecuador (42,900).

Five countries in Latin America experienced rapid annual double-digit growth over the period 1998 to 2006: Costa Rica (74.5% per year), Chile (19.5%), Ecuador (17.8%), Colombia (17.6%) and Argentina (14.3%).

In one country, Costa Rica, with 74.5% average

annual increase between 1998 and 2006, growth was so rapid as to produce concerns about possible future oversupply, price wars and too many boats around whales. It will require careful management. With the exception of a few areas in Argentina and México, whale watching is still relatively young in Latin America and much has been learned by observing the successful examples at Península Valdés and in the lagoons in México. Perhaps even more has been learned by seeing some of the less successful examples of whale watching in North America and elsewhere.

⁶ Average annual rate of growth is for the period 1998 to 2006.

Part 2: Country by Country Assessments throughout Latin America

México

Estados Unidos Mexicanos

Population: 108,700,891 (2007 est.)

Total Area: 1,972,550 sq km (761,602 sq mi)

Tourist Arrivals: 21,914,917 (2005) (+6.3% on previous year)

GDP/PPP: \$1.068 trillion USD (2005 est.)

GDP/PPP per capita: \$10,100 USD

Real growth rate: 3.0%

Environmental Performance Index: 79.8 (47th in the world)

Main WW Species: Baja California lagoons: gray whale *Eschrichtius robustus*, bottlenose dolphin *Tursiops truncatus*. Ensenada: gray whale *Eschrichtius robustus*, common dolphin *Delphinus* spp, pantropical spotted dolphin *Stenella attenuata*, Pacific white-sided dolphin *Lagenorhynchus obliquidens*. San José del Cabo

and Cabo San Lucas: humpback whale *Megaptera novaeangliae*, bottlenose dolphin *Tursiops truncatus*. Sea of Cortés/ Gulf of California: blue whale *Balaenoptera musculus*, Bryde's whale *Balaenoptera brydei*, fin whale *Balaenoptera physalus*, humpback whale *Megaptera novaeangliae*, minke whale *Balaenoptera acutorostrata*, common dolphin *Delphinus* spp, bottlenose dolphin *Tursiops truncatus*, Pacific white-sided dolphin *Lagenorhynchus obliquidens*. West coast México (Puerto Vallarta/ Bahía de Banderas): humpback whale *Megaptera novaeangliae*, bottlenose dolphin *Tursiops truncatus*, pantropical spotted dolphin *Stenella attenuata*, spinner dolphin *Stenella longirostris*, false killer whale *Pseudorca crassidens*. Yucatán: bottlenose dolphin *Tursiops truncatus*.
Year WW began: 1970 (Baja California).
Types of WW: Large whales, dolphins, porpoises, boat-based, cruise ships, land-based, educational, photo-ID research.

México WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure ⁷	USD Indirect Expenditure	USD Total Expenditure
1991	2,000	na	3,000,000	200,000	3,200,000
1994	12,000	81.7	10,000,000	5,000,000	15,000,000
1998	108,206	73.3	8,736,000	32,902,000	41,638,000
2006	169,904	5.8	\$9,077,843	\$76,401,220	\$85,479,063

México is one of the top ten tourism destinations in the world and the only one in the Americas besides the United States to reach the top ten. This alone ensures that there is a substantial international audience for whale watching. México was the first destination for whale watching outside the United States. The first trips were in 1970 – ships filled with US tourists departing from San Diego on self-contained 7- to 10-day cruises down the Baja California coast to the lagoons (Hoyt 2002). Local Mexicans earned nothing from the trips. But these pioneer journeys at least showed that there was a market for whale watching in México and helped to spread word of mouth. Beginning in the late 1980s, the local Mexicans began earning an income from whale watching from their own boats and it has grown from there into a diverse industry, spreading out from the lagoons to southern and eastern Baja and the mainland coast, especially around Puerto Vallarta.

While most high quality whale watching in México is reported and regulated, there is a substantial amount of casual, unreported whale watching outside the main ports. The unit price for this is lower and often tourists get what they pay for – in general, no naturalists or guides on the boats, less chance that guidelines and regulations are followed, and less dedication to providing high quality whale watch trips. Even with a unit price a quarter of that charged by official boats, there is no doubt that the income from these trips can be helpful for local communities, off-season fishermen and others, but they do not capture the full potential value of whale watching.

México WW Socioeconomic Profile:

WW Tourists

- Overall, tourism is led by USA (92.8%) and Canada (1.7%). Breakdowns for other countries are not reported.

⁷ The decline in per person direct expenditure from 1994 to 2006 is largely due to a change in the business as local tours replaced package tours from San Diego. The expenditure from 1998 and 2006 reflects more accurately the amounts being left in local communities.

- Through the 1970s and 1980s, the whale watch tourists were almost entirely Americans and Canadians. Today, the profile varies a little more by locale with a wider range of Europeans, Japanese, and Mexicans, the latter typically travelling from México City and other large cities to Baja or to the coast around Puerto Vallarta.
- In 1997, whale watchers at Laguna Ojo de Liebre were 27.8% from México, and 72.2% foreigners led by the USA (50.4%), Germany (7.8%), Canada (5.1%), Italy (4.6%) and France (1.4%). At Laguna San Ignacio, the whale watchers were 29.6% from México and 70.4% foreigners, including USA (45.7%), Germany (10.6%), Italy (4.3%), Canada (1.7%), and Belgium (1.7%) (Sánchez Pacheco 1997a).
- In Bahía de Banderas about 10% of the tourists go whale watching every year. This core group looks for high quality trips (good guides, educational tours, small groups) and the spend is USD \$85-\$95 per person.
- Surveys at four key locations in México have revealed that tourists would be willing to pay substantially more for their whale watch tours (Rivera *et al.* 2007). These "willingness to pay" studies are important in terms of identifying the "consumer surplus" which is a way to estimate how valuable whale watching is, beyond the basic tourist expenditure. In this way, we draw closer to uncovering the true value of whale watching in a particular area. We can also say that operators and communities have not successfully obtained all the value that they could from whale watching. Thus, at Laguna San Ignacio, as shown in Table 6, whale watchers said they were willing to pay USD \$100 for a tour that only cost them USD \$40, giving a substantial consumer surplus of USD \$60 per whale watcher. A consumer surplus of more than twice the actual cost of a whale watch trip was also found in Massachusetts, USA, in 1996 (Hoagland and Meeks 1997), but these surveys have not been done with whale watching elsewhere in Latin America.

Table 6. How much whale watchers were willing to pay for WW tours in México

Place	WTP ⁸ in USD	Actual tour cost in USD ⁹	Consumer surplus in USD
Bahía de Banderas	\$79	\$25-65	\$14-54
Bahía Magdalena	78	65	13
Guerrero Negro (Laguna Ojo de Liebre)	71	45	26
Laguna San Ignacio	100	40	60

Source: WTP (willingness to pay) and tour cost data based on Rivera *et al.* (2007).

WW Operators & the Trips They Offer

- There were no dedicated Mexican whale watch operators before the early 1990s, although fishermen were taking some tourists out in the gray whale lagoons using small local boats called pangas, mainly subcontracted by the large visiting American tour operators. In 2007, the whale watch operations in the lagoons were split between American companies largely working out of San Diego and local Mexican companies with significant revenues accruing to Mexicans.
- At Laguna San Ignacio between 1994 and 2002, the viability of local and regional operators improved significantly (Agersted 2006). They became more sophisticated in their product offerings, enhanced their facilities and gained a market share of ecotourism relative to the foreign operators. The operators that sold package tours benefited the most.
- As of 2004, there were five locally based companies offering whale watch day tours, camping, lodging, refreshments, transport and outsourcing. There were 10 foreign companies, all based out of San Diego, offering whale watching and a "live aboard" experience, with only two offering camping or lodging. However, all foreign companies were required to use local companies to conduct whale watch activities (Agersted 2006).
- The various threats and barriers to further development of whale watching, according to Agersted (2006), include unresolved land use conflicts, poor diversification possibilities outside the tourist season, stagnating visitor numbers, poor marketing and business skills among operators, lack of infrastructure, low profit margin for operators and lack of funding for further investment. Agersted presented a broad pallet of strategies to combat these problems.

⁸ WTP = Willingness to pay, or how much whale watchers were willing to pay for a whale watch tour.

⁹ Actual tour cost = the ticket price, or direct expenditure per person.

México WW Breakdown:

Port or location	Ops	Boats	WWs	% counted	Unit Price	USD Direct Expenditure	USD Indirect Expenditure ¹⁰	USD Total Expenditure
Baja – west coast								
Ensenada / Bahía de Todos los Santos	2	8	16,991	100%	25	424,775	7,331,447	7,756,222
Laguna Ojo de Liebre	7	7	10,595	100%	45	476,775	4,532,195	5,008,970
Laguna San Ignacio	8	8	6,816	100%	40	272,640	3,742,191	4,014,831
Bahía Magdalena and Estero la Soledad ¹¹	12	106	11,107	100%	65	721,933	4,792,551	5,514,484
Baja – east coast & Sea of Cortés								
Los Cabos – ships ¹²	10-21	10-21	85,200	100%	60	5,112,000	36,762,948	41,874,948
Los Cabos – pangas ¹³	70	70	13,440	20%	40	537,600	5,799,226	6,336,826
La Paz ¹⁴	-	-	-	-	-	-	-	-
Loreto	4	37	757	100%	50	37,850	326,638	364,488
Bahía de los Angeles ¹⁵	-	-	-	-	-	-	-	-
Puerto Peñasco	-	-	-	-	-	-	-	-
Guaymas	-	-	-	-	-	-	-	-
México west coast mainland								
Puerto Vallarta – Bahía de Banderas	34	57	13,483	100%	65	876,395	8,455,457	9,331,852
Nayarít ¹⁶	56	130	5,515	100%	25	137,875	3,458,567	3,596,442
Yucatán								
Quintana Roo ¹⁷	3	3	6,000	50%	80	480,000	1,200,000	1,680,000
Total	206+	426+	169,904	-	-	\$9,077,843	\$76,401,220	\$85,479,063

Sources: Data for 2006 based on Rivera *et al.* (2007), Schwoerer (2007) and individual operator interviews and survey returns.

The WW Community

- Puerto San Carlos at Magdalena Bay celebrated its "13th International Festival of the Gray Whale" (13 Festival Internacional de la Ballena Gris) from Feb. 29-Mar. 2, 2008. Attendance figures for the 12th Festival were 6,000 people, 70% local and 30% foreign visitors. The festival, held during the gray whale season, offers games, sports and cultural events including artists and singers who contribute their time for the community. The local tourist companies organize and fund the event, and last year the festival earned \$6,500 after expenses which was donated for improvements in the town.

At nearby Puerto Adolfo López Mateos in Estero Soledad, there is a similar gray whale festival held every January (see Table 2).

- On Apr. 18-20, 2008, a new event to celebrate the end of the whale watch season was started at Laguna San Ignacio. Called Encuentro Cultural (Cultural Encounter), it features cultural events such as folk dancing and exhibitions as well as games and sports. The goal is to help integrate the community living around the lagoon. It is organized and funded by ARIC Laguna Baja (Asociación Rural de Interés Colectivo Laguna San Ignacio), a lagoon-based whale watch workers association.

¹⁰ Indirect expenditure was not available for Ensenada, Los Cabos (ships and pangas) and Loreto, so calculations were used from Bahía Magdalena instead. Bahía Magdalena had the lowest ratio of indirect to direct expenditure of all known locations in Baja, so these numbers should be conservative but they are only a rough estimate.

¹¹ Reported numbers were 8,330 but estimates of under reporting here are 25-50%. 25% was added to compensate for the under reporting issue. In 2005, 12,701 visitors came to Bahía Magdalena (Schwoerer 2007) so the figure used above, 11,107 may be considered a conservative minimum.

¹² Estimate based on interviews with 10 key operators at the marina. These are conservative numbers because there are more operators who were not surveyed. Unit price is based on a typical spread of \$45-100.

¹³ Based on interviews with pangueros, 20% of trips focus on whale watching (along with snorkeling, fishing, ocean excursions and parasailing). Unit price is conservative.

¹⁴ Mainly offers tours to Baja lagoons (included in lagoon numbers).

¹⁵ Data are unreported here and at Puerto Peñasco and Guaymas.

¹⁶ WW numbers are probably under reported and the numbers from some operators were unrecorded, so these should be taken as minimum numbers. The indirect expenditure is unknown but a calculation is made based on the per person expenditure at Puerto Vallarta.

¹⁷ Numbers based on 50% of 12,000 people mainly taking whale shark tours on which dolphins were seen from Holbox Island. Indirect expenditure is derived from package price offerings from Mérida or Cancún and should be considered a rough estimate.

- Peter Rossing Agersted (2006) evaluated the impact of ecotourism at Laguna San Ignacio. He found that between 1994 and 2002, ecotourism benefits improved significantly as reflected in rising visitor numbers (50% increase), employment (100%) and local and regional revenue (approximately 70%, or 55% in real terms adjusting for inflation). Social benefits included more cooperation among previously antagonistic stakeholders, a wider distribution of ecotourism benefits, improvement in living standards and broader local support for El Vizcaíno Biosphere Reserve. Agersted found that the local stakeholders were becoming much more involved in tourism-related management activities which gave them a greater sense of empowerment.
- Local people working as guides during the tourism season and fishing the rest of the year were able to earn 50% of their income from the 3-4 months that they worked on whale watch tours in 2002 (Agersted 2006). However, only 14% of local adults were involved in whale watching, with half the workforce coming from Mexican communities outside of the area. Much remains to be done to achieve the goal of El Vizcaíno Biosphere Reserve management to turn tourism into the main source of income to provide an alternative to exploitation of the depleted fishing resources in and around the lagoons. Whale watching is not yet able to help cover El Vizcaíno's administration cost which would be an important goal as part of successful high-value whale watching in a community.
- The "Ecosystem Science Program" at Laguna San Ignacio promotes social awareness and stakeholder participation in the conservation of the marine protected area within El Vizcaíno Biosphere Reserve. It strives to achieve science-based sustainable development alternatives and local economic development in balance with the natural components of the region. The program invites graduate students to help monitor the gray whales' status, their lagoon habitat, and the other marine wildlife as an inter-related system. The overall goal is to establish a long-term ecosystem monitoring program for Laguna San Ignacio.
- Paredes (2006) and Pérez Sánchez *et al.* (2007) investigated the status of whale watching including the socioeconomic aspects around Loreto, La Paz and Los Cabos in the southern Gulf of California. Los Cabos is the area in which the activity is more disorganized, and where most of the companies don't follow the existing guidelines to observe whales. Even though the activity is relatively new in Loreto, the companies there seem to know more about the necessary requirements for offering whale watch trips, mainly due to the effort performed by the Loreto Bay National Marine Park. The companies in La Paz mainly offer trips to the gray whale breeding lagoons. As of 2007, the results of this research were to be presented in an information workshop for the whale watch industry in order to develop guidelines for the management and conservation of large whales for Loreto-La Paz-Los Cabos. A preliminary version of this document (Urbán *et al.* 2007) came to light only when this report was in draft form. It contains useful socioeconomic information based on operator surveys, as does Ojeda (2005) which could only briefly be examined.
- The economic value of whale watching was examined in two Bahía Magdalena communities – generally considered to be successful at running whale watch tours – Puerto San Carlos and Puerto Adolfo López Mateos (Estero Soledad). A cost benefit framework was used to estimate the economic rent that gray whales generate for local communities (Schwoerer 2007). Cost effective strategies, including strategies for managing peak demand, were proposed to maximize the value of whale watching in terms of income to individual stakeholders. Schwoerer found that the rent captured by local communities was significant but not maximized. He also analyzed the current permit structure which limits the capacity of whale watching in the lagoons. Despite local calls for more capacity through additional trips or larger boats, he found that this was unjustified and would not increase the net benefits from whale watching in part because the additional capacity would tend to drive the price down. Instead, the study advocates raising the price charged to whale watchers to maximize rents and manage peak demand, for example on the weekends. Another option could be to adopt a two-tier price structure for Mexicans and foreigners (mainly from the US and Canada) as has been adopted in many national parks and protected areas. Other suggested strategies include sharing advertising costs and diversifying whale watch products to attract specialized, higher-paying ecotourists.
- In the Bahía de Banderas area, the prime humpback whale presence coincides with the peak winter tourism season (Avila Foucat and Saad Alvarado 1998). The trips vary from big party boats that sell whales as an extra attraction costing USD \$45 per person to specialized guided trips for 8-16 passengers for USD \$85-\$95 per person. The specialized whale watch companies have trained naturalist guides, some of them biologists, others oceanographers or experienced naturalist guides.

Eight guides have received a Sector (government) license as a whale watch guide.

- The whale watch industry has grown in Bahía de Banderas and along the Nayarít coast – from 71 WW permits in 2001 to 178 permits in 2007-08. This has meant more job opportunities and better income to the local communities. As of 2007 the whale watching supply is thought to exceed demand leading to competition becoming fierce with small operators struggling to survive against the big companies.
- At Rincón de Guayabitos and San Blas, fishermen started offering whale watch trips with no training at all. The trips are cheap (USD \$10-15 per person) and low quality. The operators don't follow whale watch regulations or accepted guidelines with regard to approaching whales.
- Nine Mexican operators have camps at the lagoons, five of them combined with boat trips, four with camps only (Sánchez Pacheco 1997a, 1997b). Several American operators also have camps at the lagoons. These camps ensure, even when run by outside operators, that a greater percentage of the tourism receipts are spent within México than with the live-aboard cruise ships.
- The whale watch community in Puerto Vallarta has joined the environmental government authorities Semarnat (Secretaría de Medio Ambiente y Recursos Naturales) and Profepa (Procuraduría Federal de Protección al Ambiente) to support the monitoring of whale watching to ensure good practice. Regulations have been put in place all over México to watch whales and dolphins which is potentially helping to improve the management and quality of whale watching.
- In Bahía de Banderas, whale watch operators and research institutions have joined efforts to create a humpback whale photo-ID catalogue. So far, more than 1,000 different whales have been identified.

Case Study 1. Whale Watching in the Lagoons of Baja

In Jan. 1972, the Mexican government created the world's first marine protected area (MPA) specifically to protect cetaceans: Laguna Ojo de Liebre (Scammon's Lagoon) (Hoyt 2005a). Whale watching had just started in the lagoons – long range trips from San Diego, bringing Americans to see gray whales on their mating and calving lagoons. Initially the protection of the gray whales and the lagoons was only superficial – on paper.

In 1979 and 1980, protection of nearby Laguna San Ignacio and Guerrero Negro followed, and in 1988, the entire lagoon complex was officially designated as El Vizcaíno Biosphere Reserve. UNESCO World Heritage status followed in 1993.

At first, whale watching was uncontrolled, but later the MPA helped provide the muscle to enable laws and enforcement to control boat traffic, fishing gear and nets used in the lagoons, as well as pollution from local settlements and industrial degradation of the surrounding land areas. The MPA also closed some sensitive gray whale habitats entirely to tourism, providing zoned protection which many researchers and MPA practitioners believe is a good way to manage whale watching.

In 1970, large California-based tour operators began organizing 7- 10-day tours to the lagoons, departing from San Diego. These were high-quality, self-contained tours, often with naturalist guides such as Ray Gilmore and later Ken Norris. With these high quality tours, a growing US audience saw that there was a market for whale watching and enjoyed the trips. However, the trips left little or no money in México, providing no economic support for local communities. It was the classic case of almost total leakage of revenues from the area where the resource was located.

In the late 1980s one of the US companies began hiring local Mexican boats to take them into the lagoons; at the same time tourists began arriving overland and hiring boats on the spot. In 1991, partly as a trade-off for banning fishing in the lagoon during the tourist season, locals were given the sole permits to work as skiff drivers in the lagoon. The outside companies and cruise ships had to hire the pangas and their drivers. Still, Dedina and Young (1995) found that 50-65% of US operator revenues were spent on operating costs in México, though less than 1% was spent on local salaries and supplies. It took some years but this slowly transformed the value of whale watching for local people and since then local communities have become more and more involved in obtaining the benefits from tourism, starting up local inns, guesthouses and restaurants, although local land ownership and other problems remain.

It should be mentioned, however, that the US tour operators helped establish the location internationally and publicized the activity of whale watching, so their role was crucial. The boats out of San Diego still bring tourists to the lagoons but there is now more integration and cooperation with local

communities. In effect, the US operations attracted the "tourism pioneers", the early ecotourists, to visit the lagoons, and gave them a good experience so that these tourists told others and helped make the place popular. The US operators continue to do good international marketing, so they are still valuable to the whale watch industry in México.

The challenge in Latin America and other countries where whale watching is developing is how to involve outside operators with a good business sense without them taking over completely. With "controls," it is possible. The important thing is to have an effective permit system and/or management through an MPA because limitations and restrictions can then be put on the permit such as allowing only one or a very limited number of large operators with other permits awarded to local people. The Mexican case study example shows that it is possible.

Whale watching also helped raise the environmental consciousness of local people, organizations and institutions (Sánchez Pacheco 1997a). In the mid-1990s the Mitsubishi Corporation lobbied the Mexican government for expansion of their salt works in the lagoons. They were determined to push ahead with development in the gray whale's protected habitat, but an international support group joined with México's Grupo de los Cien, a group of influential Mexicans, to protect the lagoons and the local ecotourism, and to stop Mitsubishi. Against the odds, in Mar. 2000, the campaign proved successful, showing that support for the gray whale had become solid in México and that the MPA designation was much more than just on paper. A part of that success was the empowerment of the local community through whale watching.

Source: Another version of this case study appeared in Hoyt 2007a, b. For more about El Vizcaíno Biosphere Reserve management plan, go to http://conanp.gob.mx/anp/programas_manejo/vizcaino.pdf.

Guatemala

República de Guatemala

Population: 12,728,111 (2007 est.)

Total Area: 108,890 sq km (42,042 sq mi)

Tourist Arrivals: 1,315,646 (2005) (+11.4% on previous year)

GDP/PPP: \$62.97 billion USD (2005 est.)

GDP/PPP per capita: \$5,200 USD

Real growth rate: 3.1%

Environmental Performance Index: 76.7 (69th in the world)

Main WW Species: Pacific coast (year-round except as noted): bottlenose dolphin *Tursiops truncatus*, spinner dolphin *Stenella longirostris*, pantropical spotted dolphin *Stenella attenuata*; (high season, Dec.-Apr.) humpback whale *Megaptera novaeangliae*; (seasonality unknown) sperm whale *Physeter macrocephalus*, short-finned pilot whale *Globicephala macrorhynchus*.

Year WW began: Nov. 2005

Types of WW: Large whales, dolphins, boat-based, cruise ships, land-based, educational, photo-ID research.

Guatemala WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	-	na	-	-	-
1994	-	na	-	-	-
1998	-	na	-	-	-
2006	800	na	\$104,000	\$48,000	\$152,000

In late 2005, Guatemala began offering whale and dolphin watching on its Pacific coast. With several whale watch workshops, the NGO support for high quality whale watching is producing dividends and Guatemala is poised for expansion of its whale watching in tandem with research and conservation activities. There is considerable potential for future development of marine ecotourism based around whale watching.

Guatemala WW Socioeconomic Profile:

WW Tourists

- Overall, tourism is led by El Salvador (37.8%), USA (21.8%), Honduras (8.1%), México (5.5%). Tourism from the US has grown every year since 2000 and by 7.4% from 2004 to 2005. 2006 total tourist arrivals were 1,502,069, an increase of 14.2% on 2005.
- The whale watch tourists are 60% female, 40% male; 80% were national; 20% foreigners.

- 90% of the whale watchers decided in advance to go whale watching; 10% were spontaneous.

WW Operators & the Trips They Offer

- The main whale watch operator, a year-round whale watching and marine wildlife tour business, has 15 employees and has experienced an annual 40 percent rate of return over the past 2 years.
- The trips lasting up to 6 hours feature humpback whales in season and include a wide range of marine wildlife.
- Operator makes contributions to research and photo-ID programs and offers discounts on the boat to local school children.
- Tours also offer sightings of olive ridley and leatherback sea turtles, giant manta ray and whale shark.

The WW Community

- Since whale watching started in Nov. 2005, three companies (hotel, B&B and souvenir shop) have been started that would not exist without the whale watching tours.

- Three land-based whale watch spots have been identified (two on the Pacific and one on the Caribbean side) and will be developed further to augment visitor satisfaction and the overall value of whale watching.

- CONAP (Consejo Nacional de Áreas Protegidas) – the Guatemalan government's National Council of Protected Areas – has been involved from the start in conservation of whales and dolphins and in organizing and promoting responsible whale watch activities in the country.

- Two WDCS and Fundación Cethus whale workshops have been held in Guatemala and have contributed to community development and to the value of whale watching, helping to create high value community-based interest. An Apr. 2006 workshop established the platform for stakeholders led by CONAP to move forward in the development of well managed whale watching. In Oct. 2006, 90 Central American scientists, NGOs and government representatives attended the First Symposium on the Biology and Conservation of Cetaceans of Central America. In Sept. 2007, 30 participants from government, universities, navy and researchers attended a one-day stranding workshop supported by the Fondo Argentino de Cooperación Horizontal (FOAR) of the Argentine Foreign Affairs Ministry as part of Argentina-Guatemala cooperation activities.

Belize

Population: 294,385 (2007 est.)
Total Area: 22,966 sq km (8,867 sq mi)
Tourist Arrivals: 236,573 (2005) (+2.5% on previous year)
GDP/PPP: \$1.778 billion USD (2004 est.)
GDP/PPP per capita: \$6,800 USD
Real growth rate: 3.8%
Environmental Performance Index: 71.7 (84th in the world)

Main WW Species: bottlenose dolphin *Tursiops truncatus*, clymene dolphin *Stenella clymene*, Atlantic spotted dolphin *Stenella frontalis*.
 Occasionally: short-finned pilot whale *Globicephala macrorhynchus*, false killer whale *Pseudorca crassidens*, rough-toothed dolphin *Steno bredanensis*, killer whale or orca *Orcinus orca*. Also, Nov.-Mar.: humpback whale *Megaptera novaeangliae*, sperm whale *Physeter macrocephalus*.
Year WW began: 1991.
Types of WW: Dolphins, boat-based, educational, photo-ID research.

Belize WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	minimal	na	minimal	minimal	minimal
1994	262	na	460,000	40,000	500,000
1998	339	6.6	433,000	51,000	484,000
2006 ¹⁸	368	1.0	\$155,000	\$39,000	\$194,000

¹⁸ Includes 168 people on dolphin tours and 200 (10% of 2000) estimated on marine nature tours that include dolphins. Larger numbers for expenditure in previous periods included international air fares because they were part of a package price and the goal was to show the world impact of whale watching, but with the emphasis of this report on impact in each country, international air fares are not included.

Belize has the largest barrier reef in the western hemisphere and considerable tourism potential. Dolphin ecotourism, if developed along the existing model, could show some expansion, although too much will ruin the market. At present, the dolphin watching is mainly related to one ecotour company from the US that offers multi-day programs, as well as several package marine nature tour companies that offer dolphins as part of the trip.

Belize WW Socioeconomic Profile:

WW Tourists

- Mostly Americans take the dolphin trips. Overall, tourists to Belize are led by USA (61.7%), Guatemala (5.9%), Canada (5.7%), UK (4.2%) and México (2.5%). There has been strong growth in US tourism since 2001 with a 6.3% increase in numbers from 2004 to 2005. Tourism is the main source of foreign exchange.
- Surveys in process by Katheryn W. Patterson, supported by the Oceanic Society and WDCS, are looking at whale watcher attitudes to whaling and whether passengers are more or less likely to take whale watch trips in countries where whaling is tolerated. According to preliminary results, 95% thought it important that Belize has a strong commitment to whale and dolphin conservation and would be willing to pay higher tour prices to help protect the environment. 92% would be less likely to travel to Belize if the country supported whaling at the IWC (Patterson in prep).

WW Operators & the Trips They Offer

- Since 1992, Oceanic Society Expeditions has offered ecotourism/ research expeditions with bottlenose dolphins under a research permit from the Belize Forest Department. These high quality educational trips use several small ships and participants stay in lodges at Blackbird Caye east of the barrier reef. Besides dolphin and whale watching, the trips offer bird-watching, snorkeling on the reef, and hikes through the tropical forest.
- Several marine nature tours and charters offer sightings of dolphins, though not dedicated tours, out of Belize City. Also many of the fishing and dive resorts feature dolphin experiences in their descriptions and dolphins are frequently encountered en route or even while snorkeling, e.g at Caye Caulker.

The WW Community

- The Belize government is strongly promoting ecotourism as a model program for dolphins and manatees. Recently a brochure on the cetaceans of Belize was published.
- Whale watch research is trying to clarify the habitat use of the dolphins. Mother/calf pairs of dolphins, for example, are hypothesized to stay close to mangroves. If the final results support this hypothesis, there is a potential for these areas to be declared critical nursery habitats for the bottlenose dolphin (Patterson in prep).

El Salvador

República de El Salvador

Population: 6,939,688 (2007 est.)
Total Area: 20,720 sq km (8,000 sq mi)
Tourist Arrivals: 1,154,386 (2005) (+19.4% on previous year)
GDP/PPP: \$33.68 billion USD (2005 est.)
GDP/PPP per capita: \$4,900 USD
Real growth rate: 4.9%
Environmental Performance Index: 77.2 (65th in the world)

Main WW Species: (year-round) bottlenose dolphin *Tursiops truncatus*, pantropical spotted dolphin *Stenella attenuata*, sperm whale *Physeter macrocephalus*; (Nov.-Feb.) humpback whale *Megaptera novaeangliae*.

Year WW began: 2006.

Types of WW: Large whales, dolphins, boat-based, photo-ID research.

El Salvador WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	-	na	-	-	-
1994	-	na	-	-	-
1998	-	na	-	-	-
2006	minimal	na	minimal	minimal	minimal

El Salvador has moderate potential for development of whale watching. Cetaceans are present, but whale watching will have to be developed with an eye to creating a unique tour product to compete with other locations in the region.

El Salvador WW Socioeconomic Profile:

WW Tourists

- Overall, tourism is led by Guatemala (33.0%), USA (20.5%), Honduras (17.6%), Nicaragua (14.4%) and Costa Rica (3.0%).

WW Operators & the Trips They Offer

- There are no established target whale watch tours

yet but there is already marine turtle watching (Aug.-Dec.) and bird watching directed toward seabirds on their migratory routes (Nov.-Feb.) which sometimes include cetacean watching.

- Two land-based areas are identified for potential development.

The WW Community

- Currently, there are only once a month whale watch research trips organized with the cooperation of the Navy by the Instituto de Investigación en Ciencias Marinas (Institute of Marine Science Research). These half-day trips visit the edge of the continental shelf, some 15 km offshore.

<p>Honduras República de Honduras</p> <p>Population: 7,483,763 (2007 est.) Total Area: 112,090 sq km (43,278 sq mi) Tourist Arrivals: 673,035 (2005) (+5.0% on previous year) GDP/PPP: \$20.21 billion USD (2005 est.) GDP/PPP per capita: \$2,800 USD Real growth rate: 4% Environmental Performance Index: 75.4 (73rd in the world)</p>	<p>Main WW Species: Bottlenose dolphin <i>Tursiops truncatus</i>, tucuxi (marine) <i>Sotalia guianensis</i>; various tropical dolphins. Year WW began: Late 1990s. Types of WW: Dolphins, boat-based.</p>
---	--

Honduras WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	-	na	-	-	-
1994	-	na	-	-	-
1998	minimal	na	minimal	minimal	minimal
2006	minimal	na	minimal	minimal	minimal

Honduras has moderate to considerable potential for developing whale watching especially in the Bay Islands where diving and other marine tourism is already established and dolphins are often seen. University courses have offered between-term trips to the island of Utila to study the dolphins. On the largest Bay island of Roatan, which has been developed as a tourist destination, the most popular dolphin attractions are to see and swim with captive and semi-captive dolphins, including some wild dolphins that come for food offered by the resort. Such Invasive dolphin tourism is outside the scope of this report, but there is also some truly wild dolphin watching available here with the local bottlenose dolphins.

Honduras WW Socioeconomic Profile:

WW Tourists

- Overall, tourism is led by USA (29.4%), El Salvador (23.7%), Guatemala (13.8%) and Nicaragua (11.4%). US tourism increased by 16.4% from 2004 to 2005. Europe overall represented 7.9% of all tourist arrivals but this was steadily climbing, up 12.6% on the previous year.

WW Operators & the Trips They Offer

- Dolphin sightings are a regular feature of diving tours and some marine boat tours advertise dolphins as part of the attraction.

- Research trips to study and work with dolphins have been offered through the University of Southern Mississippi. In 2006, 12 students paid approximately \$2,400 in direct expenditure and \$15,600 indirect to work with wild dolphins off Utila.

The WW Community

- In 2008, WDCS plans to present a community-operator whale watch workshop in Honduras.

Nicaragua

República de Nicaragua

Population: 5,675,356 million (2007 est.)

Total Area: 129,494 sq km (49,998 sq mi)

Tourist Arrivals: 712,444 (2005) (+15.9% on previous year)

GDP/PPP: \$13.24 billion USD (2005 est.)

GDP/PPP per capita: \$2,400 USD

Real growth rate: 4%

Environmental Performance Index: 73.4 (77th in the world)

Main WW Species: Pacific: pantropical spotted dolphin *Stenella attenuata*, (Sept.-Mar.) humpback whale *Megaptera novaeangliae*, (occasionally) false killer whale *Pseudorca crassidens*.

Year WW began: 2006.

Types of WW: Large whales, dolphins, boat-based.

Nicaragua WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	-	na	-	-	-
1994	-	na	-	-	-
1998	-	na	-	-	-
2006	8,832	na	\$719,808	\$1,324,800	\$2,044,608

Nicaragua's whale watch industry is just beginning. At San Juan del Sur, one of the main tourism communities on the Pacific coast, diving companies and marine nature tours are now including sightings of whales and dolphins as a key part of the trip. As tourism to the Pacific coast increases, it is likely that whale watching will become even more important as a source of income. The development of high quality, diverse tours will help to capture more value from whale watching.

Nicaragua WW Socioeconomic Profile:

WW Tourists

- Overall, tourism is led by USA (20.7%), Honduras (19.5%), Costa Rica (15.2%), El Salvador (14.1%) and Guatemala (8.1%). US tourists were up 11.7% from 2004 to 2005. Europe overall represented 8.3% of all tourist arrivals but this was steadily climbing, up 12.2% on the previous year.

- In 2006, 111,438 people visited the beaches of the Pacific coast (12.4% of all visitors to Nicaragua). From these, 99.03% went to the beaches alone, but 0.97% or 8,832 took whale

watching and marine nature trips during the peak 8 week humpback season.

WW Operators & the Trips They Offer

- In San Juan del Sur, some 23 fishing boats carrying tourists now include sightings of whales and dolphins as part of the trip. The coastal fishing industry has declined so the fishermen are being encouraged to move into tourism. Nature trips are taken to nearby islands for frigate birds, brown pelicans and sea turtles. During the (northern) winter season, humpback whales are regularly encountered and dolphins are seen year-round.

The WW Community

- In 2006-07, workshops were led by Fundación Cethus, WDCS and Fondo Argentino de Cooperación Horizontal (FOAR) and its Nicaraguan counterpart, Ministerio del Ambiente y Recursos Naturales (MARENA). The 2007 workshop in San Juan del Sur invited 30 participants from the local fishing community, local and national government, and Nicaraguan NGOs. The Nicaraguan Navy provided a vessel for field practice with cetaceans.

Nicaragua is now working on action plans for whale watching, including preparing a cetacean inventory, developing capacity-building to establish whale watching along with conservation efforts, and

conducting cetacean research. In 2008, another FOAR-MARENA workshop will be presented in Nicaragua.

<p>Costa Rica República de Costa Rica</p> <p>Population: 4,133,884 (2007 est.) Total Area: 51,100 sq km (19,730 sq mi) Tourist Arrivals: 1,679,051 (2005) (+15.6% on previous year) GDP/PPP: \$50.89 billion USD (2005 est.) GDP/PPP per capita: \$12,500 USD Real growth rate: 7.9% Environmental Performance Index: 90.5 (5th in the world)</p>	<p>Main WW Species: Pacific: humpback whale <i>Megaptera novaeangliae</i>, bottlenose dolphin <i>Tursiops truncatus</i>, pantropical spotted dolphin <i>Stenella attenuata</i>, spinner dolphin <i>Stenella longirostris</i>, false killer whale <i>Pseudorca crassidens</i>, (offshore only) blue whale <i>Balaenoptera musculus</i>. Caribbean: bottlenose dolphin <i>Tursiops truncatus</i>, tucuxi (marine) <i>Sotalia guianensis</i>, Atlantic spotted dolphin <i>Stenella frontalis</i>, short-finned pilot whale <i>Globicephala macrorhynchus</i>. Year WW began: 1994; 1996 for humpback whales. Types of WW: Large whales, dolphins, boat-based, educational, photo-ID research.</p>
---	---

Costa Rica WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	-	na	minimal	minimal	minimal
1994	100+	na	200,000	50,000	250,000
1998	1,227	87.2	100,000	118,000	218,000
2006¹⁹	105,617	74.5	\$5,318,487	\$15,842,550	\$21,161,037

Since the last world whale watching census (Hoyt 2001), Costa Rica has become one of the fastest growing whale watch areas in the world, easily outstripping all other areas in Latin America with its fast growth rate. Why has it happened here?

At 1,412 km, Costa Rica has the second longest coastline in Central America after Panamá. Its irregular shore, mostly on the Pacific side, has numerous gulfs and bays which provide marine habitat for coastal cetaceans and good spots for whale watching. In many respects it is surprising that it took so long to happen here. Yet Costa Rica's population is concentrated in the central interior, with only 10% living along the coast. At the same time, until recently, most Costa Ricans and visitors to the country considered seaside holidays mainly for sunbathing.

Still, overall tourism arrivals to Costa Rica have been climbing rapidly in recent years and are higher than the rest of Central America. This is partly a result of Costa Rica's image as a stable political country that protects its wildlife and forest habitat through its extensive national park system.

In the Southwest Pacific part of the country where whale watching has become the most popular, the industry grew rapidly because certain hotels and guesthouses had their own boats to offer whale watching. Even more, fishermen were quick to change from fishing to whale watching and adapt their boats for tourism.

Yet none of this could have happened without a combination of the growing awareness of whales and dolphins and research into local populations. Many researchers, operators, local administrators and local and international NGOs have played a role in the development of whale watching and marine tourism. It has largely jumped off to a good start, but without care the problems endemic to fast growth, which researchers are already reporting, will soon set in. Carrying capacities especially in Drake Bay may need to be reviewed and adjusted; land-based conditions need to be enhanced and promoted to take some of the strain off the boat-based whale watching, and the existing whale watch regulations must be well defined, communicated and enforced. Attention to these things now will help ensure that whale watching has a future as an important, sustainable force in the country.

¹⁹ The numbers presented are largely from 2007 because surveys were done mainly to cover this year.

In 2008, Costa Rica ranked no. 5 among 149 countries in the world in Yale University's Environmental Performance Index; Costa Rica was singled out for its high performance for a middle income country. In the near future, development will need to be carefully managed to maintain Costa Rica's positive tourist image.

Costa Rica WW Socioeconomic Profile:

WW Tourists

- Overall, tourism is led by USA (45.2%), Nicaragua (13.8%), Canada (5.2%), Panamá (4.3%), México (3.0%), Spain (2.9%), El Salvador (2.7%) and Germany (2.3%). US tourist numbers, which have nearly doubled in 5 years, are largely driving the huge increases in Costa Rican tourism. For all of Europe, the market share is 14.4%, which was 12.4% up from 2004 to 2005. From a traditional reliance on coffee, bananas and beef exports, tourism in Costa Rica has become a key business and source of foreign exchange.

Costa Rica WW Breakdown:

Port or location	Ops	Boats	WWs	Unit Price ²⁰	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
Pacific Coast							
Bahía Drake & I. del Caño, Osa	19	10-60	28,408	21.12	600,000	4,261,200	4,861,200
Puerto Jimenez	3	7	4,542	52.30	235,927	681,300	917,227
Ballena	4	15	12,592	59.4	755,520	1,888,800	2,644,320
Sierpe	5	11	9,967	51.2	667,890	1,495,050	2,162,940
Golfito	6	6	3,654	47.5	125,334	548,100	673,434
Sámara	3	4	7,204	35.5	254,650	1,080,600	1,335,250
El Coco	3	14	8,025	73.3	1,003,500	1,203,750	2,207,250
Quepos	2	4	24,090	59.5	1,476,060	3,613,500	5,089,560
Caribbean Coast							
Manzanillo	7	7	7,135	30.6	199,606	1,070,250	1,269,856
Total	52	76+	105,617	-	\$5,318,487	\$15,842,550	\$21,161,037

Sources: Annual data from Rodríguez-Fonseca and Fischel-Quirós 2007, Montero-Cordero and Martínez-Fernández 2007, and Montero-Cordero 2007, Lenin Oviedo and individual operator returns.

The WW Community

- Thirteen main communities offer whale and dolphin tours: 11 on the Pacific side for both whales and dolphins, and two for dolphins on the Atlantic side.
- Whale watch trips off the Osa Peninsula have aided whale research, spotlighting the high marine biodiversity (11 cetacean species) inhabiting upwellings

WW Operators & the Trips They Offer

- In Bahía Drake, 19 businesses offer WW tours; 84% of them are owner-operated (Montero-Cordero and Martínez-Fernández 2007).
- Montero-Cordero and Martínez-Fernández (2007) measured awareness of the newly approved whale watch regulation in Bahía Drake. 70% of whale watch operators there had personnel who had not yet read the national regulation, six months after it came into force. Outside of Bahía Drake, Rodríguez-Fonseca and Fischel-Quirós (2007) found that more than 60% had knowledge of the regulations.
- In view of Costa Rica's successful land-based ecotourism offerings, future development of whale watching could branch out more to broad nature and marine nature tourism to extend visitor experiences over several days and to show the many ecological linkages between the land and the sea. This would add value to the tours and generate more revenue.

and a variety of nearshore and offshore habitats.

- Land-based whale and dolphin watching in Costa Rica has the potential to help minimize impact from boat-based whale watching. There are three active sites for land-based watching. On the north Pacific coast, there is Flamingo in Guanacaste; on the south Pacific coast are sites overlooking Bahía Drake and Piñuela, in Puntarenas. In addition, 11 more sites may be developed.

²⁰ Unit price is an average at each location.

Panamá

República de Panamá

Population: 3,242,173 (2007 est.)

Total Area: 78,200 sq km (30,193 sq mi)

Tourist Arrivals: 576,050 (2005) (+15.6% on previous year)

GDP/PPP: \$22.3 billion USD (2005 est.)

GDP/PPP per capita: \$7,100 USD

Real growth rate: 4.9%

Environmental Performance Index: 83.1 (32nd in the world)

Main WW Species: Pacific: pantropical spotted dolphin *Stenella attenuata*, bottlenose dolphin *Tursiops truncatus*, spinner dolphin *Stenella longirostris*, humpback whale *Megaptera novaeangliae*, (sporadic) killer whale or orca *Orcinus orca*, sperm whale *Physeter macrocephalus*, Cuvier's beaked whale *Ziphius cavirostris*, short-finned pilot whale *Globicephala macrorhynchus*; Caribbean: bottlenose dolphin *Tursiops truncatus*, tucuxi (marine) *Sotalia guianensis*, Atlantic spotted dolphin *Stenella frontalis*.

Year WW began: Late 1990s.

Types of WW: Large whales, dolphins, boat-based, cruise ships, educational, photo-ID research.

Panamá WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	-	na	-	-	-
1994	-	na	-	-	-
1998	minimal	na	minimal	minimal	minimal
2006	17,711	na	\$448,025	\$2,692,350	\$3,140,375

Panamá was slow to set up whale and dolphin watching research and tourism but it is now catching up fast. In the 1980s and 1990s, Panamá established numerous national parks and began catering to ecotourists with its rain forests, following the successful Costa Rican model. Its much longer coastline on both the Caribbean and the Pacific side give it high marine and cetacean tourism potential. This potential is starting to be realized mainly within the marine parks and protected areas which are a magnet for tourists wanting to explore the natural world. The challenge will be to ensure that high quality tours develop and that good management of the marine habitat and of cetaceans is the fundamental premise.

Panamá WW Socioeconomic Profile:

WW Tourists

- Overall, tourism is led by USA (27.8%), Colombia (18.9%), México (5.1%), Ecuador (4.5%), Costa Rica (4.4%) and Canada (3.4%). Most of the tourists come from cruise and other ships passing through the canal. US tourism has increased every year for the past 5 years and was up 14.4% from 2004 to 2005.

- In 2006 Coiba received 5,379 visitors, 20% of whom are counted for whale watching, or 1,076 people. Some 21% were nationals and 79% foreigners.

WW Operators & the Trips They Offer

- At Isla Iguana, 15 fishermen operators offer whale watch tours secondary to their main fishing activities. The trips focus on Isla Iguana Reserve but can include also Pedasí and Punta Mala. Year-round the trips offer sightings of pantropical spotted dolphins and humpback whales during the season.
- At the Archipelago Bocas del Toro, on the Caribbean side of Panamá, 206 boat skippers are involved in nature trips which feature snorkeling around the coral reef, a visit to Red Frog beach, and dolphin watching. The 206 skippers are divided as follows: 147 belong to 5 different associations or cooperatives; 52 are independent skippers and 7 are tour operators. From these, the Instituto Panameño de Turismo (IPAT) estimates that 79 (38%) have had training in tourism, 32 (16%) a course in first aid, and 76 (37%) a course on marine safety. In the table below we consider the cooperatives as single operator entities; thus there are 5 associations and 59 individual operators for a total of 64 operators.

Panamá WW Breakdown:

Port or location	Ops	WWs	% Counted	Unit Price	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
Pacific							
Golfo de Panamá/ Contadora	2	160	100	50	8,000	24,000	32,000
Isla Iguana	15	900	100	50	45,000	90,000	135,000
Arch. Las Perlas	-	incipient		-	-	-	-
Isla Coiba ²¹	-	1,076	20	150	161,400	242,100	403,500
Caribbean							
Arch. Bocas del Toro	64	15,575	35	15	233,625	2,336,250	2,569,875
Total	81+	17,711		-	\$448,025	\$2,692,350	\$3,140,375

Sources: Latest annual data from individual operator interviews and survey returns.

The WW Community

- At least eight communities at present are associated with whale watching. Isla Coiba is a National Park that is the destination for tourists from at least four main communities.
- Panamá has regulations in place to watch whales and dolphins which is potentially helping to improve the management and quality of whale watching since 2006.
- Some 44,500 visitors went to the Archipelago Bocas del Toro in 2006 and of these an estimated 35% (15,575) can be considered dolphin watchers.

With 206 boats available in the area, it is urgent to study the impact on the local bottlenose dolphin population. Although the dolphins are not being solely targeted, there is the potential for problems. Also worrisome is the low unit price for the tours, compared to elsewhere in Panamá, which is typical of over-supply scenarios. Only two operators are registered to follow the legislation that regulates whale watch activities.

- Isla Coiba used to be a prison but now it draws tourists as a national park. There is a two-tiered price structure for admission to National Park waters: USD \$20 for foreigners and \$5 for nationals.

Colombia

República de Colombia

Population: 44,227,550 (2007 est.)

Total Area: 1,138,910 sq km (439,736 sq mi)

Tourist Arrivals: 933,243 (2005) (+18.0% on previous year)

GDP/PPP: \$374.4 billion USD (2006 est.)

GDP/PPP per capita: \$8,600 USD

Real growth rate: 6.8%

Environmental Performance Index: 88.3 (9th in the world)

Main WW Species: Amazon: Amazon river dolphin or boto *Inia geoffrensis*, tucuxi *Sotalia fluviatilis*; west coast: humpback whale *Megaptera novaeangliae*, bottlenose dolphin *Tursiops truncatus*, spinner dolphin *Stenella longirostris*; Caribbean coast: bottlenose dolphin *Tursiops truncatus*, tucuxi (marine) *Sotalia guianensis*, Atlantic spotted dolphin *Stenella frontalis*, Bryde's whale *Balaenoptera brydei*.

Year WW began: Mid-1980s.

Types of WW: Large whales, dolphins, boat-based, land-based, educational, photo-ID research.

Colombia WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual ²² growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	minimal	na	minimal	minimal	minimal
1994	5,000	na	250,000	1,668,000	1,918,000
1998	minimal	na	minimal	minimal	minimal
2006	35,000	17.6	\$3,125,000	\$5,400,000	\$8,525,000

²¹ Isla Coiba tours are general marine nature tours to see birds, turtles and sometimes dolphins; only 20% of the tours are included as WWs. Tours depart from Puerto Mutis, Playa Banco, Playa Aníbal and Santa Catalina. Cost is USD \$125 per day trip plus gasoline and visitors must pay USD \$20 (foreigners) and USD \$5 (nationals) for a National Park entry fee. Estimated average unit price is USD \$150/ person.

²² Shows the average annual increase for the period 1994-2006.

Colombia has the potential to offer three distinct cetacean watching possibilities: not only the Pacific and the Atlantic or Caribbean, but the Amazon. Leading the way in terms of cetacean tourism are the substantial dedicated river dolphin tours, with Colombia being one of the best places to see river dolphins in the Amazon basin. Humpback whale watching on the west coast has substantial growth possibilities, too, although the humpback presence overlaps the rainy season in Colombia which affects overall tourism numbers. Researchers are currently exploring cetacean watching possibilities on the Caribbean coast.

For some years, Colombia suffered a decline in tourists from North America and Europe. This did not affect tourism from nearby Ecuador and Venezuela which helped to fill the gap.

Currently, however, tourism numbers are dramatically on the increase, and many people are discovering or re-discovering the natural wonders of the country. Colombia ranks 9th – and 2nd among all Latin American countries – on the Yale Environmental Performance Index 2008.

Colombia WW Breakdown:

Port or location	Ops	Boats	WWs	Unit Price	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
Pacific							
Chocó	7	7	1,000	25	25,000	300,000	325,000
Valle del Cauca: Buenaventura & Bahía Málaga	7	80	10,000	10	100,000	1,500,000	1,600,000
Amazon							
Leticia	22	38	24,000	125	3,000,000	3,600,000	6,600,000
Caribbean Coast							
Golfo de Morrosquillo, Santa Marta & Cartagena	-	-	minimal	-	minimal	minimal	minimal
Total	36	125	35,000	-	\$3,125,000	\$5,400,000	\$8,525,000

Sources: Latest annual data courtesy Fernando Trujillo, Lilián Flórez-González and based on individual operator interviews and survey returns.

The WW Community

- Four main communities or areas are involved in dolphin watching, one in the Amazon and three on the west coast. There is also some dolphin watching in the resorts on the Caribbean coast from Cartagena to Santa Marta, but more on an incidental or accidental basis.
- A whale watch training workshop by Fundación Yubarta and WDCS, the Whale and Dolphin Conservation Society, in 1997, attracted potential

Colombia WW Socioeconomic Profile:

WW Tourists

- Overall, foreign tourists are led by USA (25.2%), Venezuela (12.2%), Ecuador (10.3%), Spain (6.1%).

WW Operators & the Trips They Offer

- The operators on the Pacific coast range from fishermen with small boats to hotels that have personnel who can run inflatable boats or pleasure cruisers. Day trips are offered, as well as several-day package trips. WDCS gave a whale watch workshop on the Pacific coast of Colombia for all prospective operators in 1997, organized by Fundación Yubarta.
- For the Colombian Caribbean, there are no tours focusing on whale watching although regular opportunistic sightings of tucuxi (marine) and bottlenose dolphins are made from land and boats in Golfo de Morrosquillo, Santa Marta and Cartagena. In Golfo de Morrosquillo, Fundación Omacha began analyzing the feasibility of whale watching in 2007.
- Substantial river-boat tourism out of Leticia uses a variety of small boats, carrying four passengers each, up to river-boats that take 28 passengers.

whale and dolphin watch stakeholders and helped improve the educational value of whale watching. Since then, whale watching has grown slowly.

- Local people are invited to participate in the research-oriented Amazon dolphin watch tours. The participation is not just information transfer but it provides the rationale for research and the spirit behind it. Involving the community in research teaches respect for the local environment and emphasizes its uniqueness and importance (IFAW, WWF & WDCS 1997).

Venezuela

República Bolivariana de Venezuela

Population: 26,084,662 (2007 est.)

Total Area: 912,050 sq km (352,144 sq mi)

Tourist Arrivals: 706,103 (2005) (+45.2% on previous year)

GDP/PPP: \$186.3 billion USD (2006 est.)

GDP/PPP per capita: \$7,200 USD

Real growth rate: 10.3%

Environmental Performance Index: 80.8 (45th in the world)

Main WW Species: Anzoátegui State (Lechería and Paseo Colón) and Sucre State (Mochima): long-beaked common dolphin *Delphinus capensis*, Bryde's whale *Balaenoptera brydei*, other tropical dolphins; Aragua State (Bahía de Cata and La Boca de Ocumare): Atlantic

spotted dolphin *Stenella frontalis*, bottlenose dolphin *Tursiops truncatus*, (Oct.-Mar.) Bryde's whale *Balaenoptera brydei*; Mérida (Mérida State) to Puerto Concha (Zulia State): tucuxi (marine/estuarine, locally called tonina del lago) *Sotalia guianensis*; Mérida to Caño Guaritico and Apure River, Apure State: Amazon (Orinoco) River dolphin or boto (locally called tonina rosada) *Inia geoffrensis*²³; Bolivar State (to Caura and Caroní rivers) and Orinoco River Delta in the Delta Amacuro State: Amazon (Orinoco) River dolphin or boto (locally called tonina rosada) *Inia geoffrensis*, tucuxi (marine/estuarine, locally called bufeo negro or bufete) *Sotalia guianensis*; El Guamache, Margarita Island: long-beaked common dolphin *Delphinus capensis*.

Year WW began: Mid-1980s.

Types of WW: Large whales, dolphins, boat-based, educational, photo-ID research.

Venezuela WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	minimal	na	minimal	minimal	minimal
1994	minimal	na	minimal	minimal	minimal
1998	minimal	na	minimal	minimal	minimal
2006	9,757	na	\$240,034	\$758,625	\$998,659

Venezuela's complex marine component includes parts of the Amazon and Orinoco basins, as well as the substantial Lake Maracaibo and Gulf of Venezuela, and the extensive, vast Caribbean coast. Whale watching in Venezuela, especially of dolphins, is widespread and some operators count on 25 to nearly 30 years experience. Although Venezuela has some whale populations as well as dolphins, few tourists are interested in watching whales. Mochima, a national park, accounts for more than half of dolphin watching in Venezuela. Some tours include elements special to Venezuela, such as trips to meet Anaconda serpents, but in other areas the pink river dolphins are attraction enough. Venezuela is the only place in Latin America where the marine tucuxi dolphin *Sotalia guianensis* swims into fresh water including Lake Maracaibo and up to 800 km upstream in the Orinoco. The Caribbean coastline and numerous islands offer an area for future growth in whale watching. Whale watching has recently shown success in attracting tourists around Margarita Island. Since 2003, whale watch training courses have been given along the coast, and future

whale watch workshops are in the planning stages for some of the interior areas of Venezuela.

Venezuela WW Socioeconomic Profile:

WW Tourists

- Overall, tourists to Venezuela are led by the USA (16.5%), Germany (13.6%), Netherlands (11.8%), Canada (6.6%), UK (6.1%), Italy (5.6%), Colombia (5.1%), France (4.3%) and Argentina (3.7%). US tourism fell after 2001 but has recently recovered to near 2001 levels. Overall, Venezuelan tourism has grown rapidly since 2001. North America holds a 25.2% market share while Europe has a 54.2% market share.
- In general, European tourists prefer to see the boto or Amazon (Orinoco) River dolphins while the coastal dolphins appeal to Venezuelans.
- In Mochima National Park (northeastern Venezuela) which attracts more than half of the

²³ In Venezuela, there is some confusion surrounding the species commonly referred to in English as the Amazon River dolphin, species *Inia geoffrensis*. Only a small portion of the Amazon River is in Venezuela. Most of the "Amazon River dolphins" in Venezuela are in fact found in the Orinoco River basin. Therefore, in Venezuela, we will refer to this dolphin as the Amazon (Orinoco) River dolphin or boto. Of course, there are also various local names, some of which are mentioned.

whale watchers in Venezuela, a preliminary survey (21 participants) indicated that 76% of participants were Venezuelans; 62% were professionals and 30% business persons. 62% came to watch dolphins because of personal recommendations from previous passengers. Satisfaction was very high and 100% would repeat, recommend the experience to others and intend to go dolphin watching in other parts of the country (Bolaños-Jiménez *et al.* 2007a).

WW Operators & the Trips They Offer

- At least 123 operators offer tours that include dolphins and sometimes, on the coast, whales, too, although tours specifically to see whales are not undertaken. Dolphins are seen regularly as part of diving and marine nature tours, as well as jungle ecotours through the Orinoco basin.
- The Cumaná tour operators, based in the capital of the State of Sucre, hire fishermen from Mochima Town to do their dolphin watch tours.
- In the State of Bolivar, three places offer dolphin tours on the river. At Ciudad Bolivar, a dozen operators have organized as a union called Bolivar Promotours with a website. Brochures and stickers

have been distributed to sensitize the local community to river dolphins.

- In Mérida, in the Venezuelan Andes, most tour operators offer wildlife trips to the Venezuelan plains in the Guaritico Wildlife Refuge and inside the Apure River in search of river dolphins. One of the most unusual dolphin/wildlife watching tours is the "Llanos Tour" which is mainly oriented for the search of the Anaconda serpent *Eunectes murinus*. More than 90% of tourists come from Europe. The tour lasts 4 days and, occasionally, tour operators join efforts to be able to offer a trip, exchanging passengers with each other to fill the trips.
- The Catatumbo wildlife tours last 2 days and include dolphins and other wildlife. The tour is inexpensive with lodging in a "palafito" of the National Parks Institute, where passengers sleep in hammocks.
- Mérida is the only place where foreign tourists account for most of the customers. Tour operators offer special discounts to passengers paying in foreign currency. Several operators here also operate a lodge-like guesthouse.

Venezuela WW Breakdown:

Port or location	Ops	WWs	% Counted	Unit Price	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
Lechería, Puerto la Cruz, Anzoátegui State	3-4	1,320	100	30	39,600	178,200	217,800
Paseo Colón, Puerto la Cruz, Anzoátegui State	20-30	800	50	8	6,400	48,000	54,400
Mochima, Sucre State	60+	5,200	100	12	62,400	312,000	374,400
Mérida to Puerto Concha, Zulia State	12	112	25	77	8,624	11,760	20,384
Mérida to Apure State: Wildlife Refuge Caño Guaritico, & San Vicente, Apure River	10+	80	10	130	10,400	8,400	18,800
Bahía de Cata, Aragua State	3	120	100	10	1,200	3,600	4,800
La Boca de Ocumare, Aragua State	3-5	441	100	10-20	5,100	19,845	24,945
Bolivar State (to Caura River) & Orinoco River Delta in Delta Amacuro State	10-12	184	50	130-210	31,310	19,320	50,630
El Guamache, Margarita Island	2+	1,500	100	50	75,000	157,500	232,500
Total	123-138	9,757			\$240,034	\$758,625	\$998,659

Sources: Annual data courtesy Jaime Bolaños, Sociedad Ecológica Venezolana Vida Marina (Sea Vida). Calculations based on 2006, or 2007 if 2006 unavailable. Adjustments have been made in "% Counted" for nature tours that are only partly whale watching. Indirect expenditure is based on estimates for daily rates in each region multiplied by 1.5 to cover average time spent on the tour, with allowances for visitors' length of stay and purpose for travel.

The WW Community

- At least eight communities are currently offering tours which feature or include dolphin watching.
- Since 2001, Sea Vida, a local research-based NGO, has been promoting responsible whale watching in Aragua State (Bolaños-Jiménez *et al.* 2007b). A whale watchers' code of conduct has been developed and proposals for regulations have been made at the national level.
- Since 2003, Sea Vida has organized six training courses on whale watching and ecological aspects of local cetaceans, with national and international support (Bolaños-Jiménez *et al.* 2007b). The last one in September 2007, was organized by Sea Vida and Fondo Argentino de Cooperación Horizontal (FOAR) with support from the Ministerio del Poder Popular para Ciencia y Tecnología, Fundacite Aragua, Consejo de Educación Ambiental del Estado de Aragua and Universidad Pedagógica Experimental Libertador – Instituto Universitario Rafael Escobar Lara.
- The Ministerio del Poder Popular para Ciencia y Tecnología and Fundacite Aragua have three national programs promoting whale watching to become successful on a scientific and commercial level (Silva-Hernández *et al.* 2007, Villarroel-Marín and Bolaños-Jiménez 2007). As part of this effort, research projects have been initiated to obtain baseline information on species presence and the biological-ecological aspects necessary for good management.
- The Rufford Foundation, WDCS, Fundación Cethus and FOAR (Argentina) are supporting community whale watch workshops with Sea Vida and other organizations to be held in 2008. Locations include Puerto Concha, Mérida, Mochima and Ciudad Bolívar. Most operators have said they are willing to participate in workshops or meetings to exchange experiences. In 2008, there will also be a series of at least 12 training seminars in the cities of Cagua, Maracay and Bahía de Cata (Aragua State) as part of a project for empowering local communities for responsible whale watching. Sea Vida also has an agreement with the UNEFA University at Cagua which is offering internships to tourism students.

Ecuador

República del Ecuador

Population: 12.2 million (2007 est.)

Total Area: 283,560 sq km (109,483 sq mi)

Tourist Arrivals: 860,784 (2005) (+5.1% on previous year)

GDP/PPP: \$61.52 billion USD (2006 est.)

GDP/PPP per capita: \$4,500 USD

Real growth rate: 4.1%

Environmental Performance Index: 84.4 (22nd in the world)

Main WW Species: Galápagos: bottlenose dolphin *Tursiops truncatus*, Bryde's whale *Balaenoptera brydei*, sperm whale *Physeter macrocephalus*, short-finned pilot whale *Globicephala macrorhynchus*; mainland coast: humpback whale *Megaptera novaeangliae*, bottlenose dolphin *Tursiops truncatus*, pantropical spotted dolphin *Stenella attenuata*, killer whale or orca, *Orcinus orca*, various tropical dolphins. Amazon: Amazon river dolphin or boto *Inia geoffrensis*, tucuxi *Sotalia fluviatilis*.

Year WW began: Early 1980s.

Types of WW: Large whales, dolphins, boat-based, cruise ships, land-based, educational, photo-ID research.

Ecuador WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	5,020	na	15,060,000	minimal	15,060,000
1994	6,650	9.8	15,100,000	200,000	15,300,000
1998	11,610	15.0	19,700,000	3,650,000	23,350,000
2006	42,900	17.8	\$50,229,000	\$10,053,700	\$60,282,700

Ecuador's golden jewel, the Galápagos Islands, welcomes high-spending wildlife tourists. The Galápagos Islands were opened to organized, controlled tourism in 1970, becoming one of the first international ecotourism destinations. The

attraction has grown steadily until today more than 140,000 tourists a year are visiting the islands. Debate rages over the ideal number of tourists – some say it should be much lower, but one thing is certain, there is a limit beyond which the resource

and the value of the resource degrades considerably, making everyone losers. If this feedback loop were to be activated, the Galápagos could suffer a serious economic downturn in tourism, in addition to the ecological consequences. For now, fueled by swelling ranks of North American baby boomers eager to travel to ever more exotic locales, Galápagos tourism provides a major source of income for the country. Whale watching is only a small feature of Galápagos tourism but the traffic from incoming Galápagos tourists, a target natural history audience, has substantial high-spending spin-off effects for general tourism as well as for whale watching. Every tourist must travel through and stay in mainland Ecuador usually for at least a couple days; many visitors make side trips to other Ecuadorean treasures such as the Amazon, the high cities in the Andes, and the coast where whale watching is also on offer.

On the other hand, many budget-conscious tourists opt to go to coastal Ecuador if they cannot afford the Galápagos. Created in 1979, Machalilla National Park, including Isla de la Plata, an island just off the coast, is sometimes referred to as the poor man's alternative to the Galápagos. Satisfaction with the marine wildlife here, however, is high. Dedicated whale and dolphin watching began along the coast of Ecuador in the early 1980s but didn't really start taking off until the 1990s. It is now a firm part of coastal tourism with the strong draw of the humpback whales and special events such as whale festivals in Machalilla National Park which alone draws 10,000 people a year. This, rather than the Galápagos, has become the center for whale watching activities in Ecuador, including associated photo-ID research, education and community awareness.

Ecuador WW Socioeconomic Profile:

WW Tourists

- Overall tourism to Ecuador is led by Perú (24.4%), USA (22.0%), Colombia (19.1%), Spain (4.6%), UK (2.6%), Germany (2.4%) and Chile (2.1%). For all of Europe, the market share in 2005 was 17.6%, up 13.8% on the previous year.
- In 2005, whale watch tourists for humpback whale watching at Machalilla National Park were comprised of roughly 75% foreigners and 25% Ecuadoreans. Foreigners are represented by Europeans, especially British, French, Dutch and German (46.3%), Americans-Canadians (19.9%) and other Latin Americans (7.9%) (Weinhäupl 2005). Visitors to the park were 59% workers and

41% students with a median age of 26 and 56% female, 44% male.

- At Machalilla National Park tourists pay USD \$15-30 for the tour and an additional USD \$20 for park admission. Visitor satisfaction was high with 90% finding that the trip matched their hopes and was worth the money, with high appreciation of the guide. Whales were mentioned by 48% of the tourists as giving them the most pleasure in their visit, compared to birds at nearly 40% and other species 6% (Weinhäupl 2005).

WW Operators & the Trips They Offer

- Ecuador has 28 dedicated whale watch operators, mostly taking people to see humpback whales along the coast. The Machalilla National Park and other nearby coastal Ecuador trips are day trips offered Jun.-Sept. to see mainly humpback whales aboard fishing boats, fiberglass launches, and small, comfortable cruisers (capacity 16 PAX) specially designed for whale watching. At no cost, Machalilla operators help Ecuadorean researchers who work on the boats throughout the season.
- Two operators offer dedicated trips to the jungle to see the river dolphins, especially the Amazon River dolphin but also sometimes tucuxi. One is a cruise boat, the other a backpackers' tour. Small groups of 24 passengers each are taken to the confluence of the Aguarico and Napo rivers and the Yasuni and Napo rivers, as well as to Lagarto Cocha Lake. The number of trips expanded greatly in 2008. The trips also feature sightings of the giant otters at Jatuncocha Lake.
- At least 80 operators offer trips to the Galápagos which are typically 7-day+ journeys aboard a wide range of yachts and small motor cruisers carrying 6 to 90 passengers. These are not dedicated whale watch tours, but nature tours which include regular dolphin sightings between the islands and whale sightings especially in the Canal Bolívar between Fernandina and Isabela and in the area west of Isabela Island. Several cruise ships (Polares, Santa Cruz, Isabela, among others) include in their itineraries a special tour "Búsqueda de Ballenas" (Searching for Whales) and will spend a day or more to look for the whales as part of the trip. Cost of Galápagos cruises ranges from USD \$71 for a day trip to USD \$650/ day worked out over 7 days on a luxury cruise (USD \$4500). In 2006 there were 140,000 visitors to the Galápagos. The portion for whale watching is counted as 10%, or 14,000 passengers, spending an average of USD \$3,500 each on a 7-day cruise, with \$500 for additional expenses.

Ecuador WW Breakdown:

Port or location	Ops	WWs	% Counted	Unit Price	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
Machalilla National Park ²⁴	22	20,000	100	30	600,000	2,250,000	2,850,000
Salinas	15	5,000	100	25	125,000	312,500	437,500
Guayas & Salango, Ecuador – land-based ²⁵	-	1,800	100	0	0	25,200	25,200
Galápagos Marine Reserve ²⁶	80	14,000	10	71-4500	49,000,000	7,000,000-15,600,000	56,000,000
Amazon: dedicated dolphin trips	2	100	100	1,240	124,000	16,000	140,000
Amazon – river trips & jungle lodges	Several	2,000	10	190	380,000	450,000	830,000
Total	119+	42,900			\$50,229,000	\$10,053,700	\$60,282,700

Sources: Latest annual data courtesy Cristina Castro, Ben Haase, individual operator interviews and survey returns.

The WW Community

- Seven communities play a part in whale watching along the coast of Ecuador (especially Manabí province, including Machalilla National Park, La Plata island, Santa Elena Peninsula, Sua) as well as in the Galápagos and the Amazon region.
- Coastal whale watching has effectively taken off since the designation of Ecuador's coastal waters as a whale sanctuary in 1989. The Galápagos Marine Reserve dates from 1959.
- Ecuador's protected areas provide a powerful demonstration to local people and communities in Ecuador about the value of conserving wildlife and natural habitats. People from all over the world have paid large amounts of money for their once in a lifetime tour to see Ecuador's wonders. The small towns in Machalilla National Park chose environmental protection over industrial development and expansion as an alternative economic strategy for local residents.
- Capturing tourist expenditure in the Amazon is a challenge according to local guides and researchers.

Many river-boat trips are self-contained. The best opportunities for capturing local funds and gaining community support for tourism are the jungle lodges.

- Puerto López has had considerable community benefits from whale watch tourism. Prior to the early 1990s it was a quiet fishing town. Through the 1980s, approximately 3,000 visitors a year came to visit the Machalilla National Park. In 1994, humpback whale watching along the coast started to take off, attracting 1,630 whale watchers, mostly to Machalilla National Park and Isla de la Plata. In 1997, there were 5 hotels, 4 restaurants and 7 whale watch operators. The humpback whale festival which began in Puerto López in 1999 is largely credited with raising the numbers of park visitors to the current more than 30,000 a year. As of 2008, there were 32 hotels, 13 restaurants and 22 whale watch operators with 30 boats. Total number of dedicated whale watchers is currently 20,000 per season with 10,000 people attending the annual festival, 70% locals and 30% from outside the country. For more about the benefits from these and other whale festivals, see Table 2.

²⁴ An estimated 20,000 visitors to the park see humpback whales. 11 operators go whale watching only; 11 operators go whale watching as well as hiking on Isla de la Plata. Visitation to the general area including the 3 port towns within the park, Salango, Puerto López and Puerto Cayo, amounts to 50,000 per year.

²⁵ Humpback whales in season can be seen from up to 10 hotels along the Ecuadorean coast. Two hotels promote it, receiving 30 guests/ day in high season (Jul.-Aug.). Indirect expenditure is counted in the charge from rooms USD \$12-20. One hotel has a special whale lookout and charges \$2 more.

²⁶ 140,000 visited the Galápagos Marine Reserve. 10% is taken as a conservative estimate of whale watching. Expenditure shown also represents 10% of official Park numbers. The spread of USD \$7-15.6 million represents 2 separate estimates. For the table, calculations are included only for the lower, conservative number. Galapagos numbers are based on "Galápagos en riesgo" in Watkins and Cruz 2007. http://www.darwinfoundation.org/files/library/pdf/2007/Galapagos_en_Riesgo_7-4-07-ES.pdf

Perú

República del Perú

Population: 28,674,757 (2007 est.)

Total Area: 1,285,220 sq km (496,223 sq mi)

Tourist Arrivals: 1,486,005 (2005) (+16.4% on previous year)

GDP/PPP: \$169.5 USD (2005 est.)

GDP/PPP per capita: \$6,100 USD

Real growth rate: 5.8%

Environmental Performance Index: 78.1 (59th in the world)

Main WW Species: Amazon River: Amazon River dolphin or boto *Inia geoffrensis*, tucuxi *Sotalia fluviatilis*; coastal waters: bottlenose dolphin *Tursiops truncatus* and less often or further from shore: dusky dolphin *Lagenorhynchus obscurus*, common dolphin *Delphinus* spp, Burmeister's porpoise *Phocoena spinipinnis*, humpback whale *Megaptera novaeangliae*, sperm whale *Physeter macrocephalus*, Bryde's whale *Balaenoptera brydei*, other cetaceans.

Year WW began: 1985.

Types of WW: Large whales, dolphins, porpoises, boat-based, land-based, educational, photo-ID research.

Perú WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	27	na	40,000	-	40,000
1994	150	77.1	360,000	90,000	450,000
1998	531	37.2	64,000	17,000	81,000
2006	586	1.2	\$120,632	\$114,800	\$235,432

Perú has recently undergone a unique experiment to promote dolphin watching along the coast to provide replacement income for fishermen who previously caught the dolphins for the fish market, as well as to stimulate local interest in protecting the dolphins and their habitat (see Case Study 2). There had been several attempts to start dolphin watching along the coast in the 1980s and 1990s, but this was difficult in part due to the large numbers of dolphin catches. As recently as the mid-1990s, the number of dolphins and porpoises killed was recorded at 20,000 per year (Van Waerebeek and Reyes 1994). Following the legal banning of dolphin hunting and dolphin consumption in 1996, the number of small cetacean mortalities decreased to 3,000 or fewer, but dolphin meat could still be found on the black market (Rose 2006). In Apr. 2006, Humane Society International (HSI) joined with the Perú Tourism Board, National Police (Tourism & Ecology Dept.), US State Department and Mundo Azul to initiate a series of seven workshops ranging from regional stakeholder and specialist marine wildlife police enforcement workshops to national conferences with government ministries and international speakers (see Table 3). Case studies on whale watching were presented along with a legal framework, practical proposals and a blueprint for how to set up sustainable high quality whale watching specifically tailored for Perú (Hoyt 2007a, b). (See Case Study 2.)

Since the final whale and dolphin watching workshop in Feb. 2007, dolphin watching has

started up in a limited way along the coast, and the prospects are encouraging. The bottlenose dolphin population density along the coast is very high and offshore there are multiple cetacean possibilities including the chance of sighting rare beaked whale species. In recent decades, beaked whale species new to science have been found in the waters off Perú and northern Chile.

In Aug. 2007 an earthquake destroyed the infrastructure as well as many people's lives in Paracas and nearby towns, close to one of the key dolphin areas. It remains to be seen how long it takes to rebuild. It may thus be difficult to judge the true success of the workshops for some time; basic assistance is needed before any expansion of whale watching can occur. Meanwhile, other areas in Latin America and other parts of the world are borrowing the blueprint created in and for Perú, and putting it to work.

Peru WW Socioeconomic Profile:

WW Tourists

- Most of the dolphin watchers have been Americans. Overall, tourism to Perú is led by Chile (23.7%), USA (19.6%), Ecuador (5.9%), Bolivia (4.8%), UK (4.1%), Spain (3.9%), France (3.6%), Argentina (3.6%), Colombia (3.3%), Brazil (2.9%), Germany (2.8%). Canada (2.2%) and Japan 2.2%.

WW Operators & the Trips They Offer

- Beginning in the mid-1980s, Oceanic Society Expeditions, an American ecotour operator specializing in dolphin and whale watch tours, operated high quality research trips open to the public in the Pacaya-Samiria National Reserve area of the Peruvian Amazon. However, these tours stopped for various reasons several years ago, though it is hoped they will re-start by 2009.

- A pelagic bird watching tour operator has offered some guided whale watch trips every year, both dedicated and others partly bird-watching trips.
- A dedicated dolphin-watch operation along the coast south of Lima, beginning in 2007, introduced people to dolphin conservation and research with one-day and extended tours.

Perú WW Breakdown:

Port or location	Ops	WWs	% Counted	Unit Price	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
Coastal	3	86	100	125-2600	25,632	4,800	30,432
Paracas: Sea lions & seabirds ²⁷	Many	-	-	-	-	-	-
Amazon: dedicated dolphin trips	1	To resume 2009	100	-	-	-	-
Amazon – river trips & jungle lodges	Several	500	10	190	95,000	110,000	205,000
Total	10+	586	-	-	\$120,632	\$114,800	\$235,432

Sources: Latest annual data from individual operator interviews and survey returns.

The WW Community

- A pilot project (2008) by Mundo Azul and fishermen from Pucusana, a small port 60 km south of Lima, is offering tours to see dolphins, sea lions and seabirds.
- The whale watch blueprint pioneered the involvement of wide sectors of the community in several coastal regions of Perú, as well as from top down administrators and ministries concerned with dolphin conservation and marine tourism (see Case Study 2 for more information).

Case Study 2. The Peruvian Experiment: Blueprint for Creating New Whale Watching in Coastal Perú

How would you start from scratch if you wanted to set up high quality whale or dolphin watching in a community? In 2006, the Humane Society International commissioned a blueprint to show how to accomplish this. Specific application was to be given to coastal Perú, but the blueprint was designed and written up to be universal.

The 14-point blueprint is presented in loosely chronological order as a practical "task list" of what

needs to be done to ensure the successful development of high quality, sustainable whale watching. However, many steps can be done simultaneously or begun opportunistically, depending on the situation.

The blueprint is envisioned as a plan to be adopted initially at the national level and then developed into a working plan by a community or group of communities that undertake to start whale watching ideally aided by national and international direction, funding, coordination and implementation as needed. Following are the key tasks which need to be addressed in order to develop high quality, sustainable whale watching:

Initial planning and assessment (researchers, NGOs and government representatives take the lead; other stakeholders to assist)

1. Identify and form a planning group to refine and approve a draft working plan (national, regional and/or local) starting from the 14-step plan presented here.
2. Devise and implement stakeholder involvement strategies.
3. Organize baseline research on whales and dolphins.

²⁷ This was counted as partly dolphin watching in the past but the quality has declined and since Aug. 2007, an earthquake in the region has devastated local tourism.

4. Complete an environmental impact assessment (EIA) and a socioeconomic assessment.

Marketing and tour design (tourism agencies, operators and supporting businesses to take the lead; other stakeholders to assist)

5. Analyze the infrastructure available for tourism and identify gaps. Commission a tourism scoping document/feasibility study for current and possible future local attractions.
6. Commission a tourism marketing analysis (including visitor background and expectations).
7. Design the whale watching/ marine ecotourism tours or "tour products".
8. Shape the brand and overall marketing plan for the community/region.

Focus on business (operators and supporting businesses and tourism agencies take the lead; other stakeholders assist)

9. Set up business development, training and assistance programs and hold whale watch operator workshops.
10. Develop business plans for sustainable whale watching. Pay particular attention to value-adding techniques and impact-lowering strategies.

Management of the resource (government including tourism agencies as well as NGOs and researchers take the lead; other stakeholders assist)

11. Set the overall policies for managing the industry (licensing of operators, boats; making regulations). Set the upper limits for whale watching.
12. Examine the legal tools for managing the industry and implement them.
13. Embed education and research, as well as monitoring of the development of whale watching (to determine the impact of the animals being watched).
14. Develop a sustainability evaluation mechanism, both self-evaluation and periodic outside evaluation (including consideration of a big picture sustainability analysis.)

This 14-step plan is the core blueprint. A fuller description of each point, with positive and negative examples, is provided in the full document (Hoyt 2007a, b). The individual points of the plan and the details need to be fully adapted to the situation and conditions in specific countries and then tailored to the appropriate coastal communities, through the process of stakeholders adapting a nationally-approved plan to their own local community. In fact, without making most of the benefits accrue to local communities, a sustainable industry is impossible.

In Perú, the blueprint was only part of the process to help set up dolphin watching as a sustainable business. The other main part was an attempt to enforce Perú's existing environmental laws against killing dolphins. The Humane Society International with the Peruvian Tourism Board, the National Police (Tourism & Ecology Dept.), Mundo Azul and US State Dept. backing, adopted a strategy to sponsor:

- three regional workshops to alert local police about the presence of illegal dolphin meat in local markets and to train them to conduct dolphin meat raids;
- raids on markets where dolphin meat was illegally being sold, as well as development of an electronic database of illegal vendors to help control local black markets;
- three regional workshops to raise public awareness of the importance of protecting dolphins and to explore the feasibility of dolphin watching as an economic alternative using the blueprint; and
- a national conference to explore the development of a Peruvian whale and dolphin watch strategy with national government departments. The resulting *National Strategy for the Development of Whale and Dolphin Watching in Perú (Estrategia para el Desarrollo del Turismo de Observación de Cetáceos en Perú)* (Austermühle 2007) is designed to help small operators get started in the industry and outlines how such an ecotourism industry could develop in Perú.

Note: Adapted from Hoyt (2007a, b). See Table 3 for more information on the workshops.

Bolivia

República de Bolivia

Population: 9,119,152 (2007 est.)

Total Area: 1,098,580 sq km (424,164 sq mi)

Tourist Arrivals: 400,000 (2005)

GDP/PPP: \$23.73 billion USD (2005 est.)

GDP/PPP per capita: \$2,700 USD

Real growth rate: 3.4%

Environmental Performance Index: 64.7 (110th in the world)

Main WW Species: Amazon River: Amazon (Bolivian) river dolphin or bufeo *Inia boliviensis*.

Year WW began: Early 2000s.

Types of WW: Dolphins, boat-based, photo-ID research.

Bolivia WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	-	na	-	-	-
1994	-	na	-	-	-
1998	-	na	-	-	-
2006	400	na	\$76,000	\$90,000	\$166,000

Land-locked Bolivia has outstanding dolphin watching opportunities in its central Amazon region. Formerly considered a subspecies of the Amazon River dolphin, the recently designated river dolphin of Bolivia has the highest encounter rates recorded in the Amazon which is a positive reflection of the healthy environmental status of the region (Aliaga-Rossel *et al.* 2006). A few boat excursions are already offering dolphin sightings as part of overall nature tours on the river.

Ecotourism has not been encouraged by the country which has had years of economic and social instability but as the country recovers, the potential to draw dedicated high-spending ecotourists to Bolivia with its 22 national parks (covering 15.6% of the country) is substantial (Euromonitor International 2007). With modest national government support, several communities in the central Bolivian Amazon are already starting to turn to tourism to sustain the community and protect local areas.

Bolivia WW Socioeconomic Profile:

WW Tourists

- At present Bolivia is usually a stop on a multi-country tour. The national tourism industry is trying to change the perception to make Bolivia a destination in its own right. Part of that will be an effort to find pioneer ecotourists, as well as historical and cultural tourists, and to include dolphins, the local bufeo.

WW Operators & the Trips They Offer

- Small river-boat trips in the Mamoré River and its tributaries are at present the only offerings. Prices vary but USD \$190/ passenger is a minimum amount for a one to several-day tour on the river. Only 10% of the estimated tour numbers are counted for the purposes of seeing river dolphins.

The WW Community

- The potential benefits for communities are yet to be examined.

Guyana

Cooperative Republic of Guyana

Population: 769,095 (2007 est.)

Total Area: 214,970 sq km (83,000 sq mi)

Tourist Arrivals: Data not available

GDP/PPP: \$2.895 billion USD (2005 est.)

GDP/PPP per capita: \$3,800 USD

Real growth rate: -2.5%

Environmental Performance Index: 64.8 (108th in the world)

Main WW Species: Tucuxi (marine) *Sotalia guianensis*.

Year WW began: No Commercial WW.

Types of WW: No WW.

Guyana has tucuxi dolphins along its coasts and in the

rivers but no formal dolphin watching has yet developed.

Guyana WW Socioeconomic Profile:

WW Tourists

- Overall tourism to Guyana is led by the US

(51.5%) and Canada (13.6%). North America's market share is 65.1%, the Caribbean 23.0% and Europe is 7.5%. Tourism has grown steadily since 2001 but declined by 4.4% from 2004 to 2005.

Suriname

Republiek Suriname

Population: 470,784 (2007 est.)

Total Area: 163,270 sq km (63,039 sq mi)

Tourist Arrivals: 160,022 (2005) (+16.1% on previous year)

GDP/PPP: \$2.081 billion USD (2005 est.)

GDP/PPP per capita: \$4,100 USD

Real growth rate: 2%

Environmental Performance Index: No data available.

Main WW Species: Tucuxi (marine) *Sotalia guianensis*.

Year WW began: 2004.

Types of WW: Dolphins, boat-based, land-based, educational, photo-ID research.

Suriname WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	-	na	-	-	-
1994	-	na	-	-	-
1998	-	na	-	-	-
2006	1,906	na	\$88,292	\$9,530	\$97,822

Regular dolphin watch trips are offered by local boatmen and the Dolphin Programme of the Green Heritage Fund Suriname that is run by volunteers. The trip makes an ideal day excursion for people visiting Paramaribo and it is likely that dolphin and whale watching awareness will continue to grow here.

Suriname WW Socioeconomic Profile:

WW Tourists

- Overall, tourism to Suriname is led by the Netherlands (58.4%), French Guiana (12.6%), Guyana (8.3%), Brazil (3.7%), US (2.9%) and China (1.6%). European tourism has a 62.0% market share, largely due to the Netherlands followed by France, Belgium and Germany. All South American countries hold a 25.1% share.

WW Operators & the Trips They Offer

- The Green Heritage Fund Dolphin Programme has weekly data collection trips open to local paying volunteers as well as visitors. They collect data on dolphins and on the estuary ecosystem in the Suriname River.

- Tour operators offer official river-boat trips to see the dolphins and other wildlife, but three times as many trips are offered by small local boats.

The WW Community

- At present the trips provide local income to boatmen whether on official or unofficial trips, with official trips going once a week and unofficial three times a week. Each boat driver earns about USD \$91 but must pay fuel at a little more than \$1 a litre. On the official trips, the local company charges USD \$75 per person and they carry an average of four tourists with gross revenues of USD \$300 per trip, and earnings after expenses of \$209 per trip.
- Current work to dredge the Suriname River where the dolphins are found does not bode well for protection of their habitat. The local environmental group, the Green Heritage Fund, facilitates the dolphin research and other dolphin watching trips in the river to monitor the tucuxi and the river ecosystem but their comments criticizing the dredging proposal do not seem to have been taken seriously. Suriname is relatively

undeveloped for tourism but there is tremendous promise. If tours are developed with care and Suriname promotes a positive ecologically friendly

image, Suriname's marine wildlife including the dolphins could help support local people in a sustainable way through marine ecotourism.

French Guiana

La Guyane Française
(Overseas Department of France)

Population: 203,321 (2007 est.)
Total Area: 91,000 sq km (35,135 sq mi)
Tourist Arrivals: 65,000 (2002, most recent year available)
GDP/PPP: \$1.551 billion USD (2003 est.)
GDP/PPP per capita: \$8,300 USD
Real growth rate: Data not available.
Environmental Performance Index: Data not available.

Main WW Species: Tucuxi (marine) *Sotalia guianensis*, bottlenose dolphin *Tursiops truncatus*.
Year WW began: No commercial WW.
Types of WW: Informal/private only.

Local researchers report that tucuxi dolphins can be seen every day from shore but that there is currently no interest from local people in engaging in dolphin watching tourism. If a market can be found, the potential would be substantial.

French Guiana WW Socioeconomic Profile:

WW Tourists

- Overall tourism is led by France (63.0%), Martinique (15.0%) and Guadeloupe (8.0%). The only numbers, as reported to WTO, date from 2002.

Brazil

República Federativa do Brasil

Population: 190,010,647 (2007 est.)
Total Area: 8,511,965 sq km (3,286,470 sq mi)
Tourist Arrivals: 5,358,170 (2005) (+11.8% on previous year)
GDP/PPP: \$1616 billion USD (2006 est.)
GDP/PPP per capita: \$8,600 USD
Real growth rate: 2.8%
Environmental Performance Index: 82.7 (34th in the world)

Main WW Species: Amazon basin: Amazon river dolphin or boto *Inia geoffrensis*, tucuxi *Sotalia fluviatilis*; Fernando de Noronha: spinner dolphin *Stenella longirostris*, (Jul.-Oct.) humpback whale *Megaptera novaeangliae*; Abrolhos and north Bahia (Jul.-Oct.): humpback

whale *Megaptera novaeangliae*, minke whale *Balaenoptera acutorostrata*, rough-toothed dolphin *Steno bredanensis*, bottlenose dolphin *Tursiops truncatus*; Anhatomirim/Florianópolis: tucuxi (marine) *Sotalia guianensis*; Imbituba, Santa Catarina State: (Jul.-Nov.) southern right whale *Eubalaena australis*, (year-round) bottlenose dolphin *Tursiops truncatus*; Laguna (year-round, best Mar.-May): bottlenose dolphin *Tursiops truncatus*; Imbé/ Tramandaí: bottlenose dolphin *Tursiops truncatus*; Rio Grande/São José do Norte: bottlenose dolphin *Tursiops truncatus*.

Year WW began: Early 1980s (Fernando de Noronha); mid-1980s (Amazon); early to mid-1990s (Bahia and Santa Catarina).

Types of WW: Large whales, dolphins, boat-based, land-based, cruise ships, educational, photo-ID research.

Brazil WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	minimal	na	minimal	minimal	minimal
1994	175,000	na	2,500,000	6,250,000	8,750,000
1998 ²⁸	167,107	-1.1	4,071,000	7,243,000	11,314,000
2006	228,946	4.0	\$6,316,288	\$25,190,550	\$31,506,838

²⁸ The decline in numbers from 1994 and 1998 is largely due to the decision to count the Santa Catarina Island numbers of tucuxi dolphin watchers more conservatively as 50% instead of 100%. If they were counted as 100% in 1998, the total number of whale watchers would have been 287,107. See also footnote 47.

The most successful whale watching in Brazil has grown under the watchful, guiding efforts of dedicated researchers and marine protected area management – Fernando de Noronha, Abrolhos, and Imbituba. The main exception to this is Anhatomirim in Santa Catarina State in southeastern Brazil. Studies of dolphin reactions to the large volume of tourists at Anhatomirim have shown some problems that need to be addressed if tourism here is to contribute to cetacean conservation as high quality whale watching and to the standard found in many other areas in Latin America.

Brazil has outstanding potential for future development of whale watching with a diversity of cetaceans and places to watch them. In recent decades, considering the size of its economy compared to other countries, Brazil had captured a comparatively low percentage of the world tourism dollar, but this is changing as the infrastructure and variety of accommodation and travel options have increased.

Brazil WW Socioeconomic Profile:

WW Tourists

- Overall, Brazilian tourism from abroad is led by Argentina (18.5%), USA (14.8%), Portugal (6.7%), Uruguay (6.4%), Germany (5.8%), Italy (5.7%) and France (4.7%). European tourism has a 39.1% market share, followed by South America at 37.6% and North America at 17.6%.
- At Fernando de Noronha, representing a 31% market share of whale watching in Brazil, 82% of the tourists were from Brazil and 18% international. 55% of them were female. According to tourist interviews, 70% were dedicated whale watchers going specifically for (20%) or partly because (50%) of the presence of the dolphins, while 30% decided on the spot to go whale watching.
- At Praia do Forte, Bahia, the most popular humpback whale watching spot in Brazil, 35% of

the whale watchers were from Brazil and 65% were international. International whale watchers came from the UK (44%), Spain (26%), Germany (10%), Italy (5%), France (5%), Portugal (5%) and Switzerland (3%). An estimated 60% of visitors here went whale watching impulsively while 40% went to Praia do Forte partly (30%) or entirely (10%) to go whale watching.

- Tourists watching dolphins at Anhatomirim are mainly Brazilians and visiting Argentines.

WW Operators & the Trips They Offer

- Whale watch operators at Praia do Forte, Bahia, use experienced guides, typically with three years' training in ecotourism and a biology as well as tourism background. The tours from Praia do Forte have captured most of the humpback whale watching market from Bahia State to Abrolhos Bank. In 2007, 2 operators expanded to 4. By contrast in Caravelas, despite a high concentration of whales, whale watching had difficulty expanding due to poor tourism infrastructure and greater distance of humpbacks from the coast (Cipolotti *et al.* 2005).
- Amazon river-boat tours have the potential to contribute to local tourism if the boats and crew are local. Week-long trips can cost USD \$500-1500. Luxury cruises can cost more than \$250/ day but many of these ships are not locally owned, although they still employ at least some local people. River-boat tours are not dedicated toward the river dolphins, with few exceptions, most of which are located across the borders in Perú, Colombia or Ecuador. However, the river dolphins are a feature of most trips and are some of the easier wildlife species to see.
- Some 16 mainly schooners carry up to 300 passengers per trip in daily year-round tours departing Florianópolis for the Bay of Dolphins at the Environmental Protection Area of Anhatomirim. These are not dedicated dolphin trips, but they include frequent tucuxi dolphin sightings.

Brazil WW Breakdown:

Port or location	Ops	Boats	WWs	% counted	Unit Price	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
River dolphins								
Amazon ²⁹	-	-	10,000	10	190	1,900,000	2,250,000	4,150,000
Spinner dolphins								
Fernando do Noronha	20	30	70,000	100	25	1,750,000	8,750,000	10,500,000

²⁹ Amazon trips include jungle lodges, canoes and cruise ships of all sizes. These are not dedicated dolphin trips so only 10% is counted as the cetacean portion. 10% of 100,000 foreign tourists coming to Amazonas and the other Brazilian Amazon states represents a conservative estimate of dolphin watchers.

Port or location	Ops	Boats	WWs	% counted	Unit Price	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
Humpback whales								
Praia do Forte, Bahia ³⁰	4	4	3,207	100	77	246,939	481,050	727,989
Caravelas, Bahia	3	5	72	100	75	5,400	10,800	16,200
Itacare, Bahia ³¹	1	1	0	100	-	-	-	-
Prado, Bahia ³² (Charlotte Bank)	1	1	0	100	-	-	-	-
Salvador ³³	0	1	0	100	-	-	-	-
Tucuxi dolphins								
Anhatomirim/ Santa Catarina ³⁴	10	16	132,544	50	17.64	2,338,076	13,254,400	15,592,476
Southern right whales								
Imbituba	2	2	1,123	100	40-51	52,873	112,300	165,173
Imbituba land-based	-	-	1,000-1,500	100	-	-	25,000	25,000
Bottlenose dolphins								
Laguna	3	2	1,000	100	23	23,000	57,000	80,000
Laguna land-based	-	-	10,000	100	-	-	250,000	250,000
Imbé-Tramandai	-	-	minimal	100	-	-	minimal	minimal
Rio Grande/ Sao José do Norte	-	-	minimal	100	-	-	minimal	minimal
Total	44+	62+	228,946	-	-	\$6,316,288	\$25,190,550	\$31,506,838

Sources: Latest annual data based on estimations by researchers, individual operator interviews and survey returns.

The WW Community

- At least twelve communities in the eight main areas, as listed in the above table, have some involvement in whale watching.
- Brazil has regulations in place to watch whales and dolphins which are potentially helping to improve the management and quality of whale watching.
- Visitors to the National Marine Park of Fernando de Noronha provide income through tourism to the people of the main island at Vila dos Remédios. Since the advent of the spinner dolphin trips in the 1980s, the community has grown tremendously with 120 new hotels and motels serving the visiting public, 20 new restaurants, 40 new tour companies, and 20 new souvenir shops. None of these would exist without the popularity of the spinner dolphins.
- Fernando de Noronha has the Centro Golfinho Rotador (www.golfinhorotador.org.br), a cetacean research center open to the public.
- The humpback research group Instituto Baleia Jubarte has been advising local communities such as Itacaré on the sensible development of whale watching. They examined the potential of whale watching in the region and concluded that Porto Seguro, Guarajuba and Ilhéus, in particular, had high potential, with less but still some potential in the communities of Arembepe, Mar Grande, Comandatuba, Cabrália, Alcobça and Conceição da Barra (Cipolotti *et al.* 2005).
- Dolphins are an important drawing card for the Bahia Norte de Santa Catarina and the protected area at Anhatomirim. In this area, multi-year studies have been made of behavioral responses of tucuxi dolphins to boats, mainly schooners but also some small fishing and leisure boats (Pereira *et al.* 2007). Over time, the dolphins seem to be habituating to the boats although the reactions varied by season, boat-type and approach and were sometimes negative responses. 60% of the encounters between boats and dolphins occurred inside the no-go "Dolphin Exclusive Zone". The authors called for more integration and

³⁰ Formerly listed as "Abrolhos" with only 50% of WWs counted. However, watching whales in the Abrolhos area is now more dedicated toward humpback whales and includes departures from various locations in Bahia State.

³¹ At Itacare there were 36 WWs in 2004 and 187 in 2005 but the number declined to 0 in 2006, resuming to 70 in 2007.

³² At Prado there were 487 WWs in 2004 and 194 in 2005 but the number declined to 0 in 2006.

³³ At Salvador there were 214 WWs in 2004 and 76 in 2005 but the number declined to 0 in 2006.

³⁴ At Anhatomirim, tourists aboard the schooner (scunha) sailboats, mostly departing from Florianópolis, are not dedicated dolphin watchers, though the operators feature dolphins as a main attraction of their trips. Total capacity throughout the year was 397,632. High season (Dec.-Feb.) is full capacity while Mar., Jul. and Nov. are counted at 2/3 capacity and the other 6 months at half capacity. The resulting figure is 265,088. This is the number of passengers estimated to travel on sailboats in 2006. To determine the portion ascribable to dolphin watching, we take a conservative 50% or 132,544 and use this number for WWs and to determine their expenditure.

cooperation between boat operators, researchers and the local community, as well as more enforcement of regulations, to make sure the dolphin populations remain healthy and undisturbed.

- Landmark protection around the 913 km² Abrolhos Marine National Park extended a noise-threat buffer zone covering 95,000 km² to protect humpback whales on their breeding grounds from seismic surveys due to oil and gas exploration, as well as associated noise from potential oil development (Engel 2007). This buffer zone was withdrawn by court order in mid-Jun. 2007, although legal challenges within Brazil are now underway to restore the buffer zone or to create a much larger MPA (Agardy *et al.* 2007).

- Brazil's various whale and dolphin watching communities have spawned a number of Brazilian NGOs and researchers who are also strong marine conservation supporters. The benefits for research and conservation from commercial whale watching are growing.

- The annual Right Whale Week in Imbituba, Santa Catarina State, began in 1997, attracting locals and outside visitors for a week of special whale watching and other activities. The International Wildlife Coalition – Brazil has also organized whale watch workshops for enforcement authorities, talks and meetings with hotel and hostel owners along the "right whale coast", built a substantial land-based lookout and signage for the right whales, and made a successful proposal for a federally sanctioned (IBAMA) marine protected area for the southern right whales. In the past few years, Right Whale Week has turned into the annual Right Whale Month and it is now sponsored by the Brazilian Right Whale Project and PETROBRAS, the Brazilian Petroleum Company.

- At Laguna, the cooperative relationship between the dolphins and the fishermen and the visitors who watch the action from shore have contributed to the formulation of municipal decree 0267 issued Mar. 11, 1993 to make the whole lagoon system an ecological sanctuary for dolphins (Palazzo *et al.* 1994).

Uruguay
República Oriental del Uruguay

Population: 3,447,496 (2007 est.)
Total Area: 176,220 sq km (68,039 sq mi)
Tourist Arrivals: 1,917,049 (2005) (+2.5% on previous year)
GDP/PPP: \$54.58 billion USD (2005 est.)
GDP/PPP per capita: \$16,000 USD
Real growth rate: 6.1%
Environmental Performance Index: 82.3 (36th in the world)

Main WW Species: (Mid-Jul.-mid-Nov.) southern right whale *Eubalaena australis*; also: bottlenose dolphin *Tursiops truncatus*, killer whale or orca *Orcinus orca*, franciscana *Pontoporia blainvillei*.
Year WW began: 2001.
Types of WW: Large whales, dolphins, boat-based, land-based, educational, photo-ID research.

Uruguay WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	-	na	-	-	-
1994	-	na	-	-	-
1998	-	na	-	-	-
2006	4,800	na	\$26,000	\$99,750	\$125,750

Uruguay offers a variety of fairly accessible, high quality whale watch experiences from both land and sea, some commercial and others more educational and research-oriented. With the focus on the exciting southern right whale, it is likely that the public interest and numbers will continue to grow. Overall foreign tourism arrivals to Uruguay have declined in recent years, mostly due

to economic troubles in Argentina where most tourists to Uruguay come from, but 2004 to 2005 saw some growth with further increases in 2006 and 2007.

Uruguay WW Socioeconomic Profile:

WW Tourists

- Overall, tourism to Uruguay is from Argentina (57.8%), Brazil (10.3%), US (3.2%), and Chile (2.2%). All European countries represent 6.2% of the market share for 2005, led by Spain, followed by Germany.

- A 2004 study by Paula Mina from the Organization for Cetacean Conservation (OCC) found that whale watchers in Punta del Este were between 26-65 years old, middle to upper class, and came from Uruguay (60%), Argentina (22%), Europe (2%) and other countries (15%). For almost 80% of them, it was their first contact with whales. More than 90% expressed satisfaction with the event in general and about seeing the whales (33% very satisfied; 58% somewhat satisfied). 93% said they were interested in repeating the experience. 95% were satisfied with the manner and skill of the guide.

WW Operators & the Trips They Offer

- Five whale watch operators work from one main community in Uruguay.
- Guided land-based watching is also offered which has the potential to assist researchers with southern right whale counts as well as provide extra income from the guided trips.

The WW Community

- Eight special platforms for whale watching are

offered all along the coast of Uruguay in Maldonado and Rocha. Whales can also be seen from other high cliffs, lookouts and beaches. Over the three-month period (Aug.-Oct.) when southern right whales can be seen inshore, approximately 4,050 people watch whales with an average spend of USD \$20/person = \$81,000.

- A regular series of workshops on responsible tourism for whale watching has been held in Uruguay, culminating in the 5th WW workshop in Punta del Este in Sept. 2006. The meeting offered concrete recommendations for creating sustainable whale watching.

- In Apr. 2007, Uruguay hosted the 2nd International Workshop on the Sustainable and Non-lethal Use of Cetaceans (2º Taller Internacional sobre Gestión y Uso No Letal de Cetáceos) in La Pedrera, Rocha, attended by local and national ministries of tourism and the environment as well as whale and dolphin researchers and whale watching specialists from around Latin America and abroad.

- In Aug. 2007, an agreement on sustainable, responsible tourism, with special emphasis on whale watching, was signed by the Ministry of Tourism & Sport, the Municipalities of Maldonado and Rocha and the Organization for Cetacean Conservation (OCC). This agreement empowers a network of people to work together to implement training and workshops and to promote high quality whale watching.

Argentina

República Argentina

Population: 40,301,927 (2007 est.)

Total Area: 2,766,890 sq km (1,068,296 sq mi)

Tourist Arrivals: 3,895,396 (2005) (+12.7% on previous year)

GDP/PPP: \$542.8 billion USD (2005 est.)

GDP/PPP per capita: \$13,700 USD

Real growth rate: 8.7%

Environmental Performance Index: 81.8 (38th in the world)

Main WW Species: Península Valdés: (May-Dec.) southern right whale *Eubalaena australis*, (year-round) dusky dolphin *Lagenorhynchus*

obscurus, killer whale or orca *Orcinus orca*; Las Playas del Doradillo: (Jun.-Nov.) southern right whale *Eubalaena australis*; Playa Unión (Rawson): (Sept.-Apr.) Commerson's dolphin *Cephalorhynchus commersonii*; Ría Deseado, San Julián (year round but mainly Sept.-Apr.): Commerson's dolphin *Cephalorhynchus commersonii*, Peale's dolphin *Lagenorhynchus australis*; Cabo Virgenes (Sept.-Apr.): Commerson's dolphin *Cephalorhynchus commersonii*, Peale's dolphin *Lagenorhynchus australis*, (sporadic) southern right whale *Eubalaena australis*, killer whale or orca *Orcinus orca*.

Year WW began: 1983 (some unofficially in the early 1970s).

Types of WW: Large whales, dolphins, boat-based, cruise ships, land-based, educational, photo-ID research.

Argentina WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	17,371	na	347,000	14,245,000	14,529,000
1994	44,580	37.0	892,000	35,218,000	36,110,000

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1998	84,164	17.2	1,638,000	57,746,000	59,384,000
2006 ³⁵	244,432	14.3	\$2,218,339	\$59,346,765	\$61,565,104

Argentina was second after México to start commercial whale watching. Since 1998 it has passed Brazil in terms of numbers of whale watchers to become the leading whale watch country in Latin America. After México, it has the highest expenditure for whale watching.

The whale watching industry has a solid base around Península Valdés with southern right whales, killer whales and various dolphins. Land-based whale watching is popular in Argentina because the southern right whales, dolphins and orcas spend considerable time close to shore. Punta Norte is a legendary site for watching orcas beach themselves. Although the orcas mainly hunt the young sea lions and elephant seals from February to early May, they can be seen throughout the year practicing their routines along the shore and many people visit Punta Norte to see them. Rangers are often present to provide information. There is a path along the cliff with many excellent vantage points for watching the orcas.

Land-based whale watching has added considerably to the economic impact of the main southern right whale watching industry but perhaps the most important factor is the limiting of permits which has meant that the demand has stayed strong. Patagonia in general and Península Valdés in particular have an international appeal, a powerful brand; for the past three decades, Península Valdés has remained firmly on the map for pioneer and high-spending ecotourists, while appealing to a broader tourist base as well.

Argentina WW Socioeconomic Profile:

WW Tourists

- Overall, tourists to Argentina in 2005 came from Chile (25.1%), Brazil (11.6%) and Uruguay (11.2%). Tourists from other South American countries totalled 59.6%, while European tourists comprised 16.3% and North American 9.5%. Tourism has climbed steadily every year since 2000.
- Tourism to Península Valdés, the prime whale watch area, has increased steadily since the 1980s when whale watching started. In 1993, the overall

number of tourists to Península Valdés passed 100,000, with 33,772 (34%) taking whale watch tours. In 1999, 200,000 visitors entered the area, and by 2006, the number had reached 300,000 per year. In 2007, 322,599 visitors came to Península Valdés with 32.1% from Chubut Province, 42.5% from Buenos Aires and elsewhere around Argentina, and 25.4% foreigners.

- Currently, 40% of all visitors to Península Valdés take whale watch tours. If only the key whale months of Jun. to mid-Dec. are included, then 80% of all visitors to Península Valdés go whale watching. From Jan. to Apr., about 35% of all visitors go to Punta Norte partly in hopes of watching orcas. Visitation to Península Valdés is recorded because each person who enters the area is charged an entry fee. The average person stays 3 days in the area and spends about USD \$110 per day (total \$330).
- Departing from Puerto Pirámides, in 2006, 60.8% (73,110 out of 120,172 total) of the whale watchers were from Argentina, largely from Buenos Aires, and the rest were foreigners, mainly from Europe (Spain, Germany, France, UK and Italy).
- A study at Punta Norte in Mar. 1997 (outside the right whale season) determined that 20% of 1,646 visitors interviewed were foreigners. The foreigners included Germans (17%), Italians (12%), Americans (11%), Israelis and French (8% each) and New Zealanders (5%) (Iñíguez *et al.* 1998).
- At San Julián, the dolphin watcher's profile was obtained through surveys (Iñíguez *et al.* 1998). 83% were national visitors, largely from the Buenos Aires area, who travelled an average 2,200 km (1,367 miles) to reach the site. The 17% international visitors were mainly from France, Israel, Brazil, Canada, and Germany. The dolphin watchers were highly educated – 72% had at least a bachelor's degree and 31% were guided by recommendations. Some 82% of the visitors said that ecotourism was the primary reason for their trip (with attractions led by the Magellanic penguins and the Commerson's dolphins). Visitors spent an average of two days in the area (Fundación Cethus 1999).

³⁵ The modest increase in direct, indirect and total expenditure in relation to number of whale watchers is partly due to the Argentine government decision in Jan. 2002 that ended 10 years of parity to the US dollar with a devaluation of nearly 30%. There has also been a shift away from package tours for whale watchers compared to 1991-1998.

WW Operators & the Trips They Offer

- At Puerto Pirámides, Península Valdés, six operators run the right whale tours lasting about 2 hours each. The 17 boats in the WW fleet take up to 84 passengers per boat; except for special days during the season, only one boat per operator is

allowed to be on the water at any one time.

- At Puerto Deseado, from Sep.-Apr., three tour operators offer 1-2 hour nature trips along the river in small inflatables and fiberglass boats (capacity 27 persons) which encounter the Commerson's dolphins.

Argentina WW Breakdown:

Port or location	Ops	Boats	WWs	Unit Price	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
Boat-based							
Puerto Pirámides	6	17	120,172	17.45	2,097,001	40,558,050	42,655,051
Playa Unión (Rawson)	1	1	4,134	17.45	72,138	1,395,225	1,467,363
Puerto Deseado	3	3	2,400	15	36,000	672,000	708,000
Puerto San Julián	2	2	600	22	13,200	168,000	181,200
Las Grutas	1	1	To start 2008	-	-	-	-
Land-based							
Punta Norte ³⁶	-	-	61,856	-	-	6,804,160	6,804,160
Las Playas del Doradillo ³⁷	-	-	45,000	-	-	4,950,000	4,950,000
Cabo Vírgenes ³⁸	-	-	1,633	-	-	179,630	179,630
Antarctic departures							
Ushuaia	c20	c30	8,637	-	-	4,619,700	4,619,700
Total	32	53	244,432	-	\$2,218,339	\$59,346,765	\$61,565,104

Sources: Latest annual data from Miguel Iñíguez plus individual operator interviews and survey returns.

The WW Community

- Nine communities have some involvement in whale watching. Whale watching from Puerto Pirámides and nearby towns servicing Península Valdés began officially in 1983, while dolphin-based tourism began in 1992 out of Puerto San Julián and Puerto Deseado. However, Mariano van Gelderen had started some whale watching in the early 1970s around Península Valdés.

- Argentina has put regulations in place to watch whales and dolphins which is potentially helping to improve the management and quality of whale watching.

- The Instituto de Conservación de Ballenas (ICB) has conducted pioneer research on southern right whales, leading the way in local conservation and research initiatives, as well as helping to organize international workshops on whales, whale watching and right whales that have added considerable value to conservation and the local community (see Table 3).

- Ecocentro Mar Patagonia was set up in Puerto Madryn as a research and educational center. They engage in work on right whale photo-identification and satellite tracking of elephant seals. They also sponsor conferences.

- In a study of the socioeconomic aspects of whale watching in Argentina sponsored by WDCS and Fundación Cethus, Iñíguez *et al.* (1998) interviewed local tourism departments, fishermen, tour operators and visitors in three main areas and determined that whale watching had extensive socioeconomic value to small Argentine communities in terms of conservation, education, and public awareness as well as basic tourism revenues.

- Puerto Pirámides is a small town that depends mainly on ecotourism, much of it based around the whales (Iñíguez *et al.* 1998). Hotels, tourist buses, guides, cafés and restaurants are all substantially supported during the high whale season. The spirit

³⁶ Based on admissions purchased and park surveys, 1/3 of all visitors, 176,731, to Península Valdés go to Punta Norte = 61,856.

³⁷ Estimated number of whale watchers from the beach during the high tourist season of Jun-Sept. Sept.-Oct. are the peak months for whales. The actual season is 2-3 months longer (total up to 200 days) but this is given as a conservative estimate.

³⁸ 2006 visitor numbers to the seasonal provincial reserve at Cabo Virgenes which is famous for Magellanic penguins (*Spheniscus magellanicus*) were 8,165. The cetacean portion is estimated to be 20% or 1,633 WWs.

of the town is exhibited in the annual "El Dia de la Ballena" – the Day of the Whale – when free trips are offered to see the whales and the whole town celebrates.

- Since 1992, Fundación Cethus has worked independently and with whale watch operators in the various cetacean areas, researching mainly small cetaceans, presenting environmental education programs to more than 14,500 students of all ages, working with travel agencies to develop more educational trips, producing educational materials, and consulting with local, provincial and national consultants on marine protected areas and cetaceans.

- Substantial revenues are obtained by the Chubut Tourism Department for film permits. According to Iñíguez *et al.* (1998), foreign film crews must pay a daily fee of USD \$300 and Argentine companies USD \$100. Film crews must budget for official observers from the tourism department at USD \$50 a day. In addition, film crews have to provide a copy of the finished film. An average 20-25 days are spent in the area filming the whales and other wildlife. Even if only 50% is attributable to whales, orcas and dolphins, the earnings are a minimum of USD \$3,500 per film crew. This money currently goes to the reserves, and thousands more dollars are left in the communities for boat and other equipment rentals, hotel, food and supplies.

- Fundación Cethus (1999) traced dolphin watching expenditure at San Julián and determined that tourists were spending an average of USD \$33.96/ day for an average of two days in the area. Of the money spent on the tours, 47% was kept largely in the town (gas and oil, book-keeping office, other services), while the rest went mainly to Buenos Aires (insurance, retirement payments, boat payments, boat taxes).

- Partly because of the endangered southern right whales, Península Valdés was made a "Tourist Reserve" by the Province of Chubut in 1983. Other reserves in Argentina created in response to tourism activity surrounding whales and dolphins are Punta Norte Tourist Reserve, Ría Deseado Nature Reserve and Bahía San Julián Nature Reserve (Hoyt 2005a). Of course, these reserves also afford protection to sea bird colonies, sea lion rookeries and other species.

Case Study 3. Puerto Pirámides, Argentina: Wind-swept Whale Watch Town

Puerto Pirámides offers in many ways the prime example of how a tiny, remote wind-swept town

transformed itself into a gateway offering the world a chance to enjoy high quality experiences with whales. The whales in this case are the southern right whales in the pristine waters of the far South Atlantic. Unlike most of the rest of the world, Puerto Pirámides accomplished its goal relatively independently of the big, established whale watch businesses in North America. The only other Latin American whale watching that pre-dates Puerto Pirámides is Baja California, México, where whale watching in the gray whale lagoons was developed by US interests. Of course, the pioneer whale watching at Puerto Pirámides was helped by the worldwide publicity awarded to Península Valdés from whale researcher Roger Payne and the photographers and film makers Des and Jen Bartlett, whose stories filled National Geographic and TV screens through the 1970s. Beginning in 1973 whale tourism was informal until 1983 when the first tours got started. The whale watching is seasonal (Jun. 15-Dec. 15) but there is enough additional off season marine wildlife – high jumping dusky and other dolphins; elephant seals and sea lions; and orcas catching sea lion pups and southern elephant seals on the beaches – to keep visitors coming year-round.

What are the secrets of whale watching success at Puerto Pirámides and Península Valdés?

- A fantastic, charismatic endangered species close at hand and in local abundance: the southern right whale. The emotive, touching story of the "right whale to hunt" that nearly went extinct and comes up to your boat reaches the public in a powerful way. However, other ports in Argentina, Uruguay and Brazil, as well as locations in South Africa and Australia, can claim all this too.
- Limiting the number of whale watch operators to only six. Each company is allowed to have only one boat in the water at a time, except during the long weekend of October 12. This limitation on operators and boats has helped to ensure that the supply does not expand too fast, forcing the prices down. In fact, whale watching has grown slowly but steadily for 25 years since it began in 1983.
- Substantial protection and a ban on development of the surrounding land and marine areas of Península Valdés. Keeping the area pristine makes it more desirable, more valuable by the year: the "Mona Lisa" principle (if you've got the "Mona Lisa" or its equivalent, then keep it in good condition and

its value increases every year). The park authorities have banned all whale watching in one of the gulfs around the Peninsula, restricting it to one main area. More work should be done on the connection between the establishment of marine mammal MPAs and

sanctuaries and the value of whale watching. The opposite approach – e.g., building a 30-storey hotel on the beach – could actually have the effect of decreasing the value of the whales, whale watching and local tourism. There is a lot to be said for high-value ecotourism.

Chile

República de Chile

Population: 16,284,741 (2007 est.)

Total Area: 756,950 sq km (292,260 sq mi)

Tourist Arrivals: 2,027,082 (2005) (+13.6% on previous year)

GDP/PPP: \$202.7 billion USD (2006 est.)

GDP/PPP per capita: \$12,700 USD

Real growth rate: 4.2%

Environmental Performance Index: 83.4 (29th in the world)

Main WW Species: Arica: bottlenose dolphin *Tursiops truncatus*, pilot whale *Globicephala* spp, Risso's dolphin *Grampus griseus*, short-beaked common dolphin *Delphinus delphis*, sperm whale *Physeter macrocephalus*; Isla Choros-Damas & Isla Chañaral: bottlenose dolphin *Tursiops truncatus*; also: humpback whale *Megaptera novaeangliae*, blue whale *Balaenoptera musculus*, fin whale *Balaenoptera*

physalus, Risso's dolphin *Grampus griseus*, southern right whale dolphin *Lissodelphis peronii*; Constitución coast, Chilean dolphin *Cephalorhynchus eutropia*; Chiloe/Patagonian channels: blue whale *Balaenoptera musculus*, humpback whale *Megaptera novaeangliae*, Chilean dolphin *Cephalorhynchus eutropia*, Peale's dolphin *Lagenorhynchus australis*, Commerson's dolphin *Cephalorhynchus commersonii*, southern right whale dolphin *Lissodelphis peronii*, killer whale or orca *Orcinus orca*, Risso's dolphin *Grampus griseus*, fin whale *Balaenoptera physalus*. Strait of Magellan/ Punta Arenas (Dec.-Apr.): humpback whale *Megaptera novaeangliae*, southern right whale *Eubalaena australis*, sei whale *Balaenoptera borealis*, killer whale or orca *Orcinus orca*, Peale's dolphin *Lagenorhynchus australis*, Chilean dolphin *Cephalorhynchus eutropia*, Commerson's dolphin *Cephalorhynchus commersonii*. **Year WW began:** Early 1990s.

Types of WW: Large whales, dolphins, porpoises, boat-based, cruise ships, air, land-based, educational, photo-ID research.

Chile WW Numbers & Visitor Expenditure:

Year	WWs	Avg. annual growth rate %	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
1991	minimal	na	minimal	minimal	minimal
1994	300+	na	15,000	38,000	53,000
1998	3,300	82.1	194,000	485,000	679,000
2006	13,720	19.5	\$1,169,443	\$1,284,383	\$2,453,826

In the past few years Chile has initiated some of the most diverse whale and dolphin watching opportunities in Latin America: from dolphin watching around rocky islands in the desert north, to large baleen whales leaping against the backdrop of Chiloe Island and the impenetrable temperate forests of the southern fjords. Chile, along with Argentina, also has the world's largest share of regionally endemic dolphins, including its own dolphin species: the Chilean dolphin. There are also Peale's and Commerson's dolphins and Burmeister's porpoises. Chile's southernmost port, Punta Arenas, offers tours of the nearby channels as well as excursions to the Antarctic, part of which feature whales and dolphins. Recently, air tours were initiated with flights taking only 2 hours to traverse the Drake Passage.

Despite the strong cetacean presence, reasonable tourism infrastructure and good access to most parts of the country, Chile has been slow to develop whale watching. Hoyt (2001) noted "considerable to outstanding potential [though] surprisingly little cetacean tourism has developed." But that has all changed. Whale watching has truly been launched in Chile and now can be expected to grow rapidly over the next few years. The challenge will be to control the development and keep the value high with research, education, good guidelines and regulations, and attention to local communities that are encouraged to enter the tourism market.

Chile WW Socioeconomic Profile:

WW Tourists

- Overall tourism is led by Argentina (29.9%), Perú (10.9%), USA (9.1%), Bolivia (8.8%), Brazil (8.2%), Germany (3.4%), Spain (3.0%) and France (2.6%). All of Europe is 19.0% and all of North America is 12.5%. Big growth markets, doubling over 3 years, include Australia (1.5%) and China (0.3%).

- Boat passengers to Isla Choros and Damas (as reported by CONAF) were 12,235, 28% foreigners and 72% Chileans; 85% adult, 15% children; and 53% female, 47% male.

- In 2005, visitors to the MPA Francisco Coloane in the southern fjords were 77% foreigners and 23% Chilean.

WW Operators & the Trips They Offer

- At Isla Choros-Damas, in the north central part of the country 500 km (300 miles) north of Santiago, local fishermen offer austral summer tours using outboard fishing boats (capacity 12 passengers). A few kilometers north and offshore at Isla Chañaral, a small amount of dolphin watching has occurred at least since 1993. Cetacean watching and identification guidelines have been given to local tour boats by Centro de Investigación Eutropia.

- Researcher Parissa Yazdi looked at the impact of tour boats on the behavior and energetics of bottlenose dolphins around Isla Choros and recommended dolphin-watching guidelines to protect the dolphins as well as to improve the quality of encounters between dolphins and tourists (Yazdi 2007).

- In Arica, trips 2-3 times weekly focus on marine nature (penguins, albatross, cormorants, southern sea lions) and feature various whales and dolphins that come close to shore especially Jun.-Sept.

- Whale watching guidelines have been devised and implemented at the local level by the Chilean Navy from Ancud (Isla de Chiloe) and DIRECTEMAR (Cabrera *et al.* 2007). Valparaiso is currently working to implement guidelines for the entire Chilean coast.

- Besides a number of small to large cruise ship departures for the southern fjords and Antarctica which include cetacean sightings, there is now a service called Antarctica XXI which takes passengers by plane over the Drake Passage to the Antarctic peninsula, shortening the travel time and eliminating the sometimes rough crossing.

- Trips to the MPA Francisco Coloane include an option for extended kayaking trips that include humpback whale sightings.

Chile WW Breakdown:

Port or location	Ops	Boats	WWs	Unit Price	USD Direct Expenditure	USD Indirect Expenditure	USD Total Expenditure
Northern Chile							
Arica	1	1	300	70-110	27,000	12,000	39,000
Isla Chañaral	8	8	540	12	6,480	92,610	99,090
Isla Choros y Damas ³⁹	40	40	12,235	12	146,820	713,423	860,243
Southern fjords to Punta Arenas							
Puñihuil (I. Chiloe)	-	-	To start 2009	-	-	-	-
Quellon (I. Chiloe)	5	5	-	-	-	-	-
Patagonian Channels	1	2	150	5714	857,143	85,650	942,793
Strait of Magellan	1	1	120	1100	132,000	180,000	312,000
Punta Arenas (for southern fjords & the Antarctic) ⁴⁰	3-5	3-5	375	-	-	200,700	200,700
Total	59+	60+	13,720	-	\$1,169,443	\$1,284,383	\$2,453,826

Sources: Latest annual data based on estimates from researchers, individual operator interviews and survey returns.

³⁹ In Jan.-Feb., 150 total fishermen are active but only 40 typically work on nature trips. Dolphins are seen on all the trips, but the main attraction for most is the Humboldt penguin colony. 34% of participants go mainly to see dolphins; therefore for the indirect expenditure only 34% of the total reported expenditure is counted.

⁴⁰ Numbers represent 25% of total passengers and expenditure. Unit (ticket) prices and direct expenditure are not included because these are mainly taken by foreign companies. Instead, the data shown here detail expenditure incurred within Chile. See Table 7 for full explanation and data.

The WW Community

- Eight communities have some involvement with whale watching, including at least 59 operators.
- A growing concern in Chile, the world's second largest farmed salmon producer, is the proliferation of salmon as well as mussel production in the inshore areas especially in the southern fjords of Chile. Since the 1980s, the industry has increased more than 140-fold, with the Xth Region holding more than 90% of the country's production (sources cited in Hucke-Gaete *et al.* 2006). Higher standards are needed for these salmon farms and they must be restricted to certain areas so that they don't adversely impact the habitats of whales, dolphins and other marine wildlife. Proposed MPAs should be carefully zoned and managed using ecosystem-based management principles.
- Various suggestions for a blue whale, cetacean or multiple-use protected area have been made for the Corcovado Gulf and around Chiloe Island. It is important that such an area be created in a transparent way with broad stakeholder input to implement the highest standards of conservation design and accompanying management plan.
- Puerto Montt, Valparaiso and Punta Arenas are departure points for ecotours, research and other cruises which include cetaceans, in particular Antarctic cruises. It is estimated that Chile captures about 4-5% of the Antarctic cruise market. Many tourists enroute to Antarctica stay 1 or 2 nights before and after their trip. Antarctic cruise ship itineraries have sometimes included exploration of Chilean coastal channels.
- Several international NGOs have worked with Chilean NGOs to kickstart the socioeconomic benefits of whale watching. In Nov. 1997, the Whale and Dolphin Conservation Society, in cooperation with Fundación Cethus and Chilean scientists, held a whale watch workshop to train prospective whale watch naturalists and operators from around Chile and Argentina. That same month, the International Fund for Animal Welfare, sponsored the Workshop on the Legal Aspects of Whale Watching, an international workshop to help establish the legal dimensions and foundations of whale watching. Since then, various other workshops within the country have been given to train researchers in handling strandings, acting as naturalist guides, and offering whale watching tours. In Dec. 2007, a community whale watch workshop was organized to assist in the establishment of responsible whale watching in the Coquimbo region; the organizers were Servicio Nacional de Turismo (SERNATUR) de Chile, Intendencia Región de Coquimbo, SERNATUR Región de Coquimbo and FOAR (Argentina).
- In south Isla de Chiloe, Centro Ballena Azul has been conducting blue whale research and community-based activity through whale watch workshops.
- At Isla Choros-Damas and Isla Chañaral (MPAs), Centro de Investigación Eutropia has conducted bottlenose dolphin and fin whale research, working with artisanal fisheries and implementing a community-based educational program.
- In northwestern Chiloe Island, since 2004, Centro de Conservación Cetacea (CCC) has been conducting blue whale research and community-based activities under the Alafaguara (Chilean blue whale) Project to develop high quality blue whale watching including research programs, workshops for training operators and developing guidelines. The project is conducted in Puñihuil (northwestern Isla de Chiloe), a small coastal community mainly comprised of artisanal fishermen and local tour operators. In order to develop the activity in a responsible manner, CCC is working with the Municipality of Ancud and Project Footpath (Chilean government project) to initiate coastal blue whale watching from land sighting platforms or stations. At the same time, with the Catholic University of Chile, they are developing a business plan for five local tourist operators to evaluate the economic potential of jointly designing and buying a whale watch boat suitable for local conditions and economy of scale. Tours could begin in 2009 with whale watching of blue, sei and humpback whales promoted as one of several attractions in this biodiverse area.
- Off Constitución, in the coastal waters of central Chile, a Chilean dolphin project funded by Comisión Nacional del Medioambiente (CONAMA) was developed by Centro de Investigación Eutropia (CIE) and Universidad Católica del Maule (UCM). The project includes community-based education programs as well as research. Dolphins can be seen from the coast and there is the possibility of developing trips for tourists in future.
- In 2007, a whale sanctuary was proposed for all of Chilean national waters. In April 2008, President Bachelet announced that the sanctuary would be created and would cover all of Chile's vast exclusive economic zone (EEZ).

Case Study 4. Antarctic Whale Watching Tourism: Capturing the Antarctic Market

Antarctica is one of the ultimate destinations for whale watching in the world, as well as one of the ultimate destinations on Earth. It is the last

continent and the great Southern Ocean, around the size of the United States and situated at the margins of the southern Atlantic, Pacific and Indian oceans easily qualifies it as the last ocean. In recent decades, tourists have come in increasing numbers, fueled by visions of penguins, ice and giant whales. The cruise ship traffic has expanded dramatically with both good and worrying aspects.

Tourism was limited to 5,000 or fewer people in the early 1990s. By the end of the decade, the 1999-2000 season, it surpassed 10,000 for the first time, but the biggest increase came in the 2003-04 season when passenger numbers jumped from 15,000 to more than 25,000. Throughout the 2000s, to date, tourism visits to Antarctica have grown by 20.8% per year, a level that may well not be sustainable for much longer. In the 2006-07 season (Nov. to mid-Mar.), a record 37,552 people ventured deep into the southern ocean to cruise Antarctic waters and/or to land on Antarctica. Many of them had a sampling of blue, fin and humpback whales, orcas and various dolphins. They also saw thousands of penguins and crabeater, leopard and Weddell seals.

Only a few Antarctic cruises are mainly whale-oriented; however, all cruises market whales as part of the trip. For this report, in line with previous reports (Hoyt 2001), 25% of all Antarctic visitors are considered to be the portion linked to whale watching.

South America, because of its location closest to Antarctica, has been able to capture substantial funds from the growing Antarctic tourist trade. The revenue for Antarctic cruises goes to companies for the most part based in Europe and North America, although some supplies, moorage and crew expenses are paid within South America. The most important expenditure for South America comes from the largely North American and European tourists who pass through the country enroute to or returning from Antarctica.

The key port servicing the Antarctic is Ushuaia near the southern tip of Argentina. It represents at least 92% of all traffic to Antarctica; Chile captures most of the rest, although some cruise ships depart from Brazil and Uruguay and others stop in the Falkland Islands/Islands Malvinas, usually enroute to Antarctica. A few others depart from South Africa, New Zealand or Australia. For this report we count 4% as coming from Chile, while the other ports are considered too small or not relevant to this report. For Argentina, additional benefits are felt in Buenos Aires through which all flights to Ushuaia connect and where many tourists choose to spend 1-2 nights before or after their cruise. The Antarctic cruise business is also largely responsible for the modernization of the airport and infrastructure at the port of Ushuaia. For this report, whale watching expenditure related to Antarctic cruises is the daily in-port expenditure of the whale watch tourists (a quarter of all Antarctic tourists) incurred during and/or following a visit to go whale watching in Antarctica, as well as the cost of any internal flights (especially, Buenos Aires-Ushuaia-Buenos Aires).

Table 7 summarizes the estimated expenditure within Argentina and Chile from Antarctic whale watchers and cruise ship staff and crew. For the 2006-07 season, the total number of tourists to Antarctica – sea, air and land-based (both landed and cruise only included) – was 37,552. Therefore the total using Ushuaia as a gateway (92% of all Antarctic tourists) was 34,548 and the total for Chile – 4% or 1,502. Allowing 25% for whale watching, this means that 8,637 whale watch tourists went through Argentina and 375 whale watch tourists went through Chile. In addition there were 19,890 crew and 2,430 staff, so similar computations can be made from these numbers to determine the 25% portion attributable to whale watching in Argentina and Chile respectively and thus to estimate expenditure. With a minimum of 2 nights spent in Argentina or Chile at USD \$150/day plus USD \$600 for return flights (Buenos Aires-Ushuaia or Santiago-Punta Arenas), the computation is detailed in Table 7.

Table 7. Estimated Expenditure within Argentina and Chile from Antarctic Whale Watchers and Cruise Ship Staff and Crew (2006-07)

Departure country	No. of Antarctic WWs (25% of Total PAX)	Staff & Crew attributable to WW (25% of Staff & Crew)	2 days expenses at USD \$300 @	Internal flights at USD \$600 @	Expenditure related to WW in USD
Argentina	8,637	5,133	1,539,000	3,079,800	4,619,700
Chile	375	223	66,900	133,800	200,700
Total	9,012	5,356	\$1,605,900	\$3,213,600	\$4,820,400

Sources: Calculations for this report based on Pérez and Ocampo (2006), and International Association of Antarctic Tour Operators (IAATO) statistics (http://www.iaato.org/tourism_stats.html), especially the "2006-2007 Summary of Seaborne, Airborne, and Land-based Antarctic Tourism".

Conclusion

Whale watching is a growing business in Latin America offering a broad spectrum of socioeconomic benefits, particularly if it is well-managed. Between 1998 and 2006, the number of countries expanded from 8 to 18, and the number of communities from 56 to 91. At the same time the number of whale watchers (visits) increased to 885,679 from 243,892. This is an average annual growth rate of 11.3% per year since 1998. The current figure for total expenditure of USD \$278.1 million indicates that there is a substantial gross output, or turnover, for this industry. In the decade (1998-2007) since the last report covering whale watching in Latin America which was based on 1998 numbers (Hoyt 2001), an estimated 6.4 million whale watches have taken place throughout Latin America.

The majority of the whale watchers were international visitors, although not necessarily from outside of Latin America. Many countries within the region have extensive tourism from across their immediate borders. What is important is that the expenditure is coming from outside the country's economy, thus providing an infusion of foreign exchange. Still, domestic visitors can be important and indeed have the capacity to support local whale watch industries in shoulder and off seasons or at times when demand may not be as strong from visiting tourists due to exchange rate fluctuations or other reasons.

With such strong growth since 1998 (and really since the first census in 1991), we can say that whale watching in Latin America is not yet "mature". Indeed, the developmental phase for most of the boats being used is still in phase one (using existing boats) or the early stages of phase two (customizing existing boats). Phase three (designing and using purpose-built boats for whale watching) has only occurred in a few areas.

Most whale watching communities are outside the main cities and economic centers of Latin America, so whale watching is effectively contributing to rural economic development. The challenge for whale watch communities in Latin America will be to institute enforceable regulations and policies to steer the growth of whale watching and to put whale watching on a truly sustainable basis. Much can be learned from the mistakes of whale watch operations in communities that are already mature (in North America, for example) or that grew too fast without controls or planning and as a result developed severe problems (e.g., Tenerife in the Canary Islands).

The problems of too fast growth are well known: Too much competition to satisfy demand can quickly become oversupply causing the ticket prices to crash. Lack of adoption or enforcement of guidelines and regulations can put a severe strain on whales and dolphins and lead to a competitive situation to get ever closer to whales. Too much whale watching (over-use of the resource) could lead to long term negative effects on the animals or the marine environment that obscure and render meaningless the positive aspects and potential value of high quality whale watching.

With the possible exception of Costa Rica, whale watching in Latin America is not currently growing too fast for reasonable management. There is in fact room for growth in many areas. Perhaps the greatest potential for future growth in the industry is in land-based whale watching as well as in high quality diverse tour products that can compete with those offered in other parts of the world and can attract and meet the needs and desires of a wide variety of whale watchers. Can the existing whale watch hotspots grow in value without putting additional pressure on whale and dolphin populations or impacting the marine environment? That's part of the challenge. It is important to realize that the decisions and actions that are taken now and over the next few years in these countries will determine the sustainability and the ultimate future of whale watching in Latin America.

In general, the best way for whale watching to grow is slowly and steadily. This ensures that the customers who see whales and dolphins are satisfied and eager to return, that the animals are carefully considered, and that whale watching becomes a long-term, sustainable business. Latin Americans are working hard to make whale watching an enduring success.

References

- Agardy, T., Aguilar, N., Cañadas, A., Engel, M., Frantzis, A., Hatch, L., Hoyt, E., Kaschner, K., LaBrecque, E., Martin, V., Notarbartolo di Sciara, G., Pavan, G., Servidio, A., Smith, B., Wang, J., Weilgart, L., Wintle, B. and Wright, A. 2007. A Global Scientific Workshop on Spatio-Temporal Management of Noise. Report of the Scientific Workshop. 44pp.
- Agersted, P.R. 2006. Evaluating ecotourism in México's biosphere reserves – whale watching activities in the world heritage site of Laguna San Ignacio, Baja California Sur, México 1994-2002. MSc Thesis, University of British Columbia.
- Aliaga-Rossel, E., McGuire, T.L. and Hamilton, H. 2006. Distribution and encounter rates of the river dolphin (*Inia geoffrensis boliviensis*) in the central Bolivian Amazon. *J. Cetacean Res. Manage.* 8(1):87-92.
- Austermühule, S. 2007. Turismo de Avistamiento de Cetáceos – Oportunidad para la Conservación y el Desarrollo Sostenible. Mundo Azul, Lima, Perú, 77pp.
- Avila Foucat, S. and Saad Alvarado, L. 1998. Valuación de la ballena gris y ballena jorobada en México. *Gaceta Ecológica.* Instituto Nacional de Ecología, SEMARNAP 49.
- Bejder, L., Samuels, A., Whitehead, H., Gales, N., Mann, J., Connor, R.C., Heithaus, M., Watson-Capps, J., Flaherty, C., and Krützen, M. 2006. Decline in relative abundance of bottlenose dolphins exposed to long-term disturbance. *Conservation Biology* 20(6), 1791-1798.
- Bolaños-Jiménez, J., Herreral, O.L., Panza, R. and Villarroel-Marin, A. 2007a. Preliminary assessment of marketing-related aspects on dolphin-watching in the Mochima National Park, northeastern Venezuela. Paper to IWC Scientific Committee. SC/59/WW19
- Bolaños-Jiménez, J., Villarroel-Marin, A., Parsons, E.C.M. and Rose, N.A. 2007b. Origin and development of whalewatching in the state of Aragua, Venezuela: Laying the groundwork for sustainability. Proceedings of the 5th International Coastal and Marine Tourism Congress. Ed. Lück, M., Graeupl, A., Miller, M.L., Auyong, J., and Orams, M.B. Auckland, New Zealand, 11-15 September.
- Cabrera, E., Galletti, B., and Carlson, C.A. 2007. Recommendations for Whale Watching Guidelines in the Blue Whale Feeding Area of Southern Chile. Paper to IWC Scientific Committee. SC/59/WW15, 9pp.
- Cipolotti, S.R.C., Morete, M.E., Basto, B.I., Engel, M.H., and Marcovaldi, E. 2005. Increasing of whale watching activities on humpback whales in Brazil: Implications, monitoring and research. Paper to IWC Scientific Committee. SC/57/WW7, 15pp
- Dedina, S., and Young, E. 1995. Conservation as communication: local people and gray whale tourism in Baja California Sur México. *Whalewatcher*, 29(2): 8-13.
- Engel, M.H. 2007. Abrolhos Bank: the Role of MPAs in the protection of the most important humpback whale breeding ground in the western South Atlantic. In Agardy, T., Aguilar, N., Cañadas, A., Engel, M., Frantzis, A., Hatch, L., Hoyt, E., Kaschner, K., LaBrecque, E., Martin, V., Notarbartolo di Sciara, G., Pavan, G., Servidio, A., Smith, B., Wang, J., Weilgart, L., Wintle, B. and Wright, A. 2007. A Global Scientific Workshop on Spatio-Temporal Management of Noise. Report of the Scientific Workshop.
- Euromonitor International. 2007. Travel and Tourism in Bolivia. Report. Euromonitor International (<http://www.euromonitor.com>)
- Fundación Cethus. 1999. The value of ecotourism of Bahía San Julián, Santa Cruz, Argentina. Final report to the Whale and Dolphin Conservation Society, July 1999, 8 pp.
- Hoagland, P. and Meeks, A.E. 1997. The demand for whale watching at Stellwagen Bank National Marine Sanctuary. Woods Hole Oceanographic Institution, Woods Hole, MA, draft, unpublished, 25pp.
- Hoyt, E. 2001. *Whale Watching 2001: Worldwide Tourism Numbers, Expenditure, and Expanding Socioeconomic Benefits.* International Fund for Animal Welfare, Yarmouth Port, MA, USA, 157pp.
- Hoyt, E. 2002. Whale watching. In *Encyclopedia of Marine Mammals* (Perrin, W.F., B. Würsig and J.G.M. Thewissen, eds.) Academic Press, San Diego, CA., pp1305-1310.
- Hoyt, E. 2005a. *Marine Protected Areas for Whales, Dolphins and Porpoises: A World Handbook for Cetacean Habitat Conservation.* Earthscan, London, 512pp.
- Hoyt, E. 2005b. Enhancing the Value of Whale Watching: Strategies for True Sustainability. 1º Taller Internacional sobre Gestión y Uso No Letal de Cetáceos: Ballenas, un recurso compartido. 27-29 Sept. 2005, Salón Municipal de Puerto Pirámides, Península Valdés, Chubut, Argentina.
- Hoyt, E. 2005c. Sustainable ecotourism on Atlantic islands, with special reference to whale watching, marine protected areas and sanctuaries for cetaceans. *Biology and Environment: Proceedings of the Royal Irish Academy*, Vol. 105B, No. 3, pp141-154.
- Hoyt, E. 2007a. A Blueprint for Dolphin and Whale Watching Development. Humane Society International (HSI), Washington, DC, pp. i-iii, 1-28.
- Hoyt, E. 2007b. Un Esquema para el Desarrollo de la Observación de Delfines y Ballenas. Humane Society International (HSI), Washington, DC, pp. i-iii, 1-28.
- Hucke-Gaete, R., Viddi, F., and Bello, M. 2006. Conservación Marina en el sure de Chile. Privately published, 109pp.
- IFAW. 1999. Report of the Workshop on the Socioeconomic Aspects of Whale Watching. Kaikoura, New Zealand, 88pp.
- IFAW. 2005. The Growth of the New Zealand Whale Watching Industry: A socioeconomic assessment. IFAW Asia Pacific, Surry Hills, NSW, Australia, 26pp.
- IFAW, WWF and WDCS. 1997. Report of the International Workshop on the Educational Values of Whale Watching, Provincetown, Massachusetts, USA. 40pp.
- Iñiguez, M.A., Tomsin, A., Torlaschi, Ch and Prieto, L. 1998. Aspectos socio-económicos del avistaje de cetáceos en Península Valdés, Puerto San Julián y Puerto Deseado, Patagonia, Argentina. Fundación Cethus, Buenos Aires, pp. 1-14.
- Lusseau, D., Slooten, E., and Currey, R.J. 2006. Unsustainable dolphin watching activities in Fiordland, New Zealand. *Tourism in Marine Environments* 3(2), 173-178.

- Montero-Cordero, A. 2007. Comportamiento del delfín manchado *Stenella attenuata* (Cetacea: Delphinidae) en ausencia y en presencia de botes turísticos: Evaluación biológica y socio-económica en Bahía Drake e Isla del Caño. MSc Thesis, Universidad de Costa Rica.
- Montero-Cordero, A. and Martínez-Fernández, D. 2007. Whale-watching revenues and decree regulation awareness in the South Pacific of Costa Rica. Abstract, 17th Biennial Conference on the Biology of Marine Mammals. Cape Town, South Africa. Nov. 29th-Dec. 3rd.
- Ojeda, M.G. 2005. Evaluación del Ecoturismo en Laguna San Ignacio, BCS (México), mediante su valoración económica por el Método de Costo de Viaje y el análisis comparativo con otras actividades económicas. Universidad Autónoma de Baja California, Facultad de Ciencias Marinas, Instituto de Investigaciones Oceanológicas. MSc Thesis.
- Palazzo, Jr., J.T., Kammers, M. and Linhares, I. 1994. Whalewatching sites in Brazil: a summary of available information. Government of Brazil. IWC/46/WW, 8 pp.
- Paredes L., L. 2006. Diagnóstico de la actividad turística de observación de la ballena jorobada (*Megaptera novaeangliae*, Borowski, 1781) en la región de Los Cabos, B.C.S., México. Universidad Autónoma de Baja California Sur, Thesis, LBM.
- Pereira, M.G., Bazzalo, M., and Flores, P.A.deC. 2007. Reações comportamentais na superfície de *Sotalia guianensis* (Cetacea, Delphinidae) durante encontros com embarcações na Baía Norte de Santa Catarina. *Zoociências* 9(2):123-135.
- Pérez, L.S. and Ocampo, G. 2006. Ushuaia 'Puerta de entrada a la Antártida'. Informe sobre el Tránsito de Turismo Antártico a través de Ushuaia, Temporada 2005-2006. Tourism Board of Tierra del Fuego, Antarctic Unit, Government of the Province of Tierra del Fuego, Antarctica and the Islands of the South Atlantic, Argentina, 31pp.
- Pérez Sánchez, C.E., Guerrero-Ruiz, M., and Urbán R., J. 2007. La observación de ballenas en la región sur del Golfo de California: Planeación para la conservación en áreas naturales protegidas (whale watching in the southern portion of the Gulf of California: Planning for conservation in natural protected areas.) Abstract, 17th Biennial Conference on the Biology of Marine Mammals. Cape Town, South Africa. Nov. 29th-Dec. 3rd.
- Report of the Workshop on the Science for Sustainable Whalewatching, Breakwater Lodge, Cape Town, South Africa, 6-9 March 2004. [Available from: http://www.iwcoffice.org/_documents/sci_com/workshops/WW_Workshop.pdf]
- Rivera, M., Muñoz, C. and Ruiz, V. 2007. Economic valuation of whale watching in México, INE, México, working paper.
- Rodríguez-Fonseca, J. and Fischel-Quirós, A. 2007. Impacto socioeconómico del Turismo de Observación de Cetáceos en Costa Rica 2006-2007. Informe Técnico FP4-07. Fundación Promar, San José, Costa Rica. WSPA/PROMAR. 32pp.
- Rose, N.A. 2007. Development of sustainable cetacean watching in Perú. Paper to IWC Scientific Committee. SC/59/WW5, 2pp.
- Sánchez P., J.A. 1997a. Descripción y evaluación de las actividades turísticas de observación de ballena gris en las Lagunas Ojo de Liebre y San Ignacio de la Reserva de la Biosfera "El Vizcaíno", 1996. XXII Reunión Internacional para el Estudio de los Mamíferos Marinos. Nayarit, México, 27 de abril al 1 de mayo, 1997.
- Sánchez P., J.A. 1997b. Turismo de observación de ballenas en Laguna Ojo de Liebre y Laguna San Ignacio. Unpublished.
- Schworer, T. 2007. The economic value of gray whales to local communities: a case study of the whale watching industry in two communities in Baja, México. Simon Fraser University, Master's Thesis, 95pp.
- Silva-Hernández, M.G., Bolaños, J., Ferreira, C., and Herrera-Trujillo, O.L. 2007. Update on the abundance and distribution of cetaceans in the state of Aragua, central coast of Venezuela. Abstract, 17th Biennial Conference on the Biology of Marine Mammals. Cape Town, South Africa. Nov. 29th-Dec. 3rd.
- UNEP. 2007. The GEO Data Portal. United Nations Environment Programme. <http://geodata.grid.unep.ch>.
- Urbán R., J., Gallardo U., A.G., Pérez S., C, Cárdenas H. G., Guerrero, M., García M., M.d.L., González P., U. and Jaime S., S. 2007. Manejo y Conservación de Ballenas en las Regiones Prioritarias De Loreto, La Paz y Los Cabos, Golfo de California. Primer Informe. Programa de Investigación de Mamíferos Marinos Departamento de Biología Marina, Universidad Autónoma de B.C.S., México.
- Van Waerebeek, K. and Reyes, J.C. 1994. Post-ban small cetacean takes off Perú: a review. *Rep. Int. Whal. Commn. (Special Issue 15)*:503-515.
- Villarreal-Marín, A.J. and Bolaños-Jiménez, J. 2007. A research-action project aimed to elementary and high school children for cetacean conservation in the State of Aragua, Central coast of Venezuela (in Spanish). 1° Encuentro Internacional de Educación Infantil, Universidad Pedagógica Experimental Libertador (UPEL), Centro de Investigación en Educación Infantil (CIEDIN), Maracay, Junio 16-17 de 2007.
- Watkins, G. and Cruz, F. 2007. Galápagos en Riesgo: Un Análisis Socioeconómico de la Situación Actual en el Archipiélago. Puerto Ayora, Provincia de Galápagos, Ecuador, Fundación Charles Darwin, 21pp. [http://www.darwinfoundation.org/files/library/pdf/2007/Galápagos_en_Riesgo_7-4-07-ES.pdf]
- Weinhäupl, M. 2005. Informe. Opiniones de los visitantes y habitantes de Puerto López sobre el turismo y el Parque Nacional Machalilla. Department of Social and Cultural Anthropology. Universidad de Vienna, Austria.
- World Tourism Organization (WTO). 2007. *Yearbook of Tourism Statistics*. Data 2001-2005. World Tourism Organization, Madrid. 912pp.
- Yazdi, P. 2007. Impact of tour boats on the behaviour and energetics of bottlenose dolphins (*Tursiops truncatus*) off Choros Island, Chile. Paper to IWC Scientific Committee. SC/59/WW20, 9pp.

