

Report of the IWC Workshop on Whalewatching

3 – 5 November 2010

Ecocentro Mar Patagonia, Puerto Madryn, Chubut, Argentina



Report of the Workshop on Whalewatching

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The Workshop was held from 3 – 5 November 2010 at the Ecocentro Mar Patagonia, Puerto Madryn, Chubut, Argentina. The list of participants is give as Annex A.

1. Introductory items

1.1 Address of welcome

The Workshop was officially opened by: Enrique Meyer, the Federal Minister of Tourism of Argentina; Eduardo Arzani, the Minister of Foreign Trade, Investments and Tourism of the Province of Chubut; Ambassador Susana Ruiz Cerutti, the Legal Adviser to the Foreign Ministry and Argentina's Commissioner to the IWC; Nadia Boscarol, the representative of the Federal Secretary of Environment and Sustainable Development; Carlos Eliceche, the Mayor of Puerto Madryn (where the Workshop took place); Alejandro Albaini, the Mayor of Puerto Piramides (which is the center of Argentina's whale whatching activities); Alejandro Albarellos, the Chief of the Argentine Coast Guard in Puerto Madryn; and Raul Chiesa, from the Directory of the National Parks Administration. In addition to the participants, the ceremony was attended by representatives from scientific organisations, non-governmental organisations, tour operators, tour guides and the press.

Argentina's Commissioner, in her inaugural speech, conveyed the importance attributed to whalewatching in Argentina at all levels; she expressed satisfaction and appreciation to the Commission for having accepted Argentina's offer to hold the Workshop in Puerto Madryn. The Commissioner also thanked: the participants who had travelled from many countries, including Australia, Brazil, Costa Rica, Dominican Republic, Greenland, Guadalupe, Iceland, Japan, Mexico, New Zealand, South Africa, the USA and Argentina, as well as the IWC Head of Science; the steering committee for its excellent work; and the Governments of Australia and the USA, as well as World Society for the Protection of Animals (WSPA) and the Government of Chubut for their generous sponsorship that made the Workshop possible.

1.2 Election of chair and appointment of rapporteurs

Rojas Bracho was elected Chair. Donovan was appointed rapporteur with assistance from Rafic.

1.3 Chair's opening remarks

The Chair welcomed the participants to the Workshop and thanked the Commissioner of Argentina, Susana Ruiz Cerruty of the Ministry of Foreign Affairs and the authorities of the Province of Chubut for hosting the meeting; the Australian and USA Governments and WSPA for providing the funds and Miguel Iñiguez and the organising committee for their hard work.

He noted that a recent paper on the global potential for whalewatching (Cisneros-Monetemayor *et al.*, 2010) examined the potential for whalewatching for maritime countries that do not currently engage in this industry. The authors suggested that whalewatching might generate annually an additional 413 million USD (2009), supporting 5,700 jobs resulting in an estimated total potential for the whalewatching industry to over 2.5 billion USD in yearly revenue and about 19,000 jobs around the world.

However, the carrying capacity of whales to whalewatching remains as the decisive constraint to sustainable whalewatching and all activities should be carried out within it. Unfortunately, there is little or no information on this or indeed how to estimate it. Some recent studies have shown or suggested that some whalewatching operations have negative impacts, particularly on resident populations of small cetaceans (IWC, 2003;2007; Lusseau, 2005; Lusseau *et al.*, 2006; Stockin *et al.*, 2008). Such findings are of direct relevance to concerns regarding the effect of human activities on stocks, but to date no comprehensive studies have been conducted concerning the possible impact (if any) of whalewatching on baleen whale or odontocete populations (IWC, 2008). This is one reason why whalewatching is being addressed by both the Scientific and Conservation Committees of the IWC and why the present Workshop, bringing together experts from research, management and industry and interested communities is being held. The role of the report of the present Workshop is discussed further under Item 2.

1.4 Adoption of Agenda

The adopted agenda is given as Annex B.

1.5 Available documents

The list of presentations to the Workshop is given as Annex C. In addition, the relevant parts of the reports of the Conservation Committee (IWC/62/Rep. 4) and the Scientific Committee's sub-committee on whalewatching (IWC/62/Rep. 1 Annex M) were made available to participants. Attention was also drawn to the previous work on this topic by the Scientific Committee and the Commission, including the report of an IWC-endorsed workshop in South Africa¹. The guidelines developed by the Scientific Committee on responsible whalewatching in 1996 (IWC, 1997) are repeated here as Annex E.

1.6 Workshop procedures

The participants agreed to the work schedule proposed by the Chair.

2. Objectives of the Workshop

The rationale for the Workshop and its objectives are given in IWC/62/CC8², the report of the Working on Whalewatching (WGWW) developed by Argentina, Australia, Brazil, Mexico, South Africa, United Kingdom and the USA. This documented a preliminary strategic plan for whalewatching, identifying the main priorities for the Working Group over the five-year period, 2010 to 2015. Three key elements were identified: (1) research and assessment; (2) management; and (3) capacity building and development. The task of the WGWW is to provide practical guidelines for member states seeking to identify the potential of whalewatching to contribute to the socio-economic growth of their communities and to exploit that potential sustainably, consistent with a precautionary approach. Over the next five years, the objective is for the WGWW to assist the Commission via the Conservation Committee and with the assistance of the Scientific Committee, to develop the

¹ http://www.iwcoffice.org/documents/sci_com/workshops/WW_Workshop.pdf

² <http://www.iwcoffice.org/documents/commission/IWC62docs/CC-8.pdf>

tools necessary to allow countries to implement the above three core elements in building sustainable whalewatching industries.

It had been agreed that an important component of the development of the strategic plan was to hold the present Workshop, bringing together experts from research, management and industry and interested communities to begin a discussion on the three key themes for responsible whalewatching activities and identify the goals and tools to be achieved as part of the five-year strategic plan. It will have a practical focus and seek to identify simple and effective ways to respond to key questions from countries seeking support in the development of sustainable whalewatching.

The Commission endorsed this approach at the 2010 Annual Meeting.

The report of the present Workshop will be circulated to the Commission as soon as it becomes available after agreement of all participants by e-mail, early in 2011. It will be presented to the Conservation Committee at the 2011 Annual Meeting (IWC 63), along with the report and recommendations from the WGWW (and the section on whalewatching from the report of the Scientific Committee – see Item 5), to assist the Conservation Committee in the development of a strategic plan for whalewatching for consideration by the Commission (and see Item 2 below).

3. Development of the strategic plan

The task of developing the strategic plan is that of the WGWW discussed above, which will be submitted to the Commission via the Conservation Committee; this Workshop is being held to assist the WGWW in its work. The first day of the Workshop was primarily devoted to receiving the presentations listed in Annex C³. Authors' summaries of their presentations are given as Annex D and the issues raised during those presentations formed the basis of the discussions of the elements of a strategic plan and workplan discussed below. The presentations can be found on www.iwcoffice.org/whalewatching, along with a presentation developed by Donovan during the workshop which was used to assist in formulating this report. The presentations highlighted the complex interactions of many factors (see Fig. 1 for some examples) that need to be taken into account in the development of a strategic plan.

The Workshop **recommends** that the WGWW considers as one of the primary methods for achieving the objectives of the strategic plan, the development of a web-based 'living' Handbook on whalewatching. Such a Handbook would provide concise, periodically updated, focussed information and advice to a variety of target audiences (see Item 3) on a number of key factors relevant to the undertaking of responsible whalewatching. This should provide an important international tool to assist relevant authorities to develop national/local best practice approaches to whalewatching, incorporating a number of issues related to, and in some cases expanding on, the three key items noted in IWC/62/CC8 i.e. research and assessment, management, capacity building and development. An outline of the issues proposed to be considered in the Handbook is given under Agenda Item 3 and shown in Fig. 1.

³ Unfortunately, it was not possible to discuss one of the presentations, that of David Lusseau and Lars Bejder entitled 'A sustainable whalewatching industry' (see Annex D). The authors were unable to be present and an attempted conference call failed due to internet connection problems. The presentation is available with the other presentations on the IWC website. The lack of discussion of the presentation in this report does not suggest that the Workshop considered the presentation unimportant, but rather reflected the desire of the Workshop that the paper should be discussed full at a later date when the authors were able to explain the presentation in more detail, rather than to risk holding a perfunctory discussion.

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In developing the Handbook, the Workshop **highlights** the key issues summarised below.

(1) The IWC should play an important advisory role – the Workshop noted that management responsibility lies with national governments (or subsidiaries of these).

(2) Local issues require local solutions – there are many different types of whalewatching (see Item 3.1) and there is no universal prescription of what comprises ‘best practice’ or as yet a scientific basis to define it unequivocally. The Handbook will: (a) contain information on the factors that need to be taken into account when considering not only the establishment of new whalewatching operations (see Item 2 above) but also the improvement in existing operations; (b) provide an assessment of the strengths and weaknesses of various approaches under different scenarios; and (c) emphasise and provide advice on the need for monitoring to ensure that any measures put in place are achieving their objectives.

(3) While the IWC has expertise in a number of the important factors for consideration, there are others for which it has relatively little expertise at present and mechanisms should be developed to achieve this expertise. In this regard, as well as bringing in additional expertise on national delegations, consideration should be given to improving/establishing co-operation with other relevant international, national and regional bodies and organisations. This could include those working with the socio-economic aspects of tourism, regional bodies considering whalewatching regulations (e.g. ACCOBAMS⁴, the Buenos Aires group, the UN World Tourism Organisation⁵) and whalewatching industry associations.

(4) Given the lack at present of comprehensive scientific, socio-economic and other advice on several key aspects related to sustainable whalewatching, the development of guidance should be seen as an iterative process that will evolve and require periodic updating and monitoring in the light of new evidence and information.

(5) Consideration should be given by the Commission to developing formal ‘conservation’ and ‘user’ objectives for whalewatching, against which to monitor the success or otherwise of measures taken, recognising that for other anthropogenic activities such as whaling (e.g. the RMP, AWMP), the Commission has assigned highest priority to conservation objectives when establishing the balance between conservation and user objectives.

In developing its guidance, the Workshop noted that given the availability of expertise within the participants, emphasis in the report is on advice related to vessel-based whalewatching operations, rather than to land-based or aerial operations. These will require further consideration in the future.

⁴ <http://www.accobams.org>

⁵ <http://unwto.org>

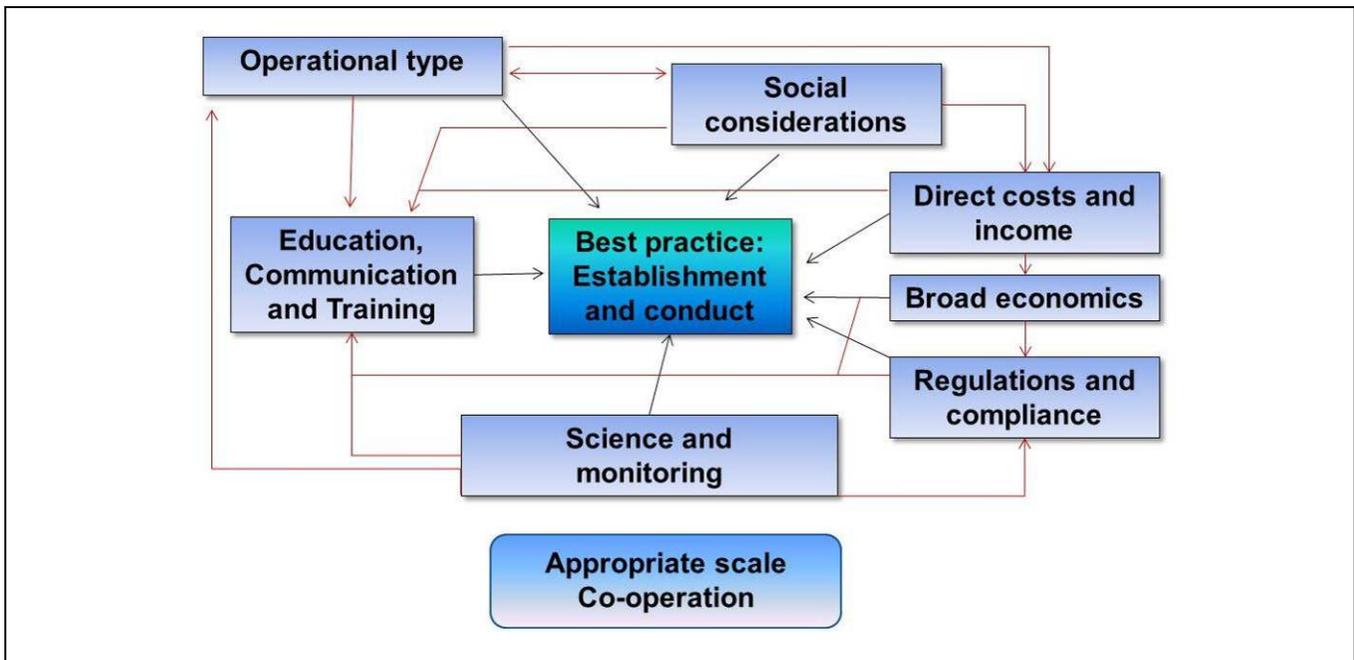
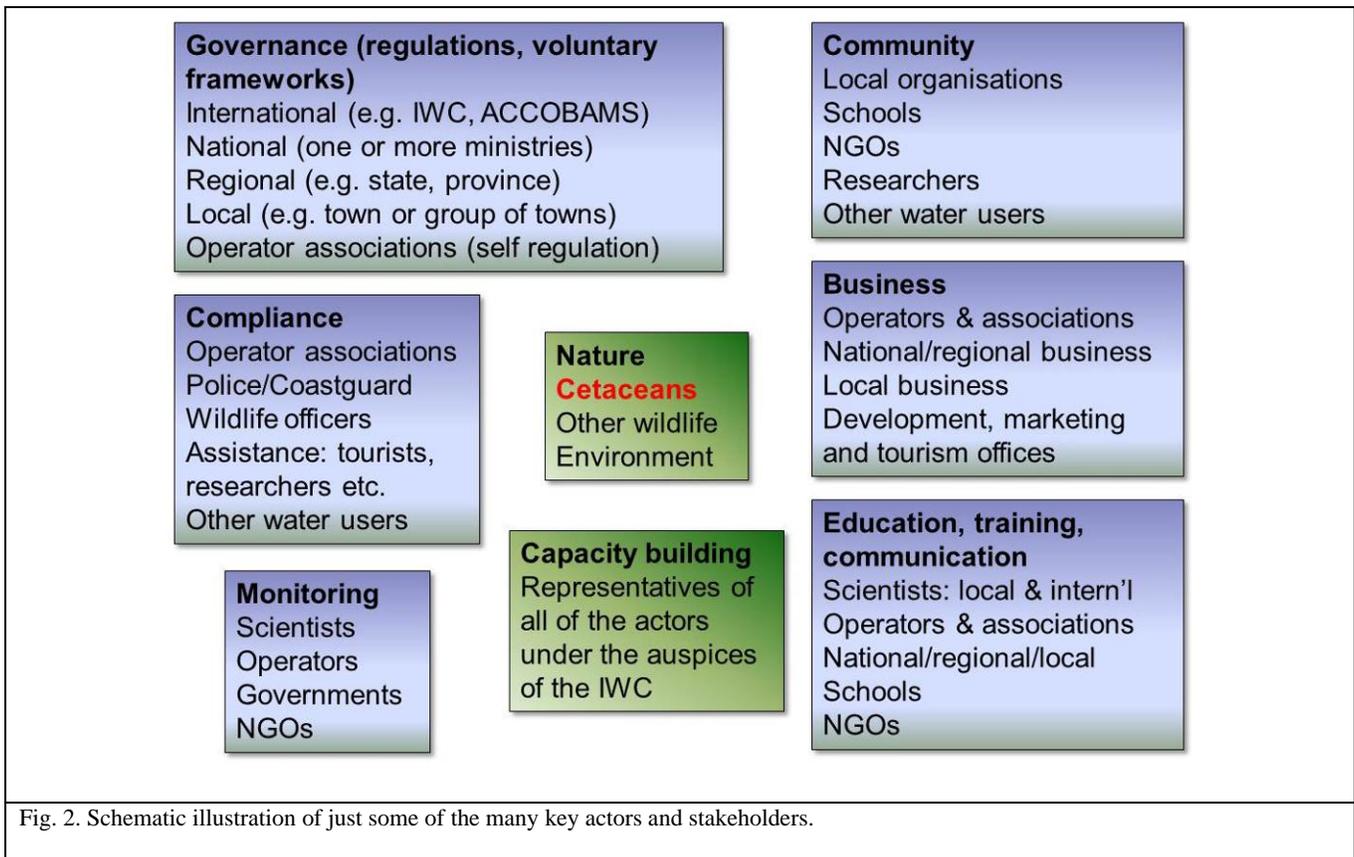


Fig. 1. Simplified schematic diagram of some of the many factors requiring consideration in the development of the provision of advice on responsible whalewatching and the links amongst them. For details see the discussion under Item 4. There is considerable overlap and interactions between the factors and the arrows are provided for illustrative purposes rather than to show all of the links.

4. Outline of the proposed Handbook

The Workshop recognised the complexity of developing a comprehensive advisory tool on whalewatching that would be of benefit to the many potential stakeholders (Fig. 2 shows some of the potential stakeholders). As noted above, it **suggests** that a web-based flexible handbook, using the most recent data-based web technology that can be tailored to various stakeholder groups, is the most promising approach. The IWC website is in the process of being updated to this new technology.

In the sections below, the Workshop identified some of the key factors that will need to be covered in the Handbook and provides a very brief *summary* of the issues that will need to be covered under each of these, drawing extensively on the presentations given and the expertise and experience of the workshop participants. Note that this outline is *not* intended to be comprehensive but rather to provide a simple outline to illustrate what it could contain. The general objective under each of the factors is to provide a summary of the strengths and weaknesses of various approaches in the light of the many different scenarios and types of whalewatching that can occur (see Item 3.1), with the provision of extensive case study examples where possible and appropriate. Ultimately, the Handbook can provide a template/decision tree incorporating a matrix of factors for the various stakeholders in considering the development of new whalewatching operations or improving existing ones.



4.1 Operational type

The Workshop **stresses** that there are many different kinds of whalewatching operations and scenarios. The Handbook must try to provide information and advice relevant to all of these. Under this section it will outline the variety that exists and may exist, ranging from:

- establishment of new, potential operations to improvements of existing operations;
- operations in developed countries with well-developed infrastructure to operations in developing countries where such infrastructure may not exist;
- operations focussing on single species of large whales to those focussed on several species of cetaceans to those focussed on the overall marine environment of which cetaceans are one component;
- operations that occur all year round to operations that are focussed on seasonally occurring species;
- operations that focus on different periods in the lifecycle e.g. breeding, feeding, migration etc. (note that for some of these, such as breeding areas, the predictability of occurrence is more stable than others, such as feeding areas);
- operations based from different vessel types (large, small, sails, engines etc.) and user types (commercial, recreational etc.) to aircraft to shore-based observations to 'swim-with' programmes.

4.2 Socio-economic implications

The Workshop noted the many important and complex aspects to examining the socio-economic costs and benefits of whalewatching. It also recognised that much of this lies outside the present expertise of the IWC. This is an area where the IWC can benefit from the experience of other bodies such as the UN World Tourism Organisation as well as national and regional tourism authorities. The Workshop **suggests** that while the Handbook can draw attention to various relevant factors and issues and provide examples from various case studies, the responsibility for economic, business and social development lies with industry, national governments (and their subsidiaries), not the IWC. That being said, to be an effective tool, the Handbook should cover a number of issues including:

- How numbers for cost-benefit analyses are calculated (and what factors should be included), to allow for consistency when comparisons are made or decisions taken;
- Discussion and listing of the various economic costs and benefits that must be considered when establishing a whalewatching operations ranging from the direct (e.g. vessels, crew, safety, insurance, marketing, licenses, fees, income etc) to the indirect (e.g. increased investment in multi-use infrastructure, increased tourism income, transport links, accommodation, and associated environmental costs such as water, sewage, energy)
- Discussion and listing of the various social costs and benefits associated with whalewatching including:
 - Potential positive or negative impact on local culture and way of life associated with influx (sometimes seasonal) of national and international tourists;
 - Models for benefit sharing within communities;
 - Handling of potential conflicts with existing local businesses and water users (e.g. fishing)
 - Involvement of all stakeholders in the decision making process;
 - Synergisms with other tourism ventures and flow on revenues and investment.

Here, as elsewhere in the Handbook, care should be given to using recognised terminology from the socio-economic field.

4.3 Regulations, voluntary frameworks and compliance mechanisms (management)

As noted above, the Workshop does not believe that the IWC as a body should be directly involved (other than in advisory capacity) in the development of management regimes, *inter alia* recognising the major workload and discussions of competency this would entail. The Handbook should focus on outlining the strengths and weaknesses of the various approaches and provide case studies where possible, to allow the appropriate national or other authorities to develop local approaches. It referred to the existing compilation of whalewatching regulations and guidelines that can be found on the IWC website⁶. The Workshop **stressed** that whatever management mechanisms are chosen, it is important to involve

⁶ <http://www.iwcoffice.org/conservation/whalewatching.htm>

stakeholders, especially operators, in the development process from an early stage. Factors that will be included in the Handbook will include a discussion of:

- legal frameworks;
- voluntary frameworks (including self-regulation by industry associations);
- codes of conduct;
- accreditation and ecolabels;
- licenses/permits (including conditions for obtaining them, lengths of validity, renewal process);
- cost recovery;
- protocols of navigation, safety and customer service.

The Workshop **stressed** the importance of developing effective compliance mechanisms, noting that the Scientific Committee has noted that there are a number of case studies identifying either the difficulties in monitoring compliance or showing that compliance level may be low (IWC, 2009). Discussion of possible approaches to compliance and associated costs should form an important component of the Handbook.

4.4 Science and monitoring

The Scientific Committee has considerable expertise related to a number of issues affecting whalewatching and other anthropogenic effects on populations (especially on large whales), including consideration of uncertainty. The Scientific Committee has been working on whalewatching issues since the mid-1990s and the Scientific Committee reports published as part of the *Journal of Cetacean Research and Management* and relevant papers published within the Journal provide a valuable resource. It developed guidelines for responsible whalewatching in 1996 (IWC, 1997) and these are included as Annex E to this report. In addition, it has held a Workshop on long-term impacts (IWC, 2008) and participated in an IWC-endorsed workshop in South Africa on sustainable whalewatching⁷, a template for developing data collection forms from whalewatching vessels (IWC, 2002), considered a number of papers and made recommendations on short-term impacts and produced an annual review of whalewatching research and developed a proposal for a major long-term experiment on whalewatching (LaWE) to assess impacts. Incorporation of an extensive literature resource will be a valuable component of the Handbook.

That being said, at present there is not sufficient information available to provide unequivocal scientific advice on many of the aspects required to develop formal guidelines for whalewatching to ensure that there are no adverse effects. It was noted that many of the present ‘best practice guidelines’ (e.g. with respect to minimum distances, lengths of encounters etc., ‘sustainable’ levels) seek to minimise adverse impacts while supporting economic activity in coastal communities. Some members, recognising that such evidence is not easy to obtain, noted that many such guidelines were not based on tested scientific evidence. The need to continue to seek to obtain and test scientific evidence of the impacts of whalewatching was agreed.

⁷ http://www.iwcoffice.org/documents/sci_com/workshops/WW_Workshop.pdf

Given this the Workshop **agrees** that in addition to large-scale long-term initiatives to obtain such evidence (such as the LaWE project being developed by the Scientific Committee (IWC, 2008)), it is essential that pragmatic local monitoring schemes are developed to try to assess the efficacy of such measures. The Workshop **suggests** that the WGWW considers requesting the Commission to ask for guidance from the Scientific Committee on how this might be achieved.

While the Scientific Committee has considerable expertise in monitoring abundance and trends, and characterising distribution, the Workshop also noted that for many populations of small cetaceans subject to whalewatching, there is no information on present abundance or status; to obtain this would be a major, though extremely valuable undertaking. Given the paucity of good scientific data for many areas, the Workshop **suggests** that, even where evidence is only circumstantial, considerably greater care should be given to deciding whether and under what conditions whalewatching operations should be allowed on critically endangered populations, in accordance with a precautionary approach.

The Workshop **recommends** that monitoring must comprise an essential component of any whalewatching management strategy, recognising that determining and interpreting (assigning causes to) changes in behaviour, distribution, abundance and population biology/life history parameters (e.g. reproductive success) is problematic and will require long-term data collection (and see recommendations below). The Scientific Committee could be requested to provide guidance on the development of pragmatic local monitoring schemes that will complement major long-term research programmes such as the LaWE.

The Handbook will ultimately include a literature section, summary of relevant Scientific and Conservation Committee discussions and recommendations and pragmatic guidelines on data collection for whalewatching operations and/or local authorities with an emphasis on monitoring.

The Workshop **recommends** that in addition to the usual focus on population level effects, the question of animal welfare should play an important role in developing guidelines for responsible whalewatching (such considerations form part of the rationale behind the guidelines given in Annex E). The Handbook will focus on the provision of relevant information here, including a possible definition of animal welfare issues in a whalewatching context.

4.5 Education, communication and training

The Workshop recognised that the Handbook itself represents a valuable educational tool. It noted that there are several potential target audiences for education (and training) and the Handbook web-design should take this into account. These include:

- industry
- operators and crew/guides;
- tour operators;
- visitors/passengers;
- recreational whalewatchers;
- local communities;

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- administrators and managers;
- decision makers; and
- media

Similarly, there are several target issues that must be considered, including:

- the rationale for regulations (including respect for the animals and their habitat);
- training in boat handling and safety near animals and how to respect any guidelines/regulations (including estimating distances at sea);
- training in data collection and an understanding of how it is to be used;
- information on the biology and natural history of cetaceans both worldwide and locally, and their conservation status;
- interpretive training
- information on the local area, habitat and culture.

The Workshop discussed the need to consider the objectives of the educational component (e.g. improved understanding leading to changing attitudes and behaviour) and the need to consider whether the educational materials are meeting those goals. It also recognised that such issues lie within the purview of national or local authorities rather than the IWC.

The Workshop also recognised the need for a mechanism to facilitate communication amongst whalewatching operators and between operators and regulators. Consideration of ways to facilitate this communication (including the use of web-based technology/forums/training opportunities, possible annual or periodic symposiums for operators to share experiences and learn from these) should be part of the 5-year plan.

4.6 Capacity building

The Workshop recognised the importance and complexity of this topic but there was insufficient time and expertise to discuss it fully, noting its close relationship to education and training. It noted that the Handbook itself provides one component of capacity building but agreed that the topic requires considerably more thought than possible at the Workshop; other ideas briefly raised in the discussion included provision of internships (as occurs for example at the Center for Coastal Studies in Provincetown, Mass., USA), exchange visits and training between operators or operator associations and an approach to GEF (Global Environmental Fund) by developing countries under the auspices of the IWC (c.f. a recent example with CCAMLR). Both within and outside the Commission there is considerable expertise on this subject; the Workshop **suggests** that this should be considered further by the WGWW prior to the 2011 Annual Meeting.

5. Workplan

If the WGWW (and ultimately the Commission) agrees to the proposal to develop a web-based advisory handbook, the Workshop **agreed** that the focus of the WGWW report and hence the discussions at the 2011 Annual Meeting should be to:

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- (1) request that the necessary resources be allocated to the Secretariat to undertake the technical design, or to engage a contractor to do so;
- (2) determine the approaches and mechanisms to populate the various sections of the Handbook and develop a timeline for this – possibilities for this work include using a combination of some or all of the resources below:
 - Scientific Committee
 - national governments volunteering to contribute to sections
 - contracted specific technical reports
 - specialist and stakeholder workshop(s) e.g. on management approaches including compliance and monitoring
 - assignment of a Handbook Steering Group to co-ordinate incorporation/editing of submitted drafts for ultimate approval by the Commission;
- (3) propose methods to improve co-operation with other relevant bodies (e.g. with respect to tourism, whalewatching operators, other regulators)
- (4) propose a mechanism to co-ordinate the work of the Conservation and Scientific Committees on whalewatching with a focus on developing and updating the Handbook (the Workshop believes that establishing a joint working group is the best approach);
- (5) propose conservation and user objectives for whalewatching or a mechanism to develop these;
- (5) consider in more detail the question of capacity building;
- (6) propose priorities for work within the short- and medium terms.

The Workshop also **suggests** that the WGWW considers requesting the Scientific Committee to comment on the scientific aspects of this report at its 2011 Annual Meeting to assist in discussions at the Conservation Committee and Commission in 2011.

6. Adoption of Report

In the time available it had not been possible to finalise all of the report and it was agreed that the revised draft would be circulated to the participants by email and any comments returned to the Chair and Head of Science. The Workshop report was adopted by email on 17 March 2011. In concluding the meeting, the Chair thanked all of the participants for their hard work and especially all of the Argentinian colleagues (including the whalewatching community of Puerto Pirámides) who had worked so hard behind and in front of the scenes to ensure the smooth running of the Workshop. The participants thanked the Chair for his excellent handling of the Workshop.

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Annex A

List of Participants

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Annex B

Agenda

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5. Workplan

Annex C

List of presentations

Natalia Leske and Rafael Benegas	Whalewatching in Chubut province (Argentina)
Steve Mitchell	Whalewatching in Australia
Marcia Engel	Whalewatching in Brazil
Damian Martinez-Fernández	Whalewatching in Costa Rica
Peter Sanchez	Whalewatching in Dominican Republic
Caroline Rinaldi	Marine mammal watching in the Eastern Caribbean
Greg Kaufman	Whalewatching in Ecuador
Erik Palo	Whalewatching in Greenland
Rannveig Grétarsdóttir	Elding/Reykjavik Whale Watching (Iceland)
Naoko Funahashi	Whalewatching in Japan
Jorge Urbán R. and Lorenzo Rojas-Bracho	Whalewatching in Mexico
Laura Boren	Marine mammal management in New Zealand: an overview
Herman Oosthuizen and Wilfred Chivell	Whalewatching in South Africa: A government and operator perspective
Carole Carlson and Greg Kaufman	Whale and dolphin watching in the USA

Annex D

Authors' summaries of their papers

NATALIA LESKE AND RAFAEL BENEGAS. WHALEWATCHING IN CHUBUT PROVINCE (ARGENTINA)

In 2006, the government of Chubut began a participative process (including whalewatching companies, non-governmental organisations and local authorities) in order to discuss changes needed to be made to the whalewatching regulations. As a result, Law N° 5714 was approved in March 2008 (a copy in Spanish of this law is available in the Secretariat of the IWC). This Law and its correspondent Decrees 42/08 and 167/08 included mainly the following items:

- (1) forbids approach and/or harassment of (sailing, swimming and diving) the Southern right whale in provincial waters during the whole year;
- (2) describes the Patagonia technique for whalewatching;
- (3) establishes the Application Authority in the Subsecretary of Tourism and Protected Areas depending of the Provincial Ministry of Foreigner Commerce, Tourism and Investment;
- (4) Specifies that the application authority will allow only between 4 or 6 companies to undertake whalewatching activities;
- (5) creates the Provincial Whale Watching Tour Operators Register and establishes the minimum requirements for their accreditation;
- (6) creates the Provincial Field Naturalist Guides Register and establishes the minimum requirement for their accreditation;
- (7) creates the advisory group on whalewatching which is led by the application authority and includes tour operators, GO's, NGO's.
- (8) specifies that only one boat per company with a maximum capacity of 70 passengers is allowed to develop whalewatching activities;
- (9) approves the best practices codes for whalewatching which prohibits whalewatching activities on mothers and calves from the beginning of the season until 31 August; limits sailing speed to a maximum of 10 knots in areas where the whales are; allows only one boat per individual whale; specifies avoidance of harassing or chasing the animals; specifies avoidance of sudden changes in boat speed; specifies not driving the boat in circles around the animals; and describes the approach maneuver to whales;
- (10) Establishes a restricted zone within which it is forbidden to sail private boats, with the exception of authorized whalewatching boats, in an area comprises between Punta Piaggio and Punta Cormoranes and from low tide zone to 3n.miles offshore.

The government of the province of Chubut, also regulates the following activities:

- (1) Commerson's dolphin watching;
- (2) nautical excursions in waters of the Golfo Nuevo (the activity of swimming could be complementary to the service of nautical excursions) specifies 'Techniques for dolphin watching'.
- (3) nautical excursions in water of Camarones and Bustamante bay: specifies 'Techniques for dolphin watching'.

STEVE MITCHELL. WHALEWATCHING IN AUSTRALIA

Australia is privileged to have 45 species of whales and dolphins that live in or migrate through Australian waters. The vast coastline of Australia provides the opportunity to watch whales by boat, land or from the air. Most whalewatching activities are centred on the migration of southern right and humpback whales each year from June until November.

The Australian whalewatching industry is a commercial activity that capitalises on the natural attributes that the ocean presents to generate economic and social benefits to local and regional communities while whale populations, industry standards and public demand are sustained. From the late 1960s, the number of whale watchers has continually risen, with over 1.5 million people watching whales in 2008. The whalewatching industry has expanded nationally to 28 regions in six of the seven coastal states.

Australian whalewatching provides more than just benefits to the economy – importantly it can provide a unique educational experience that substantially improves our awareness about cetaceans and the broader marine environment. This can, in turn, reinvigorate our interest in marine conservation and contribute to longer term marine conservation outcomes

The management of whalewatching in Australia is a multi-jurisdictional arrangement between the Australian Government, the Great Barrier Reef Marine Park Authority and state and territory governments. All jurisdictions have laws that prohibit people from killing, injuring and trading cetaceans as well as protecting them from interference (harass, chase, herd, tag or mark).

REPORT OF THE WORKSHOP ON WHALEWATCHING

Under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), the Australian Whale Sanctuary has been established to protect all whales and dolphins found in Australian waters. Within the Australian Whale Sanctuary, those undertaking whale watching activities must comply with the EPBC Regulations, which underpins the EPBC Act, and the National Guidelines for Whale and Dolphin Watching 2005 (the Guidelines). Each government in Australia applies the Guidelines through their various laws and regulations as best suits the situation of the particular jurisdiction. It is the responsibility of the whale and dolphin watching industry to be aware of the laws that apply.

The Australian whalewatching industry is well-regarded, however, we must continually assess and evaluate our practices striving for improvement in operator conduct, regulatory activities, cross-jurisdiction management and ultimately cetacean welfare.

MARCIA ENGEL. WHALEWATCHING IN BRAZIL: RESEARCH, MANAGEMENT, CAPACITY BUILDING AND DEVELOPMENT

Whalewatching in Brazil is focused in two large whale species, the humpback and southern right whale. Although some dolphin watching also is conducted on spinner dolphins, tucuxi, bottlenose and Amazon river dolphins, it is primarily opportunistic and not via a dedicated tour,

Whalewatching on humpback whales began in the Abrolhos Marine National Park, Southern Bahia, in 1988. Due to the reoccupation of areas to the north of the State by the species over time, whalewatching was initiated in Praia do Forte in 2001 and spread to two other small coastal cities in the new area. Although most of the breeding population is concentrated in the Abrolhos Bank, Southern Bahia, the lack of tourism infrastructure has prevented the expected increase in tourism. Praia do Forte however, had an annual increase of whalewatching activity from 70 participants in 2001 to 2,494 in 2009. This remains a small-scale activity, developed by local operators and the community. There are approximately 10 boats including schooners, trawlers and one catamaran used for whalewatching activities. Environmental education is provided to crew members, tourists and communities to ensure best practices. It is estimated that in 2008, approximately US\$ 744,189 total expenditure was generated from the activity.

Whalewatching on southern right whales was initiated in the 1990s in Santa Catarina State. A Marine Protected Area was created in 2000 to add protection to the species through the establishment of more rigorous regulations for whalewatching operations. Some areas of the MPA were closed to whalewatching vessels, allowing only land-based viewing. The number of participants in the whalewatching trips increased from 141 in 1999 to 2,063 in 2008.

Legislation for the protection of cetaceans in Brazil is federal, and considered as adequate for the conservation of species. Currently Decree 7643/87 forbids the hunting and harassment of cetaceans in Brazilian waters and the Edict 117/96 (modified by the Edict 24/2002) establishes the whalewatching regulations. The Brazilian National Sanctuary of Whales and Dolphins was created in 2008.

DAMIAN MARTINEZ-FERNÁNDEZ: WHALEWATCHING IN COSTA RICA: RESEARCH, MANAGEMENT AND CAPACITY BUILDING

In the 1970s, Costa Rica started a major conservation movement that led to the protection of more than 26% of its mainland, protecting about 6% of the world's biodiversity and creating a "green" tourist destination that was respectful of nature. Whalewatching tourism has begun to increase exponentially since the 1990s and Costa Rica has now a growth rate of 74% for this activity, one of the highest in Latin America (Hoyt & Iñíguez, 2008). Currently this activity takes place in over 9 locations in the country and generates annual direct funds of more than US\$ 5 million (Rodríguez-Fonseca & Fischel-Quirós 2007).

In order to improve this growth process, Costa Rica has concentrated its efforts since 1996 in the implementation of a decree on regulation of whalewatching activities that aims to control the explosion of this activity on behalf of animal welfare and ensuring its sustainability. Recently, some studies were conducted on whalewatching biological impacts in some areas and the socio-economic impact of this activity was determined for some communities and for the country (e.g. Montero-Cordero & Lobo 2010, Montero-Cordero & Martínez-Fernández 2007). Currently, the country is in the process of being recognised for having coastal communities organised in responsible tourism networks. This will be achieved through the development and marketing of responsible whalewatching activities and the promotion of practical guidelines among local whalewatching tour operators.

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

Montero-Cordero, A. & D. Martínez-Fernández. 2007. Whale-watching revenues and decree regulation awareness in the South Pacific of Costa Rica. 17th Biennial Conference on the Biology of Marine Mammals, Cape Town. Nov. 29- Dec. 3, 2007.

REPORT OF THE WORKSHOP ON WHALEWATCHING

Montero-Cordero, A. & J. Lobo. Effect of tourist vessels on the behaviour of the pantropical spotted dolphin in Drake Bay and Cano Island, Costa Rica. *J. Cetacean Research & Management*. In press /Issue 11(3).

Rodríguez-Fonseca, J. & Fischel-Quirós, A. 2007. Impacto socioeconómico del Turismo de Observación de Cetáceos en Costa Rica 2006-2007. Informe Técnico FP4-07. Fundación Promar, San José, Costa Rica. WSPA/PROMAR. 32pp.

PETER SANCHEZ: WHALEWATCHING IN DOMINICAN REPUBLIC

The Dominican Republic is located in the greater Antilles. It has an approximately 25,000km² marine mammal sanctuary within which there is a flourishing whalewatching industry that has been growing since its creation in the 1980s. In recent years, a sister sanctuary agreement has been signed with Stellwagen bank in order to protect the humpback whale at the end of the two migratory destinations. This has also contributed to capacity building within the sanctuaries through internships and data exchange.

Whalewatching in the country is seasonal, running from January 15 to March 30 (75 days) where it receives about 27,000 visitors from different countries including Germany, Canada, Russia and Italy; only about 40 % of the whalewatching passengers are Dominicans.

At present, the permit situation is as follows: 3 permits are granted in Silver Bank (the north part of the sanctuary) where snorkelling with whales is allowed; in the area of Samaná Bay, 43 permits are given to about 18 companies and individuals from the province of Samaná (one of the requirements to hold a permit for whalewatching established by the Ministry of Environment. The number of permits in Samaná Bay is under observation as the administration considers that there are too many or at least too many operating in the way that they do.

Considerable research is being done undertaken in the area *inter alia* on whale distribution, photo ID and genetics; in 2009 sonar buoys were deployed in order to measure the noise made by whalewatching boats, cruise ships and cargo ships during the whale season.

A carrying capacity study and a social economics studies are needed to measure the economic activity generated by the whalewatching industry and the impact that has had in the recent years in the area.

CAROLINE RINALDI: MARINE MAMMAL WATCHING IN THE EASTERN CARIBBEAN

The East Caribbean region has a high diversity of whales and dolphins with 22 species recorded. Data collected off Guadeloupe indicate a high incidence of between year sightings of individuals/groups suggesting a low density for many species in the region. Whalewatching activity, although not fully developed, has experienced a significant growth over the last 10 years, particularly in the island of St. Lucia (74%). Part of this growth is due to an increase cruise ships, whose passengers are the main clientele for many islands in the region. Despite the high diversity of species, whalewatching efforts target three regularly sighted species: the sperm whale; humpback whale; and the pantropical spotted dolphin. Acknowledging the development of the industry and increased pressures on individual animals and groups, CARIBwhale, an association of whalewatching operators, has been establishing training programmes for operators and guides, educational programmes for students and tourists, communications with governments and tourism companies, opportunistic data collection programmes and scientific and business monitoring to ensure activities are conducted responsibly, showing respect to whales and their habitats. These activities complement existing regulations in St Lucia and codes of conduct in Guadeloupe and Dominica.

GREG KAUFMAN: WHALEWATCHING IN ECUADOR

Land and vessel-based whalewatching occurs along the Ecuadorian coast. The primary whalewatching industry is based within the confines of the Machalilla National Park (MNP). In 2009 47,494 individuals visited MNP with approximately 17,000 participating in whalewatching tours (July – October). Vessels used are 30’-45’ long, powered by outboard motors, and generally carry 20-40 passengers. The National Government of Ecuador (NGE), through the Ministry of Tourism, Environment and Foreign Affairs has spent approximately \$400,000 to promote whalewatching. The NGE is also actively developing road signs and platforms to support land-based whalewatching.

All whalewatching vessels require permits and require the following to operate:

- (1) a valid vessel license;
- (2) a valid personnel licenses;
- (3) a list of passengers and their nationality;
- (4) an orange phosphorescent flag (1m x 0.5m) for tourist vessels displayed in the most visible place on the vessel;
- (5) life jackets in numbers equal to or exceeding the number of people on board (tourists, guides, crew members);
- (6) a certified tour guide.

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All vessels are required to keep a minimum distance of 100m from a group of whales and 50m from a group of dolphins. Time spent with a whale or dolphin pods is not to exceed 25 minutes. It is forbidden to swim or dive with whales or dolphins.

ERIK PALO: WHALEWATCHING IN GREENLAND

The whalewatching industry is new in Greenland (< 10 years). It comprises 15-20 operators of which none is dedicated to whalewatching alone. Scheduled whalewatching occurs out of less than 10 locations and only during summer (May-September). Demand has been increasing due to the increased number of visiting large cruise ships and whalewatching is still under development.

The Greenland Institute of Natural Resources undertakes cetacean research and advises the government and the municipalities on sustainable exploitation. Its programme includes aerial surveys, biological studies, genetics, feeding, telemetry and photo-identification work. Whalewatching operators assist through photographing flukes and fins to determine whether the same individuals return to same locations. The effects of whalewatching are studied from land, from boats and through whalewatching operators. Guidelines on vessel behaviour near whales are being worked out.

Whaling is managed in a municipal, national and international context (e.g. the IWC) and rules related to hunting are well developed that take into accounts issues of sustainability, culture and industry. As yet rules for whalewatching have not been developed. Particularly with the recent resumption of humpback whaling after a pause of some 25 years, the potential for a conflict between whalers and whalewatching operators has been recognised. This is being addressed through positive dialogue between stakeholders and the formation of a municipality working group. The intention is to form a set of rules/guidelines that take into consideration the needs of both whalers and whalewatching operators

It is important to remember that Greenlanders are Inuit and that whaling in Greenland derives from the Inuit culture. It is important to groups in society, and to the 'Greenlandic kitchen'. It is not an industrialised activity and there is no export of whale products. Economics is important to individuals (the whaler / fisherman), and to society (meat is widely distributed). Greenlanders wish to guard their reputation internationally and to try to obtain an understanding of their way of life. The 'emotional' debate about whaling with respect to economics, whalewatching and maintenance of the traditional culture is probably not the most productive way to address these issues. Greenlanders have had bad experiences with NGOs on a number of issues including a misleading seal campaign.

Greenland is developing fast and is a modern society. The world is focused on Greenland because of the finding of oil and minerals and the extensive and clearly observable climate change (that may affect whale distribution and abundance and hence both whaling and whalewatching in some unknown way). Tourism is a growing industry in Greenland with a present annual turnover of about \$100m. The intention is for tourism to become an important industry. Whalewatching today represents about 5% of total tourist excursion turnover. In the future there may become an increased focus on economy with regards to whaling and whalewatching and whalers may become involved in the whalewatching industry. As an operator I am interested in developing my product e.g. with respect to technical aids (such as underwater cameras), information (education and/or eco-tourism), methods (practical methods of boating).

RANNVEIG GRÉTARSDÓTTIR. WHALE WATCHING IN ICELAND

Whalewatching in Iceland started 1995 and has been growing up to some 125,000 passengers. The main whale to be seen is the minke whale. Other whales as humpback whale, blue whale are also seen along with dolphins and porpoises. There are no rules or regulations about whalewatching in Iceland other than those concerning passenger boats in general. The vessels follow guidelines established by the whalewatching association 'IcWhale'.

There are about ten whalewatching operators in Iceland, three in north of Iceland and four in southwest of Iceland and few others in other places. There are about 15 whale watching vessels in Iceland that carry from 40-190 passengers each. The majority of the whalewatching (95%) takes place in Husavik (in the north) and Reykjavik (in the southwest) in limited areas with up to 3-5 vessels in the area at the same time. Whalewatching operates all year from Reykjavik but from April - October in other places. The main potential threat to the industry is minke whaling since much of this occurs near the whalewatching areas visited from Reykjavik.

NAOKO FUNAHASHI. WHALEWATCHING IN JAPAN

Whalewatching in Japan had started in 1988 by interested people as private tours. Since then, whalewatching has spread to many areas by diving shops, fishermen, and other marine tour boats around Japan. Presently, about 15 areas have regular commercial whalewatching. Target species and operation system are very different by area and operator. Negative factors (e.g. too many boats in one area at one time and conflicts between boats) are also very different by area.

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There are several national cetacean research activities in main fields but very few about whalewatching and cetaceans. IFAW has begun to study relatively unknown but possibly threatening activities in various areas. There are no national regulations and no binding local regulations in Japan. Some areas/operators have voluntary rules and guidelines, but implementation and enforcement of these also varies. Capacity building is slow in some areas but mostly there is none. Development or the will to develop exists but resistance to any changes is also strong in many areas.

JORGE URBÁN R. AND LORENZO ROJAS-BRACHO. WHALEWATCHING IN MEXICO

Whalewatching in Mexico is focussed mainly on three species: the gray whale (in coastal lagoons in the west coast of the Peninsula de Baja California); the humpback whale (in the southern coast of the Peninsula de Baja California and off the mainland along the coasts of the States of Jalisco, Nayarit and Sinaloa); and the blue whale (along the southwest coast of the Gulf of California). Since 1998 the 'Mexican Official Standard (NOM-131)' regulates whalewatching at the federal level. Currently NOM131 is under review and will include new specific regulations (e.g. distance from boats to animals) depending on species and areas. The effectiveness of the Standard's application is better in those places under some category of Marine Protected Area (e.g. gray whales at Laguna San Ignacio, B.C.S) than in those areas without an MPA (e.g. humpback whales along the coast of Nayarit).

Approximately 170,000 whalewatchers visit Mexico every year, with direct expenses of more than US\$9,000. The cost per trip ranges from US\$25 to US\$80 (Hoyt and Iñiguez, 2008).

Whalewatching contributes to scientific research. For example, data obtained from whalewatching trips (e.g. photo-identification) contributes to a better understanding of whale movements, site fidelity, residency, migratory destinations, and birth rates. Reports from whalewatching activities are also important to determine body condition, mortalities, injuries and entanglements.

Hoyt, E. and Iñiguez, M. 2008. Estado del Avistamiento de Cetáceos en América Latina. WDCS, Chippenham, UK; IFAW, East Falmouth, EE.UU.; y Global Ocean, London, 60p.

LAURA BOREN. MARINE MAMMAL MANAGEMENT IN NEW ZEALAND: AN OVERVIEW

The New Zealand Department of Conservation (DOC) is responsible for the management of marine mammal species in New Zealand. Over 51 known species of marine mammals and some 50% of the world's cetacean species can be found in New Zealand waters. All species are protected under the Marine Mammal Protection Act 1978. The Marine Mammal Protection Regulations 1992 set out a regime for permitting commercial tour operators. In addition, local guidelines and Codes of Conduct are in place in certain areas. Standard Operating Procedures (SOPs) guide the permitting process and provide both mandatory and optional (situation/location/species specific) permit conditions.

The primary targets of tourism are sperm and Bryde's whales, bottlenose, common, dusky, and Hector's dolphins, along with both species of pinniped. Opportunistic targets include killer, humpback and southern right whales. There are nine primary locations for commercial marine mammal tourism around the country, and several others where opportunistic and land-based viewing is possible. The primary whale watching operation is based in Kaikoura, where there is also dusky dolphin, fur seal and sea bird tourism. A moratorium on marine mammal permits was implemented and research undertaken prior to the 10 year review of the moratorium. Permit fees go towards funding this research. Amendments to permit conditions, and local guidelines are being implemented; as a result of the research on dusky dolphin tourism no new permits will be issued.

A number of issues need consideration including: a review of the Regulations; more effort and resources for compliance and enforcement. In addition, conflict between permitted operators, non-permitted operators and recreational boats is high in particular areas.

HERMAN OOSTHUIZEN AND WILFRED CHIVELL. WHALEWATCHING IN SOUTH AFRICA: A GOVERNMENT AND OPERATOR PERSPECTIVE

Cetacean watching forms an important part of ecotourism in South Africa. Associated with it are possible negative impacts of the industry (environmental, social and economic) which may threaten its sustainability into the future. The authors highlight a framework for recommended best practices regarding cetacean watching ecotourism in South Africa.

Five aspects of cetacean ecotourism are considered, each of which is integral to the responsible management of the industry. For each of the five aspects, the best practices are listed and the responsibilities of the industry stakeholders are given.

Within the *Environmental Aspect*, the impacts of cetacean watching on cetaceans, other marine animals, the marine ecosystem and the local environment as a whole are discussed. The Marine Living Resources Act (MLRA) and Code of Conduct cover most mandatory regulations regarding the environmental aspect. Cetacean watching (CW) operators need to

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be aware of disturbance behaviour displayed by cetaceans, seals and seabirds to know when to abandon encounters. Government should play an important role by enforcing policies, monitoring compliance and designating marine protected areas. Government should also involve public participation in all stages of industry development.

For the *Operational Aspect*, the mandatory Permit Conditions cover most of this area, as well as regulations set out by the South African Maritime Safety Authority (SAMSA), the MLRA and the Tourism, Hospitality and Sport Education and Training Authority (THETA). Generally, CW operators should ensure tourist and cetacean safety, and SABBWWA members should adhere to the business code of conduct. Regulating bodies should liaise with each other to remove conflicts that could have a negative impact on tourism. Awards or incentives could be presented to CW operators that comply with the Best Practice Guidelines, by government or organizations promoting tourism.

With regard to the *Social and Economic Aspect*, the enforcement of cetacean watching Permit Conditions, Code of Conduct and regulations should not undermine any social and economic benefits, especially to the local cetacean watching community or town, and the benefits should be sustainable. Special consideration should be given to redressing inequalities within disadvantaged groups by providing equitable employment and income distribution. Income leakage of tourist expenditure to areas outside of the local community should be reduced, by diversifying tourist activities, selling good quality local souvenirs, charging park fees and levies where applicable, promoting local goods and services, using value-adding techniques such as offering other attractions in the area, and creating customer satisfaction. All stakeholders should play an important role in improving the social and economic benefits, by supporting various programmes or projects, especially those that are to the benefit of previously disadvantaged groups. Specifically, training programmes for local communities should be supported or provided. The community should be given opportunities to participate in and benefit from cetacean watching ecotourism activities.

The importance of having an educational component to cetacean watching that is of a high quality, accurate, informed and interpretive, is considered in the *Educational Aspect*. The training of CW operators and staff, and the use of certified tour guides, is imperative. CW operators and staff should also be knowledgeable on the Permit Conditions, Code of Conduct, regulations and Best Practice Guidelines to promote awareness amongst visitors. All stakeholders should be responsible for informing the public, and thus all should become involved using the appropriate educational tools. Information should be accurate and aimed towards changing the behaviour of visitors to reduce any negative impacts. The education of the local community, especially school children, on matters related to cetaceans and the marine environment, is recommended.

The *Scientific Aspect* of cetacean watching considers the contribution that CW operators can make towards research, to help improve management efforts. All stakeholders should support and promote research, within all areas of the industry (i.e. on cetaceans, the marine ecosystem, the environment, the social and economic areas, and education), to identify areas where the industry can be enhanced. Results should be published in various formats.

In the second section *Procedures for Best Practices*, recommendations are made regarding the implementation, marketing, monitoring and evaluation of the Best Practice Guidelines. An accreditation system would accredit those tourism operations that are sustainable and environment friendly through complying with the Best Practice Guidelines. The Best Practice Guidelines are to be implemented by SABBWWA. An independent accreditation body is to be appointed for transparency. The Accreditation system must be supported by government and tourism organisations. All stakeholders should participate in developing an accreditation system.

For the guidelines to be a success, they should be marketed appropriately. Only eco-labels, linked to the accreditation system, are to be marketed. Awareness should be raised that accredited CW operators are permitted (i.e. legal), thus helping tourists not to make use of illegal operators. All stakeholders should work together to market the Best Practice Guidelines. Monitoring compliance to the guidelines is necessary to improve standards. An independent body is regularly to assess accredited operators. Monitoring and evaluation would be continuous. A user feedback system, incorporating complaints and positive feedback, is to be developed. Positive feedback could lead to an awards programme.

Finally, the guidelines should be reviewed and updated regularly with the participation of all stakeholders. Government should attend such workshops.

Stakeholder input contributed to this document. The Best Practice Guidelines are developed for the benefit of all the stakeholders within the cetacean watching industry, to enhance the industry's short- and long-term sustainability.

CAROLE CARLSON AND GREG KAUFMAN: WHALE AND DOLPHIN WATCHING IN THE USA**East Coast, Florida and the Gulf States, Puerto Rico**

There are at least 20 whalewatching locations along the east coast of the United States, Gulf States and Puerto Rico. Tour vessels range in size from 3 to 35m and 10 species of cetaceans are targeted with the possibility of observing 10-12 others. During 2008, over 18 million whalewatchers visiting these locations generated a total expenditure of US\$187m dollars (IFAW, 2008).

Cetaceans are federally protected in US waters under the Marine Mammal Protection Act and most large whales are further protected under the Endangered Species Act. Although there is a Federal regulation for a minimum approach distance to North Atlantic Right Whales (500 yards) and whalewatching regulations for marine mammal watching in Puerto Rico, all other species and areas have NOAA suggested guidelines. For the Northeast region, the recommended approach distance is 100 feet and for the Southeast region including the Gulf states, 50 yards for dolphins and 100 yards for whales (Carlson 2010). Two voluntary programmes for commercial operations developed by the Whale and Dolphin Conservation Society and the National Marine Fisheries Service, “Whale Sense” and “Dolphin Smart”, provide training programmes for captains and naturalists and an opportunity for eco-labelling.

Case Study: Stellwagen Bank National Marine Sanctuary and the Dolphin Fleet

The most popular whalewatching location in the Northeast is the Stellwagen Bank National Marine Sanctuary (SBNMS), encompassing 842 square miles. In 2008, more than 700,000 passengers toured the Bank generating over US\$126m dollars in total expenditures (IFAW, 2008).

One of the premier companies in the area is the Dolphin Fleet of Provincetown (DF), established in 1975 and family-owned. International, national and local whalewatchers sail with the Fleet each year on one of their 30-35m vessels that carry 140-260 passengers. The success of the Dolphin Fleet is based on its ongoing, comprehensive research and education programmes and a long-term affiliation with the Provincetown Center for Coastal Studies (PCCS). Data collected by the DF and PCCS has established one of the largest, single data bases on humpback whales spanning at least 4 whale generations. These data have yielded several scientific papers in peer-reviewed journals and a data set useful for management. In addition, the DF provides hands-on education activities, trip data to school groups and with PCCS an international internship programme. The DF was the first commercial operation to sign with “Whale Sense”.

West Coast

US West Coast whalewatching comprises some 220 operators based in Alaska, Washington, Oregon, California and Hawaii. These operations account for one-half of all whalewatchers in the US (1.6 m) and generate over US\$100m in annual (direct) ticket sales. Except in Glacier Bay, Alaska there are no commercial permits issued specifically for whale or dolphin watching, and no limitations placed on the number of operations in any region. A general commercial passenger-carrying permit, issued by regional authorities, is normally required to conduct whalewatching. Land-, vessel, and aerial-based whalewatching occurs. While vessels range in size from kayaks to cruise ships, the average vessel is a 50' – 65' power vessel. Target species are gray, humpback, blue, killer and various dolphin species.

Whales and dolphins are protected in US waters under the Marine Mammal Protection and the Endangered Species Acts. NOAA has issued suggested guidelines for whale and dolphin watching for all west coast waters: 100-yard approach to whales and 50-yard approach to dolphins. In Hawaii and Alaska, NMFS has established regulations restricting approach, by any means, with some exceptions, within 100 yards (91.4 m) of a humpback whale. Aerial approaches are limited to 1,000 feet above the animals. The Alaska regulations also require a ‘slow, safe speed’ when a vessel is near humpback whales. The Hawaiian Islands Humpback Whale Sanctuary was established in 1996 and has no regulatory authority except to increase the amount of potential fines levied for violation of the approach rule.

Case Study: Designing and Developing ‘Green’ Whalewatching

Since 1980 Pacific Whale Foundation (PWF) has operated its own fleet of vessels in Maui, and has collaborated with operators in a number of international settings. Currently there are 7 vessels engaged in a variety of marine tourism ventures on Maui, catering to approximately 300,000 passengers each year. PWF’s philosophy is that re-shaping the behaviour of the 13 million whalewatchers is of far more importance than regulating the activity of a few hundred operators; operators must accept a major share of the responsibility for re-shaping that behaviour.

Educators, government agencies and researchers have all promoted educational initiatives in various marine tourism settings. A failure to fully consider the contextual demands of educating the public, however, has limited the success of many programmes. Success ultimately depends upon the development of an “ecology of interpretation” that values and understands the convergence of unique elements in a whalewatching episode: the operator, the whalewatcher and the whale; the operator is in the best position to take the lead in planning how to re-shape the behaviour of the whalewatcher in the

context of the journey to see the whale.

PWF's marine conservation and education programmes are based on three fundamental principles:

- (1) Modelling is an effective way to shape desired behaviours in others;
- (2) Reinforcement increases the frequency of desired behaviours;
- (3) Opportunity to engage in desired behaviours is a necessary part of the learning cycle.

Vessel programmes demonstrate and promote environmentally sound practices. Education programmes are developed in-house, based on research conducted by PWF scientists, alone or in collaboration with other researchers. PWF naturalists are trained in the most recent scientific information, and in the most effective interpretive techniques. Vessel design and programme presentation ensure that all guests are able to hear, meet and interact with naturalists throughout the excursion.

PWF has developed a fleet of state of the art, whale friendly, environmentally sound vessels that have purpose-built hulls; low emission, high performance engines fuelled with blended biodiesel; hi-tech oil cleaning systems; hospital grade mufflers; sound deaden hulls; low cavitation propellers; low-wake producing; protective devices guarding the propellers; and high-quality PA systems. All vessels are fitted with low-flow toilets. The organization operates its own pump-out truck (powered by 100% biodiesel), so no waste is discharged at sea. All plates, cups, utensils and napkins are biodegradable and compostable. They are fabricated from sugar cane, corn and potatoes. All printed marketing materials are produced on recycled papers using green power to print. Food served is sourced locally with emphasis placed on organic produce. Only seafood that has been harvested with sustainable techniques is served on-board, and a regional Sustainable Seafood Watch card is distributed to each passenger. An innovative solar- and wind-powered, zero-emission whalewatching vessel is currently in construction and is slated to come on-line in 2012.

In collaboration with federal, state and local agencies Pacific Whale Foundation operates the "Volunteers on Vacation" programme, which allows guests to spend part of their vacation time volunteering with any of a number of local environmental groups. These follow-up experiences help reinforce new behaviours that help protect the environment.

DAVID LUSSEAU AND LARS BEJDER: A SUSTAINABLE WHALEWATCHING INDUSTRY.

Revenues generated by whalewatching have increased rapidly over the past four decades. Many of the mature whalewatching destinations have now reached their economic carrying capacity and the development of new destinations, mainly in developing countries, has driven the growth of the sector over the past ten years. This sector represents a great opportunity to generate income from whale and dolphin resources for coastal communities and nations. At the same time, scientific studies now show that unregulated growth of whalewatching activities can lead to local overexploitation; threatening the viability of the targeted cetacean populations. This presents a new set of challenges as many of the developing destinations lack capacity to control growth. The International Whaling Commission has the opportunity to play a leading role in developing a management plan for whalewatching activities to help countries that lack capacity to do so. Not only does whalewatching fall within the remit of the Commission, but also it is best placed to synthesise information emerging from member nations on how to best manage whalewatching. Such an inter-governmental coordination of regulations is also needed because whales and dolphins are international common-pool resources. Experiences in other industries show that lack of both regulations and clearly defined property rights for such resources will lead to overexploitation and its associated socioeconomic impacts.

Both the Scientific Committee and the Conservation Committee have recognised this need and are proposing approaches to develop a whalewatching management plan. Such plans need to rely on additional scientific data collection. At this stage we do not have enough understanding of the way in which whalewatching disturbances interact with the life history strategies of targeted species and the ecological conditions of the affected sites to lead to population viability threats. We know that both play a key role in deciding how individuals will handle the energetic constraints caused by boat interactions (either through foraging disruption or increased energetic expenditures), but we cannot currently predict the "whalewatching carrying capacity" of a cetacean population. The SC LaWE initiative (Large-scale Whalewatching Experiment) anticipates that it will take 10-15 years to bridge this research need once funding is made available for the project. Therefore, a finalised management plan cannot become available within a 5-year timeframe because we currently lack the necessary scientific information on which to base this plan.

The whalewatching management plan will also need clearly defined aims. At this stage the aims proposed by LaWE and the WGWW proposed plan differ. SC LaWE has opted to follow the same management aim as defined in the IWC convention (sustainable use of cetacean resources) which sets a clear management target for population growth rate. The CC plan has opted for an aim to sustainably develop whalewatching. Such an aim does not directly link to the conservation status of exploited populations. SC LaWE has finally proposed to follow a management framework, and associated procedures, similar to the RMP because of the robustness of this approach to ensure that uncertainties do not affect potential population trajectories under different exploitation regimes. In addition, this framework is adaptive and therefore will allow revising

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exposure thresholds as new information becomes available.

Whalewatching is an excellent way of making use of whale resources because of its associated direct and indirect socioeconomic and conservation benefits. While it does not have a direct lethal effect on whale populations, whalewatching can still consume that resource and it therefore needs to be managed accordingly. The International Whaling Commission has the expertise to develop an appropriate whalewatching management plan relying on clearly defined management objectives and procedures. Exposure 'quotas' defined under this plan (n.b.: such quotas can be infinite under the SC LaWE proposal) can then be implemented by member nations in a site-specific manner as long as property rights are secured.

Annex E

Agreed general principles to minimise the risks of adverse impacts of whalewatching on cetaceans (IWC, 1997)

(1) Manage the development of whalewatching to minimise the risk of adverse impacts:

- implement as appropriate measures to regulate platform¹ numbers and size, activity, frequency and length of exposure in encounters with individuals and groups of whales;
- management measures may include closed seasons or areas where required to provide additional protection;
- ideally, undertake an early assessment of the numbers, distribution and other characteristics of the target population/s in an area;
- monitor the effectiveness of management provisions and modify them as required to accommodate new information;
- where new whalewatching operations are evolving, start cautiously, moderating activity until sufficient information is available on which to base any further development;
- implement scientific research and population monitoring and collection of information on operations, target cetaceans and possible impacts, including those on the acoustic environment, as an early and integral component of management;
- develop training programmes for operators and crew on the biology and behaviour of target species, whalewatching operations, and the management provisions in effect;
- encourage the provision of accurate and informative material to whalewatchers, to:
- develop an informed and supportive public;
- encourage development of realistic expectations of encounters and avoid disappointment and pressure for increasingly risky behaviour.

(2) Design, maintain and operate platforms to minimise the risk of adverse effects on cetaceans, including disturbance from noise:

- vessels, engines and other equipment should be designed, maintained, and operated during whalewatching, to reduce as far as practicable adverse impacts on the target species and their environment;
- cetacean species may respond differently to low and high frequency sounds, relative sound intensity or rapid changes in sound;
- vessel operators should be aware of the acoustic characteristics of the target species and of their vessel under operating conditions; particularly of the need to reduce as far as possible production of potentially disturbing sound;
- vessel design and operation should minimise the risk of injury to cetaceans should contact occur; for example, shrouding of propellers can reduce both noise and risk of injury;
- operators should be able to keep track of whales during an encounter.

(3) Allow the cetaceans to control the nature and duration of ‘interactions’:

- operators should have a sound understanding of the behaviour of the cetaceans and be aware of behavioural changes which may indicate disturbance;
- in approaching or accompanying cetaceans, maximum platform speed should be determined relative to that of the cetacean, and should not exceed it once on station;
- use appropriate angles and distances of approach; species may react differently, and most existing guidelines preclude head-on approaches;
- friendly whale behaviour should be welcomed, but not cultivated; do not instigate direct contact with a platform;
- avoid sudden changes in speed, direction or noise;
- do not alter platform speed or direction to counteract avoidance behaviour by cetaceans;
- do not pursue², head off, or encircle cetaceans or cause groups to separate;
- approaches to mother/calf pairs and solitary calves and juveniles should be undertaken with special care;
- there may be an increased risk of disturbance to these animals, or risk of injury if vessels are approached by calves;
- cetaceans should be able to detect a platform at all times;
- while quiet operations are desirable, attempts to eliminate all noise may result in cetaceans being startled by a platform which has approached undetected;
- rough seas may elevate background noise to levels at which vessels are less detectable.

¹ Any vessel (with or without engine), aircraft or person in the water.

² Chase (as opposed to follow), causing the whale to change its course or speed.