

**Preliminary Proceedings of the
Workshop on the Research and Management of Solitary, Sociable Odontocetes**
Convened at the 16th Biennial Conference on the Biology of Marine Mammals,
San Diego, California, December 10, 2005

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ABSTRACT

This is a preliminary and general overview of the *Workshop on the Research and Management of Solitary, Sociable Odontocetes*, held on 10 December 2005 as part of the 16th Biennial Conference on the Biology of Marine Mammals in San Diego, California. The overall goal of this international workshop was to increase the effectiveness of individuals, organizations, and agencies working to improve research and management of these animals by a) sharing and compiling existing information, b) identifying and developing policy, management, and research recommendations and c) improving the exchange of information, communication, coordination, and collaboration between all involved parties. Since the activities initiated from this workshop are still in progress, this paper represents an on-going effort and serves only as an initial overview of objectives, background, action items, and recommendations that are continuing to be consolidated. Meeting objectives were defined prior to the workshop as follows: (1) Identify the most serious dangers to the safety of solitary cetaceans and humans, (2) Identify what aspects of protecting solitaries and humans (through management/guidelines, policy, and research): a) have proven to be the most and least successful at mitigating these dangers (dependent upon species and circumstances), b) have not yet been explored but show the most promise in exploring, (3) Evaluate the effects of interacting with solitaries as part of recreation and management, (4) Identify the origin of solitaries, and (5) Identify the most important needs and recommendations for government/legal policy, management, research, and establishing an international communications network for exchange and dissemination of information and updates about solitaries. This workshop served as a starting point to consolidate existing information and develop a network of interested and knowledgeable parties dedicated to the research, welfare, and protection of solitary, sociable odontocetes and the management and research challenges and opportunities that they provide. Overall goals that were identified at the workshop that require subsequent action, include: (1) Publication of formal proceedings from the workshop, including bibliography, literature review, compilation of existing guidelines and participant surveys; (2) Initiation and development of working groups to discuss and develop action plans and more definitive recommendations for certain aspects of solitaries management in furtherance of workshop goals and objectives; and (3) Development of a web interface and portal to consolidate research and other information on 'solitary sociables' and creation of an email list serve to connect interested parties. Since the activities initiated from this workshop are still in progress, this paper represents an on-going effort and serves only as an initial overview of objectives, background, action items, and recommendations that continue to be consolidated. The *Workshop Workbook* for the workshop, including presentations, bibliographies, compilation of existing guidelines created to manage solitary odontocetes, participant surveys and other supplemental information can be found at www.wdcs.org. The upcoming *Workshop Proceedings* (in progress) will also be available on this website when completed.

INTRODUCTION

This is a preliminary and general summary of the *Workshop on the Research and Management of Solitary, Sociable Odontocetes*, held on 10 December 2005 as part of the 16th Biennial Conference on the Biology of Marine Mammals in San Diego, California. This workshop was the first specifically designed to discuss these solitary cetaceans who are becoming more frequently observed and receiving notable attention from the public, local recreational and commercial interests, regulatory agencies, and the media (e.g. Samuels *et al.* 2000, 2003; Wilke *et al.* 2005).

This workshop served as a starting point to consolidate existing information and develop a network of interested parties dedicated to the welfare of 'solitary sociables' and the management challenges and opportunities that they provide. Over 30 individuals from nine countries participated in the workshop, with additional participation through an established electronic mail list serve of other researchers and interested parties who could not attend the workshop. Participants included a diversity of stakeholders including governmental representatives, researchers, cetologists, ethologists, filmmakers, students, and non-governmental organizations.

Solitary, sociable odontocetes are rarely, if ever, observed in the company of other dolphins (Lockyer 1990). They initiate social interaction with people and sometimes form close bonds with individuals over time, even soliciting and allowing close physical contact with boaters and swimmers. In the past, these animals have typically been small delphinids and, most commonly, bottlenose dolphins (*Tursiops sp.*) (e.g., Doak 1989; Lockyer 1990; Müller & Bossley 2002). However, there has been a recent increase in the occurrence of other solitary sociable odontocetes; specifically, orcas (*Orcinus orca*) and beluga whales (*Delphinapterus leucas*) (Frohoff in press). To date, at least seventy solitary and sociable dolphins have been recorded worldwide.

With the growing phenomenon of solitary odontocetes interacting with humans there is often an accompanying myriad of management challenges that arise in providing for the needs of the animals and an increasing number of people eager to interact with them (Wilke *et al.* 2005; Samuels *et al.* 2000, 2003). This workshop provided an opportunity to share the collective experiences with solitary whales and dolphins, and to discuss areas of both diversity and commonality in research, management approaches, and public education and outreach. There appear to be unique aspects to each animal and his/her circumstances, requiring tailored and individualized responses and management approaches. However, it may be possible to identify commonalities that link these solitaires, if not in space and time, to successful approaches to ensure their survival and welfare in the midst of public interest and safety.

Risks to Odontocetes and Humans

Solitary, sociable odontocetes exhibit many characteristic behavioral patterns that may result in their injury or death or increase their risk of these due to proximity to human activity. In fact, odontocetes exhibiting the highest degree of contact with humans appear to be at the greatest risk of injury, illness and death from humans or human activity (Frohoff 2000). In particular, incidents in which humans intentionally or accidentally injured or killed odontocetes

were reported almost exclusively for solitary animals and animals regularly provisioned with food. The types and nature of ‘sociable’ interactions vary widely, but are generally characterized by cetaceans initiating or allowing close and sustained proximity to humans (swimmers, waders, boaters or people on docks) and allowing sustained or repeated interaction (tactile, acoustic and visual) with humans. Some of these behaviors, ranging from affiliative to aggressive, include:

- Closely following and approaching boats;
- Intensive, repetitive and frequent exploration and manipulation of boats, motors, propellers, cameras and other objects;
- Postural and vocal mimicry of a person’s actions or motor sounds;
- Sustained and repeated tactile contact with person(s);
- Display of sexual action, including the rubbing of genitalia against an object or person;
- Biting or attempting to bite person;

It is important to note that the incidence of solitary odontocete aggression directed towards humans, or between humans and odontocetes, varies dependent upon the circumstances surrounding the solitary, its environment, and species involved. The only confirmed account of a human fatality resulting from a bottlenose dolphin occurred in Brazil when a free-ranging solitary, sociable bottlenose dolphin was physically restrained and abused by two men. The dolphin severely injured one man and killed the other in self-defense (Santos 1995). Although these animals provide unique opportunities for research, their interactions with humans typically warrant immediate, intensive, and innovative methods of management to minimize hazards to humans and the cetaceans. These situations have been the focus of much recent deliberation and debate among scientists, managers, and the public. Relatively few studies of these animals have been published (but see Frohoff 2000, Frohoff *et al.* 2000; and Wilke *et al.* 2005); and even less information is available about their management. Thus, management of these situations is often undertaken with little knowledge of previous successes and failures involving the same or similar species.

This workshop provided an opportunity for researchers and managers from around the world to present new case studies and information, share video footage, and to evaluate various methods and needs of research and management. It facilitated discussion about the unique opportunities and challenges that solitary, sociable odontocetes present – and how they can best be addressed. The overall goal of this international workshop was to increase the effectiveness of individuals, organizations, and agencies working to improve research and management of these animals by a) sharing and compiling existing information, b) identifying and developing policy, management, and research recommendations and c) improving the exchange of information, communication, coordination, and collaboration between all involved parties. Since the activities initiated from this workshop are still in progress, this paper represents an on-going effort and serves only as an initial overview of objectives, background, action items, and recommendations that are continuing to be consolidated.

WORKSHOP OVERVIEW

Agenda

Introduction

8:30-9:00 Coffee and Gather

9:00-9:30 Introduction and Overview

- Welcome and Introductions - *Mike Bossley*
- Review Workshop Agenda and Goals - *Courtney Vail*
- Workshop Guidelines: Clarify and Agree -*Toni Frohoff*

9:30-9:45 Christina Lockyer/NAMMCO/Norway

“Overview of Solitary, Sociable Odontocetes”

9:45-9:50 Introductory Session Q & A

SESSION I Case Studies and Profiles: Bottlenose Dolphins

9:50-10:05 Mark Simmonds/WDCS/UK

“Management and welfare considerations relating to ‘Georges’, a solitary male bottlenose dolphin, during his residency off the English coast (March-September 2002)”

10:05-10:20 Mike Bossley/WDCS/Australia

“Jock: Dolphin Therapy in Reverse”

10:20-10:35 Oz Goffman/University of Haifa/Israel

“Effects and implications of long term (5.5 years) association between an unsupervised dolphin and human swimmers, based on interspecific underwater interactions of “Holly”, a solitary sociable bottlenose dolphin (Tursiops aduncus) from the shores of Nuweiba, Sinai, Egypt”

10:35-10:45 COFFEE BREAK

10:45-11:00 David Day/UK/France

“Observations and Video Footage on the Interaction of 3 Lone Sociable Bottlenose Dolphins with Humans, Including Records, Observations and Problems with Local People from the French group Reseau Cetaces”

11:00-11:15 Diana Reiss/Wildlife Conservation Society/U.S.

Unable to attend

11:15-11:30 Session I Q & A

SESSION II ***Case Studies and Profiles: Belugas***

- 11:30-11:45** **Cathy Kinsman/Whale Stewardship Project/Canada**
“The Whale Stewardship Project: Research and Stewardship of Solitary Sociable Beluga Whales in Eastern Canada”
- 11:45-12:00** **Dana Hartley/National Marine Fisheries Service (NMFS)/U.S.**
“Managing Solitary Beluga Whales in the Northeastern US - the story of “Poco”
- 12:00-12:10** **Session II Q & A**
- 12:10-1:10** **LUNCH**

SESSION III ***Case Studies and Profiles: Orcas***

- 1:10-1:25** **Ken Balcomb/Center for Whale Research/U.S.**
“Early Observations of Solitary Young Killer Whales”
- 1:25-1:40** **Suzanne Chisholm/Michael Parfit/Mountainside Films/Canada**
“Luna”
- 1:40-1:55** **Donna Sandstrom/ORCA Alliance/U.S.**
“Working together for Springer: the Orphan Orca Fund.”
- 1:55-2:10** **Marilyn Joyce/Department of Fisheries and Oceans (DFO)/Canada**
“Pacific Solitary Killer Whale Case Studies L98 and A73: Considerations for Management Decisions”
- 2:10-2:25** **Session III Q & A**

SESSION IV ***Research and Management Considerations: Overviews***

- 2:25-2:40** **Toni Frohoff/TerraMar Research/U.S.**
“Mitigating High Risk Situations for Solitary Odontocetes: Options and Alternatives”
- 2:40-2:55** **Kim Bassos-Hull/ Mote Marine Lab/U.S.**
“A Demonstration of the Need to Increase Public Awareness of Problems Associated with Humans Interacting with Wild Dolphins: A Case Study Near Sarasota, Florida”
- 2:55-3:10** **Session IV Q & A**
- 3:10-3:20** **COFFEE BREAK**

SESSION V *Group Discussion: Addressing Current Problems and Future Challenges***3:20-3:30** Review objectives (below) and discuss defining “success” for solitaries**3:30-5:10** Identify recommendations and action items**3:30-3:40** Address Objective #1**3:40-4:05** Address Objective #2**4:05-4:20** Address Objective #3**4:20-4:30** Address Objective #4**4:30-5:10** Address Objective #5**5:10-5:20** Review: What’s Missing?**5:20-6:00** Wrap up and Next Step Action Items**Summary of Discussions**

Clarification of the terms “*management*” and “*stewardship*” was made at the beginning of the workshop discussion and included the following:

- Stewardship is often part of larger management plan.
- Stewardship is typically conducted by non-government organizations (NGOs) while management is often a function of government and regulatory agencies. Sometimes the two can work collaboratively or the government gives authority to individuals or NGOs.
- Managing humans versus managing a solitary cetacean are usually different challenges and require different solutions.

Workshop Objectives

Consensus indicators/categories for the following objectives:

A=all agree

B=broad majority (75%)

C=average (equal split)

D=few agree (25% or less)

Objective #1: Identify the most serious dangers to the safety of solitary cetaceans and humans. [“A” to all]

1. boat propellers
2. fisheries/entanglements
3. feeding by public/poor diet/foreign food objects
4. stress
5. zoonoses/disease transmission
6. disturbance of sleep
7. acoustic deprivation
8. pollutants

9. vandalism/direct injury by humans/shooting

Objective #2: Identify what aspects of protecting solitaries and humans (through management/guidelines, policy, and research):

- a) have proven to be the most and least successful at mitigating these dangers (dependent upon initial assessment of species and circumstances)**

MOST Successful ["A" to all]

1. deliberate and prompt implementation of stewardship/management plan
2. consistent on-site stewardship/monitoring program
3. regulatory agency support
4. good research that promotes the dolphin's ultimate safety
5. collaboration with enforcement, community stakeholders and local knowledge
6. discretion with 'informing' or involving general public
7. capture, relocation/transfer, release
8. identify cause of solitary state/behavior
9. conduct initial health assessment/evaluation
10. public outreach/education
11. consideration of special interests (e.g. fishers) and cultural communities
12. accurate information and outreach to media (once solitary is known)
13. forming a good management team
14. use experts when you can in coordination
15. coordination of agencies and other actors
16. honor voluntary cooperative agreements (verbal or written)
17. where appropriate, monitor discreetly and do not intervene

LEAST Successful ["A" to all except for numbers 7 and 12]

1. undue confrontation with local community
2. inconsistent enforcement of guidelines/protective laws
3. inconsistent messaging in outreach efforts
4. media portrayal of solitary
5. lack of good training tools for voluntary stewards
6. allowing general public to take things into their own hands
7. allowing untrained and unauthorized interest groups to 'take things into their own hands' [B]
8. doing 'nothing' (i.e. ignoring and hoping the animal will go away) , but monitor
9. not utilizing the existing research on solitaries
10. absence of coordination between researchers, managers, and vets
11. unrealistic reliance on enforcement and other regulatory authorities
12. sporadic or intermittent funding/lack of long-term funding commitment [B]

- b) have not yet been explored but show the most promise in exploring:** [No consensus code determined, but general agreement reached]

1. exploring funding interests of private sector/creating a funding mechanism through diverse interests

2. possibility that each solitary is unique, and existing laws not adequate to address protection of solitary = create a council to address solitary management challenges? For instance, proactivity and creativity in permitting processes that currently govern management of these animals
3. Nurturing existing, new or non-traditional partnerships
4. continue and maintain ad-hoc coalitions/task forces/ 'rainy day' funds
5. educate public and media in advance to quell public 'hysteria' or satiate interest
6. provide an alternative to direct interaction (media, websites with live video feeds)
7. create website for solitary sociables/professional research database
8. public interactive website
9. website for co-management/cross-boundary sharing of information
10. empower regulatory authority through new legal mechanisms to address solitaries
11. capacity build for necropsy on all solitaries
12. enrichment programs

Objective #3: Evaluate the effects of interacting with solitaries as part of recreation (public) and management/stewardship (research community): [No consensus code determined, but general agreement reached]

1. develop guidelines for interaction, if interaction is occurring or considered a desirable management option

Objective 4. Identify origin of solitaries

(No time for discussion of this objective.)

Objective #5: Identify the most important needs and recommendations for: [No consensus code determined, but general agreement reached]

a). **Government/Legal policy**

(No time for discussion of this objective.)

b). **Management/Stewardship**

1. understanding social needs and capabilities of solitaries
2. development of additional management measures; e.g. acoustic playgrounds/enrichment areas, etc.

c). **Research**

1. more consolidated work on necropsy and sample collection
2. general data sheet for data collection (data sheet to tie to database)
3. disease prevalence
4. development/compilation of ethograms
5. human/anthropological research
6. explore research related to solitaries that do not become sociable
7. develop working group to further recommendations and deliverables

d). Establishing an international communications network for exchange and dissemination of information and updates on solitaries

1. develop closed web-based database to be hosted by WDCS and supported by technical assistance from working group

OVERALL GOALS REQUIRING SUBSEQUENT ACTION

Because of the ambitious agenda and timeframe of this workshop (one-day), all discussions and recommendations were not achieved. As a result, it was decided that interested parties would form working groups for important issue areas to further recommendations from the workshop, as well as develop tangible recommendations that will serve as tools for the research and management of ‘solitary sociables’. These include the following:

- Publication of formal **proceedings** from the workshop, including bibliography, literature review, compilation of existing guidelines and participant surveys (*to be subsequently finalized and posted on the WDCS website, www.wdcs.org*)
- Development of a **web interface** and portal to consolidate research and other information on solitary, sociables and creation of an email **list serve** to connect interested parties
- Initiation and development of **working groups** to discuss and develop action plans and more definitive recommendations for certain aspects of solitaries management in furtherance of workshop goals and objectives. The following working groups were created:
 1. Research Requirements Working Group: to identify and recommend research needs.
 2. Website Working Group: to develop web portal, initially or permanently to be hosted by WDCS, and to serve as central location for scientific information and exchange, resources, contact information, and other tools to be identified.
 3. Guidelines Working Group: to identify recommended guidelines and approaches to proactive and reactive ‘solitary sociables’ situations.
 4. Public Outreach Working Group: to develop and standardize public outreach regarding the content and manner in which guidelines be distributed to the public.

SUMMARY OF PRELIMINARY WORKING GROUP DISCUSSIONS AND RECOMMENDATIONS

To date, the following recommendations have been compiled from the working groups that were initiated at the workshop:

“Research Requirements Working Group”

Revised Goals & Activities

Goals

1. To encourage the development of non invasive research projects designed to provide data to improve the management of solitary odontocete situations (recognizing that most management issues relate to managing humans rather than the cetaceans).
2. To encourage the development of non invasive research projects designed to investigate why specific odontocetes have become solitary (e.g., orphaned, social companion(s) has died, etc) and why some of these solitary odontocetes redirect their social behavior toward humans.
3. To encourage the development of research protocols designed to maximize the collection of data from dead solitary odontocetes.
4. To develop procedures to ensure the dissemination of information from this working group.
5. To encourage multidisciplinary and interdisciplinary research on solitary, sociably odontocetes.
6. To promote the integration of research and management/stewardship so that both activities will complement and support each other.
7. To develop policies and strategies to reunite solitary cetaceans with their families when appropriate (e.g., when a calf is separated from a known mother or natal group, or a solitary has become geographically isolated.)
8. That baseline research is implemented at the first possible opportunity when an odontocete is believed to be displaying human oriented social behavior.

Activities

1. Develop a data base of all known current sociable solitary odontocetes and the research currently being undertaken on them.
2. Facilitate the establishment of an email forum to allow researchers to share experiences and ideas in relation to sociable solitary odontocetes.
3. Develop generic protocols for the preliminary investigation of sociable solitary odontocete situations until site and individual specific methods can be developed.
4. Provide input into the proposed solitary sociable odontocete website to be hosted by WDCS.
5. To investigate funding opportunities for research into sociable solitary odontocetes.

“Guidelines Working Group”Items for discussion

- The differences between female and male solitary cetaceans.
- Difficulties of cohabitation with fishermen and divers.
- Importance of guidelines to facilitate the cohabitation of fisherman/divers and solitary cetaceans.
- “Compulsive behaviors”, such as playing with nautical material: find the appropriate guidelines and convince people not to arouse the interest and nor to use boat material with solitary sociable cetaceans.
- In France, there are two solitary and sociable dolphins behaving differently, we ought to be careful to avoid confusion on the given information specific to each dolphin.

- General guidelines to be as clear as possible:
 - What to do when the solitary sociable cetaceans gets tangled in rope ?
 - What to do when the dolphin is playing with nautical material?

Proposed Goals and Timelines

(Proposed timeline of June 2006)

- Ideas for guidelines and more support of the authorities for this summer 2006 for existing solitary animals in different countries/region.
- Synthesis of all guidelines that we already have, to find out the common points and the different ones (and why there are different points or opinions).

(Proposed timeline of Fall 2006)

- Language for educational outreach materials.

FORMAL WORKSHOP PROCEEDINGS

The *Workshop Workbook* for the workshop, including workshop presentations, bibliographies, compilation of existing guidelines created to manage solitary odontocetes, participant surveys and other supplemental information can be found at www.wdcs.org. The upcoming *Workshop Proceedings* (in progress) will also be available on this website when completed, and are an attempt to consolidate existing information on solitaries and serve as a comprehensive resource for those interested in the subject. It is hoped that these documents and the workshop upon which it is based will serve to foster additional and improved attention and research on the management and stewardship of solitaries in the future.

ACKNOWLEDGMENTS

This Workshop and paper were sponsored by the Whale and Dolphin Conservation Society (WDCS) with additional support provided by the Summerlee Foundation. We also wish to acknowledge the contributions made by the participants of this workshop and subsequent discussion and working groups.

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