Whale Watching 2001: Worldwide Tourism Numbers, Expenditures, and Expanding Socioeconomic Benefits

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WHALE WATCHING 2001

WORLDWIDE TOURISM NUMBERS, EXPENDITURES, AND EXPANDING SOCIOECONOMIC BENEFITS

by Erich Hoyt

A special report from the International Fund for Animal Welfare

International Fund for Animal Welfare

UNEP

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This report has been endorsed by the United Nations
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Preface

The International Fund for Animal Welfare (IFAW) is committed to identifying and promoting solutions to conservation challenges that benefit both animals and people. Some of our most significant and successful work over the past decade has been on whale watching.

Through our international workshops and gatherings of experts, codes of conduct and research reports, and on-the-ground work in many countries, IFAW is now widely recognized as a driving force behind the growth and development of responsible whale watching worldwide.

We have always believed whales and dolphins are worth a great deal more alive than dead. Thanks to the extraordinary and tireless work of author Erich Hoyt, this new IFAW report proves it.

Whale watching has grown from humble beginnings in the 1950s to become an almost universal human passion. With 87 countries and overseas territories now offering whale watch tours, this new industry has begun to make a dramatic difference in coastal communities worldwide. Ironically, whale watching is popular and growing rapidly even in countries that still hunt whales, such as Japan and Norway, as well as Iceland, a country that only stopped hunting whales in the late 1980s and now threatens to reopen a commercial hunt. The overriding conclusion of this report is clear: whales and people both do better when these animals are seen and not hurt.

Whale watching educates children and adults about our ocean planet, the magnificent creatures that share our world, and the importance of maintaining their habitat; it provides a method for scientists to gain substantial information and monitoring capability with whales and dolphins and thereby contributes to their conservation.

It is our privilege to present this report on the explosive growth and economic impact of this truly sustainable industry. All of us at IFAW look forward to its further expansion in the years ahead.

Fred O'Regan
President
International Fund for Animal Welfare (IFAW)

Author's note and acknowledgements

This report was first released in draft form in August 2000 and made available on the internet through www.ifaw.org. Since the main body of research was undertaken (during the period January 1999 to May 2000), more communities have started or expanded their whale watching activities and various new developments have occurred. This published version, therefore, incorporates some changes to the original data. In addition, key new developments regarding the socioeconomic value of whale watching have been added to an expanded Conclusions section, as well as to the Executive Summary.

At the International Fund for Animal Welfare (IFAW), I would especially like to thank Patrick Ramage and Carole Carlson for all their help and patience. Vassili Papastavrou provided several invaluable contacts and references. Economist Francis Grey, from Economists At Large, helped with various valuable comments and examples. The superb design and layout were the work of Christopher Binding, assisted by Marishka Temple. Thanks to Kate Clere (Second Nature Films), Mick McIntyre, Greg Vogt, Melanie Townsend, Rod Haestier, Overberg Tourism, and IFAW for help in obtaining cover photographs. Also thanks to Rosemary Lomas and Margaret Hill at IFAW and Alessandra Vanzella-Khouri, United Nations Environment Programme (UNEP).

This report would have been impossible without the previous funding and publications of the Whale and Dolphin Conservation Society (WDCS). Although all the data was collected and processed by Erich Hoyt, data previous to 1998 was collected as part of reports funded by the WDCS. In late 1998, WDCS kindly allowed the previous work and results to be included in this volume. Special thanks to Alison Smith, Chris Stroud, and Sue Fisher at WDCS for facilitating this. Alison Smith, Niki Entrup, Hal Sato, and Kate O'Connell also generously provided information for this updated, expanded report.

Finally, I would like to spotlight the considerable contributions from more than six hundred local operators, researchers, tourism officials and whale watching managers who provided statistics or informed estimates of numbers and expenditures, as well as assessments of socioeconomic benefits, in each locality. Without their cooperation and help this report would have been impossible. Separate acknowledgments are given under each country listed, but these only reflect those who provided detailed reports, special summaries, draft or final discussion papers, not those who completed operator surveys.

Some of the information I have received for and from various countries has been conflicting. I have tried to sort out inconsistencies, relying always on the more conservative numbers. In any case, the final figures are my own, and I am responsible for them.

Erich Hoyt, July 2001

Executive summary

Whale watching as a commercial endeavor — with important educational, environmental, scientific, and other socioeconomic benefits — is now at least a $1 billion USD industry attracting more than 9 million participants a year in 87 countries and territories.

Since the last worldwide survey in 1994, whale watching has continued to grow at a rapid rate. In 1991, only 31 countries and overseas territories were involved in whale watching; today there are 87. At the same time, the number of whale watchers has increased from a little more than 4 million for the year 1991, and 5.4 million for the year 1994, to 9 million in 1998. Total whale watching tourism expenditures, estimated at $504 million USD (£311 million GBP) in 1994, grew to $1,049 million USD (£655 million GBP) in 1998.

As a further measure of its prevalence, whale watching is now carried on in some 492 communities around the world- nearly 200 more than in 1994. In many places, whale watching provides valuable, sometimes crucial income to a community, with the creation of new jobs and businesses. It helps foster an appreciation of the importance of marine conservation, and provides a ready platform for researchers wanting to study cetaceans or the marine environment. Whale watching offers communities a sense of identity and considerable pride. In a number of places, it does all of the above, literally transforming a community.

This report covers watching of all cetaceans, not just large whales. "Whale watching" is thus defined as tours by boat, air or from land, formal or informal, with at least some commercial aspect, to see, swim with, and/or listen to any of the some 83 species of whales, dolphins and porpoises. As well as tours that are strictly whale- or dolphin-oriented, I have also calculated the contribution from general nature tours and cruises which feature whales and dolphins as a prominent aspect, such as Alaskan and Antarctic cruises and Galápagos boat tours. However, in these cases, the numbers and expenditures included in this report have been reduced (to between 10% and 50% of the total) to reflect only the estimated value of the cetacean component of the trip.

Here is a summary of my key findings:

- Since 1991, when 4 million people went whale watching, the number of people participating has increased by an average of 12.1% per year, reaching more than 9 million in 1998. Whale watching grew even more rapidly in the mid-to late 1990s (13.6% per year) than it did in the early 1990s (when the rate was 10.3% per year). The direct expenditures (the amount whale watchers spent on the tours) increased from $77 million USD in 1991 to $299.5 million USD in 1998 — an average annual increase of 21.4%. The total expenditures (the amount whale watchers spent on the tours, as well as travel, food, hotels and souvenirs) increased from $317.9 million USD in 1991 to $1,049 million USD in 1998 — an average annual increase of 18.6%. (The percentages for direct and total expenditures are not adjusted for inflation.)
- Of the some 87 countries and overseas territories or dependencies with some level of commercial whale watching, the breakdown is 66 independent countries and 21 overseas territories or dependencies, including Antarctica.
- Worldwide, there are 22 new countries that have started whale watch tours since the previous survey in 1995, including St. Kitts & Nevis, St. Lucia, Namibia, Oman, Taiwan, Fiji, and the Solomon Islands.
- 34 of the 40 member countries (85%) of the International Whaling Commission (IWC) countries now have at least some whale watching activity. Some 7,731,885 people a year currently go whale watching in IWC countries (or territories of these countries), spending a total of $779,828,000 USD. Most whale watching (86%) occurs within IWC countries. Canada is the main country outside of the IWC where whale watching occurs. (See Appendix 3 for a listing of all IWC countries and associated territories with a breakdown of each country's whale watch statistics).
- The "million whale watch club" is expanding. In 1994, only one country, the United States, could claim more than a million whale watchers. Today, there are three countries or areas that can make this claim: besides the United States, both Canada and the Canary Islands (Spain) have recently surpassed 1 million whale watchers a year. Two countries with half a million or more, both of which will likely soon have 1 million a year, are Australia and South Africa.
- Some of the communities transformed by whale watching — that is, having substantial economic and, in some cases, educational and scientific benefits from whale watching — include: Kaikoura, New Zealand; Provincetown, Massachusetts, USA; Tofino and Telegraph Cove, in British Columbia, Canada; Ogata and Ogasawara, Japan; Andenes, Norway; Hermanus, South Africa; Tadoussac, Québec, Canada; Friday Harbor, Washington, USA; Lahaina, Hawaii, USA; Puerto Pirámides, San Julian, and Puerto Deseado, Argentina; Hervey Bay, Byron Bay, and Monkey Mia, Australia; Dingle, Ireland; Rincón, Puerto Rico; Húsavík, Iceland; Guerrero Negro, México; among others.

• Most of the some 83 species of cetaceans are included in whale watch programs, with the exception of the beaked whales. The most common focal species for whale watching industries are humpback whales, gray whales, northern and southern right whales, blue whales, minke whales, sperm whales, short-finned pilot whales, orcas, and bottlenose dolphins. Two of these (blue and northern right whales) are classified as endangered species, while two others (humpback and southern right whales) are considered vulnerable (IUCN Red Data Book). There is no doubt that all four of these popular species would be watched more if they could be reliably found in more locations. The percentage of whale watchers who focus on smaller cetaceans is increasing. Besides the proven appeal of watching orcas, pilot whales and bottlenose dolphins, a number of countries have seen a dramatic increase in the number of people taking swim-with-dolphin tours (New Zealand, Australia, Japan).

• The most common form of whale watching is boat-based (72% of all whale watching), everything from kayaks to converted ferry ships. Yet, more than 2.55 million people in ten main countries participated in land-based whale watching (28% of all whale watching). Land-based whale watching has substantial commercial implications in four countries: South Africa, Canada, Australia, and the United States. Less than .001 of all whale watching (< 10,000 participants a year) consists of fixed-wing or helicopter tours.

• In most countries, whale watching is primarily one of the tourism activities of outside (foreign) visitors and, as such, a source of foreign currency. However, the following countries draw the majority of their whale watchers from their own country: the United States, Australia, Japan, the United Kingdom, and a few others. In the larger countries, whale watchers are often visiting "tourists" from one region of a country to another, but they do not bring in foreign currency. However, most of the above countries with the exception of Japan also have substantial numbers of outside visitors going whale watching and because of the sheer size of the industry in these countries, the numbers of foreign visitors certainly outnumber most of the total numbers for many smaller whale watch countries.

• The fastest growing whale watch country in the world between 1994 and 1998, in countries with more than 5,000 whale watchers, is Taiwan, which went from zero to about 30,000 whale watchers during the period. The four next highest rates of increase between 1994 and 1998 are as follows: Iceland (250.9% avg. annual increase), Italy (139.9%), Spain (123.6%) and South Africa (112.5%). The fastest growing continental region for whale watching is Africa, with an average 53.0% annual increase between 1994 and 1998, followed by Central America and the West Indies (47.4%).

• Iceland's extraordinary average annual growth rate of 250.9% from the mid-to late 1990s is one of the highest ever growth rates in whale watching. There is some evidence from visitor surveys that the whale watch growth in Iceland might not have been so rapid if the country had resumed whaling.

• Whale watching in Japan has grown much faster than the average world rate throughout the 1990s. Between 1994 and 1998, whale watching in Japan grew 16.8% per year; from 1991 to 1998, the average increase was 37.6% per year. As of 1998, some 102,785 people went whale and dolphin watching in Japan, spending an estimated nearly $33 million USD. This is nearly double the number of people who participated in 1994 (55,000). The most commonly watched cetaceans are humpback, Bryde's, minke, and sperm whales, as well as bottlenose and other dolphins. Three of these, minke, Bryde's and sperm whales are currently being targetted by the Japanese whaling industry.

• Norway has experienced growth at 18.8% a year since 1994. In Norway, in 1998, 22,380 people took whale watch trips, spending more than $12 million USD. The main operation at Andenes in northern Norway, which features sperm and other whales, has been responsible for contributing diverse socioeconomic values to the community. In the Tysfjord area, in autumn, orcas come in close to feed on herring and are watched inshore. Visitors annually come from more than 30 countries to these two locations, with operators typically catering for two to five languages on the tours.

This report is based on original research and surveys covering the activities of whale watch and other marine operators around the world. Data gathered was checked and compared with existing tourism data, papers, and reports as well as with knowledgable persons in tourism departments, local NGOs, and cetacean researchers.

Additonal socioeconomic benefits

As in two previous whale watch reports in 1992 and 1995, I have largely used tourism expenditures to chart the worldwide growth of whale watching. These tourism expenditures represent conservative measures of the socioeconomic benefits of whale watching. Little data exists on the overall socioeconomic values of whale watching, but in this report an effort was made to assemble existing information in a whale watching "socioeconomic benefits profile" for each country. Thus, there are also accounts of:

• dozens of whale festivals in coastal communities in different parts of the world (nine in California alone) with a multi-million dollar socioeconomic impact in addition to whale-watch tours.

- whales and dolphins being used for tourism marketing by operators and other businesses in whale watch communities, as well as for marketing of communities, regions, and even countries, and coastal and marine protected areas. This shows the extensive value of using cetaceans for marketing, especially since they tend to attract environmentally conscious, high-spending tourists.
- scientific programs of a number of research organizations which were started and have flourished because of a close relationship with commercial whale watching. These groups provide naturalists/scientists who narrate the trips and who are also paid and are allowed to do photo-identification and other research. The value of having a whale watch boat as a platform for research has been estimated at $1,000 USD a day on Stellwagen Bank, southern New England. The naturalists/scientists who work 125 days a year on the seven main boats there obtain an estimated annual benefit of $875,000 USD.

In a few cases, I have been able to obtain other valuable economic data such as the rate of return from whale watch businesses, as well as valuations of the whales themselves based on contingency valuation studies or other work. The rate of return for a successful whale watching business, as reported by several long-time operators, is at least 10% a year.

The primary conclusion from this report is that whale watching is worth a great deal in tourist expenditures but that this is just part of the picture. An examination of the vast range of socioeconomic benefits, many of them difficult to quantify, reveals that whale watching has become extraordinarily valuable around the world in many unexpected yet pervasive ways.

Latest whale watching developments and findings

As this report was going to press (July 2001), a number of new developments and findings have come to light:

- The fastest growing whale watch country in the world since 1998 is St. Lucia, in the eastern Caribbean, which has increased from only 65 passengers in 1998 to more than 4,000 from four separate operators in 2000, with more than $175,000 USD in ticket sales and $600,000 USD in total expenditures. The extraordinary average annual rate of increase the past two years has been 685%, and this has occurred when tourism growth to the island has been reduced.
- Elsewhere in the Caribbean, in St. Vincent & the Grenadines, dolphin watching doubled in popularity from 600 to 1,200 people in only two years between 1998 and 2000, while in Dominica, the numbers of whale watchers increased from 5,000 to 8,000 and in the Dominican Republic, from more than 22,000 whale watchers to 32,000 in 2000.
- On several Caribbean islands, whale watch tour operators have begun to market their tours through the cruise ship industry, which has helped increase the volume and bring more cruise ship money into the local economy. In 2000, Caribbean tour operators attended two hands-on workshops in the Turks & Caicos Islands and in Dominica and at the latter workshop formed the first regional association of whale watch operators called the Caribbean Whale Watch Association (CARIBWHALE).
- Through 2000, Taiwan and Iceland continued to be among the fastest-growing whale watch locales in the world. Taiwan went from 30,000 passengers in 1998 to nearly 100,000 in 1999, while in Iceland, from 9 locations around the country, whale watching grew from 30,330 in 1998 to 44,000 in 2000. One out of every eight visitors to Iceland now goes whale watching, and total expenditures are in the range of at least $10 million–$13.5 million USD.
- In Japan, Ogata reached its 100,000th whale watcher in 2000 (over 10 years) and had a record year for school visitors with 1,883 school-age whale watchers. In Ogasawara, where whale watching began in Japan in 1988, 1999 saw a new high level of 12,000 whale watchers.
- Forty new cow-calf right whale pairs were recently discovered off the west coast of South Africa through reports to the Whale Hotline sponsored by the MTN Whale Route. Boat-based whale watching, begun in late 1998, continues to expand rapidly. Last year, the annual "Welcoming Our Whales Festival", which is developing a new whale culture within the towns, brought Johannesburg children to the coast on a commercial airliner painted to look like a whale. The children, new to the sea, joined coastal kids to meet the whales and learn about them.
- Whale watching continues to expand in Brazil. At Imbituba, Santa Catarina State, more than 10,000 people went whale watching in 2000, up from 1,680 in 1998.
- In Hong Kong, China, since 1998, when 4,500 people went dolphin watching, five operators now take out an estimated 10,000 dolphin watchers a year.
- The biggest wildlife event in Ireland, in June 2001, was the arrival of a bull, mother and juvenile orca in Cork harbor. They stayed for days, attracting thousands of people. Meanwhile, dolphin watching in the new Shannon River Estuary Special Area of Conservation (SAC) is on the increase, and on August 4, Ireland celebrates a nationwide day of whale watching called "Whale Watch Ireland 2001".

• In the Mediterranean, whale watching has effectively moved into high gear due to the recent designation and the start of the management process for the Mediterranean Cetacean Sanctuary by Italy, France and Monaco. Across the Mediterranean, whale watch numbers have greatly increased in Spain, Italy and Greece, while France and Croatia are not far behind.

• In the UK, whale watch observers have crowded the top decks on the P&O Portsmouth and Brittany ferries between the UK and Spain. Over the past few years these have turned into popular whale watch tours. Substantial data are coming in on some 16 species of cetaceans and various seabirds in the Bay of Biscay and English Channel, and the activity has helped spawn an email-based public sighting network around Britain. In the Moray Firth, Scotland, the May 2001 release of a draft management scheme for the Moray Firth candidate Special Area of Conservation (cSAC) spotlit the value of bottlenose dolphins for education and tourism in local communities and emphasized ways to protect and enhance the resource. The Moray Firth initiative, along with the Mediterranean Cetacean Sanctuary and the Shannon River Estuary SAC, are important because they are on the leading edge of a wave of new marine protected areas which are providing management and a positive direction for whale watching, trying to conserve cetaceans in a way that recognizes the economic, cultural, social and recreational needs of all those who live and work in the area.

What about the future of whale watching? According to the World Tourism Organization (WTO), world tourism arrivals are predicted to continue to grow on average by 3–4% annually beyond 2000. With whale watching growing at 12.1% per year throughout the 1990s, and by 13.6% per year from 1994–1998, it seems likely that whale watching will continue to grow at a faster rate than world tourism for at least a few years to come. Indeed, there is evidence that it has continued to grow and expand since 1998 though perhaps at a slightly lower rate due to the recent world economic downturn. If whale watching continued to grow at the same rate as through the 1990s (12.1% passenger increase and 18.6% total expenditure increase per year), then the year 2000 would have seen 11.3 million people going whale watching, spending $1.475 billion USD total expenditures. Even using a more conservative growth rate equal to half the above rates, I estimate that at least 10.1 million people are now going whale watching a year spending $1.253 billion USD.

Introduction

This report charts the current extent of whale watching around the world, focusing on whale watching expenditures and the associated socioeconomic benefits.

For each country, there is overall tourism and economic background information, an estimate of the number of people who annually participate in whale watching[1] and how much they spend; a whale watching socioeconomic profile of tourists, operators, and the community; and a concise assessment of the status and future of whale watching. Not all of these socioeconomic benefits can be given a monetary value but it is important to list and describe them so that they are recognized and properly considered.

The main economic numbers in this report are based on tourist expenditures for whale watch tickets (direct expenditures) and expenses incurred by tourists during as well as immediately before and after whale watching (indirect expenditures). Added together, these figures provide a conservative estimate of the total tourism expenditures on whale watching. However, this is by no means the total economic value (TEV) of whale watching. In this report, as in previous economic reports on whale watching, the total tourism expenditures are provided simply as one measure of the overall TEV. There are several reasons for using tourism expenditures to give an indication of the value of whale watching:

(1) Whale watching tourism expenditures provide conservative base or benchmark numbers which are most easily understood by politicians and the general public, as well as tourism and resource managers.

(2) Whale watching tourism expenditures are comparatively straightforward to obtain and interpret, and comparisons can be easily made from region to region, and country to country, as well as added together to show total world expenditures from whale watching. Measures of the wider socioeconomic value, on the other hand, such as can be obtained through contingency valuation studies or other methods require on-site surveys and detailed analysis, and cannot be as easily added together to obtain world estimates. Of course, such wider studies are of great value and, given unlimited time and research funds, would be the key to evaluating whale watching in many parts of the world.

Even the basic tourism expenditures, however, add up to huge world-wide numbers. These figures must be considered the very lowest dollar amount that whale watching is worth. It is likely, given the surveyed value of whales and whale watching, using contingency valuation and a variety of other methods, that the true TEV of whale watching is considerably higher (IFAW 1999).

Another measure of economic value, as pointed out in the Workshop on the Socioeconomic Aspects of Whale Watching, held in Kaikoura, New Zealand, lies in the rate of return (IFAW 1999). This is perhaps the most important measure of economic value used by economists and businessmen, but it has not, to date, been discussed in the context of whale watch socioeconomic studies. In the present study, a small sample of businesses was asked to specify their rate of return. Several reported a rate of return of 10% a year over a period of a decade or more, with an annual current volume of business based on 50,000 to 100,000 passengers. According to economist Francis Grey, "a 10% rate of return is pretty good for a natural-resource-based industry. A farmer struggles to make 5% return and many make far less. [On the other hand,] Australian multinational mining companies seek 15% from a project before they will invest and often prefer 20% return. But these sorts of returns are not normally available to small business investors." In fact, a 10% rate of return would have to be considered conservative because the values accruing to education, science and conservation, among other socioeconomic values, are not included in these calculations (see Box 1).

It should also be noted that, except in a few cases, the costs of whale watching are not considered here. To appreciate fully the socioeconomic value of whale watching, one must look at costs as well as benefits in a complete Benefits Cost Analysis (BCA). Costs include the pollution from boats, litter thrown into the water, trampling of sensitive coastal areas, the petrol's effect on the environment when visitors drive or fly to a site, the immediate social or long-term environmental strain on a community's infrastructure, and, more directly, the possible disturbance to individual whales or the reduced fitness of whale populations (some cases of the former but no proof yet of the latter). Some of these costs are social or economic, common to tourism in general, while others are environmental costs specific to marine waters or the animals themselves. Many of the costs are difficult to award a dollar value to but, in general, the costs of whale watching are thought to be considerably

[1] Whale watching is defined here as the observation of any of the 83 species of cetaceans in their natural habitat from any type of platform — small boats, sailboats, cruise ships, inflatables, kayaks, helicopters and airplanes, in-water swimming, as well as from land-based sites — especially in view of the economic implications.

less than for many other types of tourism. It would be worth exploring this in greater detail in future, and certainly all efforts to identify and reduce the costs to whale watching should be encouraged. The more that costs are reduced, the greater, in effect, are the benefits.

Some people are troubled by this focus on the economic aspects of whale watching. They say that whales are not simply definable in economic terms. Indeed, participants at the Workshop on the Socioeconomic Aspects of Whale Watching, expressed "as a basic premise", the view that "whales have intrinsic value — even if they are not watched or used in any way by humans. Whale watch operators and other stakeholders depend on the beauty, natural curiosity, and apparent tolerance of many cetacean species, or there would be no whale watching at all" (IFAW 1999). However, when I speak of the socioeconomic value of whale watching, I am attempting to include the widest set of values created by the existence of whale watching, including recreational, scientific, educational, cultural, heritage, social, aesthetic, spiritual, psychological, ecological services, remote viewing/vicarious experiences, as well as financial values. For a full listing and explanation of these values, see IFAW (1999).

It is hoped that this overview report will stimulate much needed research into the socioeconomic value of whale watching in many more communities and countries around the world to show that whale watching is worth far more than just expenditures from whale watching tourists. A few such studies, using a variety of methodologies, have been undertaken and are discussed under the relevant country listings in this report. A recent study by Mark Orams (1999), working in Tonga, is an excellent example. The awareness produced by more such investigations and the resulting reports will itself help to increase the extraordinary value of whale watching.

There is also a need to place whale watching in the context of other marine, outdoor, nature, and adventure-based tourism, as well as ecotourism. Whale watching does not fit neatly into a single category but straddles several of the above categories. Whale watching has its own dedicated participants, as well as drawing participants from overall tourism. A better understanding of the role of whale watching in tourism and its relationship to and impact on other forms of tourism would also contribute to our understanding of the socioeconomic value of whale watching.

BOX 1: Rate of Return in Whale Watch Communities

The following exercise represents an unusual use of rate of return, but it is presented here in order to draw attention to the wide scope of benefits provided by whale watching which include private return to the operator, as well as public return to the community. In fact, the inclusion of educational and scientific valuations represents only a conservative portion of all of the benefits accruing to a community.

Example A (below) uses a traditional calculation of rate of return; Example B (next page) shows the newly proposed approach. When Example B is a community-owned whale watching business, the rate of return to a single entity, the community, is more clear-cut. However, even if the rate of return is split between one or more operators and the community at large, the benefits are shared by both parties: the operator is, after all, part of the community and the community by definition benefits by any member's success.

HOW HIGH QUALITY WHALE WATCHING INCREASES THE VALUE AND RATE OF RETURN OF COMMERCIAL WHALE WATCHING IN A COMMUNITY

Example A: Commercial whale watching (traditional calculation of rate of return)

Capital value of a whale watch business (amount invested)	USD $2,000,000
Whale watch trips, food, souvenirs sold for one year	$1,000,000
Total revenues are therefore	$1,000,000
Subtract expenses, cost of items sold, plus salaries	$800,000
Result: Profit for the year (cash)	$200,000
Rate of return ($200,000 divided by $2,000,000) =	10%

Example B: Commercial whale watching with strong educational & scientific benefits to a community (community-owned operation)	
Capital value of a whale watch business (amount invested)	USD $2,000,000
Whale watch trips, food, souvenirs sold for one year	$1,000,000
Add estimates of net value from provision of public good:	
• Educational benefits in schools and to general public, plus value of whale watch boats as research platform	$200,000
• Associated benefits from scientific research toward managing the resource, and educational benefits to general public which provide powerful advertising and repeat business	$100,000
Total revenues and benefits are therefore	$1,300,000
Subtract expenses, cost of items sold, plus salaries	$800,000
Result: Profit for the year (in cash and benefits)	$500,000
Rate of return ($500,000 divided by $2,000,000) =	25%

Methodology

Over the past year, I have compiled socioeconomic information on the world's nearly 500 whale watch communities. I have sent out more than 1,000 surveys and requests for information to whale watch operators, tourism departments and researchers (see Appendix 1 and 2). Response rate has been greater than 50%, demonstrating the widespread interest and commitment which whale watch businesses have, as well as the importance attached to whale watching by communities who see it as part of their long-term future.

I have also conducted informal interviews with stakeholders in many whale watching communities to determine the wide range of socioeconomic benefits offered. Some communities, states, provinces, or countries have commissioned detailed studies of visitor preferences, spending patterns, and interest in whales and whale watching. Where relevant, data and particular points from these studies have been cited. An explanation of the method used to calculate direct and total expenditures, as well as an explanation of the categories of data presented, is provided below.

BOX 2: Explanations and Notes on Categories and Data Presented

Country Name: English-language name of country provided, along with the country's own name for itself, if different. For territories, ownership or association and status is provided.

Population: Latest population figures.

Land Area: Size of country/territory.

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 figures for arrivals from the World Tourism Organization (WTO 1999) are lower than those provided by the Caribbean Tourist Organization (CTO), sometimes significantly lower. This is because CTO includes same-day cruise ship visits and other arrivals in their total figures. For this report, the decision was made to use only WTO numbers for consistency.

Total Tourist Receipts: Amount spent by leisure/holiday and business overnight visitors.

GNP: Gross national product. The value of all goods and services produced domestically plus income earned abroad, minus income earned by foreigners from domestic production.

GNP per capita: Gross national product divided by population of the country.

Data in the above six categories are extracted from *World Desk Reference* (Heritage *et al.* 2000) and *Yearbook of Tourism Statistics. Vol. 1.* (World Tourism Organization 1999). Figures are for the year 1997 (or 1998, if available). All monetary sums are in US dollars (USD).

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.

Number of communities involved in whale watching: These are the port towns or cities from which whale watching operations are conducted and, in most cases, where whale watching businesses are located. In cases where foreign operators are working in a country with no local businesses involved in whale watching, "none" is listed. Communities can range from Boston, Massachusetts, USA, where several profitable whale watching operations represent only a tiny fraction of the city's tourism business to the high profile of whale watching in Kaikoura, New Zealand, where whale watching is the key factor in the town's economic and cultural life.

Year: Statistics for the year 1991 and 1994 are from Hoyt (1995a). 1998 statistics were collected for this report. 1998 currency conversions were made to US dollars (USD) using rates prevailing on Feb. 19, 2000. Please note that 1991 and 1994 expenditures were converted to dollars at exchange rates prevailing at the time the earlier data was assembled.

No. of whale watchers: These are the best estimates based on information collected from tour operators, tourism departments, researchers, and sometimes 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 "visits" rather than "visitors". Inotherwords, a person who goes whale watching twice will be counted twice. However, it is thought that the number of visits (whale watches) 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 has been promised for this report.

Direct expenditures: Estimated amounts spent on whale watching 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 expenditures. It is not possible to show the detailed calculations for each operator here and under "total expenditures" as that would compromise the confidentiality agreement.

Total expenditures: The sum of direct and indirect expenditures. Indirect expenditures are all the 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. A conservative estimate of the total expenditures from whale watching near urban centers with day (or less) trips is 3.5x the direct expenditures (Kelly 1983; Hoyt 1992; Hoyt 1995a), based on Kelly's computations for New England whale watchers. In remote centers which require more spending on travel, food and accommodation, total expenditures are usually at least 7.67x the direct expenditures (Duffus 1988; Hoyt 1992; Hoyt 1995a). Duffus (1988) added up total average expenditures of $370 CAD based on a $50 ticket price; and later (Duffus and Dearden 1993) determined that this had risen to $400 CAD. The factor of 7.67 on a ticket price of $50 would amount to $383.50. For the most part, the 3.5 and 7.67 factors stand up to inflation as the ticket prices increase at approximately the same rate as the other expenses. In this report, estimated total expenditures, based on these multiples, are presented only for areas where detailed figures are unavailable, but breakdowns are done to determine what percentage of a country's whale watchers are local, national or international (i.e., travelling from a short or great distance). It is also important to assess the motivation of whale watchers taking the tours and 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. (This is partly facilitated by the WW Tourist Profile which forms part of the Socioeconomic Profile for each country.) The higher the portion of visitors representing dedicated whale watchers, the more the expenditures can be counted. In some cases, such as Alaska, Antarctica and the Galápagos, only a percentage (10 to 50%) of the total visitors and visitor expenditures is counted. For package whale watch tours in which all costs are included, that figure is used (minus international air fare) for the direct expenditures, plus an estimate provided by the operator of any additional visitor spend to arrive at total expenditures. In a few cases where calendar year 1998 expenditures were unavailable, 1997 or 1999 expenditures have been used. All figures for direct and total expenditures are rounded to the nearest $1,000 USD.

Average annual % increase 1991–94 and 1994–98: These calculations are based on the numbers of whale watchers only, not the expenditures, and show 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.

WW Socioeconomic Profile: The socioeconomic profile features 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 which provide insights into the many socioeconomic benefits of 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 I have made through the survey and interview effort. All items not cited are based on research for this report.

WW Tourists: This section provides background on the whale watch tourist. Part of the purpose of building visitor/whale watcher typologies is to determine how keen the person is to go whale watching and at what point they decided to go and whether they were based locally or a long distance away within or outside the country where whale watching occurs. From the point at which this decision is made, every expense related to the whale watch trip should be counted as part of the total whale watch expenditure.

WW Operators & the Trips They Offer: This section reveals the number and kind of operators, the kinds of trips that they offer, how long the trips are, and how often they run.

The WW Community: The various communities involved in whale watching are featured here with highlights of the benefits provided to each community in terms of jobs, new businesses, cultural festivals, and various educational and scientific benefits. These are drawn from existing studies and accounts (cited), as well as original research for this report.

WW Assessment: This is the most subjective part of the report. It is an attempt to estimate the future potential of whale watching in the location based on the benefits listed here as well as known costs and problems of whale watching that may have arisen. Included are evaluations of overall tourism potential, infrastructure, and other factors.

Acknowledgments: For the most part, the operators remain anonymous except in cases where extra help was provided in a different capacity than strictly as an operator. The number of operators who replied to the survey is listed.

Please note that in this document, facts and statements that are not attributed are based on information collected directly for this report.

Results

The results showing the number of whale watchers and expenditures are presented in the following sections of the report, first for the entire world, then continent by continent, covering all the 87 countries and overseas territories that have whale watching.

WORLD

WORLDWIDE SUMMARY

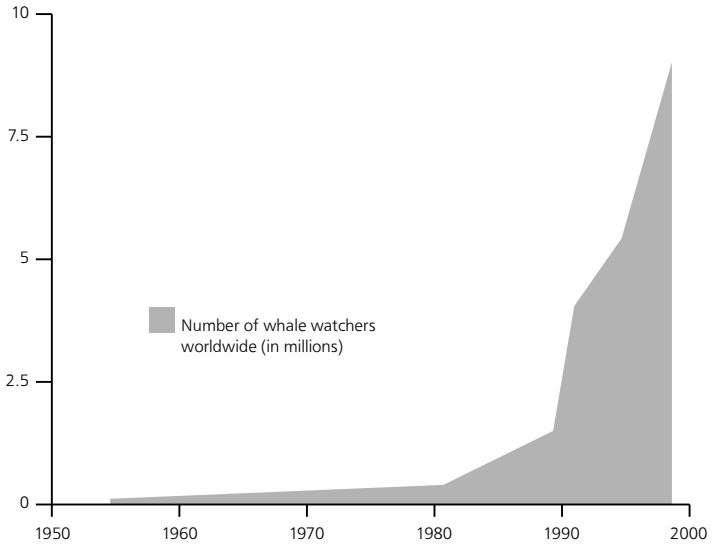
Number of countries & territories involved in commercial whale watching, 1994: 65.
Number of countries & territories involved in commercial whale watching, 1998: 87.
Number of communities involved in whale watching, 1994: 295.
Number of communities involved in whale watching, 1998: 492.

WORLD WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures
1991	4,046,957	USD $77,034,000 or GBP £44,787,000	$317,854,000 £184,799,000
1994	5,425,506	$122,445,000 £75,583,000	$504,278,000 £311,283,000
1998	9,020,196	$299,509,000 £186,924,000	$1,049,057,000 £654,716,000

Average annual % increase 1991–94: 10.3%.
Average annual % increase 1994–98: 13.6%.
Average annual % increase 1991–98: 12.1%.

THE GROWTH OF WHALE WATCHING WORLDWIDE, 1955–1998



BOX 3: Estimated Growth of Whale Watching Worldwide

YEAR	DIRECT EXPENDITURES	TOTAL EXPENDITURES	SOURCES
1981	USD $4.1 million or GBP £2.4 million	$14 million £8.4 million	Kaza 1982; Kelly 1983; Sergeant (pers. comm.)
1988	$11–16 million or £6.4–9.3 million	$38.5–56 million £22.4–32.6 million	Kraus 1989
1991	$77.0 million or £44.8 million	$317.9 million £184.8 million	Hoyt 1992
1994	$122.4 million or £75.6 million	$504.3 million £311.3 million	Hoyt 1995
1998	$299.5 million or £186.9 million	$1,049 million £654.7 million	This report

NORTH AMERICA

AREA-WIDE SUMMARY
Number of countries & territories involved in commercial whale watching: 4 (same as in 1994).
Number of communities involved in whale watching: 183 (up from 122 in 1994).

NORTH AMERICA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	3,430,225	$46,230,000	$225,275,000
1994	4,074,195	$65,791,000	$293,397,000
1998	5,500,654	$194,575,000	$594,267,000

Average annual % increase 1991–94: 5.9%.
Average annual % increase 1994–98: 7.8%.

UNITED STATES OF AMERICA (including states only, not territories)

Population:	273.8 million
Land Area:	9,166,600 sq km (3,539,224 sq mi)
Tourist Arrivals:	47,754,000 (+2.72% on previous year)
Total Tourist Receipts:	$73,268 million USD
GNP:	$7,783.1 billion USD
GNP per capita:	$29,080 USD

Main WW Species: California: gray whales, blue whales, humpback whales, bottlenose dolphins, Pacific white-sided dolphins; Oregon: gray whales; Washington: orcas, Dall's porpoises, minke whales, gray whales; Hawaii: humpback whales, spinner dolphins, bottlenose dolphins, short-finned pilot whales, sperm whales; Alaska: humpback whales, orcas, gray whales, fin whales, minke whales; Florida to Texas: bottlenose dolphins, Atlantic spotted dolphins, northern right whales, sperm whales; Georgia to New Jersey: bottlenose dolphins, humpback whales; New England: humpback whales, northern right whales, fin whales, minke whales, Atlantic white-sided dolphins, harbor porpoises.

Year WW began: 1955 (San Diego, California).

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

Number of communities involved in WW: 90 (Maine, 9; Massachusetts, 9; New Hampshire, 3; Rhode Island, 1; New York, 1; New Jersey, 2; Delaware, 1; Maryland, 1; Virginia, 1; South Carolina, 2; Georgia, 1; Florida, 6; Texas, 1; Oregon, 6; Washington, 8; California, 20; Hawaii, 8; Alaska, 10).

USA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	3,243,025	$37,506,000	$192,930,000
1994	3,600,000	$41,632,000	$214,152,000
1998	4,316,537	$158,385,000	$357,020,000

USA (Overall) WW Assessment: The US whale watch industry is approaching maturity with only modest future growth potential. However, there has been some growth in the northwest (orca watching), Hawaii (expansion to

other islands), and even in California, as new generations discover the gray whales their parents and grandparents first watched in the 1950s. Prices have increased dramatically, and many of the tours have become more educational or scientifically useful, making the industry more valuable, although there is still considerable room for improvement. In general, adding value to whale watching, through more and better educational programs, increasing the scientific output, as well as developing community programs which include land-based whale watching and other nature and ecological programs, will help maintain the demand and develop the future potential of whale watching.

USA		WWs			WWs		
	Operators	Boat-based	$DEx[2]	$TEx[3]	Land-based	$DEx[4]	$TEx[5]
New England[6]	36	1,230,000	$30.600m	$107.100m[7]	10,000	Minimal	$0.150m
Eastern US & Gulf	25	255,000	4.415m	15.452m	10,000	Minimal	0.150m
California	65	762,700	14.110m	49.101m	1,012,000	Minimal	15.180m
Oregon	10	63,930	0.818m	4.502m	126,207	Minimal	1.893m
Washington	26	52,000	3.312m	9.592m	265,000	Minimal	3.975m
Alaska	66[8]	76,700	89.100m	122.650m	5,000	Minimal	0.125m
Hawaii	40	438,000	16.030m	27–54.000m[9]	10,000	Minimal	0.150m
Totals	**268**	**2,878,330**	**$158.385m**	**$335.397m**	**1,438,207**	**Minimal**	**$21.623m**

NEW ENGLAND WW SOCIOECONOMIC PROFILE

WW Tourists

- 32% of whale watchers surveyed in 1996 in Massachusetts were from outside the region, mainly from the rest of the United States, with the foreigners led by the UK, Canada, Italy, Germany and Switzerland (Hoagland and Meeks 1997).
- Based on survey returns for this report, 24.6% of whale watchers were international visitors, led by the UK, Italy, Germany and Japan.
- For New England whale watchers going to Stellwagen Bank, whale watching represented more than a third of the value of their entire vacation, and more than 2/3 of the surveyed whale watchers had planned to go whale watching as part of their vacation (Hoagland and Meeks 1997).
- In a 1988 survey of Massachusetts whale watchers, 45% stated that their primary purpose was to go whale watching, and the average distance travelled to go whale watching was high, with 65% travelling more than 400 km (250 miles) (Lewis 1988). Only 18% of respondents in this survey were from Massachusetts, while 64% were from the US east coast.

[2] Boat-based direct expenditures in USD.

[3] Boat-based total expenditures in USD.

[4] Land-based direct expenditures in USD.

[5] Land-based total expenditures in USD. Very conservative figures are used for total expenditures so as not to count the numbers twice, as many land-based whale watchers also participated in boat-based whale watching.

[6] New England numbers are based on unofficial estimates from NMFS Northeast region for June 1998, Porter Hoagland's slightly more conservative numbers based on the year 1996, and approximately 60% completed operator surveys for this report based on the year 1998.

[7] This survey found that New England whale watchers spend between $5–$20 USD for food and souvenirs on the boat or at gift shops before or after the trip. This does not include transport to get to the departure site, film, special clothing, and accommodation if necessary. Vacationers (representing 32% of whale watchers) spend on average at least four days in the area (Hoagland and Meeks 1997). In the early 1980s, directly surveying New England whale watchers, John E. Kelly determined that they were spending about 3.5 times the ticket price in total expenditures (including travel expenses, food, accommodation, film, souvenirs, special clothing and the ticket price itself) (Kelly 1983). This calculation appears even in New England to be a conservative indication of total expenditures related to whale watching, but in the absence of more detailed studies, it will be used here, and in other regions of the world with similar day-trip whale watching near urban centers when precise data is unavailable.

[8] Includes all operators with some involvement in whale watching, not just dedicated operators.

[9] The low end of the estimate is Utech's (1990) figure which estimates the total of direct, indirect and induced revenues for whale watching using state multipliers; the higher figure adapts Kelly's 3.5 multiple to estimate total revenues based on the tourist profile for those who could be considered dedicated whale watchers.

• The most attractive features of whale watch trips, according to whale watchers, were, in order, number of whales seen, number of species seen, naturalist interpretation and having a boat trip (Hoagland and Meeks 1997). In Lewis' (1988) study, the most enjoyed features of a whale watch were seeing whales (97% rated this highly), and learning about whales (82%). Early research by Tilt (1985a, 1987) and Tilt and Rumage (1985) also looked at whale watchers in New England, their origins, aspirations and attitudes.

WW Operators & the Trips They Offer

• There are some 36 operators offering whale watch trips in New England. For breakdown and numbers of boats and unit price of the trips state-by-state, see the table below.

• The trips are offered aboard medium to large, purpose-built ships with broad, multiple decks, comfortable galleys, toilets and other amenities ideal for whale watching. Most companies started with fishing boats and have gone through two or three generations of larger, more comfortable boats dedicated to whale watching.

• Most of the trips are educational (almost all have qualified naturalists, some of whom are scientists) and at least half are scientifically valuable (with photo-ID and other research as output; see below) (Hoyt 1994b).

NEW ENGLAND WHALE WATCHING

State	Communities	Operators	Boats	Unit price	WWs	Ticket Sales
Massachusetts	9	17	30–35	$24	1,000,000	$24,000,000
New Hampshire	3	4	6–10	$24	80,000	$1,900,000
Maine	9	14	18–24	$32	137,500	$4,400,000
Rhode Island	1	1	1	$24	12,500	$300,000
Total	**22**	**36**	**55–70**	**$24–32**	**1,230,000**	**$30,600,000**

The WW Community

• There are 22 communities offering whale watching in New England (see state breakdown in table above).

• Based on 50% returns from Massachusetts, an estimated more than 150 full-time jobs and 600 part-time jobs are associated with whale watching.

• The scientific programs of several research organizations, such as the Center for Coastal Studies and the Cetacean Research Unit, both in Massachusetts, were started and have flourished because of a close relationship with commercial whale watching. These groups provide naturalists/scientists who narrate the trips but who are also paid and are allowed to do photo-identification and other research. The value of having a whale watch boat as a platform for research has been estimated at $1,000 USD a day. The seven main boats from the operations working on Stellwagen Bank in southern New England who have regular naturalists doing research work a minimum of 125 days a year, providing an annual benefit of $875,000 USD (7 x 125 x $1,000) (Hoyt 1994a, 1994b). One research group alone makes $56,000 USD per year for its research program by being allowed to sell T-shirts and other merchandise on the boat (Hoyt 1994b).

• Another measure of the high scientific value of whale watching in New England is that at least five graduate degrees and 30 published papers in refereed journals had been produced as of 1994 based on work from whale watch boats (Hoyt 1994b).

• Stellwagen Bank has been the focus of whale watching for 25 years. The interest and concern over the whales' habitat and the need for conservation developed out of whale watching. It is a tribute to the high quality of whale watching here that the reserve idea was so easy to sell to the public and government (at least 10 million people went whale watching on Stellwagen Bank between 1975 and 1993). Without commercial whale watching, much less whale research would have occurred here and far fewer people would have even been aware of the importance of the area. The Gerry E. Studds Stellwagen Bank National Marine Sanctuary was designated by the US Congress in 1993 (Hoyt 1994b).

• School children on class trips to Stellwagen Bank are roughly 10% of the market (Hoyt 1994b). They are ideal from a commercial perspective as they offer large group bookings in the shoulder, non-peak season. Highly educational programs, as well as outreach followup, provide a valuable educational output to communities in New England. Some schools do travel from outside the region on special field trips.

- Because of substantial competition, particularly in Massachusetts and New Hampshire, whale watch ticket prices here have been among the lowest in the world. The average ticket cost for whale watching was $15 USD in 1994 (Hoyt 1994b), and it has increased steadily since then, with some increase in whale watch numbers too, reaching a level of $24 by 1996.
- Economists have attempted to show how valuable whale watching is to the economy of Massachusetts, and to society as a whole. "Consumer surplus", which can be obtained through various kinds of surveys, measures how much more whale watchers would have paid for a trip over and above the actual cost. Consumer surplus is a measure of the value of whale watching beyond the basic tourism expenditures. Thus, a whale watcher in Massachusetts in 1996 was willing to pay about $50 USD for a whale watch trip; the actual cost was about $24. The consumer surplus was $26 per trip (Hoagland and Meeks 1997), slightly lower than an estimate made a decade earlier using less refined methodology (Day 1987). This consumer surplus compares favorably with other studies of the value of environmental resources using similar techniques (Hoagland and Meeks 1997). Hoagland and Meeks also calculated the capitalized economic value of whale watching to determine what whale watching may be worth, assuming no expansion of demand, presently and in the future. The calculation is made assuming that the same level of benefits occur every year and extending them into the future and discounting them back to the present. By dividing the annual economic benefits estimate by the relevant discount rate, this enables the calculation of discounted benefits infinitely far into the future. This econometric estimation of the demand relationship, using a discount rate of 5%, results in a figure on the order of $440 million USD as the capitalized economic value of whale watching in Massachusetts (Hoagland and Meeks 1997).

WW Assessment

Whale watching has realized much of its outstanding potential in New England — economically, scientifically, and in terms of education and conservation. Still, there exists potential to improve and to attract a higher capacity with the same numbers of boat trips. Results from one study suggest that raising the educational level could increase the demand for whale watching (Hoagland and Meeks 1997). Although expansion may well be limited by traffic congestion on the water, increased demand could result in the boats travelling at closer to capacity and being able to charge more per trip.

EASTERN US & GULF OF MEXICO WW SOCIOECONOMIC PROFILE

WW Tourists

- No data available on whale watch tourists in particular, but, since most ports are located in resort areas, many whale watchers are visiting Americans on holiday, travelling from out-of-state, followed by international visitors.

WW Operators & the Trips They Offer

- About 25 operators work in this area, offering mostly day trips. Hilton Head Island, South Carolina, has the greatest variety of tours, with kayaks, sailboats, inflatables as well as motor cruises and larger sightseeing boats offered. Florida has concentrations of operators around St. Petersburg and Panama City, in the panhandle, and single operators in scattered other locales all the way to Key West. On the east coast, operators at Jupiter, Ft. Lauderdale and Miami, offer 3–10 day dolphin swim trips to the Bahamas, but these trips are included under the Bahamas.

The WW Community

- Outside of New England, there are 16 communities on the east coast and Gulf of Mexico, that offer tours, largely for dolphin watching. With such a diffuse industry, operating at a modest level in the midst of a large, overall tourism industry, the impact of whale watching is muted. An exception, which shows some of the possibilities is Hilton Head, South Carolina, which has at least eight operators focussed on dolphin watching for 10 or more months of the year. The local bottlenose dolphins have been studied and named; as one advertisement announces, "We see Flipper aka Dolly, Rambo, Freckles & others. Yes, some are so friendly we have names for them."
- In Mississippi, a marine lab takes classes out on the Gulf three days a year, meeting various dolphins and sperm whales. In Texas, the Galveston Bay Foundation does dolphin workshops which include the chance to view dolphin habitat — as well as dolphins. In South Carolina, the Coastal Discovery Museum on Hilton Head Island offers a regular marine study and dolphin cruise which combines public education with a recreational cruise.
- The long-standing Earthwatch trip to study bottlenose dolphins continues at Sarasota, Florida, introducing up to about a hundred people a year who pay money to act as volunteer researchers. Some conservationists disagree about the invasiveness of some of the research on wild dolphins but the scientific results are helping in the conservation of this species in the Gulf.

WW Assessment

Considerable potential. Although at least two museums and two universities plus one Earthwatch tour in this area offer whale watching of a high standard with naturalists, there is substantial room for improvement in other tours and the possibility of further development to enhance the comparatively low socioeconomic value of whale watching to this region. One problem, e.g., in the Florida panhandle and at Corpus Christi, Texas, has been the illegal and unwise feeding of wild dolphins. If tours in this area can be put on a sound ecological as well as educational footing, the socioeconomic benefits (partly from reducing the cost to the dolphins) would increase.

CALIFORNIA WW SOCIOECONOMIC PROFILE

WW Tourists

- The tourist profiles vary considerably all along the California coast, depending on whether it is north or south, city or rural area, tourist or non-tourist location, time of year and target species. The profile also varies according to the operator and the niche to which it aims its marketing. For example, in the Los Angeles and San Diego area, many gray whale trips during the migration occur during the school year, and have attracted about half local people and many from around the state, with comparatively few international visitors. In the Monterey and San Francisco Bay areas, particularly in the summer months, the profile is closer to 50% international, with at least 2/3 non-locals. International visitors are led by Europeans (especially British and Germans) followed by Japanese. But there is no doubt that California residents continue to play a key role in supporting the whale watch industry. Because the state is so large, many can travel significant distances.
- In one of the early studies on whale watching, Tilt (1985b) found that the whale watchers in California were willing to pay more for the tours if the proceeds went toward whale research or education.

WW Operators & the Trips They Offer

- More than 65 operators using 140+ boats offer whale watch tours along the California coast, although some are seasonal businesses or tours which are marketed as marine nature tours that include whale watching.
- Several extremely popular tours over the past few decades have been run by non-profit societies, such as the American Cetacean Society and Oceanic Society Expeditions. These highly educational trips have escorted tens of thousands of school children and adults every year. The impact for conservation education has been substantial (Hoyt 1992).
- The overall profile of the trips leans toward larger boats and numbers of people and cheaper prices (more competition) in southern California, especially in the Los Angeles area, San Diego and Santa Barbara, while northern California from Monterey north has mainly smaller boats and higher prices. A number of operators, such as in the Monterey as well as the Santa Barbara areas, have a longer season due to the blue-humpback season in summer and early autumn. Because these trips seek out locally rarer species and are longer day trips than for the gray whale migration, the prices can be 3–5 times higher.

The WW Community

- In all, 20 communities offer boat-based whale watching along the 1,191–km (840–mile) California coast. Most of these also offer land-based whale watching. Many other areas along the coast offer land-based whale watching only.
- For several decades, California's state marine mammal has been the gray whale. This has provided a marketing symbol for tourism programs as well as education.
- Land-based whale watching began in the 1940s off southern California, directed toward the then endangered gray whale. In 1950, Cabrillo National Monument in San Diego was converted from an old US Army gun station into the first public whale watch lookout. About 10,000 people came that first winter and it became an annual pilgrimage for many Californians, with more than 300,000 land-based whale watchers coming to Cabrillo National Monument by 1983, and hundreds of thousands more at other lookouts (Hoyt 1992). Today, at least 52 well-publicized, mostly sign-posted, whale watch lookouts cover most areas of the coast. The most popular sites, such as at the Point Reyes Lighthouse at Point Reyes National Seashore as well as Cabrillo National Monument on Point Loma in San Diego have special whale programs, whale exhibits and viewing scopes, and they can receive thousands of visitors a day at the height of the gray whale migration. More than 15 state parks and beaches actively promote whale watching. Other areas are in national parks, or in or near lighthouses. The cultural, educational and conservation benefits are widespread though difficult to measure. Using a portion of seasonal visitor figures for state parks, beaches and other established lookouts, a minimum of 1,012,000 people was determined to have participated in land-based whale watching along the California coast in 1998. In 1991, the minimum spend was estimated at be at least $10 USD a person, including fuel to drive to the site, a snack and

souvenirs (Hoyt 1992). With inflation, and parking fees increasing to $5 for some sites (e.g., Cabrillo National Monument), as well as fees required for admission to state and national parks, this figure is at least $15 a person.

- A model educational program at the Santa Barbara Museum of Natural History is just one of many NGO/museum programs in California which put whales and people together. In January 1996, the museum established "Whale Corps", an innovative volunteer naturalist program to train and supply guides for whale watch trips. More than 20,000 whale watchers, travelling mainly with Condor Cruises, are encouraged to visit the Santa Barbara Museum of Natural History's Sea Center, located on Stearns Wharf. Whale Corps naturalists are also taking photo-IDs on whale watch trips to help with the photo-ID project of the Cascadia Research Collective.
- Whale watch tours played a key role in identifying and popularizing key whale habitats along the California coast, and they continue to be central to the public participation, education and conservation mandate of all four marine sanctuaries. The four sanctuaries are: Channel Islands, Cordell Bank, Gulf of the Farallones, and Monterey Bay national marine sanctuaries. There are some 13 research/educational facilities located on the shore adjacent to these sanctuaries.
- Loomis and Larson (1994) attempted to measure how California households and visitors (including whale watchers) valued gray whales. They obtained estimates of total economic value by asking how the public would value increasing gray whale numbers. Using the contingency valuation method, the researchers attempted to determine the value of whales to non-whale watchers in terms of the continued existence of the species for both themselves and others in the future. Economists have recognized that the continued preservation of a species includes the viewing, existence and bequest values (use and non-use values) and thus this has been termed "total economic value" (IFAW 1999; Loomis and Larson 1994). Loomis and Larson found that, on average, whale watchers would pay a maximum of $23.72 a year to increase gray whale populations by 50% and $28.26 a year to increase it by 100%.
- Many Californian whale watch communities have annual festivals to celebrate the arrival of the whales. The extraordinary range of whale watch festivals — all with socioeconomic impact — are listed below. The whale watch trips (including extra trips during the festivals) are included in the whale watcher expenditures above, but the considerable tourism revenues to the overall community resulting from the festivals have not been adequately measured.

CALIFORNIA FESTIVALS CELEBRATING GRAY WHALES

1. Monterey Peninsula Whalefest: Monterey Bay, Point Lobos and Big Sur. Two weeks in January. Whale-themed art shows, natural history exhibits, children's programs outside and at Monterey Bay Aquarium.
2. Cabrillo National Whale Watching Weekend: Point Loma, San Diego. Weekend in January. Special speakers, presentations and other festivities at the glassed-in observatory at Point Loma.
3. Ventura Harbor Village Annual Whale Celebration. Ventura Harbor. Day in February with educational and evnironmental booths and presentations, local marine art, Chumash Indian cultural displays, a drawing contest to win a trip to the Channel Islands, and entertainment. In its 6th year.
4. Oxnard's Celebration of the Whales. Channel Islands Harbor. Mainly weekends in February and March. Speakers, island trips, a 10k run, tall ships, entertainment and exhibits celebrating the migration of the gray whale.
5. West Marin's Whales, Wildlife and Wildflowers Festival. Point Reyes National Seashore. From January to April. Festival to celebrate whale watching with locally-grown oysters and seafood, to learn about local elephant seals, great blue herons and great egrets as well as the whales. Includes full moon walks at two historic lighthouses.
6. Dana Point's Annual Festival of the Whales. Dana Point/Orange County. Two weeks in late February and early March. Displays, exhibitions and contests. 30th year.
7. Mendocino's Annual Whale Festival. Mendocino. Two days in early March. Guided whale watching walks to the headlands as well as food, music, wines, and special displays and offers by the community's merchants. 19th year.
8. Fort Bragg's Annual Whale Festival. Fort Bragg, Noyo Harbor. Two days in late March. An annual Whale Run (10k run or 5k walk) along with food, drink and festivities. 19th year.
9. Cabrillo Marine Aquarium's Whale Fiesta. One day in June. A full day of events celebrating whales including a sand sculpture contest, food and crafts, children's activities and entertainment and booths on sea life matters.

WW Assessment

Outstanding potential. Whale watching originated in California in 1955 and it has undergone several major shifts and remakings over the years. It is this creativity, along with attention to education, research and conservation which have allowed the industry to continue expanding. California pioneered with boat-based whale watching,

long-range trips to the Baja lagoons, land-based whale watching from lookouts, and whale festivals. In the 1980s, the discovery of populations of blue whales and humpback whales during the summer (non-gray whale) season within easy reach of Monterey and the Bay area, as well as the discovery of local small whale and dolphin populations, saw the industry expanding far beyond the original dependence on gray whale migrations. More recently, several key whale areas have been set aside as US marine sanctuaries and these protected areas have given new publicity and conservation backing to not only the state animal but to these other marine mammals that have proved such an attraction for visitors and residents alike. No doubt, California will continue to be one of the leaders of world whale watching, as it reinvents itself in the new century.

NORTHWEST (OREGON & WASHINGTON) WW SOCIOECONOMIC PROFILE

WW Tourists

- Boat-based whale watchers to Oregon were 52% from the state, 32% from other US states, and 16% international. Land-based whale watchers were 60% from Oregon, 37% from other US states, and 3% international. All 50 US states were represented, as were 40 countries around the world, led by Canada, Germany and the United Kingdom.
- In Washington, whale watch visitors on large boat trips were about 30% in-state, 60% from other US states, and 10% international, with 20% of these from Canada, 10% from Germany, 10% for the UK, and 10% from the Netherlands. By contrast, whale watchers on multi-day kayak trips from one major company were only 2% from Washington State, 95% from around the USA, with the rest from Japan, Germany, New Zealand and Canada, but this reflects partly this company's marketing.

WW Operators & the Trips They Offer

- In Oregon, 10 companies offer whale watch tours on 41 boats.
- In Washington, some 22 whale watch operators in Puget Sound/Haro Strait using at least 27 boats (not including kayaks) depart from several different ports, offering a wide range of trips from several hour boat tours to week-long kayak trips. Six of the operators mainly or only offered kayaks. On the west coast, from Westport, gray whale trips are offered by four operators on 17 boats during the spring migration from March to May.

The WW Community

- In Oregon, there are six communities that have boat-based whale watching, although most of the whale watching occurs from two main communities, Depoe Bay and Newport. In Washington, there are six communities that offer boat-based whale watching and two communities offering substantial land-based whale watching.
- In Oregon, "Whale Watching Spoken Here" is an innovative program coordinated by Oregon Parks and Recreation Department to train and provide volunteers to count whales and whale watchers at 30 sites along the Oregon coast during two key gray whale migration weeks during the year. They also act as naturalists at the various sites, answering questions and helping with gray whale spotting. The program employs only one person who acts as coordinator and edits the attractive annual newsletter, but the influence of the program extends into schools and to tens of thousands of visitors every year. Some of these visitors later take whale watch tours by boat and they spend money at diverse locations all along the Oregon coast.
- Other community programs associated with "Whale Watching Spoken Here" are children's whale story times and educator-led programs on marine mammals at the Hatfield Marine Science Center.
- In Washington, at Lime Kiln State Park, on the west coast of San Juan Island, approximately 200,000 visitors a year go whale watching from land, while at La Push, the native Quileute tribe host a superb nature experience including land-based whale watching in season.
- For more than two decades, the Whale Museum in Friday Harbor, Washington, has offered its staff as whale watch naturalists, excellent organized whale programs (field courses, a teaching curriculum, educational and lab work), helped develop the land-based whale watch site on the west side of San Juan Island, provided a hot line for orca and other whale sightings, conducted research and acted as a museum, and promoted strategies to enhance the socioeconomic benefits of whale watching.

WW Assessment

Outstanding potential, much of it being realized. With some of the gray whales recognized in recent years as residents of coastal Oregon waters, whale watching has become a year-round business for certain operators, although most have kept it to the main migration period. The land-based "Whale Watching Spoken Here" program

is a good model that other states and countries might emulate. On a minimal budget, it has added considerable socioeconomic value to whale watching. In Washington, the Whale Museum's programs have played a big role in enhancing the value of whale watching in Haro Strait. Haro Strait, however, may well present a case of whale watching in numbers greater than is ideal from the point of view of tourists and the marine environment. Even though there is no proven impact on the whales' behavior or survival from whale watching, at least to date, too many boats around the whales lessens the quality of the whale watch experience from boats or from land. In 1998, in Haro Strait, the Whale Museum's Soundwatch Program logged a mean number of 22 boats on the orcas from May through August. Even though most of the whale watch operators take care around the whales, some whale watchers perceive that the whales are being bothered by boats, so the style and method of whale watching needs to match better with visitors' expectations. Considerable educational and scientific value has been added to whale watching here, but there is always room for more, and some operators have substantial room for improvement. In general, the potential of whale watching remains high in Washington and Oregon.

ALASKA WW SOCIOECONOMIC PROFILE

WW Tourists

- Based on returns from most of the Gustavus and Glacier Bay operators, representing more than 3,700 passengers, the whale watchers were almost 78% from continental USA and 22% international led by Canada, Germany, and the Netherlands. Fewer than 1% were from Alaska.
- Alaskan tourist profiles include a wide range of socioeconomic backgrounds and interests, but nature and wildlife are a big part of every tourist's reason for coming to Alaska.
- Cruise ship passengers to Alaska, as well as worldwide, are led by the USA (65% of all cruise ship passengers worldwide), followed by the UK, Asia (not including Japan), Germany, Canada, Italy, Australasia and Japan. All the non-Americans together add up to only half the number of Americans (Ward 1999).

WW Operators & the Trips They Offer

- The season in the main whale watch area of southeast Alaska is about 100 days, although some operators have tried to extend it to 125 or even 150 days in recent years.
- About 12 whale watch companies are active in Gustavus, offering mainly fishing boats or motor cruisers with a few kayaks and sailboats. Three are dedicated whale watch companies and the other nine combine fishing and whales. At least seven other operations are found in six other communities. Many other tour companies from other ports around southeast and central Alaska that target whales offer whale watching part-time or as part of the attraction, along with glaciers, fishing, or sailing/sightseeing.
- At Gustavus the trips can last a half day or less. In most other areas of Alaska, the trips are full- or multi-day trips. Alaskan operators are eager to custom-design tours to suit the client. Prices can range from $100 to $350 USD a day.
- In addition to tours and charters offered by Alaskan companies, there are three main size classes of ships, most of which come from outside the state, bringing visitors on somewhat self-contained trips (varies by company and itinerary). The large cruise ships started selling whales as part of their "Inside Passage" Alaska cruises in the 1980s, and now most large cruise ships will announce sightings and many make short excursions through prime whale areas, in order to introduce passengers to the humpback whales and orcas, if possible. The cruise ship market is not dedicated to whale watching, even in Alaska, yet it does offer a chance for many visitors who would not otherwise see whales to go whale watching — even if it's from the high deck of a cruise ship, or on a short special excursion via seaplane, helicopter or inflatable boat. Some 13 companies send medium to large cruise ships to Alaska. As a conservative indication of the role of whales in attracting people to Alaska cruise ships, and the frequency of sightings, 10% of the numbers and expenditures are included in our assessment here. I have used 40,000 people (10% of 400,000/year) with a unit cost of $1,500 USD to compute a minimum, conservative contribution from whale watching. More and more passengers take shore excursions as add-ons to the cruise, so an additional spend of $500 is added for the 10% of passengers counted as whale watchers.
- Some six companies offer small cruise ships (70 to 140 passengers) with more dedicated nature and wildlife trips. The ships can move through shallower waters and through island passages, getting closer to wildlife. The trips are also more flexible in terms of itinerary and inflatables or other small boats can be launched quickly from the ship. As these trips include whales and dolphins as a major component, I will count half the numbers and estimated expenditures as whale watching, and $500 USD as a per person spend for total expenditures.
- Another group of vessels includes a number of companies who offer sailing or small boat expeditions, mainly week-long trips on 6 to 10 passenger boats. An estimated 1,500 passengers a year take mixed whale

watch/nature-oriented trips, spending $1,800 to $4,500 USD (avg. $2,500 USD) a week for the tour and $300 USD while in port. 50% of the value of these tours is included in our assessment.

- The unit costs for whale watching are higher in Alaska than anywhere else in the USA. This makes the total expenditures, as well as the expenditures per person, very high.

ALASKA WHALE WATCHING

	Operators	WWs	% counted[10]	$DEx	$TEx
Day trips					
Humpback trips (e.g., Gustavus)	12	12,500	100%	$1.250m	$4.375m
Nature/whale trips (State-wide)	20	10,000	50%	1.500m	2.500m
Multi-day trips					
Small boats/sailboats	10	1,500	50%	3.750m	4.200m
Small cruise ships	6	7,500	50%	22.500m	26.250m
Medium to large cruise ships	13	40,000	10%	60.000m	85.000m
Other					
Land-based whale watching	0	5,000	100%	0	0.125m
Seaplane, helicopter nature trips	5	200	20%	0.100m	0.200m
Totals	**66**	**76,700**	–	**$89.100m**	**$122.650m**

The WW Community

- Some ten communities offer whale watching, most located in southeast Alaska. The main community is Gustavus near Glacier Bay; it has the best access to Icy Strait where humpbacks are reliably found feeding through the summer.
- Holland America Line and Princess Cruises, two large cruise ship lines, have built extensive facilities on shore in Alaska, including hotels, tour buses and even trains reportedly worth more than $300 million USD. These two companies, which together brought 361,000 passengers to Alaska in 1998, have a long term commitment to the state (Ward 1999). Cruise ship stops and excursions in the state have become more numerous in recent years, but, in general, cruise ship revenue does not accrue very much to Alaska, although most of it does end up in the USA due to the origin of most of the companies, employees on the ships, as well as the passengers. However, some ships are owned by other countries. There is also revenue that accrues to Canada, mainly through the departure port of Vancouver, where the ships take on supplies and passengers spend money before embarking as well as upon their return.
- On Kodiak Island, Whale Fest Kodiak, started in April 1997, celebrates the gray whales as they pass enroute to their Arctic feeding grounds. Situated near an excellent land-based lookout, the festival has become an annual celebration that focuses on whales and the marine environment and has brought many visitors. It has also created a whale watch market before the charter operators realized it. Now, tours are being marketed and sold around the Whale Fest.
- Whales are a big part of Alaska's mystique. The value of humpback whales and orcas — usually depicted with a glacier or fjordic mountain background — in countless advertising clips and promotions over the past two decades is difficult to calculate. It has given a poster image to some 500,000 cruise ship visitors, as well as many of the other visitors to the state every year. As a travel destination, Alaska has seen steady increases in tourism year by year, and continues to do well in the highly competitive cruise ship market.

WW Assessment

Outstanding potential, as big as the state itself, though constrained somewhat by the relatively short whale and good weather season, and by the generally high cost of travel throughout the state. Still, the potential is being

[10] This column shows the percentages that will be counted as whale watching. The numbers of whale watchers (WWs) and direct expenditures ($DEx) and total expenditures ($TEx) in the adjacent columns have been reduced accordingly. Thus, for example, 10,000 counted as whale watchers on nature/whale trips with spends of $1,500,000 and $2,500,000 represent only 50% of the total numbers in these three categories.

realized in certain areas, riding on the popularity of humpback whales and orcas. Recent efforts to attract visitors to new areas and to the "shoulder tourism season", such as with Whale Fest Kodiak in Spring, show that extraordinary potential remains. The potential for whale watching of Arctic cetacean species remains virtually untapped. Alaska's large protected-area base helps ensure that the state will continue to have substantial wildlife attractions far into the future.

HAWAII WW SOCIOECONOMIC PROFILE

WW Tourists

- Whale watchers' origin varies according to the company, anywhere from 90% US, almost all from the mainland, and 10% international, to 50% US mainland and 50% international. Leading countries mentioned are Japan, Germany, Canada, and the UK.
- The typical profile of the whale watcher is a visitor who takes a day trip during a holiday. A small portion of the market comes from abroad as dedicated whale watchers. Whales, however, do play a key role in the choice of tours, both whale watching, snorkeling and even, to a small extent, dinner cruises (Utech 1999).
- Forestell and Kaufman (1991) found that Hawaii whale watchers in 1990 were well-educated and relatively affluent.

WW Operators & the Trips They Offer

- Most of the whale watching is based around humpback whales which winter in the islands from mid-December to the end of April, with a peak from January through March. The trips are generally two-hour to half-day trips on a wide variety of pleasure boats, including catamarans with considerable deck space for photography and glass-bottom boats which provide the chance of underwater viewing. Approximately 87 trips are offered every day during the humpback season. There are an estimated 40 operators using some 57 boats.
- Several operations on the big island of Hawaii, Maui and Kauai are year-round, directed in the non-humpback whale season toward the many species of toothed whales and dolphins which are reliably seen in Hawaiian waters.
- Snorkeling tours are closely linked with whale watching during the humpback season, especially on Maui. Humpback whales are prominent in many of the Maui advertisements.
- Although land-based whale watch tours are not specifically offered, there is considerable whale watching from land. Most of it is casual, from lookouts, hotels and beaches on Maui, where humpbacks can be seen just offshore, but whales and dolphins can also be seen from other islands. Some extended-day and research-oriented trips do encourage a land-based element as part of their boat trips.

HAWAII WHALE WATCHING[11]

	Boats	Jobs	Unit price	WWs	$DEx (Ticket sales)
Dedicated Humpback trips (total)	52	277	$30	370,000	$11.200m
Maui	28	151	26	236,800	6.100m
Big Island	13	40	39	40,700	1.600m
Kauai	7	23	51	18,500	0.900m
Oahu	4	63	36	74,000	2.600m
Snorkel trips sold due to whales[12]	–	110	72	62,000	4.500m
Dolphins/Small whale trips	5+	15+	55	6,000	0.330m
Land-based whale watching[13]	0	0	0	10,000	0
Total	**57+**	**402+**	**$26–$72**	**448,000**	**$16.030m**

[11] Figures are based on the 1998–99 whale watch season.
[12] According to Utech (1999), whale watching accounted for 19% of the reason that people chose to go on a snorkeling trip in Hawaii. Whale Watching was 50% or more of the reason that 21% of snorkeling passengers chose to buy snorkeling trips. Therefore, a small portion of the snorkeling tour industry equal to 62,000 of the snorkelers spending $5 million are added in as whale watchers.
[13] Although there has been some land-based element from tours, these numbers represent casual whale watchers from lookouts, hotels, and beaches, primarily for humpbacks from Maui.

The WW Community

- The main community is Lahaina on Maui. Additional small boat harbors with some local impact on communities include three others on Maui, two on the big island of Hawaii, one on Oahu and one on Kauai: eight total. The impact in terms of tour boat companies, jobs and whale watcher expenditures is outlined in the table above.
- Several whale watch operations contribute directly to research, collecting data on board the vessels and at least one commercial operation gives a portion from the sale of every ticket to a research foundation.
- According to Utech (1999), the direct, induced and indirect revenues from whale watching in Hawaii amounted to $19–27 million USD. This figure was termed the "total economic impact" but uses different methodology than is used here. For consistency, the figures in the tables employ the same methodology as for other states and countries to come up with "total expenditures" as defined in this report. Still, the Hawaii figures from Utech are valuable indications of economic impact, using accepted state multipliers.
- Utech (1990) concluded that Hawaii's ocean tour industry (which includes whale watching as one component) had grown 25% in real terms (inflation-adjusted) between 1990 and 1999, and noted that this growth occurred against the backdrop of a relatively stagnant tourist economy. A solid part of this growth is due to whale watching. Forestell and Kaufman (1991) counted 130,000 humpback whale watchers for the 1990 season spending $3.9 million USD. This had grown to 370,000 and $11.2 million by 1999 (Utech 1999).
- The town of Lahaina and the island of Maui have been able to use humpback whales for marketing worth millions of dollars.
- Several Hawaii-based whale watch operators who work with researchers present regular programs of lectures at resort hotels and in community lecture halls on Maui and the big island of Hawaii. One NGO which grew out of whale watching, called Whales Alive, has presented an annual "Whales Alive" conference in Hawaii every January which is open to the public and annually draws scientists and researchers from the mainland US and Canada to meet Hawaii's researchers and make presentations on the whales.
- Whales Alive has also taken its enthusiasm for whales and whale watching and produced a training program for prospective whale watch guides. They have done on site, in-person training, as well as produced multi-media materials to advertise the value of whales and whale watching to a larger world audience (IFAW 1999).

WW Assessment

Outstanding potential.With several notable exceptions, Hawaii whale watching has generally been less educational and contributed less toward science than, for example, New England whale watching. With the designation of part of Hawaii's state waters as a humpback whale marine sanctuary, the opportunity to use and enhance this "brand name" recognition of Hawaii's humpback whale habitat could make whale watching much more valuable without increasing the numbers. A few operators have been offering whale and dolphin tours outside of the main humpback season to great success; this too could be expanded from other islands, providing a year-round season for whale watching and taking some of the pressure off humpback whales.

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CANADA

Population:	30.2 million
Land Area:	9,220,970 sq km (3,560,217 sq mi)
Tourist Arrivals:	17,285,000 (–0.25% on previous year)
Total Tourist Receipts:	$8,770 million USD
GNP:	$595 billion USD
GNP per capita:	$19,640 USD

Main WW Species: British Columbia: orcas, Dall's porpoises, Pacific white-sided dolphins, minke whales, gray whales; Manitoba: belugas; Nunavut: belugas, narwhals; Newfoundland: humpback whales, minke whales, fin whales, long-finned pilot whales, Atlantic white-sided dolphins, white-beaked dolphins, harbor porpoises; Nova Scotia and New Brunswick: humpback whales, northern right whales, long-finned pilot whales, fin whales, minke whales, Atlantic white-sided dolphins, white-beaked dolphins, harbor porpoises; Québec: blue whales, fin whales, humpback whales, belugas, minke whales, Atlantic white-sided dolphins, white-beaked dolphins, harbor porpoises.

Year WW began: 1971 (St. Lawrence River, Québec).

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

Number of communities involved in WW: 78 (Newfoundland, 37; Nova Scotia, 11; New Brunswick, 3; Québec, 12; Manitoba, 1; Nunavut/Arctic, 3; BC, 11).

CANADA WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	185,200	$5,724,000	$29,145,000
1994	462,000	$14,154,000	$64,239,000
1998	1,075,304	$27,438,000	$195,515,000

Canada (Overall) WW Assessment: Although Canada was considered to have a somewhat mature whale watching industry in the mid-1990s, it has continued to grow dramatically, particularly in the St. Lawrence River, responsible for most of the growth in the early 1990s, and off southern Vancouver Island, in the Maritimes and around Newfoundland where there has been rapid growth from the mid-to late 1990s. This continued growth is partly due to the vastness of Canada and the near-shore presence of cetaceans in many locales. But it is also because operators, sometimes working with provincial tourism and other departments, have developed many more whale watch opportunities in far-flung communties. This is part of an overall trend in Canada and elsewhere to focus more on tourism as certain resource-based industries have declined. Whale watching continues to provide a powerful magnet to attract higher-than-average spending visitors to remote locales. International tourism to Canada is led by USA (79%), UK (4%), Japan (3%), France (3%), Germany (2%), but a high portion of the overall tourism is domestic. Canada's huge size means that the domestic travel expenditures can be as high as international tourism for most countries. In future, more emphasis must be placed on enhancing — adding value to — existing whale watch industries, boosting the socioeconomic value while reducing any social and environmental costs. There may be room to develop more land-based whale watching in several areas, as well as a little more boat-based tourism in the High Arctic of Nunavut and the Northwest Territories. In 1999–2000, Canada's Department of Fisheries & Oceans commissioned scientist Jon Lien to undertake a national review of whale watching in order to develop a policy and design a licensing program.

Canada		WWs			WWs		
	Operators	Boat-based	$DEx	$TEx	Land-based	$DEx	$TEx[14]
Newfoundland	48	122,604	$3.159m	$19.922m	15,000[15]	Minimal	$0.015m
Maritimes: NB/NS	57	140,000	3.658m	26.422m	1,000	Minimal	0.010m
Québec	75	440,000	10.151m	76.585m	65,000	0.100m	0.350m
Manitoba/Arctic	10	6,200	1.268m	3.072m	500	Minimal	0.010m
British Columbia	47	215,000	9.102m	68.429m	70,000[16]	Minimal	0.700m
Totals	**237**	**923,804**	**$27.338m**	**$194.430m**	**151,500**	**$0.100m**	**$1.085m**

[14] Very conservative figures are used for land-based total expenditures so as not to count the numbers twice, as some land-based whale watchers also participated in boat-based whale watching on the same trip. All direct and total expenditures in this table are in USD $.

[15] Based on visitor estimates for just two main land-based whale watch sites.

[16] Based on visitor numbers to Wickaninish Centre and the Long Beach Unit of Pacific Rim National Park during the gray whale migration in March–April 1998. Number used is half the actual number of visitors as a conservative estimate of whale watchers.

NEWFOUNDLAND WW SOCIOECONOMIC PROFILE

WW Tourists

- Using returns from four of the largest whale watch operators, responsible for nearly one quarter of all whale watching in Newfoundland, the tourism breakdown was 41% international (led by US, UK and Germany), 20% from the rest of Canada, and 19% from Newfoundland. Most of the local Newfoundland whale watchers went whale watching in St. John's. Approximately one quarter of the whale watchers came to Newfoundland only to go whale watching, while three quarters came as a part of the reason for their trip. (Few visitors go whale watching impulsively or spontaneously in Newfoundland.)
- Overall, automobile tourists (including business, pleasure and family visitors) to Newfoundland were 77% Canadian (including 35% Ontario, 31% Maritimes, 8% Western Canada) and 23% international (20% USA, 3% other international). The average stay was 11 days and visitors spent $41.76 CAD per night or $459 for their entire visit (Newfoundland Department of Tourism, Culture and Recreation 1998).
- In 1997, Newfoundland was host to about 93,000 visitors by automobile from June to September. Half of all these visitors participated in whale watching. Visitor satisfaction was high, with 94% willing to recommend visiting Newfoundland. Among those who did not go whale watching, 83% expressed an interest in doing so (the second highest after "iceberg viewing" in a list of 19 activities) (Newfoundland Department of Tourism, Culture and Recreation 1998).

WW Operators & the Trips They Offer

- There are about 48 operators in Newfoundland. The average tour price for short trips was $30 CAD ($20.68 USD). Package or multi-day trips ranged from $150 to $2,000 CAD.

The WW Community

- Whale watching provides an estimated 100 full-time jobs and 180 part-time jobs in the tour boat companies.
- Some 37 communities have whale watch companies in Newfoundland. At least 6 main communities report that 3–4 new businesses per community have started up since whale watching began to expand rapidly in the mid-1990s.
- Whale watching has helped fill the economic gap following the collapse of the dominant commercial fishing industry.
- With the success of whale watching, there has been much greater public support for parks and environmental education initiatives, improved wildlife protection regulations, more local interest and knowledge of whales and seabirds, and improved public participation in whale censuses.

WW Assessment

Newfoundland's outstanding potential for whale watching is finally being realized in economic terms. There is still considerable room for improvement in education and extending benefits to the wider communities, both of which would add value to the whale watching. Newfoundland doesn't have the same management problems from too many boats — as found in Québec, in the Bay of Fundy and in certain areas of the British Columbia coast — because the whales and the whale watch boats are spread out more along Newfoundland's long and varied coast.

MARITIMES: NEW BRUNSWICK & NOVA SCOTIA WW SOCIOECONOMIC PROFILE

WW Tourists

- Whale watchers to Nova Scotia were 36% international (led by the US, followed by Britain and Germany); 11% from Nova Scotia; and 53% from the rest of Canada (half from Ontario).
- Whale watchers to New Brunswick were 37% international (mainly from the USA); 53% from the rest of Canada; and 10% from New Brunswick.

WW Operators & the Trips They Offer

- There are 57 tour boat companies in Nova Scotia (32) and New Brunswick (25).
- Most trips tend to be half-day and prices range from $20 to $75 CAD ($13.79 to $51.69 USD). Based on a sample of approximately one third of the whale watchers, the average price paid for a tour in New Brunswick was $50 CAD ($34.47 USD); for southern Nova Scotia, $37.03 CAD ($25.53 USD); and for Cape Breton Island, Nova Scotia, $23.65 CAD ($16.31 USD).

The WW Community

- Three communities in New Brunswick have whale watching. At least 10 new businesses which would not exist without whale watching were reported from these communities.
- In Nova Scotia, eleven communities from Cape Breton, the Atlantic coast and the Bay of Fundy reported whale watch tours.
- For the past two decades, researchers from the University of Guelph (the late David E. Gaskin and his students) and, more recently, DalhousieUniversity (Hal Whitehead and his students), have undertaken field studies, obtained research data and training, while acting as naturalists on whale-watch boats around Nova Scotia and in the Bay of Fundy. Some of the whale-watch boats have added considerable value to their trips by hosting the researchers. In some cases, the researchers have also taken paying customers on their research boats.

WW Assessment

Outstanding potential exists in both Nova Scotia and New Brunswick for developing the tours and continuing to enhance their value without necessarily an expansion in numbers. Precautionary management may be needed to prevent too many boats from being around critically endangered right whales in the Bay of Fundy during the late summer whale and tourism peak.

QUÉBEC WW SOCIOECONOMIC PROFILE

WW Tourists

- Approximately 70% of the whale watchers are from Québec. International whale watchers (29%) are led by the USA, France and the UK. Only 1% are local.

WW Operators & the Trips They Offer

- About 75 operators throughout the St. Lawrence offer at least part-time whale watching tours. Most are half-day or less tours. More than 50 boats operate at the confluence of the Saguenay–St. Lawrence.
- Several operators have added value to the whale watching by providing naturalists and scientists on board and allowing visitors to participate or watch the research. Other operators have set up optional full-day or longer tours, or added ecological or other natural history elements to the tours.

The WW Community

- 12 communities are involved in whale watching in Québec, spread out from the confluence of the Saguenay River and the St. Lawrence, down the St. Lawrence, to the Gulf, mainly on the north shore, but there are also a few on the south side.
- By rough estimate based on survey returns covering a third of all whale watchers, approximately 600 people, mostly seasonal, are employed by whale watch operators.
- A 1996 study on the Saguenay–St. Lawrence Marine Park estimated that boat passengers have generated directly and indirectly close to 1,000 jobs in the surrounding communities (based on an estimated 300,000 whale watchers to the park, spending $7 million CAD on tickets, $44 million CAD on travel, meals and accommodation, and $17 million CAD on additional direct economic spinoffs for a total $68 million CAD) (Le Groupe Type 1996).
- One whale research operation has been funded mainly through ecotourism. Researchers who own whale watch or ecotourism businesses in Québec can place 65–85% of the funds generated (gross revenues) into research (Sears 1994). For one operation this amounts to $100,000 USD a year.
- Two socioeconomic studies of Québec whale watching in the 1980s identified the significant benefits of land-based whale watching centers for educating visitors about the whales as well providing a source of income (Trépanier *et al*. 1989).
- Whale watching was an important factor in the designation of a new marine protected area, the Saguenay-St. Lawrence Marine Park. About 85% of the whale watch excursions in Québec occur within the park area. Whale watching provided great public and economic interest in protecting the marine life in this area. At the same time, the park must manage the whale watching so that it achieves the maximum benefit for whales and people.
- In May 1998, a whale watch workshop brought all the Saguenay–St. Lawrence Marine Park stakeholders together to address the management problems from whale watching. It was well attended and new prescriptions were designed and are now being implemented, including training programs for naturalists and boat captains, and a permit system for the marine park (Gilbert and Saguenay–St. Lawrence Marine Park 1998). These will in effect substantially increase the overall socioeconomic value of whale watching.

WW Assessment

In the St. Lawrence River, in the general area of the mouth of the Saguenay, there are too many boats focussed on the whales at the same time in a confined area. Urgent traffic management solutions are needed in order for the sensible development of whale watching to continue at all. Possible solutions suggested and mostly agreed upon include diversification of whale watch tours, a boat rotation system, time limits with whales, increased passenger-per-boat ratio, and time-out periods (Gilbert and Saguenay–St. Lawrence Marine Park 1998). There is considerable scope for expanding land- and boat-based whale watching outside the park, downstream in the river and in the gulf, but a very high quality product (educational, with scientific and educational benefits, as well as recreational) will be needed to attract potential whale watchers away from the more convenient Saguenay–St. Lawrence area.

MANITOBA & NUNAVUT/THE ARCTIC WW SOCIOECONOMIC PROFILE

WW Tourists

- Whale watchers to Churchill, Manitoba, were approximately 10% from Manitoba, 40% from the rest of Canada and 50% international.

WW Operators & the Trips They Offer

- Approximately 15 mostly seasonal jobs were created by the three main operators in Churchill, Manitoba.

The WW Community

- One community in Manitoba and four in Nunavut and the Arctic host whale watchers.

WW Assessment

Considerable potential exists to expand whale watching across Nunavut and the Arctic but tours will need to be carefully planned. Because of the high interest in seeing the rarer Arctic cetaceans, visitors are prepared to pay well and to spend time making these whale watch trips, so the economic returns could be considerable with relatively few visitors.

BRITISH COLUMBIA WW SOCIOECONOMIC PROFILE

WW Tourists

- On the west and north coast of Vancouver Island, less than 1% of all whale watchers were local. On the south coast, approximately 10% were local.
- Overall "overnight visitors" to British Columbia in 1998 were led by Americans (4.8 million visitors), other Canadians (4.7 million), followed by Japan (302,000), the largest overseas market, then UK (238,000) and Germany (129,000) (Tourism BC figures).
- In northern Vancouver Island, according to operator estimates, 80% of the whale watchers come to the community mainly or entirely for whale watching, while 15% had whale watching as part of the reason. Only 5% went whale watching impulsively on site.
- According to Duffus (1988), whale watch tourists in British Columbia had an average age of 41 years old and were 45% male and 55% female. Income was higher than the Canadian average. 51% had a university degree. Some 34% of whale watchers said that whale watching is an important part of the trip and 52% said it was the primary reason (Duffus 1988).
- In terms of satisfaction, 26% of BC whale watchers found that the experience greatly exceeded their expectations, 27% that it exceeded expectations, 33% that it met expectations, and only 14.4% saying that the experience fell below or greatly below their expectations. Factors adding to the whale watch experience were learning opportunities, environment, scenery and trip comforts. Detracting from the experience were mainly environmental degradation, other traffic, trip problems, whale harassment, and restrictions (Duffus 1988, as cited in Hvenegaard 1997).
- BC whale watchers strongly supported statements on the existence value of whales, opposition to killing whales and commercial whaling, the feeling of awe when watching whales, and enjoyment while watching films and TV programs about whales (Duffus 1988).

WW Operators & the Trips They Offer

- Some 47 operators offer whale watching along the British Columbia coast, about 36 off southern Vancouver Island alone (though as of 1999, this had declined to 29 companies). A few of these operators are based outside of British Columbia, especially in Washington State. There are also a number of international tour companies who bring visitors from California, the United Kingdom, Germany, Japan and other countries to watch whales as a big part of the trip. Most of these companies go through local operators, and are already included in the estimates. Those with self-contained trips (e.g., taking US tourists on a US boat to watch whales in British Columbia waters) are not included as they have a small economic impact in relation to other trips.
- The extensive ferry traffic between Seattle and Vancouver up the inside passage to Alaska often includes sightings of whales in British Columbia waters, but whales are only a part of the trip, and in this case more time is spent with whales in Alaska. The numbers are included in the economic estimates for Alaska.
- Most trips are half- to full-day excursions and a wide variety of boats are used from kayaks and motorized inflatables to fishing boats, sailboats and large motor cruisers.

The WW Community

- At least 11 communities are actively involved in whale watching in British Columbia. Whale watching has transformed life at the small former sawmill town of Telegraph Cove. Six new businesses, including four souvenir shops, one restaurant and one motel with 100 rooms, have been built to accommodate whale watchers.
- On the west coast of Vancouver Island, at Tofino, an estimated 20 new businesses since the early 1980s were partly or primarily due to whale watching.
- The economic impact on communities on Vancouver Island were computed by Duffus in 1986. Whale watchers spent on average $370 CAD ($255.17 USD) per person, including $117 on travel, $59 on accommodation, $50 on the whale watch trip, and $39 on other items (Duffus 1988). In 1989, this amount increased to $400 CAD ($275.86 USD) per person (Duffus and Dearden 1993).
- Indoor and outdoor whale displays and information exhibits on the west and north coast of Vancouver Island have added not only to visitor knowledge and satisfaction but to the community sense of stewardship of resources.

WW Assessment

The outstanding potential for whale watching in British Columbia was finally beginning to be realized in the late 1990s with numbers surpassing other places in Canada where whale watching started and peaked earlier. It has not happened without problems developing, particularly off southern Vancouver Island, where there are many more whale watch boats and additional recreational boaters converging on smaller numbers of whales in comparatively confined areas where pollution and decline of prey may already be placing stress on the whales. In the scramble for more business, tour companies have not always offered the best educational values possible. In terms of traffic, the whale watching off southern Vancouver Island needs to be managed in cooperation with adjacent Washington State. In the early 1990s most of the operators and boats in this area were from Washington, but in 1997, according to the Whale Museum's Soundwatch Program, the number of BC operators and boats surpassed those of Washington for the first time. If the traffic problems can be solved and educational values enhanced, the value of whale watching can be improved without increasing the numbers of whale watchers, boats and operators. At present, almost all of the whale watching is concentrated in three fairly small areas around Vancouver Island representing less than 1% of BC coastal waters. There may be scope for expanding tours to less travelled areas of the BC coast but product research and development would be necessary and additional cost of travel to remoter areas can be a constraint. A 1996 study predicted that water-related outdoor tourism in British Columbia would be the fastest growing outdoor sector with an average annual growth rate to 1999 of 10% a year (Price Waterhouse and ARA 1996).

Acknowledgments (Canada)
Jon Lien, Dave Snow, Glen Hvenegaard, Krista Morten, Silva Johansson, Nadia Menard, Jean Blane, Richard Sears, Richard W. Osborne, and more than 85 operators.

ST. PIERRE & MIQUELON (France)

(French territorial collectivity)

Population:	6,600
Land Area:	242 sq km (93 sq mi)
Tourist Arrivals:	No figures available
Total Tourist Receipts:	No figures available
GDP:	$74 million USD
GDP per capita:	$11,000 USD

Main WW Species: Minke whales, fin whales, humpback whales, Atlantic white-sided dolphins.

Year WW began: 1993.

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

ST. PIERRE & MIQUELON WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	195	$5,000	$5,000
1998	607	$16,400	$94,000

ST. PIERRE & MIQUELON WW SOCIOECONOMIC PROFILE

WW Tourists

- The whale watchers are 50% local and 50% international. The international sector is 40% American, 40% Canadian and 20% European, mainly from France.

WW Operators & the Trips They Offer

- These are billed as nature tours on which whales and dolphins are regularly seen, so they encourage an ecological appreciation of the region.
- One operator only.

The WW Community

- One community only.

WW Assessment

Moderate potential.

Acknowledgments
Emmanuel Chaigne.

MÉXICO

Estados Unidos Mexicanos

Population:	95.8 million
Land Area:	1,908,690 sq km (736,945 sq mi)
Tourist Arrivals:	19,351,000 (-9.6% on previous year)
Total Tourist Receipts:	$7,594 million USD
GNP:	$348.6 billion USD
GNP per capita:	$3,700 USD

Main WW Species: Baja lagoons: gray whales, bottlenose dolphins; Ensenada: gray whales, common dolphins, pantropical spotted dolphins, Pacific white-sided dolphins; Sea of Cortés/Gulf of California: blue whales, Bryde's whales, fin whales, humpback whales, minke whales, common dolphins, bottlenose dolphins, Pacific white-sided dolphins, vaquitas; west coast México (Bahía de Banderas): humpback whales, bottlenose dolphins, pantropical spotted dolphins, spinner dolphins, false killer whales; Yucatán: bottlenose dolphins.

Year WW began: 1970 (Baja California).

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

MÉXICO WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	2,000+	$3,000,000	$3,200,000
1994	12,000+	$10,000,000	$15,000,000
1998	108,206+	$8,736,000	$41,638,000

MÉXICO WW SOCIOECONOMIC PROFILE

WW Tourists

- Through the 1970s and 1980s, the whale watch tourists were almost entirely Americans and Canadians. Today, the profile varies by locale, but everywhere includes a wider range of Europeans, Japanese, and many Mexicans, typically travelling from D.F., the capital, or from other large cities to Baja or the coast around Puerto Vallarta.
- In 1997, whale watchers at Laguna Ojo de Liebre were 18.8% 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%), Italian (4.3%), Canadian (1.7%), and Belgium (1.7%).

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 1998, there were more than 30 operators all over México (see table below); eight others were American-based companies.
- Some six American-based companies offer small cruise ships (70 to 140 passengers) with dedicated nature and wildlife trips. Some of the ships work Alaska in the summer and México in the winter. They can move through shallow waters and through island passages, but they often use small boats or inflatables to get close to wildlife. These trips feature whales and dolphins as a major component, and I will count half the numbers and estimated expenditures as whale watching, and $300 USD as a per person spend for total expenditures.
- Mexican operators had camps at the lagoons, five of them combined with boat trips, four with camps only (Sánchez Pacheco 1997a, 1997b). Two camps were not yet in operation at Punta Abreojos. Two American

operators had 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.

- In the Bahía de Banderas area (west coast México, centered on Puerto Vallarta), the prime humpback whale presence coincides with the peak winter tourism season (Avila Foucat and Saad Alvarado 1998). There are two large boats and more than 30 small boats. The fishermen use small boats but offer more flexible tours. Year-round dolphin tours have also recently been started by a few operators.

MÉXICO	Operators	Boats	WWs	Unit Price	$DEx	$TEx
Ensenada[17]	5	9	9,338	$15.98	$0.149m	$0.522m
Laguna Ojo de Liebre	4	13	12,335	25/15[18]	0.222m	1.703m
Laguna San Ignacio (boats)	4	23	4,189	20/15.98[19]	0.078m	0.598m
Laguna San Ignacio (camps)	4	–	1,000+	1,000.00	1.000m	1.300m
Bahia Magdalena	–	–	2,914	20.00	0.058m	0.445m
Estero La Soledad	–	–	5,430	20.00	0.109m	0.836m
Long-range Boats	6	9	1,000	2,800.00	2.800m	3.100m
Sea of Cortés/Gulf of California[20]	–	Dozens	Hundreds	–	Minimal	Minimal
Bahía de Banderas	15	35+	72,000	60.00	4.320m	33.134m
Yucatán	1	1	Minimal	–	Minimal	Minimal
Totals	**39+**	**114+**	**108,206+**	**$15-2,800**	**$8.736m**	**$41.638m**

The WW Community

- Some 14 communities all over México have at least some involvement in whale watching.
- Benefits to communties have increased dramatically through the 1990s. Through the 1970s and 1980s, with most whale watch operators offering self-contained trips from San Diego, there were few benefits for México in general, much less the local economy. It was the classic case of almost total leakage of revenues from the area where the resource was located. In the 1980s, through regulations (involving use of local pangas for whale watching), the Mexican communities around the lagoons were able to capture more of the tourism dollar. By the early 1990s, Dedina and Young (1995) found that 50-65% of US operator revenues were spent on operating costs in Mexico, though less than 1% was spent on local salaries and supplies. In the mid-1990s, however, more and more Mexican operators became involved in whale watching and the infrastructure in the areas was able to support a growing level of tourism.
- The annual gray whale festival at Laguna San Ignacio is part of the cultural celebration of whales, as well as an economic boom to the community (Dedina and Young 1995).
- Whale watching in Laguna San Ignacio has provided an economic alternative for fishermen and has effectively helped provide year-round employment, beyond the fishing season (Dedina and Young 1995).
- Whale watching has helped raise the the environmental consciousness of local people, organizations, and institutions (Sánchez Pacheco 1997).
- Laguna Ojo de Liebre (Scammon's Lagoon), protected in January 1972 by the Mexican government, was the world's first whale sanctuary (Hoyt 1994c). As such, it had tremendous cachet and the designation has attracted many visitors. More recently, Laguna Ojo de Liebre has become part of the much large Vizcaíno Biosphere Reserve which confers an even greater level of protection and international attention to the gray whale lagoons.
- On March 2, 2000, the Mitsubishi Corporation proposal to expand the salt works project adjacent to San Ignacio Lagoon was turned down in favor of protecting the gray whales and the livelihood from developing ecotourism. The deciding factor, according to Mexican President Ernesto Zedillo, was the "national and world

[17] Recorded numbers of whale watchers (WWs) were 5,336 but only from one operator. Using market share ratios for the previous year, the estimated total number of whale watchers would be 9,338.

[18] Unit price was two-tier, for foreigners and Mexicans.

[19] Unit price was two-tier, for foreigners and Mexicans.

[20] Includes smaller boats and tours operating out of La Paz, Cabo San Lucas, San José del Cabo, Loreto, Puerto Peñasco, Bahía de los Angeles, and Guaymas.

importance and uniqueness of the Vizcaino Biosphere Reserve". The company had promised many jobs, so it will be even more important to ensure that the tourism industry develops sensibly and sustainably and continues to provide employment and income to the area, as well as protection to the whales.

- In the Bahía de Banderas area (west coast México, centered on Puerto Vallarta), at Corral del Risco (Punta Mita, Nayarit), a fishermen's cooperative runs whale and dolphin watching, and the business has provided substantial income for these fishermen and their families. They learned the whale watching from UNAM researchers who came regularly on their field trips to study the whales. To increase their volume, the fishermen worked with outside companies from nearby Puerto Vallarta, and these companies have recently started whale watching themselves. But the demand for the tours offered by the fishermen has continued and the larger operators continue to recommend their tours as well.

WW Assessment

Outstanding potential, particularly if environmental education programs can be implemented as part of every whale watch tour. Whale watching is growing at a tremendous rate in México. The fall in direct expenditures from whale watching between 1994 and 1998, despite the dramatic increase in numbers, is due to a fundamental change in the business. In 1994, a significant part of the whale watch expenditures were going to US companies selling package tours to the lagoons or to the Gulf of California. A sizeable portion of the tourism expenditures were leaking out of México. This has been replaced by Mexican operators and local communities getting involved in whale watching, and thus the direct expenditures accruing to Mexicans has increased as well as the overall total expenditures. Future expansion must be studied and evaluated on a case-by-case basis. Too much tourism, even too much ecotourism, can strain any ecosystem, much less desert lagoons. The arguments against expansion of whale watching include the possiblity of disrupting the current balance and distribution of permits, and the concern about increasing the boat traffic noise which may have a negative impact on the whales, as well as the strain on the ecosystem from too much tourism (Sánchez Pacheco 1997b). In any case, all stakeholders — government, tourism, boat captains, researchers, local communities, biosphere reserve employees — need to get together to work out sensible solutions. Some proposed stipulations for expansion have already been outlined: residence in the reserve area; economic competence; knowledge of environmental education; navigation knowledge of local waters, and how to maneuver boats around whales with the least impact (Sánchez Pacheco 1997b). The proposed stipulations also highlit the need to ensure that the infrastructure is adequate for tourism development and that the carrying capacity for whale watching tourism be determined.

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CENTRAL AMERICA & THE WEST INDIES

AREA-WIDE SUMMARY			
Number of countries & territories involved in commercial whale watching: 19 (up from 12 in 1994).			
Number of communities involved in whale watching: 33 (up from 17 in 1994).			
CENTRAL AMERICA & THE WEST INDIES WW VISITOR EXPENDITURES:			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	2,034	$1,524,000	$1,734,000
1994	19,212	$3,526,000	$7,357,000
1998	90,720	$5,968,000	$11,085,000

Average annual % increase 1991–94: 111.4%.
Average annual % increase 1994–98: 47.4%.

BELIZE

Population:	200,000
Land Area:	22,800 sq km (8,803 sq mi)
Tourist Arrivals:	146,000 (+9.77% on previous year)
Total Tourist Receipts:	$87 million USD
GNP:	$614 million USD
GNP per capita:	$2,670 USD

Main WW Species: Bottlenose dolphins, spotted dolphins, short-finned pilot whales.
Year WW began: 1991.
Types of WW: Dolphins, boat-based, educational, photo-ID research.

BELIZE WW VISITOR EXPENDITURES:			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	262	$460,000	$500,000
1998	339	$433,000	$484,000

BELIZE WW SOCIOECONOMIC PROFILE

WW Tourists

• Mostly Americans take the dolphin trips. Overall, tourists to Belize are led by Guatemala (38%), USA (29%), and México (13%).

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 Fisheries Department. The trips use 7 m (23 ft) skiffs and participants stay in lodges on a small private island inside the barrier reef.

The WW Community

- One community is involved in dolphin watching.
- Substantial scientific benefits include an understanding of the Belize population of bottlenose dolphins as well as manatees and other species. Such knowledge is indispensible for management.
- The Belize government in strongly promoting ecotourism using this as a model program for dolphins and manatees.

WW Assessment

Moderate to considerable potential. With the largest barrier reef in the western hemisphere, Belize is considered to have substantial future tourism potential. Dolphin ecotourism, if developed along the existing model, could show some expansion, although too much will ruin the potential for ecotourism.

Acknowledgments
Birgit Winning.

HONDURAS

República de Honduras

Population:	6.1 million
Land Area:	111,890 sq km (43,201 sq mi)
Tourist Arrivals:	257,000 (+0.78% on previous year)
Total Tourist Receipts:	$146 million USD
GNP:	$4.4 billion USD
GNP per capita:	$740 USD

Main WW Species: Bottlenose dolphins, various tropical dolphins.
Year WW began: Late 1990s.
Types of WW: Dolphins, boat-based, swimming.

HONDURAS WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	Minimal	Minimal	Minimal

HONDURAS WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, tourism is led by USA (39%), El Salvador (14%) and Nicaragua (9%).

WW Operators & the Trips They Offer

- Dolphin sightings are a regular feature of diving tours and there are some marine boat tours that advertise dolphins.

The WW Community

- No communities at present are associated with whale watching.

WW Assessment

Moderate to considerable potential. Hurricane Mitch damaged the popular resorts on the Atlantic coast and in the Bay of Islands, the prime dolphin areas, but they are recovering.

Acknowledgments
One operator.

COSTA RICA

República de Costa Rica

Population:	3.7 million
Land Area:	51,060 sq km (19,714 sq mi)
Tourist Arrivals:	811,000 (+3.84% on previous year)
Total Tourist Receipts:	$719 million USD
GNP:	$9.3 billion USD
GNP per capita:	$2,680 USD

Main WW Species: Humpback whales, bottlenose dolphins, tucuxi, Atlantic spotted dolphins, pantropical spotted dolphins.
Year WW began: 1990; 1996 for humpback whales.
Types of WW: Large whales, dolphins, boat-based, land-based, educational, photo-ID research.

COSTA RICA WW VISITOR EXPENDITURES:

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	100+	$200,000	$250,000
1998	1,227	$100,000	$218,000

COSTA RICA WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, tourism is led by USA (35%), Nicaragua (14%), Panamá (7%).

WW Operators & the Trips They Offer

- Research trips inviting the public to participate are offered by an American ecotour operator aboard 24-foot fiberglass boats.
- There is one dedicated dolphin watch operator on the Pacific coast, as well as several that offer dolphin watching as part of diving or marine nature boat tours. The Talamanca Dolphin Foundation offers wild dolphin trips on the Atlantic (Caribbean) side to see tucuxi and bottlenose dolphins, mainly in the context of multi-day research and conservation projects.

The WW Community

- Three main communities are used, one for the humpback whale trips and for dolphin watching as part of marine nature tours (both on the Pacific side) and one for dolphins on the Atlantic side.
- The humpback whale trips use local boat drivers, staying in a national park wilderness lodge, with revenues accruing to the park system and to the local community (Calambokidis 1997). Substantial scientific information is

being obtained, which is useful for future management of marine mammals in Costa Rican waters, perhaps as part of a future marine protected area.

WW Assessment

Moderate to considerable potential. Costa Rica continues to build strongly on its image of tropical rainforests and pristine beaches in the extensive system of national parks and protected areas, yet overdevelopment in many areas has led to extensive deforestation and increasingly polluted rivers. Still, in 1998, the national government spent $4 million USD on a publicity campaign that is working. Cetacean tourism has been modest, despite waters that contain substantial dolphin populations, as well as whales. In view of Costa Rica's successful ecotourism offerings, future development would best include broad nature and marine nature tourism.

Acknowledgments
Birgit Winning, Olman Hernandez Lobo, Paul Forestell, and two operators.

PANAMÁ

República de Panamá

Population:	2.8 million
Land Area:	75,990 sq km (29,340 sq mi)
Tourist Arrivals:	402,000 (+11.05% on previous year)
Total Tourist Receipts:	$374 million USD
GNP:	$8.4 billion USD
GNP per capita:	$2,670 USD

Main WW Species: Bottlenose dolphins, Bryde's whales, humpback whales, sperm whales, various tropical dolphins.

Year WW began: Late 1990s.

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

PANAMÁ WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	Minimal	Minimal	Minimal

PANAMÁ WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, tourism is led by USA (28%), Colombia (17%) and Costa Rica (9%). Most of the tourists come from cruise and other ships passing through the canal.

WW Operators & the Trips They Offer

- Dolphin and sometimes whale sightings are a regular feature of diving tours. There are also frequent sightings from cruise ships in Panamanian waters.

The WW Community

- No communities at present are associated with whale watching.

WW Assessment

Moderate to considerable potential. Panamá has set up numerous national parks and is 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 almost certainly has considerable cetacean potential, but whale watch feasibility studies would need to be done.

Acknowledgments
Julie Jonas and one operator.

BERMUDA (UK)

(British Crown colony)

Population:	60,500
Land Area:	52 sq km (20 sq mi)
Tourist Arrivals:	380,000 (–2.56% on previous year)
Total Tourist Receipts:	$474 million USD

Main WW Species: Humpback whales, short-finned pilot whales, various dolphins.

Year WW began: 1981.

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

BERMUDA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	120	Minimal	Minimal
1994	150	$8,000	$26,000
1998	180	$13,000	$20,000

BERMUDA WW SOCIOECONOMIC PROFILE

WW Tourists

- The whale watchers are almost all local, comprised of Bermudians or foreign workers who are resident in Bermuda.

WW Operators & the Trips They Offer

- Three operators — one an NGO, two private — offer humpback trips in the relatively short Bermudan whale season of March and April

The WW Community

- One community has whale watching.
- Humpback whale research has a legendary history here, due to the pioneering work of Frank Watlington in the 1950s, Roger & Katy Payne in the 1960s and 1970s and College of the Atlantic since the 1980s. The whale watch tours talk about this interesting history and help to keep it alive.

WW Assessment

The whale watching is only targeted toward locals, but as 70% of Bermuda's GDP is tourism, there is at least moderate potential for expansion to the tourist market.

Acknowledgments
Bobbii Cartwright and two operators.

BAHAMAS

Commonwealth of the Bahamas

Population:	293,000
Land Area:	10,010 sq km (3,864 sq mi)
Tourist Arrivals:	1,592,000 (–2.51% on previous year)
Total Tourist Receipts:	$1,416 million USD
GNP:	$3.3 billion USD
GNP per capita:	$11,940 USD

Main WW Species: Spotted dolphins, bottlenose dolphins, sperm whales, dwarf sperm whales, pygmy sperm whales, humpback whales, false killer whales, short-finned pilot whales, dense-beaked whales, and 11 more cetacean species.

Year WW began: Late 1970s.

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

THE BAHAMAS WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	1,000	$1,500,000	$1,650,000
1994	1,500	$2,250,000	$2,475,000
1998	1,800	$2,700,000	$2,970,000

THE BAHAMAS WW SOCIOECONOMIC PROFILE

WW Tourists

- Tourists to the Bahamas are 83% from neighboring USA, 7% from Canada, 2% from the UK, and 8% from others.

WW Operators & the Trips They Offer

- At least ten operators and NGOs offer dedicated swim-with-dolphin trips, mostly on diving boats departing from Florida ports, but stopping in the Bahamas at least once or twice during the three- to ten-day trip.

The WW Community

- Four communities on three islands are involved in whale watching.
- The Wild Dolphin Project is a long-term behavioral study of underwater dolphins which has helped pay for research by bringing along observers and paid assistants on their project for more than a decade. This group has helped by devising guidelines for dolphin swimming which have been actively distributed through the main entry port of West End on Grand Bahama. This group has worked with the Bahamas Marine Mammal Survey project (see below) to produce and submit a comprehensive, valuable marine mammal plan for the Bahamas which would help protect the animals, provide for scientific and educational outputs and monitoring, and ensure that the development of the whale/dolphin watching industry proceeded sensibly.
- Two productive educational and scientific whale watch projects in the Caribbean are the Bahamas Marine Mammal Survey, which grew out of Earthwatch projects to survey the islands, and Bahama Naturalist Expeditions. Using largely tourism and scientific funds raised outside of the Bahamas, the Bahamas Marine Mammal Survey has performed environmental education services, introducing visitors and locals to the marine fauna, as well as conducted extensive research and monitoring of the many and diverse cetacean populations. They have also developed a good land-based component for the trips which has afforded more local economic impact. Since 1996, they have planned to expand their efforts by building a research station and ecotourist lodge on Abacos. This development would provide classrooms for university students, labs for scientific work, and environmentally-friendly cottages for ecotourists, but final approval has yet to be made on the lease arrangements, despite overall government approval in principle (Hoyt 1999).

• The Bahamas has the second most valuable whale watch industry among the Caribbean islands, yet it loses a large amount of this because many tours have a US base and supply point. However, the Bahamas does receive customs fees from all the boats as they enter Bahamian waters: The US boats bringing tourists to the dolphins are charged $1,000 USD plus 4% of their passenger income. And the foreign tourists typically spend a night or more in the Bahamas on shore, with an estimated minimum of $130–180 USD paid for food, hotel and shopping (Hoyt 1999).

WW Assessment

Outstanding potential. Throughout the 1980s and early 1990s, the cetacean watching industry was focussed almost entirely on dolphin swimming north of Grand Bahama Island. In recent years, the industry has spread to Bimini (dolphin watching and swimming) and to Abacos (whale and dolphin watching). Surveys, partly sponsored by whale watch trips, have turned up new whale watch opportunities, and there is substantial untapped potential in the outer or "family islands", though basic infrastructure would need to be put in place in some cases. In general, the dolphin tourism has suffered from the fact that the islands are so close to the United States so self-contained trips can be made without leaving much money in the Bahamas. This has improved with some of the tours in the last few years being based more on land, but much more could be done to capture local value. The educational and scientific value on some of the dolphin swimming trips is high but with others it is rather low; higher minimum standards would raise the value (Hoyt 1999).

Acknowledgments
Denise Herzing, Diane Claridge, Ken Balcomb, and five operators.

TURKS AND CAICOS ISLANDS (UK)

Population:	13,800
Land Area:	417 sq km (161 sq mi)
Tourist Arrivals:	93,000 (+5.68% on previous year)
Total Tourist Receipts:	$118 million USD

Main WW Species: Humpback whales, bottlenose dolphins.
Year WW began: Early 1990s.
Types of WW: Large whales, dolphins, boat-based, land-based, swimming.

TURKS & CAICOS ISLANDS WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	100+	$10,000	$35,000
1998	1,500	$43,000	$150,000

TURKS & CAICOS ISLANDS WW SOCIOECONOMIC PROFILE

WW Tourists

• The main visitors are North Americans followed by Europeans.

WW Operators & the Trips They Offer

• The main two humpback whale operators offer day trips from Grand Turk Island; a dozen other operators offer incidental whale watching with existing diving tours mainly from Provo, Grand Turk and Salt Cay.

The WW Community

• Three communities are involved in whale watching.

• In March 2000, the islands hosted an international marine mammals workshop to devise regulations about whale watching, to develop a scientific protocol about research on whale watch boats, and to plan the sensible development of the industry. It was well attended by operators, teachers, government managers, international experts and other local stakeholders.

• The Turks & Caicos Islands have an excellent system of national parks including three marine parks. Consideration is being made over whether to set aside an area for humpback whales which would provide resource protection for whales and other aspects of the marine ecosystem, produce powerful "branding" which attracts international tourism, as well as facilitate essential management components.

WW Assessment

Outstanding potential. Regulations are currently being put in place for whale and dolphin watching. Further expansion seems certain, partly to keep pace with growing overall tourism. The government and industry need to determine whether to go for the high value ecotouristic end of whale watch tourism, with high educational and scientific content, or more for the mass tourism found in other parts of the Caribbean (Hoyt 1999).

Acknowledgments
Everette Freites, Michelle Fulford, Chuck Hesse, Dean Bernal, and two operators.

DOMINICAN REPUBLIC

República Dominicana

Population:	8.2 million
Land Area:	48,730 sq km (18,815 sq mi)
Tourist Arrivals:	2,211,000 (+14.8% on previous year)
Total Tourist Receipts:	$2,107 million USD
GNP:	$14.1 billion USD
GNP per capita:	$1,750 USD

Main WW Species: Humpback whales, bottlenose dolphins, spotted dolphins, spinner dolphins.

Year WW began: 1986.

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

DOMINICAN REPUBLIC WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	900+	$10,000	$70,000
1994	15,300	$500,000	$3,500,000
1998	22,284	$2,307,000	$5,200,000

DOMINICAN REPUBLIC WW SOCIOECONOMIC PROFILE

WW Tourists

• Overall, tourists are led by Europeans (especially Spanish, Italian, German visitors) (51%), USA (24%), and Canada (11%).

WW Operators & the Trips They Offer

• Day trips on Samaná Bay varied from small fishing boats to large sailboats or tour boats. The boats range in size from 7 to 125 passengers; 20 of the boats (51%) carry 12 passengers or less, while 9 boats carry between 13 and 25 passengers (23%). Only 10 boats (26%) carry 26 passengers or more (Hoyt 1999).

- There are 17 boats owned by 9 companies at Samaná port. At five nearby ports on Samaná Bay, an additional 22 boats owned by 13 companies ran whale watch tours in 1998. In 1998, on Samaná Bay alone, there were 1,283 whale watch excursions taking 21,784 people.
- The Silver Bank whale watchers leave from Puerto Plata in the north of the country and use large, generally comfortable boats due to the 80 km journey and offshore location. These are multi-day trips, some as long as seven to ten days. At least 500 tourists visited Silver Bank aboard the self-contained boats.

The WW Community

- Two communities are involved in whale watching. At Samaná, there are six ports from which the boats depart.
- The Dominican Republic has the most valuable whale watch industry in the Caribbean. All of the operators are Dominican nationals or residents, but the foreign guides and companies that bring package tours to the country are responsible for taking a substantial percentage of the expenditure, some of which then leaks out of the country. Still with $5.2 million USD in total expenditures, the tourism impact is substantial within the country (Hoyt 1999).
- Prospective whale watchers to the Silver Bank Humpback Whale Marine Mammal Sanctuary are required to go through a port in the Dominican Republic (although the sanctuary can also be reached from other islands) which ensures that some economic benefit is obtained by the country.
- In and around the town of Samaná, there are many new businesses and infrastructure directly attributable to the increase in visitors from whale watching. Communities have started to improve and extend facilities and local people are starting to receive some benefits from whale watching (Hoyt 1999).
- Boat permit fees provide funds to pay for whale watch monitors and the operational expenses for the management scheme. The cost of the permit varies by boat size. The 1998 budget raised $7,500 USD (Hoyt 1999).
- The Intergovernmental Management Committee for the Silver Bank Marine Sanctuary (Comisión Rectora) has fulfilled a key role in terms of encouraging marine conservation in all its aspects including whale watching and not only at Silver Bank, its orginal remit, but also in Samaná Bay. The Comisión Rectora was originally set up to administer the Silver Bank Sanctuary but its positive influence has extended to marine mammals all over the Dominican Republic. In 1997, the Comisión Rectora began to take the lead in establishing an organized system for the whale watching at Samaná. They established a permit system, a payment system based on boat-size, and gave the boat captains lectures and training. Special training was also developed for three whale watching "inspectors" for the area. A page was established on the internet to give information on whale watching, the sanctuary and marine mammals. The Comisión set up a dialogue with TUI, a large German tour operator, to try to convince it to return to the DR for whale watching, based on the Comisión's promise to redirect it. At the same time, the Comisión began to encourage more of an interest in the local people to visit the whales through TV and radio interviews. The Festival de las Ballenas was held in 1998 and a seminar with the University of Valencia in Spain featured scientific trips. The Comisión has also helped to develop children's materials and put them into the school curriculum. All of this was accomplished with very little funding and considerable volunteer help (Hoyt 1999).
- An NGO called CEBSE (the Center for the Conservation and Ecodevelopment of the Bay of Samaná and its Environment) took over the job of coordinating the co-management of whale watching in the 1998 whale watch season. Their work is being done in coordination with the Association of Boat Owners, the director of National Parks, and the Secretary of Tourism. CEBSE has promoted a code of conduct with a revision of the previous guidelines based on those used in other areas of the world. It has helped organize regular meetings (8 in 1998) with the boat owners and other stakeholders to discuss various matters and to help implement the regulations and an educational program. At the same time, National Parks has coordinated the issuing of permits. CEBSE appears to have made a start toward successful management, but there are many more challenges ahead, especially if whale watching continues to expand (Hoyt 1999).

WW Assessment

Outstanding potential. The prices for whale watch trips went up substantially in the last few years but not much more is going to the operator. Only a modest amount of revenue goes to the operators and communities. Trips to Silver Bank left almost nothing in the country, while residents of Samana earned more from whale watching there, although in many cases foreign tour operators took a 50% cut for steering their package tourists (and most of the tourists are on packages) toward whale watching.

Even though whale watching in the Dominican Republic earns the most revenue in the Caribbean, it is still at a level far below its potential. The DR has been at or near the top of the Caribbean tourism rankings, but there are problems that need to be overcome if the country is to realize its potential in terms of whale watching. These

problems fall into several areas: (1) the overall structure of the tourism industry — too many package holidays with high leakage of expenditures, (2) generally lower quality of whale watch tours (including quality and size of boats), (3) the lack of educational components on the trips, particularly lack of good naturalists, and (4) the need for the tourism department, local community and whale watch operators to work to create a high quality whale watch tourism product (Hoyt 1999). With these elements in place, plus evaluations of the carrying capacity of whale watching in local communities, it ought to be possible to increase dramatically the value of whale watching, even if the numbers cannot be increased. Land-based sites are currently being set up which may also improve the benefit to local people.

Acknowledgments
Idelisa Bonnelly de Calventi, Kim Bedall, CEBSE, Niki Entrup, and two operators.

PUERTO RICO (US)

Population:	3.8 million
Land Area:	9,065 sq km (3,500 sq mi)
Tourist Arrivals:	3,249,000 (+4.98% on previous year)
Total Tourist Receipts:	$2,046 million USD

Main WW Species: Humpback whales, bottlenose dolphins, long-snouted spinner dolphins; sometimes sperm whales, false killer whales.

Year WW began: 1994.

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

PUERTO RICO WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Nil	Nil	Nil
1994	Minimal	Minimal	Minimal
1998	55,000–130,000	$96,000	$650,000

PUERTO RICO WW SOCIOECONOMIC PROFILE

WW Tourists

- Most tourists are North American (especially USA), followed by Europeans.
- Of the 55,000 whale watchers, about 5,000 went by boat and at least 50,000 (up to 125,000) were land-based visitors to Parque el Faro (Lighthouse Park) at Rincón, with a conservatively estimated economic impact of US $10 per person. Some of the land-based visitors came on package tours, but most were independent watchers from land (Hoyt 1999).

WW Operators & the Trips They Offer

- Since regulations were instituted in 1997, there has been one large dedicated whale watch boat with a permit although it has recently stopped running trips. Meantime, six or seven local captains of diving, fishing and marine sightseeing boats offer incidental whale watching (Hoyt 1999).

The WW Community

- One main community is involved in whale watching, two in a small way.
- Rincón has forged part of its identity and tourism appeal on whale watching in the winter months. On the internet and in brochures, apartments are advertised for their whale watch potential.

• The Puerto Rican Ecological League of Rincón (Liga Ecológica Puertorriqueña de Rincón) has taken a leading role in working for the protection of the humpback whales, instituting guidelines and regulations, and working to make whale watching more educational and more a part of the local community (Hoyt 1999).

WW Assessment

Moderate to considerable potential. Despite the growing numbers of whale watchers, whale watching in Puerto Rico has a low profile considering the extent of tourism to the island. Much could be done to capture more value for the community and individual businesses, but proposed new boat tours will need to look carefully at whale watch regulations. Much more could be done to provide educational and scientific value through signage and naturalists, as well as to capture economic value with land-based packages aimed at tourists and residents in the more populated eastern part of the island.

Acknowledgments
Carole Carlson, Hector Colón, Rebecca Tozer, Joan Pavesi, and one operator.

US VIRGIN ISLANDS (US)

(Unincorporated territory of the United States)

Population:	101,809
Land Area:	347 sq km (134 sq mi)
Tourist Arrivals:	411,000 (+10.19% on previous year)
Total Tourist Receipts:	$601 million USD

Main WW Species: Humpback whales, spinner dolphins, bottlenose dolphins.

Year WW began: 1991.

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

US VIRGIN ISLANDS WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	500	$23,000	$80,000
1998	75	$3,500	$8,000

US VIRGIN ISLANDS WW SOCIOECONOMIC PROFILE

WW Tourists

• Overseas tourists are led by USA.

WW Operators & the Trips They Offer

• There are two main operators, one by a non-profit offering occasional humpback whale watch trips from St. Thomas, mainly for locals, the other offering dolphins as part of marine nature and diving trips from St. Croix. The main operator in the mid-1990s has since dropped out because of the short season and irregularity of humpback sightings (Hoyt 1999).

The WW Community

• Two communities have whale watching. Winter humpback whale surveys from land and by boat, through the Division of Fish & Wildlife, have been maintained on a volunteer basis most years through the 1980s and 1990s, fueling the local interest in cetaceans (Hoyt 1999).

WW Assessment

Moderate potential for further development. Trips for tourists have been offered in the past but are no longer available. There is some land-based whale watching. Further development and enhancement of the industry could occur along the lines of offering more general marine-based ecotours that feature whales as well as dolphins (Hoyt 1999).

Acknowledgments
Rafe Boulon.

BRITISH VIRGIN ISLANDS (UK)

(British dependent territory)

Population:	17,896
Land Area:	153 sq km (59 sq mi)
Tourist Arrivals:	251,000 (+2.87% on previous year)
Total Tourist Receipts:	$270 million USD

Main WW Species: Humpback whales, bottlenose dolphins.

Year WW began: Late 1980s.

Types of WW: Large whales, dolphins, boat-based, cruise ships, air, educational.

BRITISH VIRGIN ISLANDS WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	300+	$10,000	$35,000
1998	200	$4,000	$14,000

BRITISH VIRGIN ISLANDS WW SOCIOECONOMIC PROFILE

WW Tourists

- Mainly Americans, some British.

WW Operators & the Trips They Offer

- Air tours are offered, as well as whale listening tours by boat. There has been some boat-based whale watching in the past.

The WW Community

- Two main communities are involved in whale watching in a minor way.
- Whale-listening tours are low impact and high value with good educational commentary (Hoyt 1999). This kind of whale watching could be expanded here and elsewhere without any impact on the whales. It depends on an imaginative educational introduction so that visitors appreciate the audio experience.
- Community outputs include the program by the BVI Conservation and Fisheries Department, since 1992, to encourage residents and visitors to report all humpback and other whale sightings as part of a proposal to set up a marine conservation area north of the islands. There is also a marine mamals stranding network. The National Parks Trust collects documentation on humpback whales and prints educational materials to distribute to recreational yachtsmen and other boaters (Hoyt 1999).

WW Assessment

Moderate potential. The home of whale listening tours, the BVIs could expand through developing and enhancing the industry using general marine-based ecotours that feature whales as well as dolphins, especially as part of the proposed marine protected area in the humpback area north of the islands.

Acknowledgments
Paul Knapp, Jr., Robert L. Norton, and Bertrand Lettsome.

BONAIRE (part of Netherlands Antilles)

(Autonomous part of the Netherlands)

Population:	15,000
Land Area:	288 sq km (111 sq mi)
Tourist Arrivals:	63,000 (No change on previous year)
Total Tourist Receipts:	$43 million USD

Main WW Species: Spinner dolphins, common dolphins; sometimes bottlenose dolphins, striped dolphins, Atlantic spotted dolphins.

Year WW began: 1998.

Types of WW: Dolphins, boat-based, land-based.

BONAIRE WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Nil	Nil	Nil
1994	Nil	Nil	Nil
1998	200	Minimal	Minimal

BONAIRE WW SOCIOECONOMIC PROFILE

WW Tourists

- Dolphin watchers are exclusively divers, mainly European and North American.

WW Operators & the Trips They Offer

- Dolphin watching is offered opportunistically as part of diving tours on land and from boats (Hoyt 1999).

The WW Community

- One community is involved in whale watching (dolphins).

WW Assessment

Moderate potential. With surveys and research, more dolphin watching might be able to be established here as well as on the nearby Netherlands Antilles island of Curaçao.

Acknowledgments
Tom Van't Hof, Jack Chalk, Al Catalfumo, and one operator.

ST. KITTS & NEVIS

Federation of Saint Christopher and Nevis

Population:	41,000
Land Area:	360 sq km (139 sq mi)
Tourist Arrivals:	88,000 (+4.76% on previous year)
Total Tourist Receipts:	$72 million USD
GNP:	$256 million USD
GNP per capita:	$6,260 USD

Main WW Species: Humpback whales, bottlenose dolphins, spinner dolphins.
Year WW began: 1997.
Types of WW: Large whales, dolphins, boat-based.

ST. KITTS & NEVIS WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Nil	Nil	Nil
1994	Nil	Nil	Nil
1998	50+	Minimal	Minimal

ST. KITTS & NEVIS WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall tourists are led by 47% from the USA, 12% from Canada and 9% from the UK.

WW Operators & the Trips They Offer

- Whale and dolphin watching is part of diving and other boat excursions from both St. Kitts and Nevis.

The WW Community

- There are two communities, one on St. Kitts and one on Nevis.

WW Assessment

Moderate potential. Dolphin watching could become a greater selling point for the island of Nevis. During the season humpback whales can be seen offshore either island, but dolphin sightings are regular year-round.

Acknowledgments
Ellis Chaderton and three operators.

GUADELOUPE & ISLANDS (including St.-Martin & St. Barthélemy) (France)

(French overseas department)

Population:	419,500
Land Area:	1,848 sq km (713 sq mi)
Tourist Arrivals:	(+5.6% on previous year)
Total Tourist Receipts:	$499 million USD
GNP:	$3.7 billion USD
GNP per capita:	$9,000 USD

Main WW Species: Humpback whales, sperm whales, short-finned pilot whales, spotted dolphins, striped dolphins.
Year WW began: 1994.
Types of WW: Large whales, dolphins, boat-based.

GUADELOUPE & ISLANDS WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	Minimal	Minimal	Minimal
1998	400	$13,000	$23,000

GUADELOUPE & ISLANDS WW SOCIOECONOMIC PROFILE

WW Tourists

- Overseas tourists are led by France.

WW Operators & the Trips They Offer

- Two operators on Guadeloupe and one operator on St.-Barths offer whale watching.

The WW Community

- There are three communities involved, two on Guadeloupe and one on St.-Barths.
- A 1200–hectare marine protected area protects the marine ecological systems around St.-Barths, attracting tourists to the high quality diving and now whale watching tours (Hoyt 1999).
- On Guadeloupe, IFAW researchers have conducted cetacean assessments offshore and have worked with local people to develop regulations for whale watching and to train local NGOs to take photo-IDs and collect other useful data.

WW Assessment

Only minimal potential from St.-Martin, but moderate to considerable on St.-Barths and Guadeloupe. Whale watch guidelines are being devised to help guide the development of whale watching.

Acknowledgments
Arnaud Apremont, Caroline & Renato Rinaldi, Carole Carlson, Anna Moscrop, Elise Magras, and one operator.

DOMINICA

Commonwealth of Dominica

Population:	74,000
Land Area:	750 sq km (290 sq mi)
Tourist Arrivals:	65,000 (+3.17% on previous year)
Total Tourist Receipts:	$37 million USD
GNP:	$225 million USD
GNP per capita:	$3,040 USD

Main WW Species: Sperm whales, spotted dolphins, pygmy sperm whales, false killer whales, short-finned pilot whales, spinner dolphins, Risso's dolphins.

Year WW began: 1988.

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

DOMINICA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	14+	$14,000	$14,000
1994	1,100	$50,000	$383,000
1998	5,000	$127,000	$970,000

DOMINICA WW SOCIOECONOMIC PROFILE

WW Tourists

- Tourism is led by visitors from the USA (17%), Guadeloupe (16%), and Martinique (13%)

WW Operators & the Trips They Offer

- Two main operators and two smaller operators have mainly catamarans, fiberglass diesel boats or adapted fishing boats. Trips are several hours to all day, but the whales can usually be found in fairly calm waters close to the lee shore.

The WW Community

- One community is involved in whale watching.
- With Dominica's tropical rainforest and natural appeal, whale watching effectively adds another jewel to the crown. The whale watching has developed hand-in-hand with the diving industry. The two main operators both have dive companies and hotels. According to *Fielding's Caribbean*, Dominica has emerged as one of the four or five best dive locales in the Eastern Caribbean. Whale and dolphin watching has attained a new high profile on the islands with three full pages devoted to it in the 1999 edition of the official visitor magazine from the Dominica Hotel & Tourism Association: *Destination Dominica*. This compares to one page devoted to fishing and half a page to boating and cruising. Seven pages are devoted to diving. The local sperm whales feature as one of the mentioned attractions in the introductory message from the Hon. Norris Prevost, the Minister of Tourism, Ports and Employment (Hoyt 1999).
- American classrooms have been linked with *Song of the Whale* researchers at sea as part of the Whale Songs project, an educational project designed to give students first hand insight into Dominica and local whale research.
- The Dominica Conservation Association, Dominica Water Sports Association and the Springfeld Center for Environmental Programs, Training, Research and Education — in partnership with the International Fund for Animal Welfare (IFAW) — have worked together on whale watch guide training, equipment development, onboard education, as well as school education programs on cetaceans and marine conservation and the development of a floating classroom.

- Dominica has hosted several international workshops and conferences focusing on whale watching co-sponsored by IFAW and local NGOs including one on sperm whales (IFAW 1996a) and one on developing whale watching in the eastern Caribbean in June 2000.
- For the past three years, one operator has successfully sold 3–4 hour whale watch trips to cruise ship visitors, adding considerably to the money left on the island by cruise ships.

WW Assessment

The first spot in the eastern Caribbean to develop whale watching, Dominica has a rapidly expanding ecotourism industry and outstanding potential for further development. NGOs and tour operators involved in whale watching here have invested heavily in scientific work and education, including the promotion of special workshops. All of this has greatly benefited the local whale watch industry and made it even more valuable.

Acknowledgments
Stanton Carter, Carole Carlson, and four operators.

MARTINIQUE (France)

(French overseas territory)

Population:	381,200
Land Area:	436 sq km (1,128 sq mi)
Tourist Arrivals:	513,000 (+7.55% on previous year)
Total Tourist Receipts:	$400 million USD
GDP:	$4.24 billion USD
GDP per capita:	$10,700 USD

Main WW Species: Sperm whales, spotted dolphins, pygmy sperm whales, false killer whales, short-finned pilot whales, spinner dolphins, Risso's dolphins.

Year WW began: 1991.

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

MARTINIQUE WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	100+	Minimal	Minimal
1998	Minimal	Minimal	Minimal

MARTINIQUE WW SOCIOECONOMIC PROFILE

WW Tourists

- Overseas visitors led by France, UK, Germany, Italy, and the United States.

WW Operators & the Trips They Offer

- Some trips are offered through dive operators and charters but there are no dedicated trips.

The WW Community

- No communities are currently involved in whale watching to a significant extent.

WW Assessment

The potential is outstanding due to the existing tourism base as well as the frequency of seeing whales from this eastern Caribbean island, yet whale watching here is almost completely untapped. New research into the potential of whale watching was conducted recently by IFAW.

Acknowledgments
Giuseppe Notarbartolo di Sciara, Michael Dougherty, Lesley Sutty, Michael Meteret, and Carole Carlson.

ST. LUCIA

Population:	142,000
Land Area:	620 sq km (239 sq mi)
Tourist Arrivals:	248,000 (+5.08% on previous year)
Total Tourist Receipts:	$282 million USD
GNP:	$558 million USD
GNP per capita:	$3,510 USD

Main WW Species: Spinner dolphins, pantropical spotted dolphins, short-finned pilot whales, sperm whales, false killer whales; occasionally, Bryde's whales, humpback whales, bottlenose dolphins.

Year WW began: 1997.

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

ST. LUCIA WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	65+	$4,500	$8,000

ST. LUCIA WW SOCIOECONOMIC PROFILE

WW Tourists

- Tourists are mainly from the USA (36%), the UK (21%), and Germany (7%).

WW Operators & the Trips They Offer

- Two operators are currently offering whale watch tours. Both are established tour operators breaking into the whale watch industry. Several other operators are in the process of starting their own whale watch tours.

The WW Community

- One community involved in whale watching.
- In 1997, the St. Lucia Whale & Dolphin Watching Association (SLWDWA) was formed to promote the development of high quality whale watching around St. Lucia. With two founder operators, SLWDWA has set up a website, an environmental reference library at a local cafe, and has been working with international scientists and whale watch authorities to promote and improve whale watching and to come up with acceptable regulations for whale watching in St. Lucia (Hoyt 1999).
- Numbers for 1998, when whale watching started, were only 65 people, but 1999 numbers have increased dramatically and the current level is at least 4,000 whale watchers a year.

WW Assessment

With tourists already coming for the diving and other marine ecotourism activities, as well as for the nature offerings on land, a substantial whale and dolphin watching industry is a natural for St. Lucia. In late 1998, whale watching really started to take off, and the numbers for 1999 are many times larger than 1998 which are reported here (Hoyt 1999). The local St. Lucia Whale & Dolphin Watching Association is working to put whale watching on a firm educational and scientific basis, with naturalists on the boats to help increase the value of these tours in the community.

Acknowledgments
Jane Tipson, David and Pat Hackshaw, and one operator.

ST. VINCENT AND THE GRENADINES

Population:	111,000
Land Area:	340 sq km (131 sq mi)
Tourist Arrivals:	65,000 (+12.07% on previous year)
Total Tourist Receipts:	$70 million USD
GNP:	$272 million USD
GNP per capita:	$2,420 USD

Main WW Species: Spinner dolphins, spotted dolphins, bottlenose dolphins, short-finned pilot whales, Fraser's dolphins, humpback whales.

Year WW began: Late 1980s.

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

ST. VINCENT & THE GRENADINES WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	800	$24,000	$153,000
1998	600	$34,000	$100,000

ST. VINCENT AND THE GRENADINES WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, visitors are from the USA (47%), UK (16%), Barbados (10%). Tourism is targeted toward the cruise ship and jet set portion of the market rather than mass tourism, especially in the Grenadines.

WW Operators & the Trips They Offer

- Three operators offer cetacean tours. An 11 m sailing sloop or a 6.4 m power boat are available on trips which have an 80% sighting success rate for dolphins from April to September. The tours are year-round, but taper off from November to early January when the winds are stiffer. Other trips offer catamarans and one has bilingual (French and English) tours (Hoyt 1999).

The WW Community

- Two communities are involved in whale/dolphin watching.
- The volunteer network called ECCN (Eastern Caribbean Cetacean Network), originally based in Antigua, has recently become affiliated with the Smithsonian Institute's Marine Mammal Laboratory (Washington, DC), to

record sightings and strandings of marine mammals in the Eastern Caribbean. Endorsed by the United Nations Environment Programme (UNEP), ECCN offers special survey forms for fishermen, whale watch operators, yachters, and coastal residents to encourage them to report all sightings and strandings. ECCN's overall objective is to encourage more research and education, through better coordination and expansion of existing resources, and thereby to gain community support for the protection of resident and migratory whales and dolphins and their marine habitat. ECCN offers in-school programs for children and workshops for adults as well as training sessions for field identification and stranding protocols (Hoyt 1999).

WW Assessment

Considerable to outstanding potential is possible here but it depends on the tourism impact from what has become, over the past three years, an annual killing of a humpback mother and calf in the waters of these islands, sometimes in full view of tourists. The whaling has been considered traditional and the hunt is undertaken as part of a small quota of humpback whales, but the mothers and calves were specifically forbidden to be taken under IWC rules. This flagrant and persistent disregard for international law may well indicate the government's cavalier attitude toward its tourism industry and any future for whale watching.

Acknowledgments
Nathalie Ward and two operators.

GRENADA

Population:	98,600
Land Area:	340 sq km (131 sq mi)
Tourist Arrivals:	111,000 (+2.78% on previous year)
Total Tourist Receipts:	$61 million USD
GNP:	$300 million USD
GNP per capita:	$3,140 USD

Main WW Species: Spinner dolphins, spotted dolphins, short-finned pilot whales, bottlenose dolphins, common dolphins, sperm whales, humpback whales.

Year WW began: 1993.

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

GRENADA WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	Minimal	Minimal	Minimal
1998	1,800	$90,000	$270,000

GRENADA WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, tourists to Grenada are mainly from the USA (28%), the UK (16%), and Trinidad & Tobago (7%).

WW Operators & the Trips They Offer

- Dedicated whale and dolphin watch tours are offered aboard a catamaran designed for cetacean watching with a level platform for watching and taking photographs. There is also some whale and dolphin watching from a catamaran as part of the educational Kido Project in the Grenadines.

The WW Community

- Two communities are involved in whale watching.
- Whales and dolphins have provided some of the attraction for the educational field trips of the Kido Foundation on Carriacou which attract children and young adults (Hoyt 1999).
- The Grenada Board of Tourism's recent brochure heralding Grenada and its islands as the "Eco Islands of the Caribbean" showcased the system of national parks and protected areas and featured whale watching prominently (Hoyt 1999).

WW Assessment

Considerable to outstanding potential for expansion. The protected sea area to the west of Grenada, the lee area, is smaller than Dominica's and Martinique's, which restricts the area available for calm water whale watching, but the presence of unusual cetaceans such as false killer whales, melon-headed whales and Fraser's dolphins, in addition to sperm whales, "may be quite attractive to whale watchers" (IFAW 1996b). The Board of Tourism's push for ecotourism could help propel a bright future for high quality whale watching.

Acknowledgments
Dario Sandrini, Marina Fastigi, Carole Carlson, Celine J. Bullen, Nathalie Ward, and two operators.

SOUTH AMERICA

AREA-WIDE SUMMARY
Number of countries & territories involved in commercial whale watching: 8 (same as in 1994).
Number of communities involved in whale watching: 39 (up from 21 in 1994).

SOUTH AMERICA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	22,418	$15,447,000	$29,692,000
1994	231,530	$19,117,000	$62,581,000
1998	266,712	$25,667,000	$94,808,000

Average annual % increase 1991–94: 117.8%.
Average annual % increase 1994–98: 3.6%.

COLOMBIA

República de Colombia

Population:	37.7 million
Land Area:	1,038,700 sq km (401,042 sq mi)
Tourist Arrivals:	1,544,000 (+14.97% on previous year)
Total Tourist Receipts:	$955 million USD
GNP:	$87.1 billion USD
GNP per capita:	$2,180 USD

Main WW Species: Amazon River: Amazon river dolphins (boto), tucuxi; west coast: humpback whales, bottlenose dolphins, spinner dolphins; Caribbean coast: Bryde's whales, bottlenose dolphins, tucuxi.
Year WW began: Mid-1980s.
Types of WW: Large whales, dolphins, boat-based, land-based, educational, photo-ID research.

COLOMBIA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	5,000	$250,000	$1,918,000
1998	Minimal	Minimal	Minimal

COLOMBIA WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, foreign tourists are led by Venezuela (55%), Ecuador (15%), USA (11%), Canada (3%).

WW Operators & the Trips They Offer

- The operators on the Pacific coast range from fishermen with small boats to hotels with inflatable boats or power pleasure cruisers. Day trips are offered, as well as several-day package trips.
- There is some river-boat tourism which includes and sometimes features river dolphins using small boats.

The WW Community

- Three main communities or areas are involved in dolphin watching, one in the Amazon and two on the west coast. There is also some dolphin watching from the resorts on the Caribbean coast from Cartagena to Santa Marta, but more on an incidental or accidental basis.
- A whale watch workshop by the Whale and Dolphin Conservation Society (WDCS) in 1997 brought existing and potential whale and dolphin watch stakeholders together for several days. The workshop helped improve the educational value of whale watching here but whale watching has continued to grow 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).

WW Assessment

Moderate to considerable potential. On the west coast, humpback whales can be seen seasonally but the best whale season unfortunately is sometimes dogged by rain. There is also the potential of expanding river dolphin trips through Colombian ports on the Amazon. The Caribbean side of the country has cetacean potential and the tourism infrastructure is already built up. Although international tourism to Colombia attracts three times as many visitors as Ecuador and is equal to the number of visitors received by Venezuela and Peru added together, it is still constrained by image problems from political instability, drugs, and kidnappings. This is a greater deterrent to North American and European visitors than to neighboring Venezuelans and Ecuadoreans. Oceanic Society Expeditions considered offering whale watch trips here in 1995, but could not generate enough interest from their mostly North American clients.

Acknowledgments
Roberto Pardo, Birgit Winning, and Alison Smith.

VENEZUELA

República de Venezuela

Population:	23.2 million
Land Area:	882,050 sq km (340,560 sq mi)
Tourist Arrivals:	814,000 (+7.25% on previous year)
Total Tourist Receipts:	$1,086 million USD
GNP:	$79 billion USD
GNP per capita:	$3,480 USD

Main WW Species: Spinner dolphins, common dolphins, tucuxi dolphins, Bryde's whales.
Year WW began: 1994.
Types of WW: Large whales, dolphins, boat-based, educational.

VENEZUELA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	Minimal	Minimal	Minimal
1998	Minimal	Minimal	Minimal

VENEZUELA WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, tourists to Venezuela are led by the USA (25%), Italy (9%), Spain (8%), Germany (7%), and Netherlands (6%).

WW Operators & the Trips They Offer

- Dolphins are seen regularly as part of diving and marine nature tours, as well as jungle ecotours through the Orinoco basin.

The WW Community

- No communities are currently offering dedicated whale or dolphin watch tours.

WW Assessment

Moderate to considerable potential. Oceanic Society Expeditions started developing whale watch trips here in the mid-1990s, but it has not worked out. Great potential remains, but logistics and infrastructure remain something of a problem in good cetacean areas. Venezuela has been slow to develop its tourism, in part because the high value of the bolívar made Venezuela expensive and somewhat uncompetitive, but recent devaluations and the privatizations of state-run hotels have opened up new possibilities for tourism development. There is considerable scope for developing dolphin watch tours both in the Orinoco and Amazon basins, as well as along Venezuela's vast coast and offshore islands.

Acknowledgments
Birgit Winning and Giuseppe Notarbartolo di Sciara.

ECUADOR

República del Ecuador

Population:	12.2 million
Land Area:	276,840 sq km (106,888 sq mi)
Tourist Arrivals:	525,000 (+6.28% on previous year)
Total Tourist Receipts:	$290 million USD
GNP:	$19 billion USD
GNP per capita:	$1,570 USD

Main WW Species: Galápagos: bottlenose dolphins, Bryde's whales, sperm whales; mainland coast: humpback whales, bottlenose dolphins.

Year WW began: Early 1980s.

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

ECUADOR WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	5,020	$15,060,000	$15,060,000
1994	6,650	$15,100,000	$15,300,000
1998	11,610	$19,700,000	$23,350,000

ECUADOR WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall tourism to Ecuador is led by Colombia (33%), USA (19%) and Peru (13%).
- Whale watch tourists, based on returns from several operators, are largely Americans, followed by various Europeans and Asians.

WW Operators & the Trips They Offer

- The trips to the Galápagos are 10-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 dolphin sightings between the islands and whale sightings especially west of Isabela Island. Some trips spend a day or more to look for the whales as part of the trip.
- The coastal trips are day trips offered from June to September to see mainly humpback whales aboard fishing boats, fiberglass launches, and small, comfortable cruisers.

The WW Community

- Seven communities offer whale watching along the coast of Ecuador (especially Manabí province, including Machalilla National Park and the island of La Plata, Santa Elena Peninsula) and in the Galápagos.
- 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.
- The Galápagos Islands were opened to organized, controlled tourism in 1970, becoming one of the first international ecotourism destinations, and although the tours are not always strictly "ecological tourism", there is a strong educational backbone to the trips (Hoyt 1994c). Many people exposed to the story of the Galápagos and the wonders found there become conservationists, or better conservationists. Those who meet whales and dolphins as part of the trip, develop sympathy toward marine conservation, too.
- 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.

WW Assessment

Outstanding potential, particularly on the coast. Some 6,500 whale watchers spending a minimum $3,000 each on a 10-day cruise with $500 for additional expenses represents about 10% of Galápagos tourism — the amount I am counting above as whale watching. This part could only be expanded in terms of cetaceans if more boats took longer off-island excursions to see the whales — which is not the main point of Galápagos tourism. Therefore, the biggest growth factor lies in coastal whale watching. In 1994, whale watching along the coast took off with 1,630 whale watchers, mostly to Machalilla National Park. Since then it has expanded to various communities in Manabí province and to the Santa Elena Peninsula. It may well be able to expand further. There is also potential for more bottlenose dolphin trips along the coast and in the Gulf of Guayaquil, as well as river dolphin trips in the Ecuadorean Amazon.

Acknowledgments
Tom O'Brien and five operators.

PERU

República del Perú

Population:	24.8 million
Land Area:	1,280,000 sq km (494,208 sq mi)
Tourist Arrivals:	747,000 (+12.67% on previous year)
Total Tourist Receipts:	$805 million USD
GNP:	$63.7 billion USD
GNP per capita:	$2,610 USD

Main WW Species: Amazon River: Amazon river dolphins (boto), tucuxi; coastal waters: bottlenose dolphins and less often: dusky dolphins, common dolphins, Burmeister's porpoises, humpback whales.

Year WW began: 1985.

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

PERU WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	27	$40,000	$40,000
1994	150	$360,000	$450,000
1998[21]	531	$64,000	$81,000

PERU WW SOCIOECONOMIC PROFILE

WW Tourists

- Most of the dolphin watchers have been Americans. Overall tourism to Peru is led by USA (22%), Chile (12%), Argentina (6%), and Italy (4%).

WW Operators & the Trips They Offer

- An American ecotour operator specializing in dolphin and whale watch tours operates high quality research trips open to the public in the Pacaya-Samiria National Reserve area of the Peruvian Amazon.
- Small boat tours in the Paracas Reserve off the Península de Paracas, south of Lima on the coast, announce dolphin sightings as part of marine nature tours.

The WW Community

- Two communities have had dolphin watching with another soon to start.
- In the Amazon, the dolphin tours seek to "tread softly" so as not to have adverse impact on indigenous people. Oceanic Society Expeditions (OSE) uses a local airline to fly into the Amazon, staying a night at the beginning and end of the trip in Iquitos, with associated food and souvenir expenditures. However, the participants live aboard a large, self-contained ship as they cruise the Amazon. In the early years, the trip leaders attempted to interact with the locals, but OSE felt that the impact was destructive to the local community as the cultures are so different. They felt that a self-contained trip was a better way in this case to ensure limited cultural impact and protection of the resource (IFAW 1999).

WW Assessment

Moderate potential. The dolphin watch tours in the Amazon are expanding as of 2000 into two more locations offered by two different operators (Manu National Park and Pucallpa, Upper Ucayali). High quality tourism with high educational and scientific inputs and outputs, focusing on the dolphins as well as the rainforest, may allow additional expansion. There have been several attempts to start dolphin watching along the coast but sighting rate has been low due to the great reduction in dolphins from large numbers of catches over the past 25+ years. Tourism is recovering after the early 1990s guerilla activity, crime and cholera fears, but the tourism infrastructure needs to be improved to attract more people.

Acknowledgments
Koen Van Waerebeek and Birgit Winning.

[21] Half the estimated numbers of ecotourists in the Paracas Reserve are counted as dolphin watchers.

BRAZIL

República Federativa do Brasil

Population:	165.2 million
Land Area:	8,456,510 sq km (3,265,059 sq mi)
Tourist Arrivals:	2,850,000 (+6.9% on previous year)
Total Tourist Receipts:	$2,595 million USD
GNP:	$784 billion USD
GNP per capita:	$4,790 USD

Main WW Species: Amazon: tucuxi, Amazon river dolphins (boto); Fernando de Noronha: spinner dolphins; Abrolhos: humpback whales; Anhatomirim: tucuxi; Imbituba, Santa Catarina State: southern right whales, bottlenose dolphins; Laguna: bottlenose dolphins; Imbé/Tramandaí: bottlenose dolphins; Rio Grande/São José do Norte: bottlenose dolphins.

Year WW began: Mid-1980s (Amazon).

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

BRAZIL WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	175,000	$2,500,000	$8,750,000
1998[22]	167,107	$4,071,000	$11,314,000

BRAZIL WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, Brazilian tourism from abroad is led by Argentina (43%), Uruguay (9%), USA (8%), Paraguay (5%), and Germany (5%).
- Most whale watchers are Brazilians travelling in their own country. In the Amazon, however, one Manaus-based tour operator reports that 95% of clients are international passengers.
- Tourists watching dolphins at Anhatomirim are mainly Brazilians and visiting Argentines (Palazzo *et al*. 1994).

WW Operators & the Trips They Offer

- The Amazon tours are not dedicated toward the river dolphins, with only a handful of exceptions, most of which are located across the borders in Peru, Colombia or Ecuador. Still, the more than 10 small cruise ships (16–48 passengers) offering Amazon River boat tours in Brazil do include dolphin sightings. One operator estimated that 10–15% of the value of the tours was due to river dolphins. Overall tourism to Amazonas, the bigest state for tourism in Brazil, is 300,000 people a year. If a conservative 100,000 take river boat tours with some interest in dolphins, then 10,000 will be counted as the number of dolphin watchers split 90% as day watchers and 10% on 3- to 6-day trips, with corresponding expenditures of $100 to $1,000 USD.
- In the Abrolhos Archipelago, visitors numbered 4,855 in 1998, according to the Abrolhos Marine National Park (IBAMA) and Projeto Baleia Jubarte. These visitors are partly attracted by the possibility of seeing humpback whales and most of them during the whale season of July to November do see humpbacks. Thus the numbers are included below, but only 50% of them. Since 1995, the number of tourists has held steady at about 4,000 to 5,500, partly due to the restriction on the number of tourism vessels entering the park (maximum 15 boats inside at a time).

[22] 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 24.

• The right whale trips at Imbituba, Santa Catarina State, use a 10 m inflatable boat carrying 12–15 people on day trips.

• Some 30–35 mainly schooners carry up to 150 passengers per trip in daily year-round tours departing Florianópolis for the Bay of Dolphins at the Environmental Protection Area of Anhatomirim (Palazzo *et al*. 1994). These are not dedicated dolphin trips, but they include frequent tucuxi dolphin sightings.

• Visitors arrive by boat to the National Marine Park of Fernando de Noronha but the dolphin bay is closed to boats. Instead, dolphins are watched from a lookout on the cliffs (Palazzo *et al*. 1994). Land-based whale watching is also featured at several other Brazilian locations (see the table below).

BRAZILIAN WHALE WATCHING	Boats	WWs	% counted	$DEx	$TEx
Amazon — river dolphins					
Boat cruises (canoes to ferries)	Many	10,000	10%	$1.900m	$4.150m
Fernando de Noronha — spinner dolphins					
Land-based dolphin watching	–	23,000	100%	–	2.300m[23]
Abrolhos — humpback whales					
Boat trips (diving/whales)	15	2,427	50%	0.364m	0.364m
Anhatomirim — tucuxi					
2-hour schooner trips	30–35	120,000[24]	50%	1.800m	4–6.000m
Imbituba, Santa Catarina State — right whales					
Boat trips (inflatable)	1	180	100%	0.007m	0.025m
Land-based whale watching	–	1,500	100%	–	0.015m
Laguna — bottlenose dolphins					
Land-based	–	10,000	100%	–	0.100m
Imbé/Tramandaí — bottlenose dolphins					
Land-based	–	Minimal	100%	Minimal	Minimal
Rio Grande/São José do Norte: bottlenose dolphins					
Boat & Land-based	–	Minimal	100%	Minimal	Minimal
Totals	**46+**	**167,107**	**–**	**$4.071m**	**$11.314m**

The WW Community

• At least fourteen communities in the eight main areas, as listed in the above table, have some involvement in whale watching.

• Brazil's various whale and dolphin watching communities have spawned a number of new NGOs and a talented group of researchers. The benefits for research and conservation from commercial whale watching are incipient but may be substantial over time. Some of these NGOs are attracting foreign funds and other international support.

• The annual "right whale week" in Imbituba, Santa Catarina State, begun in 1997 by the International Wildlife Coalition/Brazil, attracts locals and outside visitors for a week of special whale watching and other activities. The IWC/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.

• 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 (Palazzo *et al*. 1994).

• In the Abrolhos Archipelago, the boat-based trips provide substantial income to the small coastal towns where the tour boats depart — Caravelas, Alcobaça, and Nova Viçosa (Palazzo *et al*. 1994).

[23] Includes $100 USD per person as a conservative contribution toward the dolphin part of the trip, recognizing that visitors come for diving too, some mainly for diving.

[24] Actual number is 240,000 (225,000 + 10,000–20,000 unrecorded), but since these were not dedicated dolphin watch tours only half the passengers and expenditures are counted in the table.

• 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 March 11, 1993 to make the whole lagoon system an ecological sanctuary for dolphins (Palazzo *et al*. 1994).

• The township of Imbé, across the lagoon from Tramandaí, has used dolphins to enhance their tourism advertisements and have declared the dolphins a Natural Heritage (Hoyt 1994c).

WW Assessment

Outstanding potential with a diversity of cetaceans and places to watch them. The development of whale watching, however, has lagged behind many other countries with comparable potential. Some dedicated whale watch tours which have been developed to a high standard have not been able to attract sufficient domestic or international customers. Part of the problem may be tourism infrastructure. Although tourism is on the increase the past few years, Brazil has been unable to capture a significant amount of the world tourism dollar; tourism revenues amounted to 2.5% of GDP in 1996, compared to a world average of 10%. The problems include the high cost of domestic air travel and the lack of modest and low-cost hotel and other accommodation (average overnight hotel rates are higher than in Europe and the USA but quality is generally lower). High crime levels in some areas and a history of political and economic instability have not helped. For whale watching and other nature tourism to begin to realize its potential throughout Brazil, a very high quality, competitively-priced product will be needed to offset the overall tourism problems.

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ARGENTINA

República Argentina

Population:	36.1 million
Land Area:	2,736,690 sq km (1,056,636 sq mi)
Tourist Arrivals:	4,540,000 (+5.93% on previous year)
Total Tourist Receipts:	$5,069 million USD
GNP:	$319.3 billion USD
GNP per capita:	$8,950 USD

Main WW Species: from Península Valdés: southern right whales, dusky dolphins, orcas; from San Julián, Ría Deseado, Río Gallegos, and Cabo Virgenes: Peale's dolphins, Commerson's dolphins; from San Blas and Rawson: franciscana and Commerson's dolphins.

Year WW began: 1983.

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

ARGENTINA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	17,371	$347,000	$14,592,000
1994	44,580	$892,000	$36,110,000
1998	84,164	$1,638,000	$59,384,000

ARGENTINA WW SOCIOECONOMIC PROFILE

WW Tourists

- At Península Valdés, an estimated 25% of the visitors are from outside the country, and nearly 75% are from Buenos Aires (Hoyt 1994c).
- A study at Punta Norte in March 1997 (not during the prime right whale watching 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), New Zealanders (5%) (Iñíguez *et al*. 1998).
- According to Iñíguez *et al*. (1998), whale watchers to Península Valdés spend a minimum of $250 USD each, including the price of the $20 tour. This is the amount spent in the immediate area, but it does not include the total amount spent (mostly within Argentina) to go whale watching; in fact, even visitors from Buenos Aires on a minimum two-night stay, can be expected to spend at least $660 USD per person for transportation, hotel and food. Visitors from the USA and Europe, and for those taking dedicated package whale watch tours, or one- to two-week nature tours that feature whales, spend, conservatively, $1,000 USD or more, not including air fare to Buenos Aires. Because a high proportion of the visitors are dedicated whale watchers, or are drawn to the Península Valdés area because of the right whales' high profile, these high expenditures should nearly all be attributable to whale watching. Thus, with total visitor expenditures at 33x the whale watch tour cost (i.e., the direct expenditures) for Buenos Aires residents and 50x or more the basic tour cost for foreigners, the per person expenditures for whale watching are some of the highest in the world.
- At San Julián, the dolphin watcher's profile was obtained through surveys (Fundación Cethus 1999). Some 83% were national visitors, largely from the Buenos Aires area, who travelled an average 2,200 km (1,367 miles) to get to 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. The reason for travelling was led by other peoples' recommendations (31%). 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 two days in the area (Fundación Cethus 1999).

GROWTH OF SOUTHERN RIGHT BOAT-BASED WHALE WATCHING COMPARED TO OVERALL TOURISM FIGURES TO PENÍNSULA VALDÉS, CHUBUT

Year	Overall tourists	Whale/Dolphin Watchers
1987	–	5,214
1988	–	10,159
1989	–	12,336
1990	–	16,524
1991	–	17,446
1992	85,000	29,121
1993	100,000	33,772
1994	115,000	44,987
1995	110,000	41,362
1996	130,000	53,038
1997	140,000	74,124
1998	165,000	79,481
1999	200,000	74,512

[Table based on information provided courtesy of Claudio Campagna.]

WW Operators & the Trips They Offer

- At Puerto Pirámide, Península Valdés, six operators using two boats each, some operations working in partnership, run the right whale tours lasting about 2 hours each. The boats are generally small (6–10 passengers) but some range up to 70 passengers.

• Only one small company advertises orca-watching trips at Punta Norte, Península Valdés. Most of the orca watching is from land, on small-group or self-organized trips.

• At Ría Deseado, two tour operators offer one-hour to half-day nature trips along the river which encounter the Commerson's dolphins.

ARGENTINA WW AREAS AND VISITOR NUMBERS (1998)

Place	Operators	Whale/Dolphin Watchers
Puerto Pirámide, Península Valdés, CH	6	79,481
Punta Norte, Península Valdés, CH	1 + land-based	1,860
Ría Deseado, SC	2	1,323
Bahía San Julián, SC	1	1,500
San Blas, BA	Just starting	Minimal
Ría Gallegos, SC	Just starting	Minimal
Cabo Virgenes, SC	Just starting	Minimal
Total	10	84,164

The WW Community

• Some nine communities in six main areas have some involvement in whale watching. Whale watching from Puerto Pirámide and nearby towns servicing Península Valdés began in 1983, while dolphin-based tourism began in 1992 out of San Julián, Ría Deseado and Río Gallegos. More recently, whale watching is in the process of starting up in San Blas, Cabo Vírgenes, and Rawson.

• In a study of the socioeconomic aspects of whale watching in Argentina sponsored by the Whale & Dolphin Conservation Society 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.

• The provincial Chubut government has some controls on whale watch companies to ensure that most of the income remains in the area. Only five whale watch licenses (maximum two boats per license) are permitted for Golfo Nuevo, and the operators must be Chubut residents for at least two years. The provincial tourism department also receives a levy on every whale watch ticket sold, equal to 10–12% of the whale watch ticket which, in 1998, amounted to a total of about $160,000 USD (IFAW 1999; Iñíguez *et al*. 1998).

• But the biggest controls on whale watching at Península Valdés may be the difficult logistics of getting to the area and then, once in the area, getting around. The distances between the whale watch communities and the whales themselves are only solved by patience and time and/or a large amount of money. Orca watching at Punta Norte can be incredibly rewarding, but the window of opportunity when the orcas are hunting the sea lions is barely a month and even in that period they can't be seen every day. The wind and waves don't always cooperate. And getting to the site from Puerto Pirámide is a 150 km (93 miles) round trip plus a 10 km (6 mile) walk across the Patagonia scrub (Whooley 1999). The reserve itself is closed to camping and has no accommodations. Expensive package tours or car rentals force the budget traveller to avoid Patagonia or try hitchhiking. In any case, good shoe tread and a great deal of patience are indispensible. All of these combine to help keep the numbers of people down and drive the total per person expenditures up high.

• Staggered entry fees to Península Valdés — $1 USD for local people, $3 for Argentine students and retired people, $5 for for all others including Argentine nationals and foreigners — generated an estimated $390,414 USD for the Economic Department of the Province of Chubut (Iñíguez *et al*. 1998). In 1998, the total figure was an estimated $495,000 USD based on 165,000 visitors. These figures are not included in the whale watch expenditures in the table but reflect additional revenues partly due to the attraction of whale watching.

• Substantial revenues are also obtained by the Chubut Tourism Department for film permits. According to Iñíguez *et al*. (1998), foreign film crews must pay a daily fee of $300 USD and Argentine companies $100 USD. Film crews must budget for official observers from the tourism department at $50 USD 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 $3,500 USD

per film crew. (Note, however, that this money goes to the provincial treasury and may not return to the reserves.) Thousands more dollars are left in the communities for boat and other equipment rentals, hotel, food and supplies.

- Puerto Pirámide is a village of about 100 people who depend entirely on tourism, 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.
- Since 1992, Fundación Cethus has worked independently and with whale watch operators in the six main 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. In 1999, Fundación Cethus began an ambitious project at San Julián to create a project that would develop ecotourism and dolphin watching with scientific, educational, and conservation background. The project is supported by the local town council, the Chamber of Deputy of the province and the country, and the Argentine Coast Guard, among others.
- Fundación Cethus (1999) traced dolphin watching expenditure at San Julián and determined that tourists were spending an average of US $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).
- At San Julián, the Town Council Tourism Area is opening an information and tourist center, providing signage and information materials of the different natural features of the area, especially the Commerson's dolphins, and contributing to an initiative by local and national banks to support ecotourism entrepreneurs. At Ría Deseado, the Town Council Department of Tourism has a campaign to promote the various species of cetaceans which can be viewed in the natural habitat on the Patagonian coast, along with legislation, guidelines and controls regarding best practices. In these and other new areas for dolphin watching, the income to the town from ecotourism is helping to improve equipment, publicity, training and the spreading of information materials, which will only help improve and allow the further sensible expansion of these activities (Iñíguez *et al*. 1998).
- Additional educational benefits are increasingly being felt around Argentina, though the impact is small compared to the potential. One company based in Buenos Aires, Ebano Viajes, specializes in educational trips for school students, including a nature and whale watch trip to Península Valdés. According to Iñíguez *et al*. (1998), 550 students participated in the trips in 1997.
- According to Iñíguez *et al*. (1998), an estimated 40% of the economic benefits linked to tourism expenditures to visit Península Valdés went to Buenos Aires (travel tickets, salaries, insurance) and 60% went to the towns of the province of Chubut (local field guides, hotel accommodations, buses, food, film, souvenirs, etc.). Considering that the origin of most visitors is Buenos Aires or farther afield, this might be considered a reasonable level of leakage from the local economy, although local economies should always strive to capture as much as possible of the tourist dollar.
- 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 Bahia San Julian Nature Reserve. Of course, these reserves also afford protection to many sea bird colonies, sea lion rookeries and other species.
- At Riá Deseado, Iñíguez *et al*. (1998) showed how boat trips on the river have evolved from as high as 35% fishing trips in 1995 and 65% nature trips for one operator, to 86–90% nature trips for the two main operators. This is partly due to a growing appreciation for the Commerson's dolphins which could be seen on almost all of the nature trips.

WW Assessment

Outstanding potential. The high total expenditures to Península Valdés are the result of the international attraction of Patagonian right whales — and the great distances people travel to see them, as well as the difficult logistics in Patagonia. Yet whale watching may well have reached its carrying capacity at Península Valdés. After steadily climbing the previous decade, the past three years whale watch numbers have hovered between 74,000 and 79,000 — despite expanding overall numbers of visitors to the area. Outstanding potential remains in the other five whale watch areas, three of which are only just starting tours. Fundación Cethus (1999) recommends care toward developing "well-managed ecotourism" with a wider publicity effort, more education and scientific content, a high quality training program for tourist guides and operators; some of this could be funded, the report suggests, through a levy on whale watch fees which would return directly to protected areas management and contribute to the various aspects of whale watch enhancement.

Acknowledgments
Miguel Iñíguez, Claudio Campagna, and seven operators.

CHILE

República de Chile

Population:	14.8 million
Land Area:	748,800 sq km (289,112 sq mi)
Tourist Arrivals:	1,644,000 (+13.38% on previous year)
Total Tourist Receipts:	$1,021 million USD
GNP:	$70.5 billion USD
GNP per capita:	$4,820 USD

Main WW Species: North coast: Bryde's whales, sperm whales, Burmeister's porpoises; Isla Choros & Isla Chañaral: bottlenose dolphins; central coast: Bryde's whales, sperm whales, orcas, blue whales, fin whales; southern fjords/Patagonian channels: humpback whales, Peale's dolphins, Commerson's dolphins, southern right whale dolphins, orcas, fin whales.

Year WW began: Early 1990s.

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

CHILE WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	300+	$15,000	$53,000
1998	3,300	$194,000	$679,000

CHILE WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall tourism is led by Argentina (55%), Peru (11%), USA (6%), Bolivia (5%), Brazil (3%).

WW Operators & the Trips They Offer

- At Isla Choros, in the north central part of the country 800 km (500 miles) north of Santiago, local fishermen offer austral summer tours on small (5 m) outboard fishing boats. A few kilometers north at Isla Chañaral, dolphin watching occurred 1993–1995 before many of the resident dolphins were killed.
- There are various cruises available through the Chilean fjords, including the 100-passenger *Terra Australis* which has weekly cruises into the Beagle Channel and along the coast of Tierra del Fuego and departs from September to April. The 74- to 160-passenger *Skorpios I, II*, and *III* fleet also sails through the Chilean fjords. These ships announce cetacean sightings, but the comparatively low profile of cetaceans here, at least in terms of promotion of these cruises, means that at present these trips cannot be included in the calculation. However, such cruises could become much more cetacean-oriented in future.
- The *World Discoverer* (Society Expeditions), *Bremen* and *Hanseatic* (Radisson Seven Seas), *Explorer* (Abercrombie & Kent), and other Antarctic cruise ship itineraries sometimes include exploration of Chilean coastal waters. The value of whale watching for these trips is included under Antarctica.

The WW Community

- Three communities have had some involvement with whale watching but only Caleta Punta de Choros at Isla Choros is currently developing dolphin watching on a community basis. Punta Arenas is a departure point for ecotours, research and other cruises which include cetaceans.
- The Centre For Marine Mammals Research LEVIATHAN has worked at Isla Choros (and originally at Isla Chañaral) to characterize the bottlenose dolphin population through photo-identification, acoustic and other

studies. Since 1998, Leviathan volunteers have developed workshops with the fishermen of Choros in sustainable dolphin watching. The results have helped improve conditions both for the dolphins and the community, with positive impact on the local economy. Leviathan is planning future work in the community.

• Several international NGOs have worked with Chilean NGOs to improve the socioeconomic benefits of whale watching. In Nov. 1997, the Whale & Dolphin Conservation Society, in cooperation with Fundación Cethus, 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. Holding the workshop in Punta Arenas helped give a positive whale watch profile to this area where some of the rarer dolphins in the world can be seen. IFAW has also worked with CODEFF (a Chilean NGO), National Fisheries Service, National Tourism Service and the Ministry of Foreign relations to chair a discussion on the responsible development of whale watching in Chile, especially in the Magallanes region.

WW Assessment

Considerable to outstanding potential. Despite Chile's long, varied and beautiful coastline, with plenty of cetacean potential, surprisingly little cetacean tourism has developed. The Chilean government is funding two projects to evaluate the potential of ecotourism featuring cetaceans in the Chilean Patagonian fjords. Here, rare and unusual small cetaceans can be seen (Peale's, Commerson's, Chilean and perhaps dusky dolphins), as well as some large whales. With research now advancing on other cetaceans as well around Chile, the next few years may see the emergence of more tours which can attract the high number of Argentines as well as Chilean tourists in their own country. Still, any cetacean tourism will automatically be compared to the much more developed southern right whale watching at Península Valdés which is the region's point of reference when it comes to cetacean watching. On the plus side, Chile's tourism infrastructure is solid, its national park system extensive, and the country could support substantial whale and dolphin watching; even the remotest parts of the southern fjords have good sportsfishing lodges and other facilities (Hoyt 1994c). In order to compete, Chilean cetacean watching will need to partner research and education with the tours to expose and promote new stories about the animals that will help attract the tourist dollar.

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FALKLAND ISLANDS (UK)

(British dependent territory)

Population:	2,805
Land Area:	12,170 sq km (4,680 sq mi)
Tourist Arrivals:	6,500
Total Tourist Receipts:	No current figures

Main WW Species: Orcas, pilot whales, Commerson's dolphins, Peale's dolphins.

Year WW began: Mid-1990s.

Types of WW: Dolphins, boat-based, cruise ships, land-based.

FALKLAND ISLANDS WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	Minimal	Minimal	Minimal
1998	Minimal	Minimal	Minimal

FALKLAND ISLANDS WW SOCIOECONOMIC PROFILE

WW Tourists

- British as well as Argentine tourists are most common, now that regular jet service has recently been restored to and from Argentina.

WW Operators & the Trips They Offer

- Nature and specialist tour operators offer packages which include cetaceans. There is also land-based orca watching from Sea Lion Island (Hoyt 1994).
- Some of the Antarctic cruise ships call in the Falkland Islands, and some see cetaceans here.

The WW Community

- One community is involved in whale watching.

WW Assessment

Moderate potential.

Acknowledgments
R.C. Huxley, Graham Bound, and Tom O'Brien.

EUROPE

AREA-WIDE SUMMARY
Number of countries & territories involved in commercial whale watching: 18 (up from 15 in 1994).
Number of communities involved in whale watching: 65 (up from 34 in 1994).

EUROPE WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	158,763	$2,261,000	$5,690,000
1994	204,627	$4,123,000	$21,985,000
1998	418,332	$11,048,000	$46,029,000

Average annual % increase 1991–94: 8.8%.
Average annual % increase 1994–98: 19.6%.

NORWAY

Kingdom of Norway
Kongeriket Norge

Population:	4.4 million
Land Area:	306,830 sq km (118,467 sq mi)
Tourist Arrivals:	2,702,000 (–1.6% on previous year)
Total Tourist Receipts:	$2,226 million USD
GNP:	$159 billion USD
GNP per capita:	$36,100 USD

Main WW Species: Northern Norway: sperm whales, orcas, minke whales; Svalbard: belugas.
Year WW began: 1988.
Types of WW: Large whales, dolphins, boat-based, cruise ships, land-based, educational, photo-ID research.

NORWAY WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	4,563	$459,000	$1,607,000
1994	11,227	$834,000	$4,567,000
1998	22,380	$1,632,000	$12,043,000

NORWAY WW SOCIOECONOMIC PROFILE

WW Tourists

- Approximately 7% of the whale watchers are from Norway while 93% are international from some 40 countries led by Sweden, Germany, Spain, Britain and others.
- A 1999 *Guardian* and *Observer* reader survey in the UK found that Norway was the first favorite would-be holiday destination.

WW Operators & the Trips They Offer

- The largest and first operator is based at Andenes, and two smaller operators have been based nearby at Stø and Nyksund, although one of these has recently stopped business. In the Tysfjord area there are approximately eight operators at present, several of which are from Sweden and bring large numbers of Swedes and other Europeans to Norway for orca watching.

The WW Community

- Two main communities are involved in whale watching, and there is some activity in two other communities. The business is seasonal (late May to early September in Andenes area and October–November in Tysfjord); a few of the Tysfjord operators are expanding their tours to other whales in the summer season as well.
- Total revenues accruing to communities due to whale watching are substantial due to the high cost of travel within Norway.
- The main operation at Andenes in northern Norway has been responsible for adding diverse socioeconomic values to the community (especially in the area of education, research, and community identity which has contributed to successful tourism marketing). Whale watching has given Andenes and the surrounding area a higher profile to market its nature, sports, and cultural activities (Hoyt 1997b).
- The educational and scientific work through Whale Safari Ltd. at Andenes has provided many benefits for the community as well as for visitors over the past decade. Included in the whale watch ticket is a free visit to the Andenes Whale Center where visitors learn about whales and whaling. There are public lectures on whale behavior, ecology and other topics, and an audio visual library. The company also set up the Royal International Whale Safari Club to help provide funds for students to study whales. Researchers have been offered places on the whale watch boats to carry out their studies and they also act as naturalists helping to guide the tourists (Hoyt 1994b).
- The education program at Andenes has featured multilingual naturalists on the boat as well as free whale information sheets in 4–5 languages (IFAW, WWF & WDCS 1997).
- Whale watching in Norway has a served as a catalyst to introduce new whale research techniques (IFAW 1999).
- In the Tysfjord area, local hotels have been filled in the mid-autumn, adding off-season income, and hotels have helped organize educational workshops and events which have attracted tourists and contributed to the educational value of the tours.

WW Assessment

Outstanding potential, some of it being realized at Andenes, and by some of the Tysfjord operators. Whale watching continues to grow steadily, with an average 18.8% increase between 1994 and 1998. There is potential to expand into other areas of Norway with long-range trips, and to Svalbard (already visited by some cruise ships).

Acknowledgments
Henning Røed, Hanne Strager, Catherine DeNardo, and eight operators.

ICELAND

Lyveldi Ísland

Population:	277,000
Land Area:	100,250 sq km (38,707 sq mi)
Tourist Arrivals:	202,000 (+0.5% on previous year)
Total Tourist Receipts:	$173 million USD
GNP:	$7.2 billion USD
GNP per capita:	$26,580 USD

Main WW Species: Minke whales, blue whales, humpback whales, orcas, white-beaked dolphins, Atlantic white-sided dolphins, harbor porpoises. Occasionally: fin whales, sei whales, sperm whales, long-finned pilot whales, northern bottlenose whales.

Year WW began: 1991.

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

ICELAND WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	100	$17,000	$60,000
1994	200	$32,000	$146,000
1998	30,330	$2,958,000	$6,470,000

ICELAND WW SOCIOECONOMIC PROFILE

WW Tourists

- Visitors to Iceland are led by Germany (19%), USA (14%), and Denmark (12%). According to the operators, foreigners comprise 85–90% of the whale watchers, Icelanders 10–15% (Björgvinsson 1999).
- It is estimated that from the total number of whale watchers to Iceland in 1998 and 1999, 14% were Icelanders, 10% were dedicated whale watchers, 7% came to Iceland partly because of whale watching, while 69% did the whale watch tour because it was available (Björgvinsson 1999).
- 1998 visitors to Iceland, according to a survey of 924 tourists from 23 countries conducted by Asa Sigridur Thorsdottir, were 78.2% opposed to whaling and 68.9% opposed to Iceland resuming whaling. A third of the sample had participated in a whale-watch tour and 63.8% rated it 8 or higher on a scale of 0–10. A 1999 *Guardian* and *Observer* reader survey in the UK found that Iceland was the fourth favorite would-be holiday destination.

WW Operators & the Trips They Offer

- Day trips are mainly offered aboard traditional and modern fishing boats. At Stykkisholmur, two large motorized catamarans (ex-ferry boats) provide comfort and a large viewing area/platform, good for photography, with some of the most reliable trips in the world to see blue whales (100% success rate two of the past three years in June and July).

THE GROWTH OF WHALE WATCHING IN ICELAND: NUMBERS OF COMMUNITIES, OPERATORS, WHALE WATCHERS

Year	WW Communities	WW Operators	WW Passengers
1991	1	1	100
1994	3	4	200
1995	6	8	2,200
1996	8	9	9,700
1997	10	13	20,540
1998	8	12	30,330
1999	7	10	35,250

Source: Björgvinsson 1999; Hoyt 1994b; Hoyt 1995a.

The WW Community

- As of 1998, eight communities were involved in whale watching (7 in 1999), primarily located in the southwest near Keflavík, on the Snaefellsness peninsula in the west, and in the northeast at Húsavík. In 1994, there was only one community which had any whale watching, but following a whale watch workshop in Reykjavík organized and sponsored by the Whale and Dolphin Conservation Society (WDCS) in June 1995, and presented by international experts, which brought prospective whale watch operators together for the first time, whale watching started to take off. Since 1994, whale watch numbers in Iceland have shown an extraordinary average 251% increase per year, the second highest rate of increase in the world since the mid-1990s.

• To calculate the tourism expenditures from whale watching in Iceland, there are several approaches. One is to determine the purpose of the visitors and where they were travelling from and estimate how much they spent. Using the whale watcher profiles above, with separate calculations for Icelanders, dedicated and semi-dedicated whale watchers, as well as Icelanders, would produce total expenditures amounting to $6,470,435 USD. This figure includes an estimated minimum of $250 spent by Icelanders and incidental whale watchers in the course of whale watching, with dedicated or semi-dedicated whale watchers spending an estimated minimum of $1,000 and $500 respectively. Another approach is to use the mutliple of 3.5x – 7.67x the direct expenditures. In fact, Iceland, at least for its international visitors, fits the profile of the more remote smaller community (such as Telegraph Cove or Tofino where this multiple has been measured carefully) which would dictate use of the 7.67 multiple. This would produce an estimate of total expenditures ranging from $10,353,000 (for 3.5) to $22,688,000 (for 7.67). A third method would be to extrapolate from the 1997 calculations of the Icelandic Tourist Board. Using this method, the 1998 total expenditures from whale watching in Iceland would be $9.6–$11.216 million USD. For this report, the most conservative calculation for total expenditures is used here — $6,470,000 — but it should be stressed that this is a very conservative figure. It must also be pointed out that air fares are not included in any of these calculations and that since almost all tourists arrive via Icelandair, the national airline, the revenue accruing to Iceland is even higher than many other countries whose visitors are carried by home or "third party" airlines.

• Húsavík has rapidly developed into one of the premiere whale watch communities of the north. It hosts half of all whale watchers in Iceland. With a beautifully designed new whale watch center/museum, new restaurants, an expanded book store, and two successful whale watch operators, the town has expanded its tourism base dramatically. The non-profit, educational Húsavík Whale Center opened June 20, 1998, attracting nearly 6,000 tourists the first summer. In 1999, more than 12,000 visitors came to the center and nearly 2,000 school children visited free of charge during the winter. The center is designed as an educational experience on whales, their life and habitat, but it also acts effectively as a promotion center for whale watch tours, research and educational opportunities all over Iceland (Björgvinsson 1999). The center also helped set up a whale watch workshop in 1999 inviting all the operators from around Iceland and international authorities, sponsored by IFAW. The Húsavík Whale Center is a community project, initiated by the Fish Processing Plant of Húsavík, the Co-operative Society of Thingeyinga, The Húsavík Hotel, Restaurant Setberg, and the two whale watch companies in the town. In May 2000, Center director Ásbjörn Björgvinsson was named to the United Nations "Global 500" for his work on behalf of whale watching and education in Iceland — an affirmation of the important role that whale watching now has in Iceland.

• Húsavík has an annual whale watch festival which has included expositions of whale models in the town's sports center, the Whale and Dolphin Road Show from the UK (with inflatable models), and international artist Namiyo Kubo with her outstanding paintings of whales. With lectures on whales and nature, and a midnight sun whale watch, the festival draws people from all over Europe and North America.

• Most Iceland whale watch companies are contributing to national research on whales by reporting whale sightings to the Marine Research Institute (MRI) in Reykjavík. All companies keep a logbook and two companies use GPS equipment to log all cetaceans seen and the location of their boats (Björgvinsson 1999). Most companies provide free trips for MRI and other researchers.

• Whale watching has contributed to tourism through its high profile publicity but the continuing debate over whether to resume whaling in Iceland has also had an important impact. In effect, this debate — which surfaced at least several times a year in the Icelandic and often foreign media through the 1990s — provides a publicity vehicle for whale watch tours. As long as the whaling does not resume and result in the end of whale watching, the discussion does no harm and arguably creates tourism awareness and publicity that has a positive economic impact. However, in March 1999, Icelandair Holidays' marketing department reported cancellations of holidays (not just whale watch holidays) as a result of Iceland's parliamentary motion calling for the resumption of whaling at the earliest opportunity.

WW Assessment

Outstanding potential for further expansion and development of more high quality whale watching. There was only one operator between 1991 and 1994, but the year 1995 saw the arrival of seven new operators. By 1998 there were twelve operators in eight communities. In the late 1990s, Iceland became the fastest growing whale watch destination in Europe. Iceland will never support mass tourism on the order of France or Spain, but it has captured a valuable niche in the market for discerning travellers, interested in unspoiled nature and adventure, in one of the world's most unusual tourism destinations. Whales and dolphins have become a key part of the appeal to the type of tourist who savors all that Iceland has to offer.

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GREENLAND (Denmark)

(Self-governing territory of Denmark)
Kalâtdlit-Nunât
Grønland

Population:	56,076
Land Area:	1,869,200 sq km (700,950 sq mi)
Tourist Arrivals:	Tourism information is not supplied to WTO

Main WW Species: South: humpback whales, minke whales, harbor porpoises; Disko Bay area: fin whales, belugas, narwhals; Northwest: belugas, narwhals, orcas; East coast: narwhals, belugas.

Year WW began: Early 1990s.

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

GREENLAND WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	100+	$16,000	$57,000
1998	2,500	$832,000	$2,750,000

GREENLAND WW SOCIOECONOMIC PROFILE

WW Tourists

- According to one large operator in southeastern Greenland, tourists are 80% European, 10% Asian (Japanese, etc.), and 10% North American (US and Canada).

WW Operators & the Trips They Offer

- There are two main operators offering whale watch trips, but the trips can be organized from at least six communities through the local tourism office (Hoyt 1997b). The national Greenland tourism office has listed a whale watch tour since the mid-1990s.

The WW Community

- Three main communities have whale watch tours, and at least three others offer whale charters; six communities in all are involved in whale watching.
- Although cetaceans are hunted in some numbers, especially in northern Greenland, cetacean tourism provides a valuable contribution to local economies.

WW Assessment

Considerable to outstanding potential because of the Arctic cetaceans that many whale watchers and nature enthusiasts have never seen. Tourism has been restricted in the past, but has expanded over the past decade. Future tourism will need to be carefully controlled so that the fragile ecology and infrastructure are not overtaxed, but cetacean tourism could be part of a strategy for high-earning ecotourism that treads lightly.

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FAEROE ISLANDS (Denmark)

(Self-governing territory of Denmark)
Føroyar

Population:	43,382
Land Area:	1,399 sq km (542 sq mi)
Tourist Arrivals:	30,000
Total Tourist Receipts:	Unavailable

Main WW Species: Long-finned pilot whales, Atlantic white-sided dolphins, white-beaked dolphins, orcas, sperm whales.

Year WW began: 1996.

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

FAEROE ISLANDS WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	Minimal	Minimal	Minimal

FAEROE ISLANDS WW SOCIOECONOMIC PROFILE

WW Tourists

- Many of the nature enthusiasts are British tourists, some of which are brought in by a British tour operator on trips that stop in the Faeroes for 2–3 days enroute to Iceland.

WW Operators & the Trips They Offer

- There are two operators offering nature and seabird trips that include dolphin and sometimes whale sightings. One operator advertises the chance to see dolphins (Hoyt 1997b). The whales and dolphins can also be seen frequently from land.

The WW Community

- No communities are involved in whale watching.

WW Assessment

Moderate to considerable potential especially if the whale and dolphin kills end. Iceland and Norway have shown there is a big market for whale watching in northern waters. Substantial numbers of British and other European tourists also travel long distances in part to watch pilot whales off the Canary Islands. If only a small percentage knew they could see these and other cetaceans closer to home in the Faeroe Islands, it could lead to many more visitors. There has been a feasibility study on whale watching. There seems to be a desire within the islands to promote and encourage tourism, but the will to stop the annual pilot whale and dolphin kills (the "grinds") is not there at present (Hoyt 1997b).

Acknowledgments
Mark Carwardine, Clive Stacey, and one operator.

DENMARK

Kongeriget Danmark

Population:	5.3 million
Land Area:	43,070 sq km (16,629 sq mi)
Tourist Arrivals:	2,158,000 (+1.55% on previous year)
Total Tourist Receipts:	$3,156 million USD
GNP:	$184 billion USD
GNP per capita:	$38,890 USD

Main WW Species: Harbor porpoises, white-beaked dolphins, some minke whales offshore.
Year WW began: Mid-1990s.
Types of WW: Porpoises, land-based.

DENMARK WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	Minimal	Minimal	Minimal
1998	Minimal	Minimal	Minimal

DENMARK WW SOCIOECONOMIC PROFILE

WW Tourists

- The porpoise watchers are largely Danish and German residents on summer holiday.

WW Operators & the Trips They Offer

- Porpoise watching is casual, from the shore of the island of Rømø, Denmark, and especially from the German island of Sylt, and from the ferry between Rømø and Sylt. The porpoises sometimes approach swimmers in the water (Hoyt 1997b).

The WW Community

- One community is involved in porpoise watching.
- There has been some regular research and monitoring from the beaches, as well as local interest in protecting the porpoises (Hoyt 1997b).

WW Assessment

Moderate potential for additional socioeconomic value from porpoise watching in this area. There may also be potential for developing offshore dolphin and whale watching as summer cruises northwest of Denmark, along the boundary of the North Sea and the Skaggerak, have produced regular sightings of white-beaked dolphins and sometimes minke whale and harbor porpoises. However, long-day or overnight trips would be necesssary (Hoyt 1997b).

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Peter Østrin, Rolf C. Schmidt and Hanne Strager.

UNITED KINGDOM

United Kingdom of Great Britain and Northern Ireland

Population:	58.2 million
Land Area:	241,600 sq km (93,282 sq mi)
Tourist Arrivals:	25,515,000 (+1.4% on previous year)
Total Tourist Receipts:	$20,039 million USD
GNP:	$1,231 billion USD
GNP per capita:	$20,870 USD

Main WW Species: Scotland: minke whales, bottlenose dolphins, orcas, harbor porpoises, Risso's dolphins, Atlantic white-sided dolphins, white-beaked dolphins, common dolphins; England and Wales: bottlenose dolphins, harbor porpoises.

Year WW began: Mid-1980s; dedicated (Mull), 1989.

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

UNITED KINGDOM WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	400+	$43,000	$330,000
1994	15,000+	$1,380,000	$10,500,000
1998	121,125+	$1,884,000	$8,231,000

[Regarding the apparent discrepancies in the numbers of whale watchers when compared to expenditures in the UK between 1994 and 1998, whale watching during this period underwent a change from a small number of higher-priced, typically multi-day trips consisting of high quality nature trips that were focusing on whale or dolphin watching, to more than ninety thousand land-based or low-priced two-hour trips. A portion of the higher-priced sector of the industry remains, but many have moved back a little from whale watching to a broader ecological and cultural-based tour which may include only a small amount of whale or dolphin watching. For more information, see also the table on p. 77.]

UNITED KINGDOM WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, the main visitors to the UK are from the USA (14%), France (13%), Germany (12%), Ireland (8%) and the Netherlands (6%).
- In Scotland, England and Wales, whale and dolphin watchers were 60–70% from the UK, with a few exceptions (up to 98% from the UK from one company). Foreign tourists make up the balance led by Germany, the Netherlands, France, Italy, and Belgium.
- Overall, visitors to the island of Mull, western Scotland, were middle-aged, affluent and well educated, and 42% considered seeing wildlife as the highlight of their trip (Warburton 1999). Yet "unlike other [whale watch] destinations around the world," according to Warburton, "UK-based whale watching tends to be peripheral to most tourists" motivations for visiting an area." But this is not true of dolphin watching.
- Of visitors to the Moray Firth, 28% said that the presence of dolphins had been the sole reason for their visit; 14% said it had been a factor, and 16% of those visiting said that the presence of dolphins had led them to stay an extra night. 93% of all visitors going dolphin watching said they would take the trip again (Arnold 1997).

WW Operators & the Trips They Offer

- There are more than 40 operators offering full- or part-time cetacean watching in the UK. For breakdown, see the table below.
- Trips are offered on a wide variety of boats including sailboats, inflatables, motor cruisers, and former fishing boats.

- In Wales, boat-based trips are billed as general wildlife trips instead of dolphin trips, although dolphins and porpoises are seen on 90% of the trips (in the table below, 75% of the numbers and value from this trip are included).
- In the Moray Firth, Scotland, most trips last about 2–3 hours. Elsewhere, trips range from half to a full day and some were multi-day, lasting up to a week or ten days.
- The trips were highly seasonal with strong peaks in the northern hemisphere summer when winds are lightest and temperatures highest.

UK WHALE & DOLPHIN WATCHING

	Operators	WWs	% counted	$DEx	$TEx
Scotland					
Sumburgh Head land-based	2+	12–15,000	100%	Minimal	$0.180m
Moray Firth boat-based	9–12	48,000	100%	0.768m	3.489m
Moray Firth land-based	2+	25,000	50%	0.019m	0.375m
Western Isles boat-based	15	10,000	25%	0.200m	0.700m
Western Isles dedicated boat-based	2	3,500	100%	0.235m	1.802m
Scotland dedicated multi-day trips	5	500	50%	0.400m	0.500m
Wales					
Boat-based	3	12,000	75%	0.192m	0.672m
Land-based	–	5,000+	50%	Minimal	0.050m
England					
Boat-based	2–3	5,125	50%	0.070m	0.463m
Total land-based	4+	42,000+	–	$0.019m	$0.605m
Total boat-based	36–40	79,125+	–	$1.865m	$7.626m
Grand Total	**40–44**	**121,125+**	**–**	**$1.884m**	**$8.231m**

The WW Community

- Some 12 communities in the UK offer whale or dolphin watching trips.
- In Scotland, cetaceans are one of the top six species groups used to promote and market wildlife tourism worth some £11 million GBP a year (the others are seals, sea bird colonies, birds of prey, red deer and otters). Wildlife tourism in Scotland supports about 1,500 full-time equivalent jobs, many in rural communities and remote areas, and in Scotland, up to 9,000 full-time equivalent jobs are to be found in providing services to wildlife visitors (Tourism and Environment Task Force 1997). Although dedicated whale watch tours are a relatively small part of overall wildlife tourism in Scotland, it is significant that cetaceans are used as part of the marketing for a wide-range of marine nature tours. There are more than 50 boat-based wildlife businesses, most of which at least at some time include cetaceans. Even a few of the 25+ land-based tour holiday operations include sightings of cetaceans.
- The Hebridean Whale and Dolphin Trust, a registered charity which grew out of a whale watching operation called the Mull Cetacean Project, has raised awareness of cetaceans and issues pertaining to their conservation on Mull and in the Hebrides (Warburton 1999).
- At Tobermory, on the Isle of Mull, the Hebridean Whale & Dolphin Trust Education Centre, which opened in 1998, attracted 14,000 visitors in its first four months, nearly 6% of all Mull visitors, who obtain information about cetaceans, local research and conservation efforts, and who spend money on souvenirs, books and other items (Warburton 1999). The center has poster displays, a 3-D map, interactive displays, microscopes, videos, and CD-ROM-based computer programs designed for access by both adults and children. The center sells locally-made crafts and other items, largely based on cetaceans, and serves as a focal point for gathering and disseminating

sightings and other information on Hebridean wildlife both marine- and land-based. Merchandise sales between January–July 1999 were more than £5,700 GBP ($9,133 USD) (HWDT 1999, cited in Warburton 1999). A volunteer program at the center attracts people to Tobermory for a month or more to learn about the experience of running a wildlife charity. It brings revenue into the community year-round in the form of rent, food and other spending. The Centre supports one full-time and three part-time jobs. As well, local school children volunteer to help out and kids' clubs and school visits are included in the program. The Centre maintains a sightings board outside which provides an indication of cetacean presence and raises the profile of cetaceans considerably. Finally, the Centre is a dry year-round attraction located in a frequently wet area (Warburton 1999).

- "While whale watching is a small part of marine wildlife tourism," writes Warburton (1999), "it is believed that cetaceans may have greater value to tourism on Mull in the wider context, in terms of raising the profile of cetaceans in British waters, broadening the nature tourism base, developing the tourism product of Mull, raising conservation issues and using cetaceans as a figure head for education of conservation issues through whale watching and HWDT" (Warburton 1999).
- Warburton (1999) estimated the percentage of shop shelf stock relating to wildlife in Tobermory's Main Street, the location of most shops on Mull. An estimated 18% of all stock in souvenir shops was wildlife related, and 13% related to cetaceans. The average tourist spend was high — £16.67 GBP ($26.71 USD) on whale and dolphin souvenirs alone — although only 24% of visitors bought wildlife-related souvenirs.
- The Moray Firth dolphins provide substantial revenues through the adopt-a-dolphin program of the Whale and Dolphin Conservation Society (WDCS). These revenues in turn help support research and conservation of these dolphins. But there is much more revenue possible through visits these adopters make to see "their dolphins" in the wild. An estimated 86% of respondents intend to visit the Moray Firth to go dolphin watching. In 1993, the potential revenue from dolphin adoptee holiday makers in the Moray Firth (who would travel in groups of three and spend £34 a day for an average stay of 5 days) was calculated at £1.4 million GBP ($2.2 million USD) (Arnold 1997). In 1998, this figure had risen to £7.4 million GBP ($11.9 million USD), because of the great increase in the numbers of adopters to 17,000 members (Masters *et al*. 1998).
- Several visitor centers and lighthouses in the Moray Firth area and on the west coast have helped focus tourist interest in seeing dolphins and other wildlife from land, performing an important educational service, as well as providing a local income through sales of souvenirs and other items. At Inverness, a seal and dolphin center is run by the Highland Council. In Spey Bay, the Moray Firth Wildlife Centre offers an educational exhibition and a viewing area for dolphins, and employs 2 full time and 6 part-time workers generating revenues from entrance fees plus the sales of souvenirs (shop spend reportedly averages three times the entrance fee).
- In Cardigan Bay, Wales, the marine mammal visitor center at Newquay offers land-based dolphin watching and an educational/conservation perspective on the local dolphins.
- In England, on the Dorset coast south of Swanage, the visitor's center at Durlston Country Park monitors passing dolphins in the English Channel using a permanent hydrophone installation. Although bottlenose and other dolphins can only be seen sporadically from the site, visitors can hear them passing up to 80% of the time (Hoyt 1997b). The exhibit provides valuable information on cetaceans, displaying a community focus for interest in marine wildlife and the sea, and offers economic benefits for the community.
- In the Minch, and around the Hebrides and Western Isles of Scotland, the Scottish Marine Wildlife Operators Association has worked with NGOs and researchers to develop high standards for cetacean and other wildlife watching.
- In Mull, Gairloch, and other areas of the Hebrides, and Cardigan Bay, commercial cetacean watching has contributed to scientific research and monitoring through the Sea Watch Foundation, the International Fund for Animal Welfare, and the Whale and Dolphin Conservation Society. In the Moray Firth area, however, research has generally been carried out separately from dolphin watching with the notable exception of Dolphin Ecosse which has aided in the studies of seals, dolphins and porpoises.
- In the Moray Firth area, Scottish Natural Heritage, the government agency charged with wildlife and habitat conservation in Scotland, has worked with stakeholders in the dolphin watch industry to develop and improve an accreditation program for boat-based operators. It has also worked on guidelines for boat-based dolphin watching and promoted land-based dolphin watching.

WW Assessment

In most areas, the best strategy has been developing marine nature tours which include whales or dolphins but are not exclusively based on cetacean sightings. This reflects the uncertainty in some cases of basing tourism only on cetaceans, but it also shows the broad wildlife and ecological interests of both operators and travellers in the UK. In terms of the overall British tourism base, it is solid with a world rank of five in both tourism receipts and tourist arrivals, although the strength of the pound may pose some problems for attracting more international visitors for cetacean or marine-based tours. High quality tours, with emphasis on educational values, are essential

if Britain is to continue to compete. The infrastructure is well developed and there is a large outdoor and ecotourism segment which has been established and is successfully marketed nationally and internationally. The extent to which cetacean watching continues to develop will be based largely on the existence and health of local cetacean populations. The Moray Firth bottlenose dolphin population is a case in point. Stresses on this population probably come from several sources including boat traffic (possibly including dolphin watching trips), availability of sufficient high quality food, and water pollution.

With more than 60% of the UK's coastline (much of it in undeveloped areas), Scotland has the greatest potential for expansion of marine wildlife tourism in general and cetacean tourism in particular. In 1998, the first comprehensive review of the marine wildlife tourism industry in the UK determined that marine wildlife tourism in Scotland is a "niche market of significant value that appears to have good potential for growth and expansion" but that "standards vary and there is considerable scope for improvement and further provision... More focused support is required from the agencies responsible for tourism and economic development if the industry is to grow to its potential. It is essential that this support reflects the conservation needs of the resource [with] an integrated monitoring program, appropriate resource management mechanisms, more effective marketing and promotion, and training and skill development" (Masters *et al*. 1998).

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IRELAND

Eire

Population:	3.6 million
Land Area:	68,890 sq km (26,598 sq mi)
Tourist Arrivals:	5,557,000 (+5.21% on previous year)
Total Tourist Receipts:	$3,189 million USD
GNP:	$65.1 billion USD
GNP per capita:	$17,790 USD

Main WW Species: Bottlenose dolphins, harbor porpoises, Risso's dolphins, common dolphins, minke whales.
Year WW began: 1986 at Dingle (solitary dolphin); 1992 on the south coast; 1993 in the Shannon River Estuary.
Types of WW: Large whales, dolphins, porpoises, boat-based, land-based, educational, photo-ID research.

IRELAND WW VISITOR EXPENDITURES:

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	150,000	$1,290,000	$3,010,000
1994	165,000	$1,337,000	$4,679,000
1998	177,600	$1,322,000	$7,119,000

IRELAND WW SOCIOECONOMIC PROFILE

WW Tourists

- 55% of dolphin watchers in the Shannon Estuary were international, largely from the UK and Europe, while 45% were from around Ireland (10% of which were local).
- 2,600 people went dolphin watching in the Shannon River Estuary in 1998. This number has increased by 150% to around 4,000 persons in 1999 and is set to grow even more as operators have recently obtained larger boats.
- Based on a limited survey (100 visitors interviewed) at Dingle in August 1999, 55% of Dingle dolphin watchers were Irish, 21% British, and the balance were from 13 other countries. 59% were aged between

35–60. All were on holiday and 94% travelled to Dingle by car, with more than 75% travelling more than 50 km. 76% of the Irish visitors and 42% of overseas visitors came primarily to see Fungi. Nearly 10% of international visitors came to Ireland primarily to see the Dingle dolphin, and 60% of international visitors had heard of Fungi before their trip (Berrow and Whooley 1999).

- At Dingle, 175,000 (the midway point of the most recent estimate of 150,000 to 200,000 dolphin watchers per year) is estimated to be the year-round number of dolphin watchers, but only 150,000 of these are counted for expenditures with breakdowns for total expenditures based on surveys of passenger origin. Thus about 25,000 is considered a fair estimate of the number of land-based dolphin watchers at Dingle who do not take a boat tour.
- A small number of visitors (<100) went on marine nature boat- and land-based trips to the south coast to see a variety of whales and dolphins. Many more went on coastal walking tours but, to date, these generally high quality trips have attracted relatively few dedicated cetacean watchers.
- According to the 1997 Visitor Attitudes Survey, the quality of the natural environment and scenery was central to the decision of tourists to come to Ireland (Brady Shipman Martin, David Pryor & Associates, & Natural Environmental Consultants 1999).

WW Operators & the Trips They Offer

- There are two main dedicated dolphin watch operations in the Shannon River, at least 12 small-boat operators in the Dingle area, and several nature-based tour operators that include cetacean watching.
- At least 12 boats offer trips to see the Dingle dolphin from March to October with three of the boats offering year-round or nearly year-round trips. Expenditures have been determined based on a unit cost of $8.60 USD for the base estimate of 150,000, with total expenditures based on the breakdown of Irish vs. overseas visitors.
- Since 1995, there have been approximately 200 dolphin watch trips a year in the Shannon River Estuary, except for 1998 when poor weather and sea state caused the cancellation of many trips (Berrow and Holmes 1999).

The WW Community

- Five communities are involved in some level of dolphin watching or land-based whale and dolphin watching.
- The enormous interest in dolphin watching directed toward the lone dolphin Fungi, at Dingle, led in part to research to see what dolphin and whale populations might be accessible in Irish waters. This led to the designation of the Irish Whale & Dolphin Sanctuary in 1991 which in turn has contributed to the success of the dolphin venture in the Shannon River Estuary.
- Dolphin watching in the Shannon River estuary, with naturalist guides and sometimes scientists on board is leading to a greater awareness of the need for and advantages of protected habitat for the resident bottlenose dolphins. In Autumn 1999, the Shannon Estuary was made an EU Special Area of Conservation (SAC). The operators, scientists and Dúchas, the government agency responsible for designating SACs, have developed a management plan for the new SAC. This will make dolphins and dolphin watching a permanent, sustainable tourism draw and regular feature of County Clare (Brady Shipman Martin, David Pryor & Associates, & Natural Environmental Consultants 1999). A ranger for the Shannon area is now responsible for the dolphins' well being.
- Better monitoring of the water quality of the Shannon River Estuary has resulted from the desire to make dolphin watching there a sustainable industry with a long-term future.
- Scientific monitoring and research from tour boats in the Shannon Estuary is already occuring and has great potential for future benefit to the management of dolphin watching, as well as for understanding the dolphins (Berrow and Holmes 1999).
- In all, an estimated 10 full-time and 30 part-time jobs have been created by the cetacean watching industry.

WW Assessment

Considerable potential. The bulk of the numbers are directed toward the wild solitary dolphin at Dingle and will be dependent on his continuing presence in the area. Still, cetacean watching, mainly through nature tours, has great potential from various locations along the south and west coast of Ireland, as well as some potential offshore, though it is dependent on weather (Berrow and Petch 1998). In any case, rapid growth seems likely for land and boat-based watching of resident bottlenose dolphins in Shannon estuary. A 1998 study reported that with appropriate regulation the potential of the industry there was to attract some 20,000 dolphin watchers per year, eight times as many as are presently taking the tours (Rogan 1998).

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GERMANY

Federal Republic of Germany
Bundesrepublik Deutschland

Population:	82.4 million
Land Area:	349,520 sq km (134,910 sq mi)
Tourist Arrivals:	15,837,000 (+4.16% on previous year)
Total Tourist Receipts:	$16,509 million USD
GNP:	$2,320 billion USD
GNP per capita:	$28,280 USD

Main WW Species: Harbor porpoises.
Year WW began: Early 1990s.
Types of WW: Porpoises, land-based.

GERMANY WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	Minimal	Minimal	Minimal
1998	Minimal	Minimal	Minimal

GERMANY WW SOCIOECONOMIC PROFILE

WW Tourists

- The porpoise watchers are largely Danish and German residents on summer holiday.
- Sylt has a little more than 20,000 residents but tourists between April and October in the mid-1990s surpassed 500,000 visitors per year, each spending on average 10 nights on the island.

WW Operators & the Trips They Offer

- Porpoise watching is casual from the island of Sylt and from the ferry between the Danish island of Rømø and Sylt (access is via Denmark). The porpoises sometimes approach swimmers in the water (Hoyt 1997b).

The WW Community

- One community is involved in porpoise watching.
- There has been some regular research and monitoring from the beaches, as well as local interest in protecting the porpoises (Hoyt 1997b).

WW Assessment

Moderate potential for additional socioeconomic value from porpoise watching.

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Peter Østrin, Rolf C. Schmidt and Hanne Strager.

FRANCE

République Française

Population:	58.7 million
Land Area:	550,100 sq km (212,394 sq mi)
Tourist Arrivals:	66,864,000 (+7.14% on previous year)
Total Tourist Receipts:	$28,009 million USD
GNP:	$1,542 billion USD
GNP per capita:	$26,300 USD

Main WW Species: Normandy: bottlenose dolphins, common dolphins, pilot whales, Risso's dolphins; Brittany: bottlenose dolphins, striped dolphins, harbor porpoises; Mediterranean, especially Ligurian Sea: fin whales, sperm whales, striped dolphins, Cuvier's beaked whales, long-finned pilot whales, Risso's dolphins, common dolphins, bottlenose dolphins.

Year WW began: 1983.

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

FRANCE WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	1,000	$100,000	$203,000
1994	800	$80,000	$280,000
1998	750	$411,000	$512,000

FRANCE WW SOCIOECONOMIC PROFILE

WW Tourists

- France is the world's top tourism destination with more than 10% of all arrivals worldwide. It is third in actual tourism earnings (after the USA and Italy). Overall, tourists are led by the UK and Ireland (19%), Germany (17%), Belgium and Luxembourg (11%), Netherlands (9%), and Italy (9%). As well, most French people take holidays in their own country. Few tourists to or within France, however, travel to see whales and dolphins. Based on returns from several whale watch operators, most whale watchers are French residents (70%), followed by Swiss (15%) and Belgians (8%), although one operator took entirely Swiss visitors on his whale watch boat.

WW Operators & the Trips They Offer

- There are 13 operators around France who have had some interest and participation in cetacean watching. Ten of these operators work out of the Mediterranean.
- The typical trips are sailing or cruise trips lasting 3 to 8 days, offered by NGOs with a strong commitment to research, education and conservation. In 1998, one company working from Cannes began offering cruises using an airplane to find fin whales.
- In Normandy and Brittany, dolphin watching has occurred at a modest level from small boats through most of the 1990s.

The WW Community

- Six communities have hosted whale and dolphin watch tours, three in the Mediterranean.
- The conservation of whales and dolphins in the Mediterranean Cetacean Sanctuary, designated jointly by Italy, Monaco and France, has been facilitated and given a higher profile through whale watching and whale research.
- Several NGOs have worked to set up scientific and educational expeditions at sea, open to the public. These bring public exposure to science with the public helping to support it. As well, conferences are presented to

schools and to the public. In this way, whale watching in effect pays for scientific research, education, and public outreach.

WW Assessment

Moderate to considerable potential, particularly on the Mediterranean Sea. The recent designation of the Mediterranean Cetacean Sanctuary should attract many more tourists interested in whale watching. Although France has a huge tourism industry, the tourism is not oriented toward marine nature tours in general or cetaceans in particular. Most of the cetacean watching here has developed in partnership with research which has afforded a sensible development. But for whale watching to expand in future, it will be necessary to build a high quality commercial "product" that can be successfully marketed in partnership with the science and conservation.

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SPAIN (not including Canary Islands)

Kingdom of Spain
Reino de España

Population:	39.8 million
Land Area:	499,440 sq km (192,834 sq mi)
Tourist Arrivals:	43,403,000 (+7.06% on previous year)
Total Tourist Receipts:	$26,651 million USD
GNP:	$569.6 billion USD
GNP per capita:	$14,490 USD

Main WW Species: southwest Spain (Cadiz & Tarifa): striped dolphins, common dolphins, bottlenose dolphins, long-finned pilot whales, fin whales, sperm whales, orcas; southeast Spain (Mediterannean coast): common dolphins, striped dolphins, bottlenose dolphins, long-finned pilot whales, fin whales, sperm whales; Bay of Biscay (Gijón & Santander): minke whales, striped dolphins, common dolphins, bottlenose dolphins, orcas, Risso's dolphins; Païs Vasco: bottlenose dolphins; Galicia: bottlenose dolphins.

Year WW began: Late 1980s.

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

SPAIN WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	1,000	$29,000	$101,000
1998	25,000–38,000	$550,000	$1,925,000

SPAIN WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, foreign tourism is led by France (22%), Portugal (17%), Germany (16%), UK (15%), and Italy (5%).
- The whale watchers in Andalucía are led by German, British and French nationalities, though considerable numbers of Spanish nationals are also taking the trips. Very few come to Spain for whale watching, although some operators in Tarifa are noting considerable numbers coming from 200 km or more away within Spain to go whale watching. One operator representing fewer than 5% of the total whale watchers taken out, estimated 60% international and 40% domestic (Spanish) passengers.

WW Operators & the Trips They Offer

• Whale watching has exploded off the southern Spanish coast in Andalucía. In 1997, from Conil/Barbate, Tarifa, Estepona, Fuengirola, Benalmádena, Mazarrón, and Ceuta, there were six boats offering whale watch tours but by 1999, there were at least 24 boats and 14 operators, not including those from Gibraltar (de Stephanis *et al*. 1999). More boats were being added in 2000, especially in Tarifa which now has two but will soon have 4–5 operators.

• The boats range from sailboats, small fishing boats, and inflatables to kayaks. Several operators at Tarifa have speedboats. Many of the operators are fishermen or small boat owners, but several are NGOs conducting research or educational projects. Most operate year-round, except February and March, according to demand (de Stephanis *et al*. 1999). Most are half- to full-day trips, although some operators (especially sailboats) specialize in multi-day trips.

WHALE/DOLPHIN WATCHING IN & AROUND ANDALUCÍA PROVINCE, SPAIN — 1999

Place	Operators	No. of Boats	Avg. Adult Price	Capacity/PAX[25]
Andalucía:				
Conil/Barbate	2	3	10,500 ESP	–
Tarifa	2	3	4,500 ESP	27,160
Estepona	1	1	3,500 ESP	–
Fuengirola	2	8	4,950 ESP	69,400
Benalmádena	6+	8+	3,500 ESP	22,000+
Mazarrón	1	1	5,000 ESP	1,000
Total	14+	24+	–	119,560
Other:				
Gibraltar	5	6	4,000 ESP	54,000
Ceuta	1–2[26]	1–2	12,000 ESP	–

[Table based mainly on information in de Stephanis *et al*. (1999), used with permission.
Exchange rate: 168.818 ESP (pesetas) = $1.00 USD]

The WW Community

• At least 11 communities, most of them along the coast of Andalucía, with three on the north coast of Spain, are now involved in whale or dolphin watching.

• Tarifa has received some local benefits from whale watching with passengers often meeting and waiting for the trips in local restaurants and cafes. The people in Tarifa have received the benefits of learning more about the whales and dolphins, and local schools now have educational programs developed by NGOs offering whale watch tours in the area.

• From 1992–98, Alnitak ran an Earthwatch-type volunteer project that pioneered whale watching, cetacean research and conservation in the Western Mediterranean. Since 1999, the group began working with paying Earthwatch participants. There have been substantial environmental education and scientific benefits from this project.

• For some years, the Bay of Biscay Cetacean Group, based in the UK, has compiled whale and dolphin sightings from two regular ferries which sail between England and northern Spain. Many of the sightings are in Spanish waters and close to the northern Spanish and adjacent French coasts. Some 13 species were recorded in 1998. In 1998, one whale watch operator in the UK began advertising the ferry as a cetacean watching tour,

[25] Capacity (number of possible whale watchers) on all the boats available from each port in Andalucia per year. This includes only boats which go whale watching.
[26] Operators were partly based in Andalucía communities.

selling four-day packages to Bilbao. On one weekend in August 1998, the sightings included 5 minke whales, 13 fin whales, 9 Cuvier's beaked whales, 440 common dolphins, 293 striped dolphins, and 58 bottlenose dolphins.

WW Assessment

Mass whale watching tourism has just arrived in Andalucía and with it all the growing pains that other areas of the world often experience in the first few years of a rapidly developing whale watch industry: need for regulations and guidelines, including enforcement; the need for training of naturalists and sometimes skippers; the need to develop educational, scientific, and conservation objectives to inform and enrich the whale watch experience. At present, with some notable exceptions, much of the whale watching in Adalucía is casual and unregulated. Spain is one of the powerhouses of world tourism, ranking third in number of arrivals and fourth in tourism receipts. Tourism accounts for 10% of GDP and employs about 8% of the workforce. As such, there is potential room for more whale watch passengers, particularly along the heavily visited Mediterranean coast. With much more attention given to developing the whale watch "product", Spain would have outstanding potential for future "high quality" growth, with corresponding benefits.

Acknowledgments
Renaud de Stephanis, Erika Urquiola, Lourdes Isasa Lopez, Ricardo Sagarminaga, Diego Asensio, and three operators.

GIBRALTAR (UK)

(British Crown colony)

Population:	27,086
Land Area:	6.5 sq km (2.5 sq mi)
Tourist Arrivals:	72,000 (+9.09% on previous year)
Total Tourist Receipts:	$300 million USD

Main WW Species: Common dolphins, bottlenose dolphins, striped dolphins, sometimes orcas.

Year WW began: 1980.

Types of WW: Dolphins, boat-based.

GIBRALTAR WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	2,500	$52,000	$180,000
1994	10,000	$243,000	$850,000
1998	18,750	$450,000	$2,700,000

GIBRALTAR WW SOCIOECONOMIC PROFILE

WW Tourists

- Overseas tourists are mainly European, especially British. One in every six tourists goes dolphin watching.
- One operator reports 60% international (mostly European), with 30% domestic and 10% local.

WW Operators & the Trips They Offer

- There is one long-standing operator, offering trips since 1980, and four other operators, one an NGO. Capacity on the boats is estimated at 54,000 people a year.
- Most trips are several hours, but some multi-day packages are offered.

The WW Community

- The dolphin watching occurs from two different ports in the community.
- An NGO receives part of its profile and funds through dolphin watching.

WW Assessment

Considerable to outstanding potential. Gibraltar has the jump on the surrounding Andalucían coast where whale watching is just taking off and has greater potential due to the much larger area and tourism base. At present the prices are competitive but the tours themselves, with some notable exceptions, are generally of a higher standard in Gibraltar.

Acknowledgments
Mike Lawrence, Tom Walmsley, Eric Shaw, Renaud de Stephanis, and two operators.

PORTUGAL

República Portuguesa

Population:	9.8 million
Land Area:	91,950 sq km (35,502 sq mi)
Tourist Arrivals:	10,172,000 (+4.54% on previous year) (includes Azores)
Total Tourist Receipts:	$4,277 million USD (includes Azores)
GNP:	$109.5 billion USD
GNP per capita:	$11,010 USD

Main WW Species: Bottlenose dolphins.
Year WW began: Early 1980s.
Types of WW: Dolphins, boat-based, land-based, educational, photo-ID research.

PORTUGAL WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	Minimal	Minimal	Minimal
1998[27]	1,398	$31,000	$87,000

PORTUGAL WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall tourism is led by Spain (50%), UK (14%), Germany (9%), France (7%), and Netherlands (4%).
- Dolphin watchers are 40% national from all over Portugal and 60% international, primarily from Belgium, German and Holland and secondarily from France and the UK, with only a few from Spain, Scandinavia and the USA.

WW Operators & the Trips They Offer

- Dolphin watching in Portugal has been land-based and research-oriented for more than two decades. In 1998, operations started with tours using mainly inflatable boats to take people to see the dolphins with 96% success rate. The 3–4 hour tour features the Natural Reserve of the Sado Estuary as well as an introduction to its noted residents, the local bottlenose dolphins, many of whom are known by name through special markings.
- In 1999, there were two dolphin operators and three other companies offering boat sightseeing trips in the estuary which included dolphins. The tours operate nearly year-round.

[27] 1999 was first full year, so 1999 figures are used.

The WW Community

- One community offers access to dolphin watching in the Sado Estuary.
- The dolphin watching has been driven by photo-ID and other research. Two marine protected areas have been made at the Sado Estuary and Serra da Arrábida, partly in recognition of the resident dolphins (Hoyt 1997b).
- The tours use a slide presentation to give a good educational introduction to the dolphins and the ecology of the area.
- One company takes about 500 Portuguese students (age 8–18) per year, offering a special program that includes canoeing and a visit to the oceanographic museum.

WW Assessment

Moderate to considerable potential in Portugal. Expansion of dolphin watching in the Sado Estuary would need to proceed cautiously because of the confined area and other possible stresses on the population from ship traffic and pollution (Hoyt 1997b). There may be considerable potential for whale watching off the coast of the Algarve and in the Gulf of Cadiz, but it has yet to be developed.

Acknowledgments
Marina Sequeira, Raguel Gaspar, Maria Fonseca, and one operator.

AZORES ISLANDS (Portugal)

Arquipélago dos Açores
Açores

Population:	237,800
Land Area:	2,247 sq km (868 sq mi)
Tourism and other data included under Portugal	

Main WW Species: Sperm whales, bottlenose dolphins, spotted dolphins, common dolphins, Risso's dolphins, striped dolphins, short-finned pilot whales, various beaked whales.

Year WW began: 1989.

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

AZORES ISLANDS WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	1,000	$31,000	$664,000
1998	9,500	$582,000	$3,370,000

AZORES ISLANDS WW SOCIOECONOMIC PROFILE

WW Tourists

- In 1998, based on operator statistics, whale watchers were 1–2% local, 11% national (from Portugal), and nearly 88% international including France (24%), Germany (16%), United Kingdom (15%), and USA (14%).
- The majority of these whale watchers came to the Azores mainly or only to go whale watching.

WW Operators & the Trips They Offer

- In 1998, 6 companies and 12 boats offered whale watching while at least 3 unlicensed vessels operated mainly with underwater film crews (Gordon and Matthews 1999). By 1999, there were ten companies, most using rigid-hulled inflatable boats.
- 1,400 trips were taken to see whales in the five-month season.

The WW Community

- Two main communities/islands are involved in the whale watching.
- Some ex-whalers as well as young Azoreans are now employed in the whale watching industry as skippers, crew, or land-based spotters (Gordon and Matthews 1999). The old vigia huts, originally used for spotting whales for whaling, have been recovered and renovated.
- Two years before whale watching started, the last whales were killed in the Azores by whalers. One former whaler, now a whale watch employee, has said that whale watching is more enjoyable and lucrative for him personally, with a shorter work day. He does not miss whaling.
- There have been 8 to 12 new businesses starting up in the islands since 1993.
- Whale watching is becoming a key attraction for the islands, with the images of whales proliferating in tourist material, including some of the rare beaked whale species that can be seen from the Azores.

WW Assessment

There is outstanding potential — if the problems of managing the whale watching can be fully solved. As of 1999, the first part of the new whale watch regulations are now law in the Azores, but there is still a need for better regulation of boat numbers, licensing, and enforcement, as well as a need for a cooperative operators' association. Too many small, fast inflatable boats — competing to get to the whales in the main whale watch area south of Pico and Faial — will eventually have an adverse effect on the success of marine tourism, even if the sperm whales remain unaffected. A precautionary approach is strongly advised, and educational and scientific programs need to be expanded to add value to whale watching, without adding more boats.

Acknowledgments
Regional Tourism Office, Helena Fraga, and five operators.

MONACO

Principality of Monaco
Principauté de Monaco

Population:	32,000
Land Area:	1.95 sq km (0.75 sq mi)
Tourist Arrivals:	259,000 (+14.6% on previous year)
Total Tourist Receipts:	Unavailable
GNP:	$4.9 billion USD
GNP per capita:	$11,000 USD

Main WW Species: Fin whales, sperm whales, Cuvier's beaked whales, long-finned pilot whales, Risso's dolphins, striped dolphins, common dolphins, bottlenose dolphins.

Year WW began: Early 1990s.

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

MONACO WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	Minimal	Minimal	Minimal
1998	Minimal	Minimal	Minimal

MONACO WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, tourists to Monaco are led by Italy (30%), France (18%), and USA (11%).

WW Operators & the Trips They Offer

- Several operators have had trips departing from here on an infrequent basis, but this may soon change with the new sanctuary designation.

The WW Community

- One community has been involved in whale watching.

WW Assessment

Moderate to considerable potential. With the protection of the Ligurian Sea, whale watching may well grow here, although the Italian ports are more closely identified with the sanctuary, so they would be expected to have the bulk of future whale watchers to the region.

Acknowledgments
Giuseppe Notarbartolo di Sciara and Mauricio Wurtz.

ITALY

Repubblica Italiana

Population:	57.2 million
Land Area:	294,060 sq km (301,270 sq mi)
Tourist Arrivals:	34,087,000 (+3.76% on previous year)
Total Tourist Receipts:	$29,714 million USD
GNP:	$1,160 billion USD
GNP per capita:	$20,170 USD

Main WW Species: Fin whales, sperm whales, Cuvier's beaked whales, long-finned pilot whales, Risso's dolphins, striped dolphins, common dolphins, bottlenose dolphins.

Year WW began: 1988.

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

ITALY WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	200	$300,000	$300,000
1994	160	$81,000	$81,000
1998	5,300	$241,000	$543,000

[Some 1998 figures were incomplete so 1999 figures were used.]

ITALY WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, the main foreign tourist arrivals are from Switzerland (17%), France (16%), Germany (16%), Yugoslavia (15%), and Austria (9%).

• 75–80% of the whale watchers are from Italy, mainly northern Italy, with the balance led by Switzerland, Britain, Austria, Spain, and the USA.

WW Operators & the Trips They Offer

• One commercial and two NGO operators are at present offering day and week-long trips, respectively, during the summer season.

The WW Community

• Two communities (Genoa and Imperia) are mainly used, though other ports could be used in future.

• With the strong educational and scientific orientation of the trips, there have been numerous benefits which are expected to continue for the forseeable future.

• On November 25, 1999, France, Italy and Monaco signed an agreement for the creation of the Mediterranean Cetacean Sanctuary, the culmination of nearly a decade of work (Notarbartolo di Sciara 2000). Whale watching contributed to the impetus to establish this first international marine protected area for cetaceans.

• Tethys, a scientific NGO, has assisted by providing overall counsel and naturalists for the commercial whale watch trips out of Imperia.

WW Assessment

The higher profile from the cetacean sanctuary designation is expected to lead to greater expansion of the whale watch tours. This means outstanding potential for future whale watching both in terms of the Ligurian Sea and access to other areas of the Mediterranean. With the Italian marine research institute ICRAM taking a leading role in preparing whale watch regulations and policy for the sanctuary, there is hope that the whale watching here can maintain its high value, with solid educational and scientific benefits, as well as recreational and commercial benefits. There is a great new opportunity for the development of educational and scientific programs aboard NGO and commercial whale watch trips which will help bring the message of the sanctuary to the public and ensure the maximum socioeconomic benefits are achieved. Of course, Italy has a huge tourism base to draw on, with the world's fourth highest number of arrivals and the second highest tourism receipts.

Acknowledgments
Giuseppe Notarbartolo di Sciara, Elena Politi, and two operators.

CROATIA

Republic of Croatia
Republika Hrvatska

Population:	4.5 million
Land Area:	56,538 sq km (21,829 sq mi)
Tourist Arrivals:	3,834,000 (+44.73% on previous year)
Total Tourist Receipts:	$2,529 million USD
GNP:	$19.3 billion USD
GNP per capita:	$4,060 USD

Main WW Species: Bottlenose dolphins.
Year WW began: 1991.
Types of WW: Dolphins, boat-based, educational, photo-ID research.

CROATIA WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	60	$24,000	$24,000
1998	21	$15,000	$18,000

CROATIA WW SOCIOECONOMIC PROFILE

WW Tourists

- The dolphin watch participants are 19% from Croatia and 81% international, largely from Italy, Austria, Spain, and Slovenia.
- Overall, tourists to Croatia are led by Germany (24%), Italy (23%), and the UK (10%).

WW Operators & the Trips They Offer

- The operator is an NGO offering a chance for the paying public to join and participate in scientific expeditions to study dolphins.

The WW Community

- One community is involved in the dolphin watching.
- The whale watch program has contributed to awareness of the need for protection of the dolphins. The researchers running the tours assembled a management plan for the area and, in May 1995, the Croatian government designated the core habitat area for the bottlenose dolphins as a marine sanctuary (Hoyt 1997b).

WW Assessment

Moderate to considerable potential. There has been some commercial dolphin watching here, and the NGO operator/research institute from Italy has worked with a Croatian group to pass on its knowledge of dolphin watching and research. Daily naturalist-led trips were set to begin from the island of Losinj in the 2000 season. For now it is a pilot project and regulations and observation guidelines will be designed to protect the dolphins. With the fairly small population of dolphins, great care will need to be taken.

Acknowledgments
Giovanni Bearzi, Giuseppe Notarbartolo di Sciara, Elena Politi, and Caterina Fortuna.

GREECE

Hellenic Republic
Elliniki Dimokratia

Population:	10.6 million
Land Area:	130,850 sq km 50,521 sq mi)
Tourist Arrivals:	10,070,000 (+9.07% on previous year)
Total Tourist Receipts:	$3,771 million USD
GNP:	$122.4 billion USD
GNP per capita:	$11,640 USD

Main WW Species: Bottlenose dolphins, common dolphins, striped dolphins, sperm whales.
Year WW began: Late 1980s.
Types of WW: Whales, dolphins, boat-based, cruise ships, educational, photo-ID research.

GREECE WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	80	$36,000	$36,000
1998	3,678	$140,000	$261,000

GREECE WW SOCIOECONOMIC PROFILE

WW Tourists

- Most are international, outside of Greece, who come specifically to go dolphin watching and to assist in photo-identification research. However, two of the smaller operators attract 50% of their students from Greece, followed by Switzerland, the UK, Italy, France, USA, Spain, and Cyprus.
- Overall, tourists to Greece are led by Germany (21%), UK (18%), Italy (5%), France (5%), and the Netherlands (5%).

WW Operators & the Trips They Offer

- There are three operators (working from research institutes or NGOs) offering a chance for the paying public to join and participate in expeditions to study and watch whales and dolphins, as well as two operators offering dolphin trips.
- Four operators feature dolphins, in the Aegean and Ionian Sea and between Corfu and Cephalonia and off southwest Crete. Sperm whale trips are also offered off Crete. There is also some dolphin watching from cruise ships and sailing charters but to an unknown extent. The commercial trips last 3 hours; the eco-volunteer trips are usually a week or ten days.

The WW Community

- Three communities are involved in dolphin or whale watching. One village in southwest Crete has two dolphin-spotting operations.
- Excellent monitoring and baseline data profiles for cetaceans are being collected through part of Greek waters.
- These and other Greek communities advertise the availability of dolphins, and souvenir shops sell arts and crafts based on dolphins.

WW Assessment

Moderate to considerable potential. Greece is still one of the major tourism countries (current ranking: 18th), though its ranking in world tourism has fallen particularly when measured by earnings. There has been casual dolphin spotting since the 1980s but dolphin and whale watching research, with a commercial element benefiting research, only started to gather steam in the late 1990s. In addition, the first purely commercial dolphin-spotting trips began working 5 months of the year from southwest Crete. There is certainly potential for more marine ecotours including commercial dolphin and sperm whale watching. The existing commercial dolphin tours travel through an area of high sperm whale concentration but miss most of the sightings because they have no hydrophone to locate the whales.

Acknowledgments
Elena Politi, Alexandros Frantzis, Aimilia Drougas, and two operators.

CYPRUS

Greek Republic of Cyrpus
Kypriakí Dimokratía

Population:	766,000
Land Area:	9,251 sq km (3,572 sq mi)
Tourist Arrivals:	2.088,000 (+7.08% on previous year)
Total Tourist Receipts:	$1,639 million USD
GNP:	$7.5 billion USD
GNP per capita:	$9,400 USD

Main WW Species: Bottlenose dolphins, common dolphins, striped dolphins.
Year WW began: Late 1990s.
Types of WW: Dolphins, boat-based, educational, photo-ID research.

CYPRUS WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	Minimal	Minimal	Minimal

CYPRUS WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, tourists to Cyprus are led by the UK (47%), Germany (8%), and Switzerland (5%).

WW Operators & the Trips They Offer

- In the late 1990s, one NGO operator based in Greece began offering trips that included cetacean surveys through the waters of Cyprus. The sailboat sometimes docks in the South and students from Cyprus join the boat. At present, the operator is not allowed to offer "official" whale or dolphin watch trips; instead the trips are considered surveys which students or the public can participate in. The participants typically spend a week on the sailboat.

The WW Community

- No communities yet are involved in the dolphin watching.
- The existing cruises are providing valuable monitoring and baseline data on cetaceans for Cyprus waters.

WW Assessment

Moderate potential. The tourists are here in some numbers, but if commercial dolphin watching is developed, it is hoped that the NGOs can contribute naturalists and help advance the scientific monitoring and information-gathering program.

Acknowledgments
Aimilia Drougas and Alexandros Frantzis.

AFRICA

AREA-WIDE SUMMARY
Number of countries & territories involved in commercial whale watching: 13 (up from 8 in 1994).
Number of communities involved in whale watching: 40 (up from 17 in 1994).

AFRICA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	46,150	$1,150,000	$4,146,000
1994	282,550	$7,379,000	$26,647,000
1998	1,547,550	$19,022,000	$134,904,000

Average annual % increase 1991–94: 82.9%.
Average annual % increase 1994–98: 53%.

CANARY ISLANDS (Spain)

Islas Canarias

Population:	1.6 million
Land Area:	7,242 sq km (2,796 sq mi)
Tourism and other data included under Spain	

Main WW Species: Short-finned pilot whales, bottlenose dolphins. Operators who venture farther offshore see sperm whales, Bryde's whales, sei whales, various beaked whales, common dolphins, spotted dolphins, rough-toothed dolphins, false killer whales.

Year WW began: Late 1980s.

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

CANARY ISLANDS WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	40,000	$1,144,000	$4,004,000
1994	250,000–600,000	$7,150,000	$25,025,000
1998	1,000,000	$17,770,000	$62,195,000

CANARY ISLANDS WW SOCIOECONOMIC PROFILE

WW Tourists

- Whale watchers are mostly foreign visitors (British, German, other European) as well as nationals from the Spanish mainland.
- Although some visitors go to the Canary Islands specifically for whale watching, the vast majority are there on a sun and sand holiday and go whale watching as a diversion.

WW Operators & the Trips They Offer

- In 1997, 27 operators or companies were authorized but only 24 were active, carrying 2,178 passengers on some 42 boats from the four marinas on Tenerife (Urquiola, Martin and Iani, in press).

- In 1998, an average of 18 boats a day were on the water in the main whale watch area, with a maximum of 25 boats in October, with each boat running 2–4 trips per day (Urquiola, Martin and Iani, in press). In 1998, the total number of whale watch trips off Tenerife was 15,000 to 20,000.
- Unit price ranged from 2,500 pesetas (ESP) ($14.81 USD) to 4,000 pesetas ($23.69 USD) for most operators, though some value-added trips (aboard sailboats, offering food, etc.) cost 5,000 to 10,000 pesetas or more. A conservative figure of 3,000 pesetas ($17.77 USD) was chosen as the usual ticket price for this analysis.
- The number of boats has grown from 10 in the early 1990s to 50 currently. Since regulations came in after 1995, the number of vessels has stayed about the same. However, 10% of the vessels have been replaced by new ones with much larger capacity. Catamarans, with their much higher passenger capacity, account for 50% of all whale watching measured by number of passengers.
- To date, the limit to whale watching operators and boats has been based more on the availability of dockings for boats in the marinas than on best policy.
- Most operators offer non-educational trips. Several, however, have enhanced the value of the trips considerably by adding naturalists, hydrophones, and supporting scientific programs.

The WW Community

- Whale watching is offered from five communities: three on the south or southwest coast of Tenerife, one community on La Gomera, and one on Gran Canaria.
- With 315 of 365 days of the year suitable for whale watching, the potential economic benefits are substantial.
- Since whale watching regulations were instituted in the late 1990s, outside or unscrupulous operators have been largely eliminated, so most of the revenues from whale watching now accrue to those operators resident in the Canary Islands. The community benefit from whale watching in a large tourism-oriented island is not as obvious as in a small community, but whale watching expenditures must be having an impact on the local economy.
- The scientific community in the Canary Islands has also benefited with extensive opportunites for research. In 1993, the Society for the Study of Cetaceans in the Canary Archipelago (SECAC) was founded as a nonprofit organization to focus on research, conservation and dissemination of knowledge about the cetaceans of the Canary Islands (Urquiola, Martin and Iani, in press).
- Partly as a result of reaction to the intense whale watching activity, there have been moves to recommend a marine protected area for the waters frequented by the pilot whales and bottlenose dolphins. This could provide valuable conservation as well as name-branding to help create higher quality whale watching. At present, various areas are being considered as special areas of conservation (SACs) under EU rules.

WW Assessment

The explosive numbers of pilot whale watchers from Tenerife in the Canary Islands — at least 250,000 in 1994 (though estimates ranged as high as 600,000) and current annual numbers of at least 1 million people — may well be a situation beyond carrying capacity. Regulations and enforcement have been put in place with mixed results. Canary Islands whale watching — offered 300+ days a year — is concentrated on probably the most intensively watched population of whales in the world, in terms of the number of people who see them and the number of hours they are watched per day and per year.

Bottlenose dolphin watching has also started up on La Gomera; a variety of other whales and dolphins can be seen some kilometers offshore from the islands but have been little visited due to the close presence of the pilot whales and bottlenose dolphins. The potential for further development, particularly for high quality tours to see other whale species, remains outstanding, but education, science and conservation must become a key part of whale watching here in order for it to be successful with the maximum socioeconomic benefit and the least social and environmental cost.

Acknowledgments
Erika Urquiola, Giuseppe Notarbartolo di Sciara, and four operators.

EGYPT

Arab Republic of Egypt
Jumhuriyat Misr al-Arabiya

Population:	65.7 million
Land Area:	995,450 sq km (384,343 sq mi)
Tourist Arrivals:	3,657,000 (+3.66% on previous year)
Total Tourist Receipts:	$3,727 million USD
GNP:	$72.1 billion USD
GNP per capita:	$1,200 USD

Main WW Species: Spotted dolphins, bottlenose dolphins, Risso's dolphins, Indo-Pacific humpbacked dolphins.
Year WW began: Early 1990s.
Types of WW: Dolphins, boat-based, cruise ships, land-based, swimming.

EGYPT WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	Minimal	Minimal	Minimal
1998	10,000	$100,000	$425,000

EGYPT WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, tourists to Egypt are led by Saudi Arabia (9%), Germany (9%), UK (9%), Israel (8%), and Libya (6%).

WW Operators & the Trips They Offer

- Diving boats sometimes include dolphin sightings in the Red Sea, but the biggest development has been the tours to see a solitary dolphin, using a variety of small boats and swimming tours, plus watching from land.

The WW Community

- One community has been associated with the dolphin watching, and many small businesses have been started by the local Bedouins.
- The Bedouins are said to consider the solitary dolphin a gift from Allah.

WW Assessment

Moderate potential. Dolphin watching is growing in the Red Sea where there is substantial tourism development and many diving-oriented tours. Of concern, however, is the solitary dolphin Holly who lost her calf in July 1997, and has since had a second calf. The Bedouins have restricted the use of boats and limited the number of swimmers to 5–7 at a time. In any case, a dolphin watch tourism industry cannot be built long-term on a solitary dolphin though much has been learned here about the possibilities.

Acknowledgments
Dan Kerem, Oz Goffman, and Abeidalla Mekiten.

MAURITANIA

Islamic Republic of Mauritania
République Islamique Arabe et Africaine de Mauritanie

Population:	2.5 million
Land Area:	1,025,520 sq km (395,953 sq mi)
Tourist Arrivals:	No figures
Total Tourist Receipts:	$11 million USD
GNP:	$1.1 billion USD
GNP per capita:	$440 USD

Main WW Species: Bottlenose dolphins, Atlantic humpbacked dolphins, orcas.
Year WW began: Early 1990s.
Types of WW: Dolphins, land-based.

MAURITANIA WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	50	Minimal	Minimal
1998	50	Minimal	Minimal

MAURITANIA WW SOCIOECONOMIC PROFILE

WW Tourists

- 100% international, mainly from France. Usually independent travellers and researchers with a few French naturalist tour groups (Hoyt 1997a).

WW Operators & the Trips They Offer

- Mostly land-based but some sailboat trips are offered by local people within the Parc National du Banc D'Arguin.

The WW Community

- Two communities sometimes host the dolphin watchers.

WW Assessment

There is moderate future potential to develop dolphin watching within the park and with the assistance of the villagers and the Imraguen fishermen who work with the dolphins cooperatively fishing, but it would need to be very carefully structured so as not to have an adverse impact on the relationship the fishermen have with the dolphins. Yet the most serious obstacle to future cetacean tourism may be the high level of offshore dolphin by-catch. With the designation of the park as a world heritage site, there is more opportunity to attract world interest and to try to manage the fishing, tourism, and other activities in and around the park.

Acknowledgments
Michel Vely, Koen Van Waerebeek, and Jean Worms.

GAMBIA

Republic of Gambia

Population:	1.9 million
Land Area:	10,000 sq km (3,861 sq mi)
Tourist Arrivals:	84,000 (+9.09% on previous year)
Total Tourist Receipts:	$32 million USD
GNP:	$407 million USD
GNP per capita:	$340 USD

Main WW Species: Bottlenose dolphins.
Year WW began: 1995.
Types of WW: Dolphins, boat-based.

GAMBIA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	1,000+	$30,000	$105,000

GAMBIA WW SOCIOECONOMIC PROFILE

WW Tourists

- The dolphin watchers are reported to be mainly foreigners with only a few local people.
- According to general tourism figures for the country, most of the visitors are from the United Kingdom (67%), Germany (8%), and Sweden (7%).

WW Operators & the Trips They Offer

- Three operators, employing four boats ranging from a 22 m (72 ft) motor cruiser to a small outboard motor boat, were offering daily nearly year-round dolphin watch tours in 1998 (Hoyt 1997a; Van Waerebeek *et al*. 1999). Prices for the tours varied by operator and by season but 350 GMD ($29.64 USD) was a common price.

The WW Community

- The dolphin trips leave from three different communities/ports on the river.
- The main operator collects data on the dolphins in the Gambia River valuable for understanding their movements and future management (Van Waerebeek *et al*. 1999).

WW Assessment

Considerable potential, some of it now being realized, for long-term dolphin tourism. There is also a future possibility of whale watching as unidentified small to medium-size whales, possibly minke whales, are being reported regularly by fishermen 10 km (6 mi) west of Sanyang (Van Waerebeek *et al*. 1999).

Acknowledgments
Koen Van Waerebeek and one operator.

SENEGAL

République de Sénégal

Population:	9 million
Land Area:	192,530 sq km (74,336 sq mi)
Tourist Arrivals:	300,000 (+6.38% on previous year)
Total Tourist Receipts:	$160 million USD
GNP:	$4.78 billion USD
GNP per capita:	$540 USD

Main WW Species: Bottlenose dolphins, long-beaked common dolphins, Atlantic humpbacked dolphins.
Year WW began: Late 1990s.
Types of WW: Dolphins, boat-based.

SENEGAL WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	Minimal	Minimal	Minimal

SENEGAL WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall tourism is led by France (57%), Italy (7%), and Germany (6%).

WW Operators & the Trips They Offer

- Boat tours announce dolphin sightings and at least one company advertises its ability to find dolphins, but there are no regular, dedicated dolphin watch tours.

The WW Community

- No communities are supported by dolphin watching.

WW Assessment

Moderate potential for future dolphin watching. The tourism infrastructure is good but dolphin sightings have reportedly declined in the late 1990s perhaps due to too many by-catches.

Acknowledgments
Koen Van Waerebeek and Thomas Jefferson.

NAMIBIA

Republic of Namibia

Population:	1.7 million
Land Area:	824,290 sq km (318,260 sq mi)
Tourist Arrivals:	502,000 (+23.95% on previous year)
Total Tourist Receipts:	$336 million USD
GNP:	$3.4 billion USD
GNP per capita:	$2,110 USD

Main WW Species: Heaviside's dolphins, bottlenose dolphins, southern right whales (occasionally).
Year WW began: 1998.
Types of WW: Dolphins, boat-based.

NAMIBIA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	7,000	$216,000	$756,000

NAMIBIA WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, tourism is led by South Africans (61%), Germans (12%), and Angolans (5%).
- The dolphin watchers are 10% from Namibia and 90% foreigners which comprise Germans (70%), French (10%), Italian (10%), and South African (10%).

WW Operators & the Trips They Offer

- Three operators offer dolphin and seal tours, two using motor cruisers and one using kayaks.

The WW Community

- One community, Walvis Bay, is involved in dolphin watching.

WW Assessment

Moderate to considerable potential. Tourism infrastructure is lacking yet any tourism development will have to be carefully controlled so as not to have a negative impact on Namibia's fragile desert ecology. There are plans to limit tourism to 300,000 people per year.

Acknowledgments
G. Kruger and one operator.

SOUTH AFRICA

Republic of South Africa
Republiek van Suid-Afrika

Population:	44.3 million
Land Area:	1,222,081 sq km (471,845 sq mi)
Tourist Arrivals:	5.4 million (+10% on previous year)
Total Tourist Receipts:	$2,297 million USD
GNP:	$130,200 million USD
GNP per capita:	$3,210 USD

Main WW Species: Southern right whales, Heaviside's dolphins, humpback whales, Bryde's whales, orcas, bottlenose dolphins, Indo-Pacific humpbacked dolphins.

Year WW began: Early 1980s; boat-based whale watching, 1999 (early 1990s unofficially).

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

SOUTH AFRICA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	6,000	None	$121,000
1994	25,000	$29,000	$512,000
1998	510,000	$311,000	$69,186,000

SOUTH AFRICA WW SOCIOECONOMIC PROFILE

WW Tourists

- On average 77% of the whale watch boat tourists in 1999 came from outside South Africa and 17% from within South Africa not including 6% who were local.
- The international tourists were mostly European, especially German and British, followed by Dutch and Americans. There were smaller numbers from Switzerland, Sweden, Denmark, Austria, France, and Canada. Overall, however, South Africa's visitors were largely African including Lesotho (30%), Zimbabwe and Swaziland (14% each), and Botswana (10%).
- Operators noted that whale watch visitors spent from R50 to 100 (ZAR) (about $8 to $16 USD) in addition to a boat trip. This does not include travel or accommodation.
- For land-based whale watching at Hermanus, it was estimated that visitors spent R500 (ZAR) ($79 USD) per day for an average three-day stay.

WW Operators & the Trips They Offer

- 15 boat-based operators were given permits to start whale watching in 1999, one per area. All but one carried out operations. 28 people were employed full-time and 34 part-time. In total, 6,176 boat-based whale watchers spent $174,500 USD on direct expenditures and an estimated $1,175,300 USD on total expenditures.
- Previously, illegal boat-based whale watching had been occuring since the early 1990s, and at least 6 illegal operators were reported to be operating in 1999, with at least another 6 jobs, and estimates of 6,740 whale watchers spending an estimated total of $1,282,600 USD. The 1998 estimated number of whale watchers on boats was at least 10,000 with expenditures of $1,903,000 USD.
- Most boat-based operators have no naturalist on board. One of the operations that always carries naturalists is also one of the more successful, combining education and research as part of the tour. This operation effectively funds scientific research as well as marine education in the community.

- Three operators offered land-based tours, escorting about 300 people with total expenditures of $28,800 USD.
- Although land-based whale watching occurs from more than a dozen communities along the coast, only the estimated numbers from Hermanus are included here.

The WW Community

- At least 20 communities are now involved in whale watching in South Africa. Most except for Hermanus are at the beginning stages but should experience benefits from the growth of the boat-based whale watch sector over the next few years.
- Since the early 1990s, the mobile telephone network, MTN, has sponsored a "whale route" accompanied by an international tourism campaign to promote the viewing of southern right whales and various dolphins in nearshore waters along much of the South African coast. In recent years, the MTN Whale Route has grown in stature, extent, and impact. It now extends for 2,000 km (1,243 miles) along the coast and includes numerous land- and boat-based whale watch locales, different cultures, scenery and other wildlife opportunities. The MTN Whale Hotline offers information on whale sightings along the coast. MTN has also sponsored an extensive network of whale interpretive signs at good viewing sites (Cockcroft and Joyce 1998).
- SATOUR, the national South African tourism agency, has added the southern right whale to its Big Five list of large charismatic land animals; it's now the Big Six.
- Hermanus has been completely transformed by land-based whale watching. Between 1991 and 1998, 120 new businesses (restaurants, souvenir shops, accommodation, tour companies) have been started in the town.
- In September, Hermanus' annual MTN Whale Festival provides 11 days of art shows, music, theatre, sports, and flower exhibitions to supplement the whale watching. It attracts thousands of people for each day of the festival.
- On Market Square, in Hermanus, Whale House was recently built as a visitor attraction with a museum complex, including lecture rooms and displays.
- Many coastal communities are effectively taking advantage of whale interest, using the high-profile attraction of the whales to draw visitors who not only go whale watching but may play golf, visit vineyards, and go fishing and hiking. Whales are also effectively extending traditional tourism seasons in some areas, due to their presence partly outside of the main tourist season.
- Overall, tourism is expected to grow dramatically with 450,000 new jobs predicted by 2005; whale watching represents a small but important part of this growth.

WW Assessment

Outstanding potential. With boat-based whale watching now being introduced to most sectors of the coast, the stage is set for dramatic future growth which will build on, not take away from, the superb land-based whale watching at Hermanus and in other communities. Continuing careful management of the resource and the boat operators through permits and monitoring to ensure compliance with regulations will aid the development of a solid, growing industry over the next few years.

Acknowledgments
Darden Lotz, Greg Vogt, Herman van Oosthuizen, Jeanne van Antwerpen, Brian Ancketill, Vic Cockcroft, and 20 operators.

MOZAMBIQUE

People's Republic of Mozambique
República Popular de Moçambique

Population:	18.7 million
Land Area:	784,090 sq km (302,737 sq mi)
Tourist Arrivals:	No figures available (minimal)
Total Tourist Receipts:	No figures available (minimal)
GNP:	$2.41 billion USD
GNP per capita:	$140 USD

Main WW Species: Bottlenose dolphins, Indo-Pacific humpbacked dolphins, spinner dolphins, humpback whales.
Year WW began: Late 1990s.
Types of WW: Dolphins, large whales, boat-based, swimming.

MOZAMBIQUE WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	500+	$100,000	$150,000

MOZAMBIQUE WW SOCIOECONOMIC PROFILE

WW Tourists

- Nearly all South African.

WW Operators & the Trips They Offer

- Several South African operators have crossed the border to offer whale watch trips, mainly for dolphins, operating from beach resorts and fishing villages south of Maputo near the South African border, but currently there is only one main operator offering dolphin tours. In Mozambique, the tours are unrestricted and require no permits — unlike the requirements in South African waters.

The WW Community

- One fishing village/resort area has whale watching at present, but revenues are almost completely leaking out of the country to South Africa due to the origin of the operators, and the package deal they offer.

WW Assessment

In the 1970s, the tourism industry attracted 300,000 visitors a year, mainly from South Africa and Rhodesia, but most of this collapsed with the civil war and was only beginning to recover when storms and floods struck in early 2000. It will take help from the outside world, but there remains considerable potential for planning and developing marine tourism in Mozambique that would have substantial benefits for the communities. The dolphin watch/swim operation by the South African operator appears to offer negligible benefit to Mozambique or to the dolphins themselves, and the Mozambiquan authorities and an NGO were trying to close down the operation. In future, there may be even greater potential for whale watching in the Bazaruto archipelago, which has been set aside as a land and marine protected area, and has a growing nature tourism industry which already employs some 2,600 island residents. This could provide the setting for future whale and dolphin watch trips developed internally with maximum socioeconomic value (Hoyt 1997a).

Acknowledgments
Vic Cockcroft, Herman Oosthuizen, and Ken Findlay.

MADAGASCAR

Democratic Republic of Madagascar
Repoblika Demokratika n`i Madagaskar

Population:	16.3 million
Land Area:	587,041 sq km (226,656 sq mi)
Tourist Arrivals:	101,000 (+21.69% on previous year)
Total Tourist Receipts:	$73 million USD
GNP:	$3.58 billion USD
GNP per capita:	$250 USD

Main WW Species: Humpback whales, bottlenose dolphins, spinner dolphins, Indo-Pacific humpbacked dolphins, sperm whales.

Year WW began: 1988.

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

MADAGASCAR WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	150	$6,000	$21,000
1994	7,500	$200,000	$1,110,000
1998	4,000	$120,000	$774,000

MADAGASCAR WW SOCIOECONOMIC PROFILE

WW Tourists

- Approximately 20% are domestic visitors and 80% are international.

WW Operators & the Trips They Offer

- 12 operators range from small sportsfishing boats to hotels offering special trips on sailboats.

The WW Community

- Three communities offer some whale watching revolving around the peak humpback whale season of July to September but the main community is on Ile Sainte Marie. The benefits mainly accrue to hotel owners and sportsfishing operators.
- To some extent whale watching complements the land-based nature tourism (lemurs and other endemic fauna and flora), but there is substantial room for further development and increasing the socioeconomic benefits within communities.

WW Assessment

Considerable potential. Naturalists and educational programs have yet to be developed and would add considerably to the value.

Acknowledgments
Jean-Jacques Ravello, Michel Vely, Rod Salm, Olivier Langrand, Stephen Leatherwood, Pieter Folkens, Voara Randrianasolo, and one operator.

MAURITIUS

Republic of Mauritius

Population:	1.2 million
Land Area:	1,860 sq km (718 sq mi)
Tourist Arrivals:	536,000 (+10.06% on previous year)
Total Tourist Receipts:	$475 million USD
GNP:	$4.4 billion USD
GNP per capita:	$3,870 USD

Main WW Species: Tropical dolphins.
Year WW began: Early 1990s.
Types of WW: Dolphins, boat-based.

MAURITIUS WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	Minimal	Minimal	Minimal
1998	Minimal	Minimal	Minimal

MAURITIUS WW SOCIOECONOMIC PROFILE

WW Tourists

- Tourists to Mauritius are mainly 27% from France, 19% from Réunion, and 10% from South Africa.

WW Operators & the Trips They Offer

- Tours are charters or diving trips which encounter cetaceans in the course of other activities.

The WW Community

- No communities are involved yet in whale watching.

WW Assessment

Moderate potential, in view of previous cetacean surveys; however, it may be time for a new survey. Tourism has increased dramatically since the early 1990s. With the popularity of big game fishing and other water sports, and the many large, half-full hotels, cetacean watching may well have potential for attracting new tourists to the island.

Acknowledgments
Vic Cockcroft.

TANZANIA

United Republic of Tanzania
Jamhuri ya Muungano wa Tanzania

Population:	32.2 million
Land Area:	886,040 sq km (342,100 sq mi)
Tourist Arrivals:	347,000 (+10.16% on previous year)
Total Tourist Receipts:	$392 million USD
GNP:	$6.6 billion USD
GNP per capita:	$210 USD

Main WW Species: Bottlenose dolphins, Indo-Pacific humpbacked dolphins.
Year WW began: Early 1990s.
Types of WW: Dolphins, boat-based.

TANZANIA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	Minimal	Minimal	Minimal
1998	15,000	$375,000	$1,313,000

TANZANIA WW SOCIOECONOMIC PROFILE

WW Tourists

• The tourists are mostly international (American, British, other Europeans) on holiday in Tanzania or Zanzibar who then come to Kizimkazi specifically to watch dolphins.

WW Operators & the Trips They Offer

• Trips offered mainly aboard traditional wooden fishing boats although some fishermen now operate newer fiberglass boats. The dolphins are year-round residents, but the best season for weather and tourists is October to February. There is some watching throughout the year.

The WW Community

• The dolphin watching occurs in one main community — Kizimkazi, Zanzibar — where the dolphin watching has contributed to a new tourism economy.

• The fishermen and other villagers are protective toward the dolphins. In 1997, Kizimkazi residents, fearing for the dolphins' health, helped arrest fishermen from Dar es Salaam who were using dynamite (Else 1998).

• An information center has been set up and several businesses have developed, catering to the visiting dolphin watchers.

• Direct expenditures for tours booked in the community go largely to the operators, but income from bookings made in Zanzibar Town or from hotels on the East Coast, which may be sold as a package including transportation, are split between the booking hotel or agency and the community.

WW Assessment

Considerable potential. The dolphin watching is already contributing significantly to the socioeconomic welfare of one community. One-third of Tanzania is national park or game reserve, so many visitors are already coming to see Tanzania's protected wildlife. The Zanzibar Government's Commission for Natural Resources is studying the

dolphin tourism and is implementing management guidelines in order to ensure the long-term benefits of dolphin tourism.

Acknowledgments
Stephen Leatherwood and one operator.

KENYA

Republic of Kenya
Jamhuri ya Kenya

Population:	29 million
Land Area:	566,970 sq km (218,907 sq mi)
Tourist Arrivals:	1,00l,000 (-0.2% on previous year)
Total Tourist Receipts:	$377 million USD
GNP:	$9.7 billion USD
GNP per capita:	$340 USD

Main WW Species: Humpback whales, tropical dolphins.
Year WW began: Mid-1980s.
Types of WW: Large whales, dolphins, boat-based, educational.

KENYA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	Minimal	Minimal	Minimal
1998	Minimal	Minimal	Minimal

KENYA WW SOCIOECONOMIC PROFILE

WW Tourists

- According to WTO figures for all tourism, tourists are coming from Germany and the UK (15% each), Tanzania (12%), Uganda (8%), and USA (7%).

WW Operators & the Trips They Offer

- Diving operators have offered the trips sporadically; usually, the dolphins are seen as part of the dive tours.

The WW Community

- The trips have been offered largely out of Mombassa, as well as in the marine park at Casiti.

WW Assessment

Moderate potential for developing dolphin and whale watching along the coast. Oceanic Society Expeditions has led tours here in the past, but most dolphin watching is currently conducted as part of dive tours. According to WTO, overall tourism to Kenya is down significantly after the boom of the 1980s. This has been at least partly due to reports of instability and violence in the country. The government continues to recognize the vital importance of wildlife conservation to the tourist industry, but the competition in land use between agricultural use and national reserves is difficult to resolve, especially with one of the highest population growth rates in the world in recent years.

Acknowledgments
Birgit Winning, Stephen Leatherwood, and Vic Cockcroft.

ERITREA

State of Eritrea

Population:	3.5 million
Land Area:	93,680 sq km (36,170 sq mi)
Tourist Arrivals:	410,000 (–1.68% on previous year)
Total Tourist Receipts:	$75 million USD
GNP:	$852 million USD
GNP per capita:	$230 USD

Main WW Species: Spinner dolphins, spotted dolphins, bottlenose dolphins, common dolphins, Indo-Pacific humpbacked dolphins.

Year WW began: 1997.

Types of WW: Dolphins, boat-based, educational.

ERITREA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	Minimal	Minimal	Minimal

ERITREA WW SOCIOECONOMIC PROFILE

WW Tourists

- No information.

WW Operators & the Trips They Offer

- Diving tours and charters.

The WW Community

- No communities are involved in whale watching, but diving tours along the Red Sea coast have taken people to the Dahlak Islands with regular dolphin encounters as part of the trip.

WW Assessment

War with Ethiopia has interrupted the budding tourism industry, but there is moderate potential for future cetacean tourism.

Acknowledgments
Giuseppe Notarbartolo di Sciara.

ASIA

AREA-WIDE SUMMARY
Number of countries & territories involved in commercial whale watching: 13 (up from 12 in 1994).
Number of communities involved in whale watching: 45 (up from 32 in 1994).

ASIA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	10,992	$371,000	$4,748,000
1994	73,192	$3,887,000	$24,601,000
1998	220,165	$7,735,000	$44,704,000

Average annual % increase 1991–94: 88.1%.

Average annual % increase 1994–98: 31.7%.

RUSSIA

Russian Federation
Rossiskaya Federatsiya

Population:	147.2 million
Land Area:	17,075,400 sq km (6,592,812 sq mi)
Tourist Arrivals:	15,350,000 (+5.23% on previous year)
Total Tourist Receipts:	$6,900 million USD
GNP:	$394.9 billion USD
GNP per capita:	$2,680 USD

Main WW Species: Taymyr Peninsula: belugas; Franz Josef Land, Novaya Zemlya, Severnaya Zemlya: bowhead whales, belugas, narwhals; eastern Siberia/Kamchatka: gray whales, orcas, belugas.

Year WW began: 1992.

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

RUSSIA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	100+	$300,000	$350,000
1998	Minimal	Minimal	Minimal

RUSSIA WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, tourists come from Georgia (21%), Poland (11%), Finland (9%), Lithuania (9%), and Mongolia (8%).

WW Operators & the Trips They Offer

- Lindblad Special Expeditions, Zegrahm Expeditions, and Society Expeditions have taken their up to 110-passenger cruise ships on nature and wildlife cruises off Siberia and Kamchatka. The summer cruises always log whale sightings but they are a minor part of the trip so they will not be counted here.
- Cruises aboard the icebreakers *Professor Molchanov, Kapitan Dranitsyn* and *Yamal* offer 13- to 20-day tours of the Russian Arctic archipelagoes, Franz Josef Land, Novaya Zemlya and Severnaya Zemlya, and the Taymyr Peninsula. Inflatable Zodiacs are used to see whales up close. Helicopters are also sometimes used to find or view whales (Arcturus Expeditions, Quark Expeditions, Noble Caledonia).
- Some beluga watching occurs from small boats and land on the Taymyr Peninsula. On the White Sea in northwestern Russia, on Solovetskij Island, land-based whale watch tours are being advertised for summer 2000.

The WW Community

- No communities are yet involved in whale watching, as the whale watching has been largely offshore from self-contained ships.

WW Assessment

Moderate to considerable potential. The logistics are sometimes difficult and the prices expensive, but the conversion of some Russian ice-breakers to tourism, and the use of helicopters, have opened up the western Russian Arctic. Off Siberia and Kamchatka, there is substantial potential for whale-oriented trips that could promise orca, gray and bowhead sightings. The trips would be best based from land or include substantial land segments, so that tourism expenditures would accrue to local people. In the White Sea and at the mouths of the rivers on the Taymyr Peninsula in summer, there is good beluga watching possible from shore and in small boats.

Acknowledgments
Rauno Lauhakangas, Art Cooley, and Alexander M. Burdin.

TURKEY

Republic of Turkey
Türkiye Cumhuriyeti

Population:	63.8 million
Land Area:	769,630 sq km (297,154 sq mi)
Tourist Arrivals:	9,040,000 (+13.48% on previous year)
Total Tourist Receipts:	$8,088 million USD
GNP:	$199.4 billion USD
GNP per capita:	$3,130 USD

Main WW Species: Aegean Sea: striped dolphins, common dolphins, bottlenose dolphins, sperm whales; Black Sea: common dolphins, bottlenose dolphins, harbor porpoises.

Year WW began: 1994.

Types of WW: Dolphins, boat-based.

TURKEY WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	Minimal	Minimal	Minimal
1998	Minimal	Minimal	Minimal

TURKEY WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, tourism is led by Germany (15%), UK (9%), Romania (6%), Israel (5%), and USA (4%).

WW Operators & the Trips They Offer

- Dive operators and sail charters encounter dolphins regularly yet few advertise the possibilities.

The WW Community

- No communities are yet identified with dedicated whale watching.

WW Assessment

Considerable potential, especially for small cetaceans in the Aegean, but also some potential in the Black Sea.

Acknowledgments
Bayram Öztürk.

OMAN

Sultanate of Oman
Saltanat `Uman

Population:	2.5 million
Land Area:	212,460 sq km (82,030 sq mi)
Tourist Arrivals:	375,000 (+7.45% on previous year)
Total Tourist Receipts:	$108 million USD
GNP:	$10.6 billion USD
GNP per capita:	$4,820 USD

Main WW Species: Spinner dolphins, common dolphins, bottlenose dolphins, pantropical spotted dolphins. Also, sometimes: Risso's dolphins, false killer whales, dwarf sperm whales, sperm whales, humpback whales (Nov. to March), Indo-Pacific humpbacked dolphins.

Year WW began: 1996.

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

OMAN WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998[28]	4,700	$320,000	$500,000

OMAN WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall tourism arrivals to Oman are led by Europeans (39%), West Asians (17%) and Southeast Asians & Oceania nationals (15%).

[28] Estimates are based on a 12 month period in 1998–99.

• Dolphin watch tour companies report almost all passengers are European. The largest company reports about 80% Germans, followed by Swiss, Dutch, French, Swedish, Americans, and British. Omanis and other Arab state nationals have been recorded on the trips only a few times. One smaller company targets the local Asian community and expat holiday makers from Dubai, UAE.

• Some visitors are now being reported to come specifically for dolphin watching, or to return specifically for repeat dolphin trips, but generally dolphin watching is an incidental activity. Also, many of the tours include transport from the hotel to the boat, and breakfast and drinks on board. Thus the total expenditures here are lower than in other parts of the world.

WW Operators & the Trips They Offer

• The dedicated dolphin watching trips are mainly offered aboard fishing and other small boats (capacity 8 to 14 passengers per boat) to see inshore dolphins and occasionally whales. One hotel uses a large 36-foot boat adapted to dolphin watching which carries up to 20 passengers. In the 1997–98 season, there were four operators offering mainly dolphin watch trips, but in the 1998–99 season, it expanded to six operators. The trips last 2 to 4 hours.

• Season is year round but the peak season consists of 3–4 months between September and April.

• The six operators use at least 12 boats.

The WW Community

• One community is involved with whale watching: Muscat.

• The tours are offered partly through international hotels, and partly independent tour companies. The operators offer various other tours but dolphin watching is the most popular type of tour with at least several operators. Sometimes tourists who take the dolphin tours end up trying other tours that are offered.

WW Assessment

Considerable to outstanding potential. More research needs to be done on the humpback and other offshore whales which could provide significant additional attractions. The whales are definitely there but the operators are still relatively inexperienced at finding them reliably, although there is no trouble finding dolphins. Only one operation uses naturalists or scientists as guides. With more of a focus on developing educational trips, and legislating regulations to minimize any impact on cetacean populations, Oman could be the flagship whale watch country in the Arab world. In other areas of Oman, off the central and southern part of the country, according to Robert Baldwin, large cetaceans are even more common, and dolphins remain abundant, too, but, without much infrastructure outside of Muscat, trips would have to be long, self-contained day or overnight trips, preferably multi-day. Much will depend on how well the industry develops out of Muscat where they have the opportunity to create a long-term sustainable business.

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Robert Baldwin, Tim Collins, Gianna Minton, Andrew Spalton, and Vassili Papastavrou.

MALDIVES

Republic of the Maldives
Divehi Raajjeyge Jumhooriyaa

Population:	282,000
Land Area:	300 sq km (116 sq mi)
Tourist Arrivals:	366,000 (+7.96% on previous year)
Total Tourist Receipts:	$286 million USD
GNP:	$301 million USD
GNP per capita:	$1,180 USD

Main WW Species: Blue whales, sperm whales, and Bryde's whales; long-beaked spinner dolphins, pilot whales, Risso's dolphins, 10 other cetacean species.

Year WW began: 1998.

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

MALDIVES WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	30	$100,000	$149,000

MALDIVES WW SOCIOECONOMIC PROFILE

WW Tourists

- Tourism to the Maldives is led by Germany (24%), Italy (16%), and the UK (9%), but most of the whale watchers are currently from the UK. 10% of the whale watchers are domestic.

WW Operators & the Trips They Offer

- One operator at present offers a high quality, educational, multi-day trip. Package tours only are offered.
- Diving, tour and charter boats in the area also encounter dolphins in particular but these are not included in the above numbers.

The WW Community

- The trips move around the many islands (200 inhabited; nearly 1,000 uninhabited) protected by the reefs but are not based out of one community.
- Approximately 20 people are employed on a part-time basis.
- The trips are providing an awareness of the extensive whale and dolphin fauna around the islands and the cruises will provide base information on distribution and abundance, at minimum.

WW Assessment

Considerable potential. Tourism is already the largest source of foreign exchange, accounting for about 18% of GDP, and cetaceans could provide a new, key attraction.

Acknowledgments
Charles Anderson.

NEPAL

Kingdom of Nepal
Nepal Adhirajya

Population:	23.2 million
Land Area:	136,800 sq km (52,818 sq mi)
Tourist Arrivals:	418,000 (+6.09% on previous year)
Total Tourist Receipts:	$119 million USD
GNP:	$4.9 billion USD
GNP per capita:	$220 USD

Main WW Species: Susu (Ganges River dolphin).
Year WW began: 1993.
Types of WW: Dolphins, boat-based, land-based, educational, photo-ID research.

NEPAL WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	Minimal	Minimal	Minimal
1998	150+	$23,000	$29,000

NEPAL WW SOCIOECONOMIC PROFILE

WW Tourists

- Dolphin tourists were Nepali 10%, Australian 15% , European 30%, American 15%, Indian 5%, and other 25%.

WW Operators & the Trips They Offer

- Two operators offer tours which include dolphin watching. The main operation offers three-day wildlife package safaris, one day of which features river dolphin watching by raft.

The WW Community

- One community is involved in dolphin watching.
- Many people doing the dolphin tours stay at Dolphin Manor, a jungle tented camp.

WW Assessment

Moderate to considerable potential. New field study tours developed by the Whale and Dolphin Conservation Society (WDCS), which has supported continuing work on river dolphins, will help bring more foreign tourists to the area for "well balanced whale watching" including visits to nearby Royal Bardia National Park. However, the proposed construction of a high dam on the Karnali River hangs over the future of the river dolphins, ecotourism and the future of the communities in the area. The Karnali Basin is also home to endangered crocodiles, otters and turtles and the local Tharu people. Tigers, rhinoceroses and elephants live in neighboring Royal Bardia National Park. The tiny snail darter saved the Tennessee Valley in the USA, but will the marvelous susu achieve similar status in Nepal and India?

Acknowledgments
Alison Smith and Gajendra Bdr Jung Chettri.

INDIA (especially Goa)

Republic of India
Bharat

Population:	976 million (Goa: 1.3 million)
Land Area:	2,973,190 sq km (1,147,949 sq mi) (Goa: 3,701 sq km)
Tourist Arrivals:	2,048,000 (+2.61% on previous year)
Total Tourist Receipts:	$3,152 million USD
GNP:	$357 billion USD
GNP per capita:	$370 USD

Main WW Species: Goa: Indo-Pacific humpbacked dolphins.
Year WW began: 1993.
Types of WW: Dolphins, boat-based.

INDIA WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	3,600+	$19,000	$68,000
1998	25,000	$150,000	$525,000

GOA (INDIA) WW SOCIOECONOMIC PROFILE

WW Tourists

- The dolphin watchers are largely international, drawn especially from British, American and German visitors who are among the top five tourism arrivals to the country.

WW Operators & the Trips They Offer

- The operators are mainly fishermen who supplement their income by offering dolphin watching every morning in outboard-powered dugouts, but there are also several full-time commercial operators using larger boats. The larger operators offer food, drinks and even taxi pick-up from a hotel as part of a package price. One operator offers a "no dolphins; no pay" money-back guarantee.
- 1.5- to 3-hour morning trips offered mainly from late October to early April with the peak mid-December to late January.

The WW Community

- At least four communities in north and south Goa are involved in dolphin watching which provides an additional attraction for visitors and makes a significant contribution to the local tourism economy.
- The dolphin watch industry has led to conservation concern in the community. The commercial operators, fishermen and the community increasingly express fears for the welfare of the dolphins. Potential threats include boat traffic to and from the Vasco da Gama container port, waterborne pollutants from oil refineries and chemical plants and the possible extensions of the Vasco da Gama port to the Grandi Islands with an extensive reclamation project (Parsons 1998).

WW Assessment

There is considerable potential to improve the dolphin watch tours and make them more educational and scientifically useful (and in the long run thus to improve the prospects of the dolphins' conservation). With the success in Goa, dolphin-based boat trips might be extended elsewhere along the west coast in existing tourism areas such as Kerala province.

Acknowledgments
Chris Parsons, Tom Jefferson, and one operator.

SRI LANKA

Democratic Socialist Republic of Sri Lanka
Sri Lanka Prajathanthrika Samajawadi Janarajaya

Population:	5 million
Land Area:	64,740 sq km (24,996 sq mi)
Tourist Arrivals:	366,000 (+21.19% on previous year)
Total Tourist Receipts:	$212 million USD
GNP:	$14.8 billion USD
GNP per capita:	$800 USD

Main WW Species: Blue whales, sperm whales, Bryde's whales, spinner dolphins, bottlenose dolphins.
Year WW began: 1983, interrupted due to civil war.
Types of WW: Large whales, dolphins, boat-based, land-based.

SRI LANKA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	Minimal	Minimal	Minimal
1998	Minimal	Minimal	Minimal

SRI LANKA WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall tourists to Sri Lanka are led by Germans (23%), British (12%), and Indians (11%).

WW Operators & the Trips They Offer

- Trips offered are through diving tours or fishing charters.

The WW Community

- The industry is too small to show a benefit to a community but Trincomalee is where tours had embarked from in the past and it offers good land-based whale watching as well. It has the potential to attract considerable benefits from whale watching if the tourism can be fully revived in future.

WW Assessment

The Civil War in Sri Lanka has claimed tens of thousands of lives since 1983. The conflict between the government and the Tamils, who are fighting for an independent state, has dominated Sri Lankan affairs to this day. Some tourism has persisted but the interest in developing cetacean tourism which began in the early 1980s and held such promise remains problematic. There remains considerable to outstanding potential for the development of whale watching in Sri Lanka but it will depend on cessation of conflict and the image of the country. Recently, however, one group has advertised cetacean tours and another plan to start soon.

Acknowledgments
Hiran Jayewardene, Kate O'Connell, and Stephen Leatherwood.

THAILAND

Kingdom of Thailand
Prathet Thai
Muang Thai

Population:	59.6 million
Land Area:	510,890 sq km (197,255 sq mi)
Tourist Arrivals:	7,221,000 (+0.40% on previous year)
Total Tourist Receipts:	$7,048 million USD
GNP:	$165.8 billion USD
GNP per capita:	$2,740 USD

Main WW Species: Bottlenose and other tropical dolphins.
Year WW began: 1994.
Types of WW: Dolphins, boat-based.

THAILAND WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	1,000+	$50,000	$175,000
1998	Minimal	Minimal	Minimal

THAILAND WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, foreign tourism is led by Malaysia (15%), Japan (11%), Taiwan (7%), South Korea (6%), and Singapore (6%).

WW Operators & the Trips They Offer

- The tours have been based around diving tours which advertise dolphin sightings out of Phuket on the Andaman Sea.

The WW Community

- No communities can yet be considered dedicated to whale or dolphin watching.

WW Assessment

In terms of some of the dolphin populations accessible from Thailand, there would be considerable potential, but the overall potential should perhaps be downgraded to moderate in view of Thailand's growing sex tourism image, the serious pollution problems from uncontrolled development in such places as the Pattaya beach resort, the overall preoccupation with large resort and golf tourism (although visitors are now tending to seek out the less developed resorts and areas), and the nationalities of the foreign tourists, most of which are not traditionally considered wildlife enthusiasts.

Acknowledgments
Supoj Chantrapornsilp.

INDONESIA

Republic of Indonesia
Republik Indonesia

Population:	206.5 million
Land Area:	1,811,570 sq km (699,477 sq mi)
Tourist Arrivals:	5,185,000 (+3% on previous year)
Total Tourist Receipts:	$5,437 million USD
GNP:	$221.5 billion USD
GNP per capita:	$1,110 USD

Main WW Species: Bali: Spinner dolphins, common dolphins, baleen (Bryde's?) whales.
Year WW began: 1991.
Types of WW: Dolphins, whales, boat-based.

INDONESIA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	12,000	$100,000	$350,000
1998	41,000	$1,281,000	$4,551,000

INDONESIA WW SOCIOECONOMIC PROFILE

WW Tourists

- The dolphin watchers in Bali are international tourists. At Lovina the tourists are Australian, British, Japanese, German and a wide mix of others. It is said that most tourists who go to Lovina, or to the southeast coast, try the trips at some point during the holiday, but that it is not for most people a primary reason for their trip to Bali. However, according to one operator familiar with the area, approximately 20% of the people who go to Lovina go for the dolphin watching and wouldn't go if there weren't dolphins.
- In South Bali, the largest operator reports 70% Japanese guests, followed by various Europeans and Australians. Most guests decide to go dolphin watching after they arrive in Bali, although many Japanese tour operators (for organized tours) include a dolphin cruise.

WW Operators & the Trips They Offer

- In the Lovina area, in north Bali, the boats are local fishing boats called jekungs (motorized canoes with outriggers) which carry three passengers besides the driver. In the high season, there may be 80 boats going out to sea and congregating around the dolphins at one time. The fishermen operators are organized and meet every month to discuss the dolphin watching and to fix prices. Even between seasons, the price fluctuates from Rp15,000 to Rp35,000 (IDR) ($2.02–$4.72 USD). All the money is shared among the group of fishermen regardless of how many passengers each boat carries.
- The Lovina tours started first and expanded quickly through the 1990s. In the past two years, however, the tours in south Bali have competed to offer dolphin watching of a higher quality on larger, more comfortable boats and at a location closer to the main traffic pattern of the tourists. At Benoa Harbor, southeast Bali, and along the coast of south Bali, the dolphin watching occurs from large motor cruisers and glass bottom boats, which carry from 8 to 26 people. There are approximately 15 vessels offering dolphin cruises. The price of the trips ranges from $49 to $65 USD a person, 10 to 25 times more than the price of tours at Lovina, although visitors to Lovina must take extra time and expense to get there, making the price difference less than it would seem.

• One of the larger operators in southeast Bali provides cetacean information sheets for every passenger, contributes data to a scientific program, and has hydrophones for use on the boats. This company has run a cetacean workshop for its crew and includes a marine biologist on its day cruises but it does not have a regular naturalist on the target dolphin trips.

The WW Community

• Two main areas or communities have dolphin watching, both on Bali.

• The income from dolphin watching for the local fishermen at Lovina has become crucial to their yearly income, even though all of them do some fishing.

• Balinese attitudes to dolphins are kindly. They have never eaten dolphins but see them as a sign that tuna and other fish are in the area and can be caught. The attitude is that "When you are travelling, if you see dolphins you must take care." This positive view has expanded to include the new role of dolphins as the local money spinners.

• The dolphin trips are offered year-round, dependent mainly on weather and presence of tourists. An estimated 30 days a year are lost to poor weather. This means that dolphin watching has the potential to be a continuing year-round attraction.

• At Lovina, dolphin T-shirts now provide a substantial income as one of the main tourist souvenirs. These and other dolphin souvenirs are sold in various shops in the community as well at hotels. Approximately 45% of Lovina-area residents rely on tourism, and 55% depend on fishing and farming.

WW Assessment

Considerable to outstanding potential in North and South Bali, yet the number of boats on the water at Lovina in North Bali and the consistently aggressive approaches toward the dolphins requires urgent attention and precautionary management, if the future presence of the dolphins is to be ensured. Considerable value could be added to these trips, with more repeat business, by offering naturalist guides and commentary.

Acknowledgments
Troy Davis, Annabel Thomas, Wayan, Bill Leverett, Janet Walker, and two operators.

JAPAN

Nippon

Population:	125.9 million
Land Area:	376,520 sq km (145,374 sq mi)
Tourist Arrivals:	4,218,000 (+9.93% on previous year)
Total Tourist Receipts:	$4,326 million USD
GNP:	$4,812 billion USD
GNP per capita:	$38,160 USD

Main WW Species: Ogasawara-mura: humpback whales, sperm whales, bottlenose dolphins, spinner dolphins; Keramas (Zamami-son, Tokashiki-son): humpback whales, rough-toothed dolphins, bottlenose dolphins; Ogata-cho, Saga-cho, Shimonokae, Kobotsu, Tosa-shi, Kochi-shi: Bryde's whales, common dolphins; Muroto-shi: sperm whales, Risso's dolphins, short-finned pilot whales, bottlenose dolphins; Muroran-shi: minke whales, Pacific white-sided dolphins, Dall's porpoises, harbor porpoises, orcas, short-finned pilot whales; Shibetsu-cho, Nemuro-shi, Rausu-cho, Shari-cho: minke whales, harbor porpoises, orcas, Baird's beaked whales; Nachi-katsuura-cho, Koza-cho, Kushimoto-cho: sperm whales, Risso's dolphins; Miyake-jima and Mikura-jima: bottlenose dolphins; Itsuwa-machi, Reihoku-cho: bottlenose dolphins; Mihama-cho: finless porpoises; Kamisu-machi: Pacific white-sided dolphins, short-finned pilot whales; Chohshi-shi: Pacific white-sided dolphins, bottlenose dolphins, finless porpoises, common dolphins, Baird's beaked whales; Kasasa-cho: Bryde's whales, bottlenose dolphins; Toshima-mura: bottlenose dolphins.

Year WW began: 1988.

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

JAPAN WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	10,992	$371,000	$4,748,000
1994	55,192	$3,384,000	$23,539,000
1998	102,785	$4,300,000	$32,984,000

[Total expenditures in Japan, as logged by operators, communities or researchers, have been consistently larger than a factor of 7.67, as evidenced by 1991 and 1994 figures. However, the conservative factor of 7.67 was used as the basis for 1998 total expenditures because of the difficulty of estimating these increasingly diverse and expanding expenditures. This estimate is similar to more detailed calculations using estimated expenditures for short and long distance whale watchers in Japan. See table on "Japan Whale Watching — 1998" and footnotes 30 and 31.]

JAPAN WW SOCIOECONOMIC PROFILE

WW Tourists

- The whale and dolphin watchers are more than 95% Japanese. Some 72% of Japanese travel from some distance outside the prefecture, while 28% are taking short trips within the prefecture or community. In some communities as many as 94% are short-trip visitors while other communities — mainly islands or more remote communities — attract up to 100% long-trip visitors on whale watch tours. Long-trip tourists spend more on food, accommodation, and souvenirs, and bring money from outside the local economy. Because long-trip internal travel in Japan is costly (sometimes more expensive than travel overseas), whale watching is already contributing to the domestic tourism economy, helping to transfer considerable money from urban areas to remote villages and smaller, often needy island economies. Whale watching has the potential to provide a continuing and even greater boost to the domestic tourism economy. With marketing, advertising and adapting the tours toward foreigners, whale watching could attract considerably more international travellers.
- About 65% of the tourists are watching dolphins exclusively or mainly, while 35% watch whales, with a reported, consistent skew toward Japanese women being more interested in watching and swimming with dolphins than Japanese males.
- Overall tourism to Japan is led by South Korea (26%), Taiwan (19%), USA (15%), UK (7%), and China (6%).

WW Operators & the Trips They Offer

- There are an estimated 45 Japanese whale watch operators. This counts the cooperatively managed operations in Ogata and Saga as single operators. There are at least 185 boats used part- or full-time in whale watch operations in Japan. Boat size and capacity tend to be small — carrying as few as 10–12 passengers on fishing boats in Ogata and elsewhere in Kochi Prefecture. There is some use of ferries carrying several hundred passengers, but mainly for special trips or occasions.
- Whale watching provides extra income in fishing communities during off or low fishing seasons. In these communities, whale watching is not considered the primary business but it is considered important. In other areas, whale watching is a dedicated seasonal or full-time tourism business. Direct income to operators from ticket sales in 1998 was ¥ 477,344,200 (JPY) ($4,300,000 USD).
- In Ogasawara, Zamami and other tropical or subtropical locations, whale watching has attracted special school trips and provides an educational service for visiting students.
- Many whale watch operations in Japan are community-oriented. Some communities have individual proprietor operators as in most of the world, but others (Ogata, Saga, Ogasawara) have whale watching organized more as a cooperative, sometimes as divisions of the sportfishing union with special restricted membership of whale watch operators who run the tours on a rota basis (IFAW 1999).
- 25% of all operators in Japan carry special naturalists or nature guides on their boats (Hoyt 1998).

The WW Community

- Some 30 communities in Japan have held whale and dolphin watching tours since the first tour to Ogasawara in 1988. 23 communities offer regular seasonal trips on an ongoing basis. Five communities have special or irregular tours, one of which appears unlikely to have whale watch tours again due to shortage of whales. In addition two other communities have tried whale watching but lack of cetacean sightings has resulted in discontinuing the tours.
- Seven communities have cooperatively managed whale watching, operated by the community (sportsfishing union, whale watchers' association or center). Boat owners are scheduled for boat tours on a rota basis.

JAPAN WHALE WATCHING — 1998

Admin. Division/Community	WWs[29]	Short[30]	Long[31]	Adult ticket[32]	¥DEx
Hokkaido					
Shibetsu-cho	1,370	40%	60%	¥ 7,500	¥ 10.275m
Nemuro-shi	100	–	–	[5,000]	0.500m
Rausu	200	–	–	[5,000]	1.000m
Shari-cho	100	–	–	[5,000]	0.500m
Muroran	4,257	40%	60%	6,000	25.542m
Ibaraki-ken					
Kamisu-machi	1,800	60%	40%	6,000	10.800m
Chiba-ken					
Chohshi	2,765	50%	50%	5,000	13.825m
Tokyo-to					
Miyake-jima	8,300	0	100%	12,000	99.600m
Mikura-jima	3,000	0	100%	6,500	19.500m
Ogasawara	3,400	0	100%	7,300	24.820m
Aichi-ken					
Mihama-cho	100	–	–	[5,000]	0.500m
Wakayama-ken					
Nachi-katsuura-cho	2,185	7%	93%	6,500	14.2025m
Koza-cho	–	–	–	–	–
Kushimoto-cho	192	30%	70%	7,350	1.4112m
Kochi-ken					
Muroto-shi	810	30%	70%	5,000	4.050m
Kochi-shi	800	90%	10%	5,000	4.000m
Tosa-shi	1,500	2%	98%	5,000	7.500m
Saga-cho	2,000	–	–	[5,000]	10.000m
Ogata-cho	10,315	30%	70%	5,000	51.575m
Kobutsu (Tosa-Shimizu-shi)	225	20%	80%	5,000	1.125m
Shimonokae (Tosa-Shimizu-shi)	225	20%	80%	5,000	1.125m
Kumamoto-ken					
Reihoku-cho	341	94%	6%	3,500	1.1935m
Itsuwa-machi	50,000	30%	70%	2,500	125.000m
Kagoshima-ken					
Kasasa-cho	1,700	70%	30%	4,000	6.800m
Tokunoshima-cho	0	–	–	–	–
Toshima-mura	100	–	–	[5,000]	0.500m
Takara-jima	0	–	–	–	–
Yoron-cho	0	–	–	–	–
Okinawa-ken					
Zamami-son	5,000	25%	75%	5,000	25.000m
Tokashiki-son	2,000	60%	40%	8,500	17.000m
Totals	**102,785**	**28%**	**72%**	**–**	**¥477.3442m**

Table based on information gathered by Hal Sato from 1999 surveys of whale watch communities and operators around Japan. Some 79% of all communities responded. Exchange rate ¥ 111 = $1 USD (Feb. 19, 2000).

[29] Number of whale/dolphin watchers

[30] Percentage of whale/dolphin watchers who come from a short distance away, usually the same administrative division where the whale watching occurs. Typical travel expenditures are ¥5,000–10,000 plus ¥2,000–5,000 for food and souvenirs, with no accommodation charge. Average per person expenditure for short-range trips is ¥11,000, not including the cost of the whale watch trip.

[31] Percentage of whale/dolphin watchers who come from a long distance away, outside the administrative divsion where the whale watching occurs. Typical trips are two or more days with accommodation expenditures of ¥5,000–10,000/day, food and souvenirs at ¥5,000–8,000/day, and travel costs of ¥10,000–45,000, with a conservative per person expenditure for long-range trips of ¥41,500, not including the cost of the whale watch trip.

[32] Ordinary cost of a whale/dolphin watch ticket in Japanese Yen (¥). Numbers in brackets [—] are estimates based on average or minimum prices.

- At Ogata, whale watching has helped create a successful image and identity for a town of 11,000 people. An attractive whale mural in the port, more than 50 meters long, painted by international artist Namiyo Kubo provides a focal point for visitors to the community.
- Ogata has also built a special whale watch/fishermen's center at the harbor which functions as a meeting hall for fishing and whale watching activities, a cafe, a souvenir shop and an information and ticket center for whale watching (IFAW 1999). Whale watching has thus helped bring a number of overall benefits to the community through the building of this center.
- Three whale watch communities in rural or remote areas (Ogata, Zamami and Muroran) have funded national forums on whale watching which have brought publicity, considerable pride and revenue to the communities. Some of the funding for these forums came from central government. Scientists from outside Japan have attended.
- The town of Ogata has offered whale watch workshops, advertised in the national press, to train naturalists and to learn about whales. These well-subscribed workshops have been partly subsidized by the town and partly by fees. The influx of visitors provides substantial tourism income to the town.
- Whale watching in Japan "has assisted related industries and contributed to enhanced undertanding of whales/dolphins and nature" (Mori and Yamada 1996).
- The city of Muroran has adopted the emblem of a whale, thanks to the efforts of the city's whale watch tour operator and whale enthusiast, and this emblem can be seen all around the city, on signs and souvenirs. As with Ogata, it provides an effective tourism identity at no cost. This identity not only attracts tourists but provides an emblem and image for souvenirs which earn revenues.
- Displays of living whales and dolphins in souvenir shops, restaurants, parks, and sidewalks have made whale watching a "common scene in Ogasawara" (Mori and Yamada 1996).
- Conservation benefits in communities range from proposed protection areas (Ogata, Muroran); as well as a fostering of cetaceans by communities which previously had little or no connection to them. Several communities have set up whale watch associations and started clubs with regular newsletters (e.g., Whalco for Kochi Prefecture and the Ogasawara Whale Watch Association for Ogasawara).
- Scientific research has been funded and sponsored by a number of whale watch operators and communities, notably Muroran, Ogata, Ogasawara, Miyake-jima, among other locales. However, only 3% of Japanese operators have researchers or naturalists doing research on their boats; 85% of Japanese operators never conduct scientific research or offer information to scientists. 50% of Japanese operators would be willing to allow researchers on their boats (Hoyt 1998).
- At Ogasawara, whale watch visitors are a captive audience because of the limited ferry service to the islands and the cost to get there. Visitors are "forced" to stay and spend money in the community (IFAW 1999).
- At Ogasawara, whale researchers who belong to the Ogasawara Whale Watching Association present a free lecture every evening of the day that the Tokyo ferry arrives in the islands. They also provide lectures and orientation from the land-based whale watch site before the whale watchers depart on the boats to look for whales (Mori and Yamada 1996).

WW Assessment

Japan has one of the most diverse and interesting whale watch industries and it continues to offer outstanding promise for further development. Despite a recession in the late 1990s, whale watching has continued to expand, though not as rapidly as in the early 1990s. In all, 30 communities have tried whale watching, though three communities have stopped offering the tours due to lack of whales. The Japanese whale watch industry is almost entirely domestic (95%+) and expansion to outside visitors would potentially offer substantial additional revenue. Still, total expenditures remain high even for Japanese nationals due to the considerable expense of travelling within Japan.

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PHILIPPINES

Republic of the Philippines
Republika ng Pilipinas

Population:	72.2 million
Land Area:	300,000 sq km (115,830 sq mi)
Tourist Arrivals:	2,223,000 (+8.49% on previous year)
Total Tourist Receipts:	$2,831 million USD
GNP:	$88.4 billion USD
GNP per capita:	$1,200 USD

Main WW Species: Sperm whales, pygmy sperm whales, dwarf sperm whales, pantropical spotted dolphins, long-snouted spinner dolphins, Risso's dolphins, short-finned pilot whales, melon-headed whales, Fraser's dolphins, Bryde's whales.

Year WW began: 1991.

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

PHILIPPINES WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	Minimal	Minimal	Minimal
1994	Minimal	Minimal	Minimal
1998	12,000	$121,000	$927,000

PHILIPPINES WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall tourist arrivals are led by USA (20%), Japan (18%), Taiwan (10%), South Korea, and Hong Kong (6% each)
- More than 90% of the whale watchers are going through Bais City in the Negros Oriental Province. Currently 90.8% are domestic and 9.2% international (Japanese 5%; European 4.2%).

WW Operators & the Trips They Offer

- In the Central Visayas, a catamaran offers whale watch trips and is also running scientific surveys through the area.
- The baleen whale trips are seasonal but the dolphins and small whales are found year-round.
- Whale watch trips at Bais City are offered aboard two government-owned "pump boats" or three private boats, capacity 15–20 persons per boat.

The WW Community

- There are two main communities offering whale watching, and at least three other communities on resort islands where small-scale dolphin and whale watching occur.
- Pamilacan Island residents used to hunt dolphins and whales but now WWF-Philippines is working with the 235 families on the island who have formed the Pamilacan Island Dolphin and Whale Watching Organization to promote whale watching as a conservation "use" of the whales. Some 100 family members of the PIDWWO offer trips aboard twelve refitted boats formerly used for hunting. Three-year funding for this community transition, still in the early stages, was provided by WWF-Philippines, the Philippine Dept. of Tourism, and Citibank NA.
- Whale watching has helped contribute to a strong community identity in Bais City in the Negros Oriental Province. An estimated 40 people there work on the whale watching, half of them part-time. There have been

four new souvenir shops and four restaurants due largely to the influx of visitors from the whale and dolphin watching tours. In addition, tourists are invited to visit a mangrove forest and dive on a coral reef, which spreads the whale tourism benefits around to other parts of the community.

WW Assessment

After growing slowly through the early 1990s, whale watching began to realize its outstanding potential in 1996, partly because of WWF-Philippines and a far-sighted mayor and city government. Whale watching should continue to grow in these areas and expand to others. Sex tourism has given certain areas of the Philippines a poor image, but the country also has extraordinary, unspoiled tropical rainforests, coral lagoons and island passages filled with whales and dolphins. Besides the above areas, there are additional communities and islands that might develop whale watching. Part of the untapped appeal of the Philippines for foreign visitors is the chance to see species of dolphins and small toothed whales rarely seen elsewhere (Tan 1995). Fuga Island, for example, in the northernmost province of Cagayan, offers humpback whales from February to May which may be a new, unstudied breeding stock in the North Pacific, although the waters here are often rough and the area is remote.

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CHINA (especially Hong Kong)

People's Republic of China
Zhonghua Renmin Gonghe Guo

Population:	1.3 billion (Hong Kong: 6.69 million)
Land Area:	9,572,900 sq km (3,696,000 sq mi)
Tourist Arrivals (Hong Kong):	10,406,000 (–11.08% on previous year)
Total Tourist Receipts:	$9,242 million USD (Hong Kong only)
GNP:	$148,518 billion USD (Hong Kong only)
GNP per capita:	$22,200 USD (Hong Kong only)

Main WW Species: Indo-Pacific humpbacked dolphins, finless porpoises, baiji (Chinese river dolphins).
Year WW began: 1994.
Types of WW: Dolphins, porpoises, boat-based, educational, photo-ID research.

CHINA (HONG KONG) WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	1,000	$34,000	$119,000
1998	4,500	$217,000	$759,000

CHINA WW SOCIOECONOMIC PROFILE

WW Tourists

- 70% local and 30% international to see the dolphins in Hong Kong.

WW Operators & the Trips They Offer

- There is one main operator, a smaller operator, and several NGOs offering infrequent trips.

The WW Community

- The only place with commercial whale watching at present is Hong Kong. There have been some trips most years in search of baiji and to look at finless porpoises in the Yangtze River, but these are sporadic, mainly based around scientific trips and have little future due to the perilous state of the baiji.
- The dolphin watching has helped create some awareness of the plight and need for protection of Hong Kong's resident "pink dolphins". There have been media stories, newsletters and campaigns.
- The pink dolphins of Hong Kong were chosen as the official mascot of the 1997 ceremony when Hong Kong was handed over to China.

WW Assessment

The year-round watching of the pink humpbacked dolphins of Hong Kong harbor has provided a steady income since the mid-1980s for at least one commercial operator and several NGOs. The commercial operator offers high quality tours with solid educational content. Future potential will depend on how long the pink dolphins can survive in the polluted waters of the harbor, or if resident populations can be found in other accessible areas of the coast. Elsewhere in China, Earthwatch and other trips have gone in search of baiji in the Yangtze River but with these dolphins near extinction, river dolphin tourism cannot be sustainable.

Acknowledgments
Tom Jefferson, Stephen Leatherwood, and one operator.

TAIWAN

Republic of China
Chug Hua Min Kuo

Population:	21.5 million
Land Area:	32,260 sq km (12,456 sq mi)
Tourist Arrivals:	2,372,000 (+0.59% on previous year)
Total Tourist Receipts:	$3,402 million USD
GNP:	$247 billion USD
GNP per capita:	$10,320 USD

Main WW Species: Risso's dolphins, spinner dolphins, pantropical spotted dolphins, bottlenose dolphins, Fraser's dolphins, pygmy killer whales, common dolphins.

Year WW began: 1997.

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

TAIWAN WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	30,000	$1,223,000	$4,280,000

TAIWAN WW SOCIOECONOMIC PROFILE

WW Tourists

- It is estimated that 99% of the whale watchers are Taiwanese.
- Overall, visitors to Taiwan are led by Japan (38%), USA (13%), South Korea (6%), Thailand (5%), and the Philippines (3%).

WW Operators & the Trips They Offer

- There are 14 whale watch boats, plus at least another six small fishing boats which also take out whale watchers. These are owned by 13 companies or individuals.
- The business is seasonal, mainly May to September on the east coast, and is supplementary to fishing and other business.

The WW Community

- The whale watching occurs from eight different ports in six counties.

WW Assessment

Outstanding potential. Since July 1997, when the trips started, the numbers of whale watchers have grown from 8,500 in 1997 to 30,000 in 1998 to a preliminary estimate of 70,000 to 80,000 in 1999. A symposium in 1998 brought international experts together with Taiwanese scientists and operators to try to develop sensible guidelines and to put the new business on a firm footing (National Taiwan University, Society of Wildlife and Nature, and Taipei Marine Life Aquarium 1998). Much work remains to be done. As in Japan, almost all the whale watchers are domestic travellers. Taiwan is not a major tourism destination but facilities and infrastructure are being improved in an effort to attract more tourists. Marketing whale watching to international visitors could bring more socioeconomic benefits to communities and would add considerably to the domestic value as it then becomes, in effect, an export industry.

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AUSTRALIA, OCEANIA & ANTARCTICA

AREA-WIDE SUMMARY
Number of countries & territories involved in commercial whale watching: 12 (up from 6 in 1994).
Number of communities involved in whale watching: 87 (up from 52 in 1994).

AUSTRALIA, OCEANIA, & ANTARCTICA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	376,375	$10,051,000	$46,569,000
1994	540,200	$18,622,000	$67,710,000
1998	976,063	$35,494,000	$123,260,000

Average annual % increase 1991–94: 12.8%.
Average annual % increase 1994–98: 15.9%.

AUSTRALIA

Population:	18.5 million
Land Area:	7,617,930 sq km (2,941,283 sq mi)
Tourist Arrivals:	4,318,000 (+3.67% on previous year)
Total Tourist Receipts:	$9,026 million USD
GNP:	$382.7 billion USD
GNP per capita:	$20,650 USD

Main WW Species: Queensland: humpback whales, minke whales, bottlenose dolphins, Indo-Pacific humpbacked dolphins; New South Wales: humpback whales, bottlenose dolphins; Victoria: southern right whales, bottlenose dolphins; Tasmania: southern right whales, humpback whales, bottlenose dolphins; South Australia: southern right whales, bottlenose dolphins, common dolphins; Western Australia: humpback whales, southern right whales, bottlenose dolphins.

Year WW began: Late 1960s (Monkey Mia dolphins); 1987 (whales at Hervey Bay).

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

Number of communities involved in WW: 46.

AUSTRALIA WW VISITOR EXPENDITURES:

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	335,200	$3,056,000	$32,269,000
1994	446,000	$4,662,000	$45,000,000
1998	734,962	$11,869,000	$56,196,000

Australia (Overall) WW Assessment: Outstanding potential with growth in many areas. Most recent national assessment with breakdown of state-by-state activities was presented at the "Encounters with Whales 1995" conference (Anderson *et al*. 1996). The particularly high estimates of total expenditures in relation to direct

expenditures are due to the substantial numbers of dedicated land-based cetacean tourists who may spend little or nothing on direct expenditures (tours) but considerable amounts on total expenditures. Tourism has grown dramatically since the 1980s. The mid-1980s tourism boom (with tourist arrivals growing by an incredible 200% in five years) helped fuel the start of whale watching in the late 1980s and its subsequent rapid growth. Tourism has recently become Australia's largest single foreign exchange earner, and wildlife and various marine/water-oriented activities — including whale and dolphin watching — are likely to stay at the top of the visitor attraction list. Following a big "regional" tourism push in the 1990s, overall tourism to the country is currently led by Japan (21%), New Zealand (14%), UK (10%), USA (7%), and Singapore (6%). There is still considerable room for attracting more European and North American tourists. In terms of whale and dolphin watching, the national as well as the state governments have responded to the need for regulations and management of the industry, sponsoring considerable research into the various whale and dolphin populations found around Australia, as well as research into possible whale watching impacts. Still, the educational component of most whale watch tours is modest and could certainly be improved. Enhancing the educational as well as the scientific components of the trips will only contribute to repeat business and added state and community value from whale watching.

Australia		WWs			WWs		
	Operators	Boat-based	$DEx[33]	$TEx	Land-based[34]	$DEx	$TEx
Queensland	42	148,280	$4.190m	$21.627m	6,260	$0.032m	$0.095m
New South Wales	73	186,000	3.565m	12.476m	20,000	Minimal	0.300m
Victoria	6	30,000	0.709m	3.662m	70,000	Minimal	1.400m
Tasmania	1	<1,000	Minimal	Minimal	Minimal	Minimal	Minimal
South Australia	12	10,000	0.271m	0.743m	96,000	1.197m	2.141m
Western Australia	89	55,341	1.905m	8.652m	112,081	Minimal	5.100m
Totals	**223**	**430,621**	**$10.640m**	**$47.160m**	**304,341**	**$1.229m**	**$9.036m**

QUEENSLAND WW SOCIOECONOMIC PROFILE

WW Tourists

- Hervey Bay whale watchers, based on estimated breakdowns from three of the largest operators, are 3% local, 67% from around Australia, and 30% international, led by the UK, Netherlands and Germany. One long-standing operator reported that the tours regularly attracted participants from about 40 countries a year.
- Dolphin and whale watchers booking tours at Tangalooma were 40% from the state, 20% from around Australia, and 40% international, led by the US (about 70%) and Japan (about 20%).
- Based on Muloin's (1996) survey of Hervey Bay whale watchers, there were more females than males, and average age was 42 years old with age 36–50 being the main age group. 89% of the respondents were from Australia, followed by UK (5%), New Zealand (2%), Germany, France, Ireland and the USA (1% each). Of the Australian whale watchers, 64% were from Queensland, half of which came from Brisbane. Only 5% were local from Hervey Bay. The whale watchers represented a well-educated cross-section of the general population, 78% of whom had never been whale watching before. 87% did not belong to any conservation or environmental group.

WW Operators & the Trips They Offer

- In 1998, 18 vessels, mainly purpose-built whale watch motor cruisers, with some catamarans and sailboats, made 1,280 whale watch trips from Hervey Bay, the main whale watch center in the state from July to October.
- At Tangalooma, site of a one-time humpback whaling station, a "wild dolphin resort" enables people to feed bottlenose dolphins who come in close at night. A comprehensive selection of tours is also offered including humpback whale boat tours in season, aerial whale tours, and land-based whale watching.

[33] Direct and total expenditures in USD $.

[34] The estimates for land-based whale watching in South Australia and Victoria date from 1995, as no newer estimates were available. These estimates of land-based whale watchers and expenditures should be considered conservative until a new estimate can be made.

• Tours to see and even swim with "dwarf" minke whales on the Great Barrier Reef depart Port Douglas between March and October (June–July best) (Arnold 1998).

The WW Community

• Seven communities have whale watch tours.

• According to Paul Forestell, in less than a decade, Hervey Bay went from a sleepy little town of retirees and caravan parks to a "resort" with new marine, harbor facilities, improved roads, shopping malls, big purpose-built whale watch boats, and tourist facilities. The transformation due to whale watching includes some 80 new businesses set up since 1990.

• Every August, Hervey Bay has a fortnight-long whale watch festival which provides a commercial attraction for not just whale watching operators but all the businesses in the community.

• Each of the twenty some whale watch operators provides from 4 to 17 full and part-time jobs, for an estimated total 76 full time and 68 part-time jobs in the whale watch operations alone.

• The whale watching at Hervey Bay Marine Park and the nearby Fraser Island World Heritage area have worked in tandem to attract large numbers of people.

• Humpback whale watch tours provide a valuable platform for the public to get acquainted with the Hervey Bay Marine Park, and for many people provide a first introduction to adjacent World Heritage-listed Fraser Island which helps make Hervey Bay and Platypus Bay special places for humpback whales to stop on migration.

• Whale watchers visiting Hervey Bay pay a $2 AUD per head levy to help fund Queensland Department of the Environment & Heritage management and research programs (Corkeron 1998). The local office of QDoE is responsible for fund allocation from the levy. However, after 1995, when $30,375 was allocated to two projects, no funds had been allocated for research into whale watching as of April 1998.

• In Townsville, the local radio station broadcasts whale and dolphin sightings with their location (Gill and Burke 1999).

• The Queensland Department of the Environment & Heritage, in conjunction with Australian Commonwealth agencies such as the Australian Nature Conservation Agency, and the Great Barrier Reef Marine Park Authority, has periodically hosted whale watch workshops to bring together government, NGOs, industry, community and scientific participants for continual review of all aspects of whale watching in Hervey Bay and other locales in Australia (IFAW 1999).

• A study conducted at Tangalooma showed that interacting with dolphins accompanied by a structured education program produced a desire in tourists to change their behavior, to become more environmentally responsible (Orams 1996). "By combining watching whales with good education services," wrote Orams, "the whale watching industry may be able to achieve its lofty aspirations and be beneficial to both cetaceans and people."

• An NGO based in Hawaii, USA, and in Australia, called Whales Alive, has taken its enthusiasm for whales and whale watching and produced a training program for prospective whale watch guides. The group has done on site, in-person training, as well as produced multi-media materials to advertise the value of whales and whale watching to a larger world audience (IFAW 1999).

WW Assessment

Whale watching seems to have plateaued at Hervey Bay with about 80–85,000 whale watchers a year. There remains considerable potential to expand the educational and scientific mandate of the tours with so-called "product enhancement". Tours might also be expanded in the more northern parts of the state.

NEW SOUTH WALES WW SOCIOECONOMIC PROFILE

WW Tourists

• At Port Stephens, the center for dolphin watching on the east coast of Australia, the dolphin (and whale watchers) are 10% local or from the Sydney area, 80% from around Australia, and 10% international. International participants are mainly Asian (as high as 90% with one large company) with participants from China, Malaysia and Japan, while European participants (10+%) are German, Dutch, Belgian and others.

• At Jervis Bay, dolphin watchers are 70% from Sydney and area, 22% from around Australia and 8% international.

WW Operators & the Trips They Offer

• Some 73 operators are currently in the state database offering whale or dolphin watching, at least part-time. Some operators offer both, such as at Port Stephens where humpback whales are offered May to November with dolphins more year-round.

• Many dolphin watching trips allow passengers to swim in "boom nets" behind the boat, observing the dolphins without direct contact, as swimming is forbidden under NSW legislation.

The WW Community

• 16 communities are involved in whale or dolphin watching.

• Port Stephens has become the center for dolphin watching on the east coast of Australia with rapid growth in the late 1990s. An estimated 40 new businesses have been set up due to dolphin and whale watching. There has been an 8% room increase in this fast-growing area.

• Byron Bay has created a wonderful community profile and image thanks to its location at the far eastern point of Australia which affords a superb view of migrating humpback whales. Also famous in local waters are the surfing dolphins that have been widely photographed and publicized. Some tours offer breakfast with the surfing dolphins off Main Beach at Byron Bay. The Byron Bay Whale Centre is a nature interpretation and education facility focusing on whales, dolphins and the marine environment — a valuable asset for the community as well as tourists; it was created by scientists, conservationists, and federal, state and local governments, all working together.

• In and around Eden/Twofold Bay on the south coast, humpbacks are seen first after their long journey from Antarctica. Eden draws tourists interested in its unique whaling history including its local museum which tells the story of cooperative whaling between 19th century whalers and the orcas who pursued humpback whales together. But a powerful draw is afforded by the chance to go whale watching, which has helped build up tourism to the region. A new interactive whale center is currently being planned for Eden.

• Dolphins and dolphin watch tours provide a focus for the public to get acquainted with Jervis Bay Marine Park.

WW Assessment

The outstanding potential of whale watching in NSW is finally being realized in the late 1990s with the success of dolphin tours particularly in the Port Stephens Bay area, while numbers are also gradually expanding at four other locations. The rapid expansion of the numbers of dolphin watchers at Port Stephens Bay may well be reaching carrying capacity. There is certainly room for all communities to enhance the educational value of whale watching, and "product enhancement" will help draw more people to those areas farther from population centers in the northern and southern parts of the state.

VICTORIA WW SOCIOECONOMIC PROFILE

WW Tourists

• Based on two Port Phillip operators, the dolphin watchers were 10% local (including Melbourne), 60% from around Australia, and 30% international, comprised of the UK (40%), Netherlands (15%), Asia (15%), and Germany, Canada and the USA (each 10%). Half of the total 30,000 were dedicated dolphin watchers with high indirect expenditures (except for locals) and the other half were casual dolphin watchers, for which 50% of tour cost only is included.

WW Operators & the Trips They Offer

• Six operators offer dolphin watching in Port Phillip Bay, four of them with in-the-water encounters. Several others offer marine nature or sightseeing cruises.

The WW Community

• Four communities have some dolphin watching.

• In Warrnambool, 260 km southwest of Melbourne, visiting southern right whales have been estimated to bring $1.4 million USD into the town's economy. The economic boon to this town of 25,000 people is significant during the period May to October when the right whale females bring their calves close to shore, staying for weeks at a time. Estimates for numbers of whale watchers in the Warrnambool area, mainly to the specially built Logans Beach Whale Watching Lookout, are 70,000–75,000 in a good whale year. Approximately 20% of visitors are estimated to stay overnight, spending a minimum of $65 AUD, while 56,000 are day visitors with minimum spends of $25 AUD. Total expenditures amount to at least $1.4 million USD. The town projects a positive image that attracts many visitors with its self-proclaimed title as "Victoria's Southern Right Whale Nursery".

WW Assessment

Port Phillip Bay dolphin watching may well be at or near carrying capacity for boat-based tours but there is some potential for developing more land-based whale watching there and along the western coast. At Lakes Entrance

and in each of the Gippsland Lakes, bottlenose dolphins are seen regularly although dedicated dolphin tourism has not developed here (Gill and Burke 1999).

TASMANIA WW SOCIOECONOMIC PROFILE

WW Tourists

- No information.

WW Operators & the Trips They Offer

- One charter operation at Coles Bay has made some whale watch trips for humpbacks and southern rights, as well as bottlenose dolphin excursions. There is also some incidental whale watching from other boats.

The WW Community

- One community has had occasional whale watch charters and offers land-based whale watching nearby.

WW Assessment

Moderate potential for more whale watch development. Although not advertised for its whale watching, Tasmania was a large commercial whaling center and still has many whales and a diversity of cetacean species in its waters. The sometimes rough and unpredictable weather has precluded regular, dedicated cetacean tours, but whale and dolphin watching could be developed more, both from land and from stable, ocean-going boats.

SOUTH AUSTRALIA WW SOCIOECONOMIC PROFILE

WW Tourists

- Boat-based dolphin tours and air- and land-based expeditions to Head of Bight were 5.4% from Adelaide and around South Australia, 57.4% from other states, and 37.2% international (mostly USA and Europe).
- In addition to visitors who go whale watching, a recent recreational profile of Adelaide residents determined that 13.1% "participated... on a regular basis" in whale watching. This amounts to an estimated 140,000 regular whale watchers out of Adelaide's 1,071,100 population (South Australian Tourism Commission, undated).
- As early as 1992–93, a visitor survey of the Fleurieu Peninsula (where Victor Harbor and other land-based whale watching is located), determined that 8% of visitors from nearby Adelaide and 14% of overseas visitors were going whale watching (Tourism South Australia 1993).

WW Operators & the Trips They Offer

- There is boat-based whale and mostly dolphin watching out of Port Adelaide and Streaky Bay.
- Head of Bight is one of the best land-based whale watching sites in Australia, in terms of the high view and the reliability during the August-September peak season for southern right whales. There are no boat tours, but land-based, multi-day tours, as well as air tours, depart from various points east, within driving distance of Adelaide, the largest city in South Australia. South Australia's other main land-based site is at Victor Harbor, south of Adelaide on the Fleurieu Peninsula, but its comparatively easy access precludes organized tours.

The WW Community

- Five communities have some involvement with whale watching
- Victor Harbor (population 10,000), located on the Fleurieu Peninsula some 85 km southeast of Adelaide, has used the reliable presence of southern right whales from May to October to help build its identity as a tourist town and attract visitors. A number of local seaside cafes and restaurants post regular whale sightings.
- The South Australian Whale Centre, a privately-owned attraction in Victor Harbor, has three floors of exhibits, murals and information on whales, whaling and the marine environment. It also maintains the Whale Information Service, a phone service that has monitored whale activity since 1993, and enables locals and visitors to find out where whales have been most recently sighted.
- The Yalata Aboriginal Community controls access and gains revenues from whale watching at Head of Bight, which is managed jointly with the SA Department of Land Management.
- Sea Link ferries to Kangaroo Island, although it is not a whale or dolphin watch tour, advertises its "outdoor dolphin viewing deck".

WW Assessment

Considerable to outstanding potential, much of it being realized in land- and air-based tours to Head of Bight. Good land-based southern right whale watching at Victor Harbor attracts visitors every year. There may be room for other communities along the coast of the Eyre Peninsula, the Fleurieu Peninsula and on Kangaroo Island, to develop new whale watch tours directed toward some of the many less commonly seen offshore species such as blue whales. The often rough seas, however, may limit boat-based whale watching and encourage more air-based whale watching or land-based when species come inshore or can be seen from islands.

WESTERN AUSTRALIA WW SOCIOECONOMIC PROFILE

WW Tourists

- Breakdowns were unavailable for the Perth area, but around Exmouth, whale watchers were 6% local, 23% from around Australia, and 71% international, including Japanese, German, Swiss, and British.
- 32% of Monkey Mia visitors were from overseas. Most of the 68% national dolphin watchers, however, also travelled great distances coming from the big cities of the east and southeast of the country, or even some distance from Perth, the largest WA city.

WW Operators & the Trips They Offer

- In 1998, there were 87 licensed whale watch operators and two swim-with-dolphins' operators. An additional 23 operators did some dolphin watching as part of their fishing, sightseeing and other activities, but they are not included here. Almost all of these are boat operators, with two or three offering whale watching from the air.
- At Monkey Mia, visitor numbers for 1998 were 102,081. An estimated spend of at least $50 USD per person results in considerable revenues for the area. Dolphin watching here is from shore. Feeding, encouraged in previous years but now found to have deleterious effects, is now tightly controlled and limited to a few dolphins.

The WW Community

- 13 communities are involved in whale watching.
- For several decades since the late 1960s, Monkey Mia has occupied a special place in the affection of dolphin watchers all over the world. Several million dolphin watchers have come to this remote spot to watch or interact with the dolphins. Important research has been undertaken by several research teams. Substantial local economic benefits from the tourism influx have accrued to the local communities of both Denham and Monkey Mia, as well as to bus lines, air commuters, nearby restaurants and motels. Meeting the dolphins at Monkey Mia is also a great introduction to the Shark Bay World Heritage area, a place with many attributes that appeal to wildlife and nature enthusiasts.
- Norwest Seafoods of Carnarvon, which before 1984 was called Nor-West Whaling Company and which operated the largest whale-processing plant in Australia, began running whale watch tours aboard the *N.W. Abel Tasman*, in addition to its fishing business in 1999. The trawlers in its fleets are being fitted with bycatch reduction grids among other conservation measures, and a whale museum in the community is set to open by May 2000.

WW Assessment

Outstanding potential with diverse whale watch opportunities across a vast portion of Australia's coastline. Although farther from the large population centers of Australia, Perth is now a city of 1.2 million which draws a share of Australia's tourism, and has important trans-Indian Ocean links with South Africa, India, the Middle East, and Southeast Asia. Although there is certainly potential for expanding the numbers of whale and dolphin watchers at most sites, enhancement of the industry (improving "the product") will perhaps best help ensure its future in the state.

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NEW ZEALAND

Population:	3.7 million
Land Area:	268,670 sq km (103,733 sq mi)
Tourist Arrivals:	1,497,000 (–2.09% on previous year)
Total Tourist Receipts:	$2,039 million USD
GNP:	$59.5 billion USD
GNP per capita:	$15,830 USD

Main WW Species: Sperm whales, dusky dolphins, Hector's dolphins, bottlenose dolphins, common dolphins, orcas, long-finned pilot whales, Bryde's whales, false killer whales, southern right whale dolphins, and minke whales.

Year WW began: 1987.

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

NEW ZEALAND WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	40,000	$1,095,000	$8,400,000
1994	90,000	$3,900,000	$12,500,000
1998[35]	230,000	$7,503,000	$48,736,000

NEW ZEALAND WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, foreign tourism is led by Australia (30%), USA (12%), Japan (11%), UK (9%), and South Korea (5%).
- The decision to go whale watching was made at home or while travelling (Simmons and Fairweather 1998).
- Some 79% of all 2-hour to full-day and overnight visitors to Kaikoura were international (Simmons and Fairweather 1998). The operator survey for this report found that 83% of their customers were international and 17% domestic. Even the domestic whale watchers, however, largely came from some distance away due to Kaikoura's relatively remote location.
- Key motivations for visitors to Kaikoura are (1) access to marine mammal species, (2) the small coastal town atmosphere in an unspoiled natural environment, and (3) the friendliness and acceptance of local residents (Simmons and Fairweather 1998). There was high overall satisfaction by visitors to Kaikoura and a willingness to re-visit and refer Kaikoura to others.
- Oustide of Kaikoura, approximately 60% of the whale watchers (actually mainly dolphin watchers) are from outside New Zealand and 40% are from within New Zealand.

WW Operators & the Trips They Offer

- 73 full-time and 45 part-time jobs have been created in the whale/dolphin watching industry in Kaikoura alone.
- More than 12,000 whale watchers a year go whale watching from the air from both fixed-wing aircraft and helicopters at Kaikoura.
- More than 50 operators offer tours on which whales or dolphins are seen in New Zealand. According to Rob Suistead (DOC survey, March 1999), there were a total of 82 marine mammal permits granted around New

[35] Actual numbers obtained by survey for 1998 were 187,600, based on returns from all Kaikoura operators and 50% of operators outside of Kaikoura. Total number of whale and dolphin watchers are at least 230,000 and most likely 275,000 or more. In 1995, 8% of New Zealand visitors were said to be whale watchers and 14% dolphin-watchers (New Zealand Tourism Board 1996). If these percentages remained the same, there would be approximately 120,000 whale watchers and 210,000 dolphin watchers (in 1997). In any case, conservative figures are used in the table above.

Zealand, with 21 still under application. Two focussed on whale watching and 21 on swimming with dolphins. The rest were seal-oriented, or included whales and dolphins along with seals and other marine wildlife. Some companies have more than one permit and run a number of boats; some permits cover two boats.

The WW Community

- At least 30 communities in New Zealand have some involvement with whale or dolphin watching. Four of the main areas with 20,000 or more whale watch visitors are Kaikoura and Akaroa (Banks Peninsula) on the east coast of South Island and Bay of Islands and Bay of Plenty on North Island, but some marine mammal watching extends to ten of DOC's 14 conservancies, often combined with seal watching.
- The Maori people at Kaikoura run the large, successful whale watch business, employing Maori and non-Maori people from the community. Whale watching was largely responsible for enabling the Maori to move from a position of relative powerlessness and low socioeconomic status to becoming a major employer and economic force in the community. The tourism in general and whale watching in particular in Kaikoura are mainly locally owned and operated by small-scale businesses with the benefits of tourism spread relatively well throughout the community (Simmons and Fairweather 1998).
- The whale watching at Kaikoura is not just a successful business; the Maori are re-interpreting a culturally significant animal and have seen what amounts to a cultural revival (IFAW 1999).
- Few communities in the world have been more transformed by whale watching than Kaikoura, New Zealand. Between the late 1980s and 1998, more than 100 new businesses were started in Kaikoura, including five new motels, at least six restaurants, and several souvenir shops — most of which would not exist without whale watching.
- According to Simmons and Fairweather (1998), the total visits to Kaikoura are 873,000 per year, with 356,000 staying overnight, 137,000 staying 2 hours to a day, and 380,000 staying less than 2 hours. An estimated 278,000 visitors expressed a desire or intention to go whale watching and 130,000 visitors (overlapping the 278,000) wanted to go dolphin watching or swimming (Simmons and Fairweather 1998). All of this shows the extraordinary pulling power of whales and dolphins in this community which had little tourism to speak of only 15 years ago.
- At Kaikoura, greatly reduced rates are offered to school and community groups to participate in marine nature tours; in effect, the operators are providing a subsidy for education — a community benefit from whale watching.
- As dolphin watching and swimming activities, sometimes combined with seal watching, have spread from Kaikoura around New Zealand, there are growing benefits to other communities in terms of employment, with dozens of new businesses starting up and jobs created.

WW Assessment

In general, New Zealand is a model country in terms of careful government management of whale watching including the funding of research and the requirement that operators have an education program. Still, the educational offerings could be improved with the addition of trained naturalists on every boat and more community programs. New Zealand's permit-based system has helped control the number of boats on the water to protect the resource, but some would argue that there are already too many permits given in some areas, not enough in others. Yet, with whale and dolphin watching flourishing in New Zealand and providing a major draw to international tourists, there remains outstanding potential to increase the socioeconomic benefits.

In Kaikoura, more than twice as many visitors come to the town wanting to go whale or dolphin watching but are unable to due to an inability to get reservations or poor weather. The growing number of visitors to Kaikoura, and the profile of the visitors' motivations, means that the town faces some difficult decisions regarding whether to limit growth or face the degradation and possible destruction of the community and environment that originally made it a successful tourism destination.

Acknowledgments
Rob Suistead, Mike Donoghue, Rochelle Constantine, and more than 30 operators.

FIJI

Republic of Fiji

Population:	822,000
Land Area:	18,270 sq km (7,054 sq mi)
Tourist Arrivals:	359,000 (+5.59% on previous year)
Total Tourist Receipts:	$297 million USD
GNP:	$2 billion USD
GNP per capita:	$2,460 USD

Main WW Species: Spinner dolphins.
Year WW began: 1998.
Types of WW: Dolphins, boat-based, photo-ID research.

FIJI WW VISITOR EXPENDITURES:			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	Minimal	Minimal	Minimal

FIJI WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, tourists to Fiji are from Australia (27%), New Zealand (17%), and USA (14%).
- The dolphin watchers are mainly from Japan and Europe.

WW Operators & the Trips They Offer

- Fiji's first dedicated dolphin watch tour started up in late 1998. These are 2.5-hour tours aboard power catamarans. Free trips are offered if no dolphins are sighted. The cost is $56.00 FJD per person ($27.70 USD).

The WW Community

- One community is involved in the dolphin watching. The tours were started following research on the local spinner dolphins by the University of the South Pacific and the Organisation for Research and Rescue of Cetaceans in Australia (ORRCA). The tours provide a vehicle for consistent monitoring of the population, as well as providing education for tourists.

WW Assessment

Moderate potential. The spinner dolphins appear to be resident in a protected bay along the barrier reef. Surveys around the islands and outside the reef may well turn up other cetacean possibilities.

Acknowledgments
Roy Chetty and Shigeki Komori.

NEW CALEDONIA (France)

(French overseas territory)
Kanaky

Population:	196,836
Land Area:	19,103 sq km (7,374 sq mi)
Tourist Arrivals:	105,000 (+15.38% on previous year)
Total Tourist Receipts:	$110 million USD
GNP:	$2.1 billion USD
GNP per capita:	$11,400 USD

Main WW Species: Humpback whales, spinner dolphins.

Year WW began: 1995.

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

NEW CALEDONIA WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	1,695	$107,000	$375,000

NEW CALEDONIA WW SOCIOECONOMIC PROFILE

WW Tourists

- Overseas tourists are led by Japan (nearly a third), followed by Australia, France and New Zealand. Whale and dolphin watch tours in New Caledonia are marketed directly through Japanese travel magazines.
- An estimated 500 visitors a year go dolphin watching, mostly Japanese tourists. In addition, in 1998, 1,195 people went whale watching.

WW Operators & the Trips They Offer

- The whale watch cruises are offered on 15 boats, mostly owned by separate individuals or companies. In 1998 there were 102 cruises.
- The dolphin trips are offered by one operator aboard a 7 m inflatable; there have been 1–2 cruises a week since 1996.

The WW Community

- Two communities offer whale watching in the Province Sud. In 1998, at least 13 people were employed in the seasonal whale watch tour industry, not including the dolphin watch industry.
- Currently a scientific and environmental assessment has been commissioned locally to investigate the status and future potential of whale watching, to prepare legislation, and to make educational and scientific provisions.

WW Assessment

There is considerable potential with whale watching growing steadily every year between 1995 and 1998. The challenge now will be to manage the whale watching on a sustainable basis and to infuse it with educational, scientific and other community benefits. New Caledonia, the third largest producer of nickel in the world, is known for its extensive nickel mines. Unfortunately, nickel mining has a high environmental and human health cost. Thus, the prospect that New Caledonia will be able to successfully market itself as an ecotourism

destination is uncertain, but with care, whale watching may offer possibilities. Also whale watching occurs offshore and on the barrier reef where New Caledonia could perhaps forge a new "marine tourism" image.

Acknowledgments
Claire Garrigue.

SOLOMON ISLANDS

Population:	417,000
Land Area:	289,000 sq km (11,158 sq mi)
Tourist Arrivals:	16,000 (+45% on previous year)
Total Tourist Receipts:	$7 million USD
GNP:	$350 million USD
GNP per capita:	$870 USD

Main WW Species: Tropical dolphins.
Year WW began: 1998.
Types of WW: Dolphins, boat-based, land-based.

SOLOMON ISLANDS WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	Minimal	Minimal	Minimal

SOLOMON ISLANDS WW SOCIOECONOMIC PROFILE

WW Tourists

- According to WTO statistics, 34% of visitors are from Australia, 12% are from New Zealand, 8% from Papua New Guinea and 46% all others.

WW Operators & the Trips They Offer

- One operator offers dolphin watching tours through the village Ecotourism Rest House on Marovo Lagoon in North New Georgia in the western part of the islands. Marovo is a large lagoon and World Heritage-listed area. The dolphins are usually seen in groups of 50 to 100 or more.
- The trips cost about $250 SBD each ($49.78 USD).
- The dolphins can also be seen from land, such as from the Mavo Rest House in Ramata Village. Whales can sometimes be seen on longer excursions offshore.

The WW Community

- At present, only one dolphin watch tour occurs in one small village. Dolphin watching offers a non-consumptive way to bring additional socioeconomic benefits to a local community in a rural area.

WW Assessment

Moderate potential, but cetacean tourism potential needs to be explored further with surveys around the hundreds of islands extending over 645,000 sq km (245,000 sq mi). Tourism is set to grow with recent upgrading of the main airport to handle Boeing 747 jets.

Acknowledgments
Solomon Islands Chamber of Commerce and one operator.

GUAM (US)

(Unincorporated territory of the USA)

Population:	149,249
Land Area:	549 sq km (212 sq mi)
Tourist Arrivals:	1,382,000 (+1.39% on previous year)
Total Tourist Receipts:	$1,450 million USD

Main WW Species: Spinner dolphins; occasionally pilot whales.
Year WW began: Early 1990s.
Types of WW: Dolphins, boat-based.

GUAM WW VISITOR EXPENDITURES

Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	2,000	$50,000	$175,000
1998	4,000	$100,000	$350,000

GUAM WW SOCIOECONOMIC PROFILE

WW Tourists

- International tourists led by USA and Japan.

WW Operators & the Trips They Offer

- Three dive operators have expanded into dolphin watch trips.

The WW Community

- One community involved in dolphin watching.

WW Assessment

Considerable potential for dolphin watching as the dolphins can be reliably seen on 90% of the trips and the numbers of tourists coming to the island are already substantial.

Acknowledgments
Sophiano Limol and two operators.

MIDWAY (US)

(Unincorporated territory of the USA)
Midway Islands

Population:	453
Land Area:	5 sq km (1.9 sq mi)

Main WW Species: Spinner dolphins.
Year WW began: 1996.
Types of WW: Dolphins, boat-based, land-based, educational, photo-ID research.

MIDWAY WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	289	$500,000	$543,000

MIDWAY WW SOCIOECONOMIC PROFILE

WW Tourists

- Mainly Americans.

WW Operators & the Trips They Offer

- Only one operator is permitted to work here and offer the tours. The trips are partly land-based and use a 7-m (22-foot) motor vessel.

The WW Community

- Midway Atoll has been inaccessible to the public but was recently opened for ecotourism.
- Dolphin watching research is designed to assist management agencies in developing boater and visitor guidelines, as well as to provide new information on the ecology, behavior and social organization of spinner dolphins in an atoll habitat.

WW Assessment

Moderate potential for dolphin watching due to Midway's status as a National Wildlife Refuge. Tourism is only being allowed at a modest level.

Acknowledgments
Birgit Winning.

MICRONESIA

Federate States of Micronesia (FSM)
(includes the four main island cluster states of Pohnpei, Kosrae, Chuuk and Yap)

Population:	109,000
Land Area:	702 sq km (271 sq mi)
Tourist Arrivals:	20,000 (+82% on previous year)
Total Tourist Receipts:	Incomplete data
GNP:	$213 million USD
GNP per capita:	$1,920 USD

Main WW Species: Spinner dolphins, bottlenose dolphins, pilot whales.
Year WW began: 1998 (in Yap and Kosrae).
Types of WW: Dolphins, boat-based.

MICRONESIA WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	None	None	None
1998	230	$10,500	$36,000

MICRONESIA WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, tourists are mainly from Japan (40%), USA (34%), and Europe (9%).

WW Operators & the Trips They Offer

- In Kosrae, dolphin watching is incidental to diving and deep-sea fishing at present. In Yap, there is one dedicated operator who uses mainly small diving boats. In Pohnpei, four tour companies offer dolphin charters.

The WW Community

- Two communities are involved in dolphin watching, in Kosrae and in Yap, with more casual dolphin watching from Pohnpei.

WW Assessment

Considerable potential for dolphin watching on Yap as part of trips to see giant manta rays. Dolphin watching provides another reason for visiting the islands which includes diving and sightseeing tours. Moderate potential for dolphin watching on Kosrae as a separate offering through diving operators. There may well be considerable additional cetacean opportunities in this vast island nation, including around Pohnpei, but surveys would need to be done. These islands, unlike the neighboring Marshalls, are comparatively unpolluted. In general, the lack of infrastructure has slowed the growth of tourism, yet the untouched, unspoiled character of, particularly, the outer islands, is part of the attraction.

Acknowledgments
Yap Visitors Bureau, Bumio Silbanuz, David Vecella, Sophiano Limol, and two operators.

TONGA

Kingdom of Tonga
Pule'anga Fakatu'i'o Tonga

Population:	97,000
Land Area:	720 sq km (278 sq mi)
Tourist Arrivals:	26,000 (–3.7% on previous year)
Total Tourist Receipts:	$14 million USD
GNP:	$177 million USD
GNP per capita:	$1,810 USD

Main WW Species: Humpback whales, pilot whales, spinner dolphins, sperm whales.
Year WW began: 1994.
Types of WW: Large whales, dolphins, boat-based, land-based, educational, photo-ID research.

TONGA WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	200	$10,000	$35,000
1998	2,334	$55,000	$422,000

TONGA WW SOCIOECONOMIC PROFILE

WW Tourists

- Overall, tourism from abroad is led by New Zealand (30%), USA (22%), and Australia (16%).
- Tonga whale watchers tend to be "free and independent" travellers, not on "package tours". They are highly educated with relatively high incomes (Orams 1999).
- Whale watchers represent nearly 10% of all arrivals to Tonga. An estimated 8,500 people visit the Vava'u area each year, where the whale watching occurs, with only an estimated 5,800 visitors considered "holiday-makers". More than 3/4 of them arrive via aircraft and the rest come via cruising yacht (Orams 1999). According to operator returns for this study, 2,334 people went whale watching in Vava'u in the 1999 season. This amounts to about 63% of all seasonal holiday-makers to Vava'u (2,334 of 3,721), but it does not take into account visitors who make repeat trips within the same season, the up to 5% local residents according to one operator who go whale watching, and the possibility that some business visitors may also be taking whale watch trips (as they do in other parts of the world). By comparison, Orams found that 70% of all Vava'u visitors he interviewed said they went whale watching (Orams 1999).
- Orams (1999) found three main types of visitors: (1) "hard core" whale enthusiasts (22% of air holiday-makers and 8% of yacht visitors), (2) part-time whale watchers, those who consider whales part of the attraction and overall experience of visiting Tonga (59% of air holiday-makers and 64% of yacht visitors), and (3) incidental whale watchers, those who were unaware of whale watching prior to arrival but who viewed whale watching as an added bonus (18% of air holiday-makers and 22% of yacht visitors).
- Some 43% of air holiday-makers and 37% of yacht visitors considered that whales were important or extremely important reasons for their visit to Vava'u (Orams 1999). In addition, 95% of holiday makers and 83% of yacht visitors were opposed or strongly opposed to the commercial hunting of whales, though the percentages fell by a little more than 30% in each case if the whaling was indigenous hunting for local consumption — still half or more opposed. Most important, 65% of yacht visitors and 73% of air holiday-makers said that whaling at a particular location such as Vava'u would reduce their likelihood of visiting the area (Orams 1999). Thus, according to Oram's study, whale watching and whaling would be unlikely to be compatible in Tonga.

WW Operators & the Trips They Offer

- There are five main operators offering whale watch tours, although some of the other general marine tour operators also do some whale watching.
- Tonga companies are now investing in customised whale watch vessels with large stable observation and photography platforms, complete with hydrophones and a speaker system, toilets, onboard seating, and easy diver access to the water.

The WW Community

- One community in Tonga is involved in whale watching.
- According to the operators, there are 18 jobs (mainly local residents) in the whale watch industry itself, all but three of them full-time.
- A humpback whale souvenir industry has started up with numerous T-shirts, postcards, whale song cassettes, whale carvings, jewelry, and other items, many of them locally produced. This industry provides additional income to operators and gift shops.
- Orams estimated the number of participants and the direct and total whale watch expenditures using different methodology from that used in this report. Orams found that a smaller total number of whale watchers on aircraft and yachts were contributing $78,000–$116,000 TOP ($47,558-$70,727 USD) in direct expenditure (which in Orams' study includes not just the ticket price, but food, film, souvenirs, and other). Orams then evaluated the

wider expenditures of visitors to Vava'u that he had determined came specifically to watch whales: an additional $567,847 TOP ($346,227 USD) spent on accommodation, food, transport, souvenirs and other items. According to Orams, the five permitted whale watch operators also spent an estimated $54,464 TOP ($33,208 USD) on their whale watch operations and their employees spent an additional $44,000 TOP ($26,828 USD) in Vava'u each year. This leads to a "use" value (including direct, indirect and induced expenditure) of whales as a tourism resource in Vava'u of between $746,000 and $784,000 TOP ($454,850–$478,020 USD) (Orams 1999). Orams states that this represents an incomplete "underestimate" of the total economic benefit of whale watching to the Vava'u community which he estimates at more than $1,000,000 TOP ($609,719 USD) a year.

- The Tonga Visitor's Bureau and the tourism industry recognize that Tonga's most important attractions are all marine nature: coral reefs, islands, beaches, fish, birds, and whales and dolphins, and they use images associated with these attractions, especially whales, to promote tourism to Tonga. 82% of all written tourism publicity on Tonga refers to whales and whale watching and nearly half use visual images of whales (Orams 1999).
- Since 1996, the NGO Whales Alive, funded by the South Pacific Regional Environment Programme (SPREP), has worked with stakeholders in the whale watch industry and local government to present whale watch operator and naturalist guide workshops; to help devise, test and evaluate guidelines for whale watching; to create whale watch outreach education programs; and to visit school classrooms and bring some of them out to meet whales at sea.
- Orams (1999) estimates that each humpback whale in Tonga's waters brings $30,000 TOP ($18,292 USD) in whale watch earnings each year and $1.6 million TOP ($975,550 USD) during its 50-year lifetime.
- Whale watching and whale conservation contribute to the powerful, positive international image of Tonga. As Orams (1999) points out, Tonga successfully promotes itself internationally as a "religious, peaceful, friendly kingdom" which produces a positive self-image and sense of pride in their country and culture. Orams believes that whale watching and protection of whales fits right into this and contributes to an international image which is "attractive to the dominant tourist markets of Tonga — Australia, New Zealand, Western Europe and North America."

WW Assessment

There is outstanding potential, some of it being realized in the rapid growth of whale watching which is already making a substantial tourism impact on this island country. In the 1960s and 1970s, a small whaling industry in the northern Vava'u area hunted whales for food but the King of Tonga banned whaling in 1978. In recent years, the World Council of Whalers, in league with some local Tongans, has been working to promote a return to whaling in Tonga. The conflict in the community remains unresolved but the growing importance of whale watching and the views of visiting tourists who provide substantial foreign exchange mean that the future of island tourism may well hang on the decision. Yet how fast and how much whale watching grows in future also depends on overall tourism infrastructure and government support of tourism, as well as Tonga's closest competitors (e.g., the South Pacific islands of Samoa, Fiji and others, none of which have whale watching, though Fiji recently started dolphin watch tours.) To some extent, the future development of whale watching in Vava'u is constrained by transportation and accommodation limitations (Orams 1999), though 1999 air arrivals to Vava'u were up substantially on the previous few years. For now, at least in the short term, whale watching can be expected to continue to grow.

Acknowledgments
Mick McIntyre, Kate Clere, Mark Orams, Mike Donoghue, and four operators.

FRENCH POLYNESIA (Tahiti and Moorea) (France)

(French overseas possession)

Population:	219,521
Land Area:	3,541 sq km (1,363 sq mi)
Tourist Arrivals:	180,000 (+9.76% on previous year)
Total Tourist Receipts:	$359 million USD

Main WW Species: Spinner and other tropical dolphins.

Year WW began: Early 1990s.

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

FRENCH POLYNESIA WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	Minimal	Minimal	Minimal
1998	Minimal	Minimal	Minimal

FRENCH POLYNESIA WW SOCIOECONOMIC PROFILE

WW Tourists

- No information.

WW Operators & the Trips They Offer

- From the north side of Moorea, spinner dolphin trips outside the lagoon have been led by an American scientist over the past several years. Some trips have also been offered through the Bali Hai hotel in Moorea.

The WW Community

- One community in Moorea has been involved in the dolphin watching.
- An American scientist based at the Richard Gump South Pacific Biological Station on Cook's Bay has led the tours which have contributed to scientific research and conservation of the local spinner dolphins. The station maintains a public profile and contributes to environmental education in the community.

WW Assessment

Moderate potential for expanding dolphin tours. There may well be accessible dolphin and whale populations near other islands in this vast group but cetacean surveys would need to be done. There has been a strong backlash against tourism and French military use of the islands. The Polynesian majority have consistently called for a reduction in tourism and for greater autonomy and local trade promotion.

Acknowledgments
Kathy Wang.

NIUE (New Zealand)

(Self-governing territory in free association with New Zealand)

Population:	2,080
Land Area:	260 sq km (99 sq mi)
Tourist Arrivals:	2,000 (same as previous year)
Total Tourist Receipts:	$2 million USD

Main WW Species: Humpback whales (early June-October), spinner dolphins (year-round).
Year WW began: 1994.
Types of WW: Large whales, dolphins, boat-based, swimming.

NIUE WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	None	None	None
1994	Minimal	Minimal	Minimal
1998	50	$1,500	$2,000

NIUE WW SOCIOECONOMIC PROFILE

WW Tourists

- Mainly from New Zealand.

WW Operators & the Trips They Offer

- Three operators run the whale watch tours as part of the three main marine tourism operations that are based around game fishing or dive charters. Often, the whale watching is opportunistic, occuring enroute to dive or fishing site. There are also some general nature tours on which whales and dolphins are encountered. Two operators have invested in hydrophones to listen to the whales. Although only a few trips are dedicated whale or dolphin watch trips, the operators would like to develop these further. The boats carry between 4 and 12 passengers. Approximately 25% of the marine-based trips during the year are cancelled due to poor weather (Constantine 1998).

The WW Community

- There is one community where the three operators are based.

WW Assessment

There is modest to considerable potential in terms of the small scale of tourism on this island of only 1,500 population. To attract international tourists to cetacean tourism, the tours will require "value-added" features (e.g., turtles and other marine nature attractions including the world's largest coral island) to distinguish it from other, more accessible places where humpback whales and spinner dolphins can be found.

Acknowledgments
Rochelle Constantine and Mike Donoghue.

ANTARCTICA

Population:	None (transient population of researchers)
Land Area:	13,900,000 sq km (5,366,790 sq mi)
Tourist Arrivals:	10,013 (+6.5% on previous year)

Main WW Species: Humpback whales, blue whales, fin whales, sei whales, minke whales, sperm whales, orcas, various dolphins.

Year WW began: Tours date from 1957, but whale watching has been a prominent feature only since the 1980s.

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

ANTARCTICA WW VISITOR EXPENDITURES			
Year	No. of whale watchers	Direct expenditures	Total expenditures USD
1991	1,175	$5,900,000	$5,900,000
1994	2,000	$10,000,000	$10,000,000
1998	2,503	$15,348,000	$16,600,000

[The numbers above represent 25% of all tourists and expenditures as a conservative indication of whale watching.]

ANTARCTICA WW SOCIOECONOMIC PROFILE

WW Tourists

- During the Antarctic summer of 1998–99 (Nov. 12–March 20), visitors came from 51 countries led by the USA (49%), UK (12%), Germany (9%), Australia (7%), Switzerland (3%), Japan (3%), Austria (2%), and Canada (2%).
- 9,844 tourists came by cruise ship, 90 by yacht, and 79 were on land-based trips. The total of 10,013 is the highest visitor total ever for Antarctica (Enzenbacher 1992; Barrio and Roldán 1999).

WW Operators & the Trips They Offer

- Some 18 companies used 15 cruise ships of various sizes (including 3 companies which sell into other companies' departures) carrying from 85 to 2,177 passengers during the 1998–99 season.
- Of the trips going through Ushuaia, the main port, small ships (up to 100 passengers) made a total of 56 trips carrying 3,481 passengers; medium ships (101–299 passengers) made 33 journeys carrying 3,481 passengers; and large ships (300+ passengers) made 6 trips carrying 2,177 passengers (Barrio and Roldán 1999).
- Overall capacity on the trips was 78% in 1998–99, which is down on the previous six years when it ranged from 81–84% capacity. Average length of journey on board a cruise ship was 14 nights (Barrio and Roldán 1999).
- None of the Antarctic trips are dedicated whale watch tours. However, many carry accomplished whale watch guides and cetacean sightings are a big part of the trips. Many use Zodiac inflatables or other boats to view the whales close-up; some offer helicopter flights. Wildlife (including whale) watching was a highlight of the trip for more than 44% of visitors. Therefore, for this report, 25% of all tourists and expenditures is taken as a conservative indication of whale watching. The average minimum price for cruises to Antarctica in 1998–99, based on average trip times and unit costs for the three main size classes, was $6,132 USD per person.

The WW Community

- One community in Antarctica on King George Island now has an 80-bed hotel but the main community used as a departure port for most of the cruises is Ushuaia, Tierra del Fuego, Argentina, where there is considerable local economic impact. 93% of all Antarctic passengers in 1998–99 called at the port of Ushuaia (Barrio and Roldán 1999). Ushuaia bills itself as the "Gateway to Antarctica". An estimate of Ushuaia revenues (for total expenditures above), includes film ($150), food + drink ($250), accommodation ($100) — a minimum of $500 USD per person.
- The 18 tour companies have more than 150 main staff positions, but overall number of supporting jobs is much higher.
- Whale watching and tourism in general from the cruise ships contribute to conservation efforts, giving a higher profile to Antarctica's fragile ecosystem, as well as contributing scientific knowledge about Antarctica through photo-identification and other research from the ships. A trip to Antarctica is for many people the trip of a lifetime, and those who visit develop an enduring passion and support for Antarctica, many contributing toward its protection (Hoyt 1992).

WW Assessment

Moderate to considerable potential. Antarctica's capacity for tourism is hotly debated and more impact studies are needed. Still, the tours have the built-in limiting factor of their cost and the remoteness of the location (Hoyt 1992).

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Conclusions

Whale watching as a commercial endeavor — with important educational, environmental, scientific, and other socioeconomic benefits — has become a more than $1 billion USD industry. In 1998, it attracted more than 9 million participants in 87 countries and territories.

Through the late 1990s, whale watching continued to grow at a rapid rate. Since the last worldwide survey in 1994, the number of countries and overseas territories where whale watching occurs has increased from 65 to 87. Previous numbers and other results from 1991 and 1994 in this and later paragraphs are based on Hoyt (1992, 1995a). In 1991, only 31 countries were involved in whale watching. At the same time, the number of whale watchers has increased from a little more than 4 million for the year 1991, and 5.4 million for the year 1994, to 9 million in 1998. Total whale watching tourism expenditures, estimated at $504 million USD (£311-million GBP) in 1994, grew to $1,049 million USD (£655 million GBP) in 1998.

As a further measure of its prevalence, whale watching is now carried on in some 492 communities around the world — nearly 200 more than in 1994. In many places, whale watching provides valuable, sometimes crucial income to a community, with the creation of new jobs and businesses. It helps foster an appreciation of the importance of marine conservation, and provides a ready platform for researchers wanting to study cetaceans or the marine environment. Whale watching offers communities a sense of identity and considerable pride. In a number of places, it does all of the above, literally transforming a community.

The key overall findings are as follows:

- Since 1991, when 4 million people went whale watching, the number of people participating has increased by an average of 12.1% per year, reaching more than 9 million in 1998. Whale watching grew even more rapidly in the mid-to late 1990s (13.6% per year) than it did in the early 1990s (when the rate was 10.3% per year). The direct expenditures (the amount whale watchers spent on the tours) increased from $77 million USD in 1991 to $299.5 million USD in 1998 — an average annual increase of 21.4%. The total expenditures (the amount whale watchers spent on the tours, as well as travel, food, hotels and souvenirs) increased from $317.9 million USD in 1991 to $1,049 million USD in 1998 — an average annual increase of 18.6%. (The percentages for direct and total expenditures are not adjusted for inflation.)

- Of the some 87 countries and overseas territories or dependencies with some level of commercial whale watching, the breakdown is 66 independent countries and 21 overseas territories or dependencies, including Antarctica.

- Worldwide, there are 22 new countries that have started whale watch tours since the previous survey in 1995, including St. Kitts & Nevis, St. Lucia, Namibia, Oman, Taiwan, Fiji, and the Solomon Islands.

- 34 of the 40 member countries (85%) of the International Whaling Commission (IWC) countries now have at least some whale watching activity. Some 7,731,885 people a year currently go whale watching in IWC countries (or territories of these countries), spending a total of $779,828,000 USD. Most whale watching (86%) occurs within IWC countries. Canada is the main country outside of the IWC where whale watching occurs, with a little more than one million whale watchers in 1998. (See Appendix 3 for a listing of all IWC countries and associated territories with a breakdown of each country's whale watch statistics).

- The "million whale watch club" is expanding. In 1994, only one country, the United States, could claim more than a million whale watchers. Today, there are three countries or areas that can make this claim: besides the United States, both Canada and the Canary Islands (Spain) have recently surpassed 1 million whale watchers a year. Two countries with half a million or more, both of which will likely soon have 1 million a year, are Australia and South Africa.

- Some of the communities transformed by whale watching — that is, having substantial economic and, in some cases, educational and scientific benefits from whale watching — include: Kaikoura, New Zealand; Provincetown, Massachusetts, USA; Tofino and Telegraph Cove, in British Columbia, Canada; Ogata and Ogasawara, Japan; Andenes, Norway; Hermanus, South Africa; Tadoussac, Québec, Canada; Friday Harbor, Washington, USA; Lahaina, Hawaii, USA; Puerto Pirámides, San Julian, and Puerto Deseado, Argentina; Hervey Bay, Byron Bay, and Monkey Mia, Australia; Dingle, Ireland; Rincón, Puerto Rico; Húsavík, Iceland; Guerrero Negro, México; among others.

- Most of the some 83 species of cetaceans are included in whale watch programs, with the exception of the beaked whales. The most common focal species for whale watching industries are humpback whales, gray

whales, northern and southern right whales, blue whales, minke whales, sperm whales, short-finned pilot whales, orcas, and bottlenose dolphins. Two of these (blue and northern right whales) are classified as endangered species, while two others (humpback and southern right whales) are considered vulnerable (IUCN Red Data Book). There is no doubt that all four species would be watched more if they could be reliably found in more locations; wherever they are found, they are very popular. The percentage of whale watchers who focus on smaller cetaceans is increasing. Besides the proven appeal of watching orcas, pilot whales and bottlenose dolphins, a number of countries have seen a dramatic increase in the number of people taking swim-with-dolphin tours (New Zealand, Australia, Japan). The lesser known smaller cetaceans can also attract seasoned whale watchers eager to see the smaller and sometimes more unusual species. Other vulnerable or rare species, typically with rare or limited distribution but forming part of whale watch programs, include the Ganges river dolphin or susu (India & Nepal), boto or Amazon river dolphin (Amazon basin), Hector's dolphin (New Zealand), Heaviside's dolphin (South Africa and Namibia), Commerson's dolphin (mainly Argentina), northern bottlenose whale (mainly Nova Scotia), and the bowhead whale and narwhal (both in the Arctic).

- Photographic identification (individual photo-ID studies using natural markings and pigmentation on the bodies of living whales) is now a component of whale watching in some 46 countries and overseas territories — 53% of all countries where there is some whale watching. However, regular photo-ID shots are taken on only a small percentage of operations in each country.

- The most common form of whale watching is boat-based (72% of all whale watching), everything from kayaks to converted ferry ships. Yet, more than 2.55 million people in ten main countries participated in land-based whale watching (28% of all whale watching). Land-based whale watching has substantial commercial implications in four of these countries: South Africa; Canada (especially in Québec, also British Columbia and Newfoundland); Australia (in Western Australia, South Australia and Victoria); and the United States (in California, Oregon, and Washington State). Less than .001 of all whale watching (< 10,000 participants a year) consists of fixed-wing or helicopter tours.

- In most countries, whale watching is primarily one of the tourism activities of outside (foreign) visitors and, as such, a source of foreign currency. However, the following countries draw the majority of their whale watchers from their own country: the United States, Australia, Japan, the United Kingdom, and a few others. In the larger countries, whale watchers are often visiting "tourists" from one region of a country to another, but they do not bring in foreign currency. However, most of the above countries with the exception of Japan also have substantial numbers of outside visitors going whale watching and because of the sheer size of the industry in these countries, the numbers of foreign visitors certainly outnumber most of the total numbers for many smaller whale watch countries.

- Some 4.3 million people went whale watching in the USA in 1998. Compared to the rest of the world, 47.8% of all whale watching occurs in the United States. Whale watching started here in 1955 and it continues to flourish in all regions, though it appears, finally, to be leveling off, though still posting a 4.17% average annual growth rate between 1991 and 1998.

- The fastest growing whale watch country in the world between 1994 and 1998, in countries with more than 5,000 whale watchers, is Taiwan, which went from zero to about 30,000 whale watchers during the period. The four next highest rates of increase between 1994 and 1998 are as follows: Iceland (250.9% avg. annual increase), Italy (139.9%), Spain (123.6%) and South Africa (112.5%). The fastest growing continental region for whale watching is Africa, with an average 53.0% annual increase between 1994 and 1998. Second fastest was Central America and the West Indies (47.4%), followed by Asia (31.7%).

- Iceland's extraordinary average annual growth rate of 250.9% from the mid-to late 1990s is one of the highest ever growth rates in whale watching. In 1994, some 200 people went whale watching from one community; by 1998, there were 30,330 taking trips from eight communities. Iceland offers close-up encounters with minke, blue and humpback whales, as well as orcas and Atlantic white-sided and white-beaked dolphins. There is some evidence from visitor surveys that the whale watch growth in Iceland might not have been so rapid if the country had resumed whaling.

- Whale watching in Japan has grown much faster than the average world rate throughout the 1990s. Between 1994 and 1998, whale watching in Japan grew 16.8% per year; from 1991 to 1998, the average increase was 37.6% per year. As of 1998, some 102,785 people went whale and dolphin watching in Japan, spending an estimated nearly $33 million USD. This is nearly double the number of people who participated in 1994 (55,000). The most commonly watched cetaceans are humpback, Bryde's, minke, and sperm whales, as well as bottlenose and other dolphins. Three of these, minke, Bryde's and sperm whales are currently being targetted by the Japanese whaling industry.

• Norway experienced growth at 18.8% a year between 1994 and 1998. In Norway, in 1998, 22,380 people took whale watch trips, spending more than $12 million USD. The main operation at Andenes in northern Norway, which offers sperm whales as well as several baleen whale species and dolphins, has been responsible for contributing diverse socioeconomic values to the community (especially in the area of education, research, and community identity which has contributed to successful tourism marketing). In the Tysfjord area, in autumn, orcas come in close to feed on herring and are watched inshore. Visitors annually come from more than 30 countries to these two locations, with operators typically catering for two to five languages on the tours.

• South Africa has seen a change as well as an increase in whale watching. From an industry that was almost completely based on watching southern right whales from land, there have been expanding socioeconomic benefits in the land-based and, now, in the boat-based sector, too, including dolphins, humpback whales and even Bryde's whales. In 1998, about 500,000 people went whale watching from land at Hermanus alone. In late 1998, licenses were given for boat-based whale watching for the first time in many areas of the coast. Over the next few years, whale watching can be expected to continue to grow steadily in South Africa, with a million participants a year possible within the next decade.

This report is based on original research and surveys covering the activities of whale watch and other marine operators around the world. Data gathered was checked and compared with existing tourism data, papers, and reports as well as with knowledgable persons in tourism departments, local NGOs, and cetacean researchers.

As in two previous whale watch reports in 1992 and 1995, I have largely used tourism expenditures to chart the worldwide growth of whale watching. There has been no effort to include in these valuations whale-watching-induced (sometimes termed indirect) revenues, such as the amounts spent by whale watch employers and employees. Recent whale watch studies in Hawaii and Tonga have confidently included such numbers in their calculations, but it would be difficult to do this for every country due to the inappropriateness of using existing multipliers as well as the time it would take to devise new multipliers. Thus, a decision was taken to present only the visitor expenditures (spends) as a conservative indication of economic benefits. Tourism expenditures are the numbers that are the most straightforward, and the least controversial, to measure. They are also readily understood and accepted by politicians, bureaucrats, tourism departments, and the general public. Finally, they provide a means of continuing to chart the growth of whale watching, since this approach has been used now for nearly two decades.

These tourism expenditures, even though they are substantial, represent conservative measures of the socioeconomic benefits of whale watching. Little data exists on the overall socioeconomic values of whale watching, but in this report an effort was made to assemble existing information in a whale watching "socioeconomic benefits profile" for each country.

Other evidence of socioeconomic benefits can be seen in:

• dozens of whale festivals in coastal communities in different parts of the world (nine in California alone) with a multi-million dollar socioeconomic impact in addition to whale-watch tours.

• whales and dolphins being used for tourism marketing by operators and other businesses in whale watch communities, as well as for marketing of communities, regions, and even countries, and coastal and marine protected areas. This shows the extensive value of using cetaceans for marketing, especially since they tend to attract environmentally conscious, high-spending tourists.

• the econometric estimation of the demand relationship for whale watching which, using a discount rate of 5%, results in a figure on the order of $440 million USD as the capitalized economic value of whale watching in Massachusetts alone (Hoagland and Meeks 1997).

• scientific programs of a number of research organizations which were started and have flourished because of a close relationship with commercial whale watching. These groups provide naturalists/scientists who narrate the trips and who are also paid and are allowed to do photo-identification and other research. The value of having a whale watch boat as a platform for research has been estimated at $1,000 USD a day on Stellwagen Bank, southern New England. The naturalists/scientists who work 125 days a year on the seven main boats there obtain an estimated annual benefit of $875,000 USD (7 x 125 x $1,000 USD a day). One research group alone makes $56,000 USD per year for its research program by being allowed to sell T-shirts and other merchandise on the boat (Hoyt 1994b).

Other important measures of socioeconomic benefit include the rate of return from whale watch businesses, as well as valuations of the whales themselves based on contingency valuation studies or other work. A significant indicator of a successful business is its rate of return: for successful long-term whale watching operations,the rate of return is at least 10% a year.

The primary conclusion from this report is that whale watching is worth a great deal in tourist expenditures but that this is just part of the picture. An examination of the vast range of socioeconomic benefits, many of them difficult to quantify, reveals that whale watching has become extraordinarily valuable around the world in many unexpected yet pervasive ways.

As this report was going to press (July 2001), a number of new developments and findings have come to light:

- The fastest growing whale watching in the world is currently in St. Lucia, in the eastern Caribbean, which has increased from only 65 passengers when it began in 1998 to more than 4,000 from four separate operators in 2000, with more than $175,000 USD in ticket sales alone. The extraordinary average annual rate of increase the past two years has been 685%, and this has occurred when tourism growth to the island has been minimal so whale watching provides a bright spot. Total tourist expenditures related to whale watching would be at least an estimated 3.5x the ticket sales ($600,000 USD).

- Elsewhere in the Caribbean, in St. Vincent & the Grenadines, dolphin watching doubled in popularity from 600 to 1,200 people in only two years between 1998 and 2000 — despite what amounts to the annual killing of breeding humpback whales (mothers and calves) over the past few years as well as the recent killing of four orcas in a pod of six. Orcas and humpback whales are two of the biggest draws to whale watchers around the world. In Dominica, the numbers of whale watchers almost doubled from 5,000 to 8,000 sperm whale and dolphin watchers between 1998 and 2000, and with the recent reliable appearance of humpback whales off its northeast coast, there are plans to expand into humpback watching tours in 2002. Humpback watching has recently expanded in the Dominican Republic, from more than 22,000 whale watchers in 1998 to 32,000 in 2000. The operators are now collecting photo-ID and other data and a new humpback whale exhibition has opened locally.

- On several Caribbean islands, whale watch tour operators have begun to market their tours through the cruise ship industry, which has helped increase the volume and bring more cruise ship money into the local economy. In 2000, Caribbean tour operators attended two hands-on workshops in the Turks & Caicos Islands and in Dominica and at the latter workshop formed the first regional association of whale watch operators called the Caribbean Whale Watch Association (CARIBWHALE).

- Through 2000, Taiwan and Iceland continued to be among the fastest-growing whale watch locales in the world. Taiwan went from 30,000 passengers in 1998 to nearly 100,000 in 1999, with more than 20 whale watch operations. Figures are incomplete for 2000. In Iceland, from 9 locations around the country, whale watching grew from 30,330 in 1998 to 44,000 in 2000. One out of every eight visitors to Iceland now goes whale watching, and total expenditures are in the range of at least $10 million — $13.5 million USD.

- In Japan, whale watching has been increasing in many of the some 25 whale watch communities despite poor national economic indicators the past few years. In 2000, however, volcanic eruptions near Muroran and Miyake-jima reduced local whale watching opportunities. Still, Ogata reached its 100,000th whale watcher in 2000 (over 10 years) and had a record year for school visitors with 1,883 school-age whale watchers. In Ogasawara, where whale watching began in Japan in 1988, 1999 saw a new high level of 12,000 whale watchers. Whale and dolphin watching — now year-round, with humpback whales during the winter, sperm whales spring through autumn, and spinner and bottlenose dolphins year-round — has become a permanent and important economic fixture in the community.

- Forty new cow-calf right whale pairs were discovered off the west coast of South Africa through reports to the Whale Hotline sponsored by the MTN Whale Route. Boat-based whale watching, begun in late 1998, continues to expand rapidly. There are various teething problems but efforts are being made to enable the permits to benefit local communities all along the South African coast. Last year, the annual "Welcoming Our Whales Festival", which is developing a new whale culture within the towns, brought Johannesburg children to the coast on a commercial airliner painted to look like a whale. The children, new to the sea, joined coastal kids to meet the whales and learn about them. Currently, the program is offering a six-month course called "Ambassadors of the Sea" in which enthusiastic kids can apply to research whales in the wild then bring the message back to their schools.

- Whale watching continues to expand in size and value in Brazil. At Imbituba, Santa Catarina State, more than 10,000 people went whale watching in 2000, up from 1,680 in 1998. The excellent land-based observation of right whales is being enhanced by the new Right Whale Environmental Protection Area (established September 2000) which will provide more interpretive signs and publications, and sponsor a study assessing the potential impact of whale watching. A certification course for whale watch guides will be starting up.

- In Hong Kong, China, since 1998, when 4,500 people went dolphin watching, five operators now take out an estimated 10,000 dolphin watchers a year.

• In the Maldives, where rare blue and beaked whales and a large assortment of tropical dolphins can be seen, the established local whale watch operator is set to begin work with the Ministry of Tourism on a project to document and disseminate information on Indian Ocean cetaceans, encourage local participation in wildlife tourism, and develop guidelines prior to the local expansion of whale watching.

• The biggest wildlife event in Ireland, in June 2001, was the arrival of a bull, mother and juvenile orca in Cork harbour. The orcas hunted for fish just off the promenade at Cobh and thousands came to watch as the orcas swam within 50 m of shore and stayed for days. Meanwhile, dolphin watching in the new Shannon River Estuary Special Area of Conservation (SAC) is on the increase, fin whales are regularly watched passing the Cork coast and on August 4, Ireland will hold a nationwide day of whale watching called "Whale Watch Ireland 2001".

• In Andenes, Norway, poor weather in 1999 and to some extent in 2000 decreased the opportunity available for whale watching but total numbers for all Norway remained robust at more than 20,000, approximately the same as in 1998.

• In the Mediterranean, whale watching has effectively moved into high gear due to the recent designation and the start of the management process for the Mediterranean Cetacean Sanctuary, which has implications for all of the Mediterranean but especially in the shared sanctuary waters of Italy, France and Monaco. Although the latest 2000 numbers are unavailable, Spain, Italy and Greece have greatly increased numbers, while France and Croatia are not far behind.

• In the UK, whale watch observers have crowded the top decks on the P&O Portsmouth and Brittany ferries between the UK and Spain. Over the past few years these have turned into popular whale watch tours especially in July and August. With substantial data coming in on some 16 species of cetaceans and various seabirds in the Bay of Biscay and English Channel, the activity has now helped spawn an email-based public sighting network around Britain. There is also considerable effort to enhance the value of existing whale and dolphin watch tours. In the Moray Firth, the May 2001 release of a draft management scheme for the Moray Firth candidate Special Area of Conservation (cSAC) spotlit the value of bottlenose dolphins for education and tourism in local communities and emphasized ways to protect and enhance the resource by encouraging such things as the use of low-noise engines on dolphin watch boats; asking for new boat licensing arrangements that ensure responsible behavior with dolphins, demanding that photographers and film makers obtain a license and be required to check a film library to be established; controlling the number and type of research and wildlife-watching boats and where they are based; and reviewing and consolidating the existing Dolphin Space Programme guidelines and making them more universal for all fare-paying wildlife-watching boats. These efforts to improve whale and dolphin watching — to enhance the overall socioeconomic value and lower the environmental, social and biological costs to the wildlife resource — are crucial for the future of whale watching as the industry becomes mature worldwide and the phenomenal growth of the late 1980s and through the 1990s inevitably slows down. The Moray Firth initiative, along with the Mediterranean Cetacean Sanctuary and the Shannon River Estuary SAC, are important because they are on the leading edge of a wave of new marine protected areas which are providing management and a positive direction for whale watching, trying to conserve cetaceans in a way that recognizes the economic, cultural, social and recreational needs of all those who live and work in the area.

What about the future of whale watching? According to the World Tourism Organization (WTO), world tourism arrivals are predicted to continue to grow on average by 3–4% annually beyond 2000. With whale watching growing at 12.1% per year throughout the 1990s, and by 13.6% per year from 1994–1998, it seems likely that whale watching will continue to grow at a faster rate than world tourism for at least a few years to come. Indeed, there is evidence that it has continued to grow and expand since 1998 though perhaps at a slightly lower rate due to the recent world economic downturn. If whale watching continued to grow at the same rate as through the 1990s (12.1% passenger increase and 18.6% total expenditure increase per year), then the year 2000 would have seen 11.3 million people going whale watching, spending $1.475 billion USD total expenditures. Even using a more conservative growth rate equal to half the above rates, I estimate that at least 10.1 million people are now going whale watching a year spending $1.253 billion USD.

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APPENDIX 1

SURVEY 1 (circulated to 1,000+ operators worldwide)

OPERATOR SURVEY FORM: Reply as soon as possible by _____

THE VALUE OF WHALE & DOLPHIN WATCHING BY ERICH HOYT: NEW REPORT

In 1995, I prepared a report on the worldwide value of whale watching. At that time, 5,400,000 people a year were going whale & dolphin watching in 65 countries, spending an estimated US $504 million dollars a year in total expenditures.

I am now compiling world-wide figures on the 1998 value of whale and dolphin watching for a report to be published in 2000. Can you please help by filling out this short form? If your company or organization offers whale/dolphin watching tours in more than one country, state, or region, photocopy the form and use one form per area. *Please note that I will keep individual company figures confidential*. Check here if you would like to receive the final world figures [ ].

Please fill in name and contact details or attach current business card or brochure. If there is not enough room, please write on the back of this page.

Name

Company/Organization Name

Mailing Address

City/State/Province/Country

Phone Fax

email website

1. For each area, where your company/organization offers whale/dolphin watching, please say where the tour departs from (name of town or port, as well as country).
2. Please put a check after the best description(s) of your 1998 tours: boat-based whale or dolphin watch tours [ ]; nature tours on which whales/dolphins were often seen [ ]; kayak tours [ ]; cruises aboard large cruise ships [ ]; land-based tours to see whales/dolphins [ ]; other [ ].
3. How many employees work in your whale/dolphin tour business full time / part time?
4. **THIS IS THE MOST IMPORTANT QUESTION TO ANSWER:** Estimated number of people your company took whale & dolphin watching in this one area only, for the year 1998 (or if calendar year 1998 is unavailable, please let me know which period your estimate covers).
5. How many (or what percentage) of your whale watchers are local / domestic / international? If you know what countries (or regions) they come from, please give approximate percentages:
6. For 1-HOUR to 1-DAY TOURS, what was the 1998 average amount spent per person for a whale or dolphin watching tour (please give average or usual adult ticket price, and currency used)?
7. For MULTI-DAY or PACKAGE tours only, what was the 1998 estimated average amount spent per person How many days did the package include? Was airfare included?
8. Additional amount per person (if known or can estimate) which your customers spend for travel, food, film, souvenirs, & accommodation incurred in process of going whale/dolphin watching and getting to the site (not including ticket price or package tour cost listed above)?

9.a. Total number of companies/organizations offering whale/dolphin watching in your area?

9.b. Estimated number of whale/dolphin watchers (domestic & foreign tourists) from all companies/organizations in 1998 in your area (including your own business)?

10. Please tell us the number of new businesses in your community (souvenir shops, tour companies, restaurants, etc.) due to whale/dolphin watching tours in your area? since 19__

APPENDIX 2

SURVEY 2 (circulated to limited number of operators)

OPERATOR SURVEY FORM: PART 2

THE VALUE OF WHALE & DOLPHIN WATCHING *BY ERICH HOYT*: NEW REPORT

(Based on Year 1998 Numbers)

FOLLOW-UP QUESTIONS IN KEY AREAS TO KEY BUSINESSES:

These questions are supplementary to our main survey. If you can answer some or all of them, it would be extremely helpful in terms of enabling us to calculate the value of whale watching.

2–1. Is it possible to compute/estimate the annual rate of return on initial investment for your whale watching business? __% per year for period 19__ to 19__

2–2. Please state the number of businesses in your community which would not exist if whale watching had not started in your area? If you can, it would be very helpful to tell us:

- number of new souvenir shops?
- number of new restaurants?
- number of new hotels/motels?
- number of new rooms (incl. guest houses & b&b)
- number of other new shops (please describe as many as you can)

2–3. How many, or give the percentage, of your whale watch customers who:

- come to your community just to go whale/dolphin watching?
- come to your community with whale/dolphin watching as part of the reason for their trip?
- went whale/dolphin watching spontaneously (impulsively decided on site)?

2–4. Please tell us other community benefits that have come from whale watching, including social, educational, economic or environmental benefits. (For example, benefits in some areas that can be traced to whale watching businesses include the designation of a local area as a marine protected area with multiple advantages, the building of a new community center or a dock, the monitoring by whale watch scientists of the local marine waters for the benefit of all, tour boats taking school classes whale watching at reduced or free rates.)

2–5. Please let us know if there are available socioeconomic or other useful tourism reports on whale watching for your area, which describe the social and economic impact of whale/dolphin watching on your community, area or country. Please tell us how we might obtain copies of these reports or other documents. If there is an economist, human geographer, or tourism consultant who is analyzing the value of whale watching in your area, we would be pleased to be put in contact.

APPENDIX 3
WHALE WATCHING WITHIN THE INTERNATIONAL WHALING COMMISSION (IWC)

Whale watch numbers are for 1998, based on this report.

Country	Joined IWC	Started WW	No. of WWs[36]	Total Expenditures[37]
Antigua & Barbuda	1982		No WW tours offered, but potential exists.	
Argentina	1960	1983	84,164	$59,384,000
Australia	1948	late 1960s (1987)	734,962	$56,196,000
Austria	1994		No internal WW but foreign WW tours offered.	
Brazil	1974	mid-1980s	167,107	$11,314,000
Chile	1979	early 1990s	3,300	$679,000
China	1980	1994	4,500	$759,000
Costa Rica	1981	1990	1,227	$218,000
Denmark	1950	mid-1990s	Minimal	Minimal
Faeroe Islands		1995	Minimal	Minimal
Greenland		early 1990s	2,500	$2,750,000
Dominica	1992	1988	5,000	$970,000
Finland	1983		No internal WW but foreign WW tours offered.	
France	1948	1983	750	$512,000
French Polynesia (Tahiti & Moorea)		early 1990s	Minimal	Minimal
Guadeloupe		1994	400	$23,000
Martinique		1991	Minimal	Minimal
New Caledonia		1995	1,695	$375,000
St. Pierre & Miquelon		1993	607	$94,000
Germany	1982	early 1990s	Minimal	Minimal
Grenada	1993	1993	1,800	$270,000
India	1981	1993	25,000	$525,000
Ireland	1985	1986	177,600	$7,119,000
Italy	1998	1988	5,300	$543,000
Japan	1951	1988	102,785	$32,984,000
Kenya	1981	mid-1980s	Minimal	Minimal
Republic of Korea	1978		No internal WW but foreign WW tours offered.	
México	1949	1970	108,206	$41,638,000
Monaco	1982	early 1990s	Minimal	Minimal
Netherlands	1977		No internal WW but foreign WW tours offered.	
Bonaire (Netherlands Antilles)		1998	200	Minimal

[36] Number of whale watchers.
[37] Total expenditures in USD $.

Country	Joined IWC	Started WW	No. of WWs	Total Expenditures
New Zealand	1976	1987	230,000	$48,736,000
Niue		1994	50	$2,000
Norway	1960	1988	22,380	$12,043,000
Oman	1980	1996	4,700	$500,000
Peru	1979	1985	531	$81,000
Russia	1948	1992	Minimal	Minimal
St. Kitts and Nevis	1992	1997	50+	Minimal
St. Lucia	1981	1997	65+	$8,000
St. Vincent & The Grenadines	1981	late 1980s	600	$100,000
Senegal	1982	late 1990s	Minimal	Minimal
Solomon Islands	1993	1998	Minimal	Minimal
South Africa	1948	early 1980s	510,000	$69,186,000
Spain	1979	late 1980s	25,000+	$1,925,000
Canary Islands		late 1980s	1,000,000	$62,195,000
Sweden	1979		No internal WW but foreign WW tours offered.	
Switzerland	1980		No internal WW but foreign WW tours offered.	
United Kingdom	1948	mid-1980s	121,125+	$8,231,000
Bermuda		1981	180	$20,000
British Virgin Islands		late 1980s	200	$14,000
Falkland Islands		early 1990s	Minimal	Minimal
Gibraltar		1980	12,500	$1,801,000
Turks & Caicos Islands		early 1990s	1,500	$150,000
USA	1948	1955	4,316,537	$357,020,000
Guam		early 1990s	4,000	$350,000
Midway		1996	289	$543,000
Puerto Rico		1994	55,000	$650,000
US Virgin Islands		1991	75	$8,000
Venezuela	1991	1994	Minimal	Minimal
TOTAL			**7,731,885**	**$779,828,000**

SUMMARY:

- 34 of 40 IWC countries (or their territories) offer whale watching (85% of IWC countries)
- 86% of all whale watching goes on in IWC countries (74% of all expenditures).
- 33 additional countries and 3 overseas territories, in addition to the above, offer whale watch tours, but they account for only 14% of all whale watching worldwide.

Whale Watching Countries and Overseas Territories