

# MINKE WHALE PROJECT



## RESEARCH UPDATE, 30 NOVEMBER 2004 (INFORMATION SHEET # 7)

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### Highest number of whales seen in 2004

In this, its ninth consecutive year, the Minke Whale Project had its most successful field season to date. Within the June-July period the research team recorded the highest number of whale sightings. During the six weeks aboard the research and live-aboard dive vessel *Undersea Explorer* a minimum of 216 and up to 241 dwarf minke whales were sighted by the research team in 70 encounters, and they had in-water interactions with around 150 of these. Highlights of the season included re-sightings of old friends, within and between seasons, and documentation of interesting behaviours, including courtship displays and several cow and calf interactions.

This season has also produced the highest data returns from the swim-with whales industry, with 217 Whale Sighting Sheets completed by 14 dive vessels (day boats and live-aboards). We have also received 689 completed Minke Whale Questionnaires (up from the previous best of 403 in 2003) and 226 Encounter Logs from 'swim-with' passengers, as well as 49 Vessel Movement Logs completed by vessel crew in the 2004 season. Data entry and analyses of the MWQs, Encounter Logs and VMLs has begun with the assistance of research volunteers, however we do not presently have the funding to fully analyse these for presenting results back to the industry and GBRMPA at this stage. Detailed results of the Whale Sighting Sheet and 2004 field season will be presented at the 2004 Dwarf Minke Whale Tourism Monitoring Post-Season Workshop on the 1<sup>st</sup> of December in Cairns, which will workshop key management issues for the 2005 season.



**View from above:** Peter Arnold recording topside observations from the roof of *Undersea Explorer*

### Industry contributions in 2004 season

Special thanks from the Minke Whale Project team to the crew members and passengers who sent copies of their digital photos and video from the 2004 minke season to assist with ongoing whale-ID studies. Since the end of the season, six CD-ROMs have been received containing 289 still images and 26 movie clips from a total of eight encounters. In addition, four DVDs were received documenting 144 minutes of underwater footage from 26 encounters! We are particularly grateful to Ian Stapleton and Hidemi Yokota (of *Nimrod Explorer*) and Laurence Buckingham and Fran Truter (of *Mike Ball Dive Expeditions' SuperSport*) for their numerous and comprehensive contributions. These video and still images will greatly assist our records of individual whales and have already led to several re-sightings of known animals. Further analysis of these will occur in 2005.

### Conferences for the Minke Whale Project

In March 2004, Alastair Birtles visited Cape Town, South Africa, as an invited participant at an International Whaling Commission endorsed workshop on "The Science of Sustainable Whale Watching." Alastair gave three presentations on behalf of the Minke Whale Project research team, entitled: "Review of whale and dolphin management in Australia: scientific basis for management approaches," "Evaluating the effectiveness of management frameworks: some Australian examples," and "Whale watching visitor studies in the GBR: a case study of the swim-with dwarf minke whale ecotourism industry." The initial two-day open symposium (with over 80 attendees) was followed by a four-day closed workshop

attended by 28 researchers and managers from 14 different countries. The Workshop was a great success and a substantial report was prepared and presented to the 56<sup>th</sup> IWC Scientific Committee Meeting in Sorrento, Italy in July 2004.

In April 2004, Peter Arnold attended a symposium on taxonomy of whales and dolphins, held in La Jolla California. He presented our analysis of colour patterns in dwarf minke whales, which are the most complex found in any of the larger whales. Many of the colour patterns are subtle and are only visible in good photographs or video of living whales. Having established the various colour elements from our study of dwarf minke whales, we can compare similar colour elements shared by other species; this provides clues about how the dwarf minke whale is related to other minke whales and other baleen whales. Feedback from symposium participants was incorporated into a paper which has been submitted for review to the Memoirs of the Queensland Museum.

Peter Arnold and Alastair gave an invited presentation at the National Cetacean Workshop held in Ballina, NSW in April 2004, attended by whale and dolphin researchers from around Australia. In discussing the management of the dwarf minke whale swim activities, they were very positive about the good will and active participation by the industry and its adoption of the Code of Practice. It was noted that ongoing work was necessary to assess the effectiveness of the current management strategies. A number of studies on whale and dolphin watching activities have documented low compliance with regulations and there are continuing reservations about the impacts of swim-with programs on whales and dolphins. As a result of this, the GBR minke whale tourism industry can expect that there will be an increasing focus on the dwarf minke swims from managers, researchers and conservation and animal welfare organisations.

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## Minke whale lengths study

The Minke Whale Project's underwater videographer for the last three seasons, Susan Sobotzick, is currently an Honorary Visiting Scholar in the JCU School of Business from the University of Rostock, Germany. She is working with the Minke Whale Project to complete her final 5<sup>th</sup> year thesis (equivalent to a MSc). The thesis, supervised by Prof. Graf (U. Rostock) and Dr Alastair Birtles (assisted by Dr Peter Arnold), is entitled: 'Size estimations of dwarf minke whales (*Balaenoptera acutorostrata*) using underwater videogrammetry'. Susan has been using an underwater sonar attached to a video camera to film the whales and later calculated their body lengths on a computer. Susan collected measurements of 58 whales from 29 different encounters over seven weeks aboard *Undersea Explorer* during the 2004 season.

Outcomes of this study will allow Susan to outline the size range and estimate the state of sexual maturity of whales approaching dive vessels on the GBR. Her results will also contribute to our understanding of the social structure of these whale pods. Further studies with repeated size measurements of re-sighted individual whales from year to year may also help determine growth rates, and potential differences in body ratios between male and female dwarf minkes. Preliminary results of Susan's research will be presented at the 2004 Post-Season Workshop. This work was initiated by Andy Dunstan of *Undersea Explorer* and Susan, Andy, Alastair and Peter Arnold will submit a paper on this research shortly.



Photo by Ross Miller

A whale approaches Susan Sobotzick as she records video for use in size estimations during an encounter this season.

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## Masters student research on day-boat encounters

During the 2004 season, JCU Master of Tourism student Arnold Mangott undertook a study of the GBRMPA minke whale permitted day-boat operations and their management of minke whale encounters. Interactions between minke whales and these vessels, carrying between 50 and 100 passengers each day to the Agincourt Reefs from Port Douglas, have not been previously studied. Management considerations for encounters involving larger numbers of people have not yet been incorporated within the scope of the current Code of Practice, which was developed in conjunction with live-aboard dive vessels prior to GBRMPA issuing permits to the industry in 2003.

Arnold conducted observations on board *Quicksmart*, *Poseidon III* and *Aristocat IV* over a period of three weeks in July, following up with interviews of crew about their management of minke whale encounters on these vessels. Results of the study will be presented at the 2004 Post-Season Workshop and will help to improve or develop new protocols in the Code of Practice for day boat operations. Special thanks to the managers and crews of *Quicksmart*, *Poseidon III* and *Aristocat IV* for their support of Arnold's project and for providing him in-kind trips on the vessels during the season to conduct observations. A sum of \$1,000 was received from GBRMPA towards the cost of this study.

## Hot off the press

### Recently published:

Valentine, P.S., Birtles, R.A., Curnock, M., Arnold, P.W. & Dunstan, A. (2004). Getting closer to whales – passenger expectations and experiences, and management of swim with dwarf minke whale interactions in the Great Barrier Reef. *Tourism Management*, 5(6): 647-655.

### Submitted paper:

Arnold, P.W., Birtles, R.A., Dunstan, A., Lukoschek, V. & Matthews, M. (manuscript submitted 2004). Colour patterns of the dwarf minke whale (*Balaenoptera acutorostrata* sensu lato): general description, cladistic analysis and taxonomic implications. *Memoirs of the Queensland Museum* ISSN 0079-8835. 28pp, 2 Tables & 8 Figures.

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## Thanks to our hard working volunteers!

The Minke Whale Project team was very fortunate this year to have received the assistance of several volunteers who have helped with many aspects of the project. Most notably, Rhona Barr, a zoology graduate from Edinburgh University UK, has been assisting full-time with the Minke Whale Project and other research projects from February to end October 2004.

Rhona's contributions to the MWP in 2004 included masses of data entry and coding of the Minke Whale Questionnaires, fieldwork and logistical preparations for the 2004 minke season among many other incredibly helpful tasks. Rhona returned to the UK at end October and is already greatly missed for her hard work and fun companionship by all of the MWP team!

Additional volunteers who assisted the Minke Whale Project during the 2004 field season include Rebecca Wilde and Silvia Figaro Morelli. The MWP team is very grateful for their assistance with workshop preparations, data collection and entry during the 2004 season, which has provided a wonderful boost to the accomplishments of the Project this year.



Photo by Matt Curnock

Research volunteer Rhona Barr on watch for minke

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## What to expect in 2005

In May 2005 we will host a Pre-Season Industry and Management Workshop, which will include preparations for the permitted minke whale vessels for the 2005 season. At the Workshop operators will be presented the latest research findings and will be provided with new interpretive materials for their passengers and updated data sheets for the 2005 minke whale season. It is particularly important that as many crew from the vessels attend, along with the owners, managers and operations staff of each permitted operator, in order for crews to be updated and become familiar with any amendments to the Code of Practice, interpretive materials and research instruments prior to the 2005 season. Vessel crew provide the key link to managing passengers in minke whale encounters and their contributions to our research have proven invaluable over past seasons.

A proposed PhD study by Matt Curnock (MWP Research Officer) to commence in 2005, entitled "Mechanisms for Assessing the Sustainability of Swim-with Whales Programs" will focus on industry effort in the Ribbon Reefs during the minke season and indicators to assess the sustainability of the industry. Matt will be seeking the support of each permitted operator to conduct this study, which will involve the development of automated recording of vessel cruise tracks using programs such as "Logger" to develop industry effort data.

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## Funding Opportunities

The Minke Whale Project is currently being funded by the Great Barrier Reef Marine Park Authority for 2004-05 (\$20,384; Dwarf Minke Whale Tourism Research and Monitoring Program) to evaluate data collected by the industry in the 2004 minke whale season and make recommendations to industry and managers on future data recording and on the

sustainability of the industry. This is the second year of a proposed six-year research collaboration to examine the sustainability of the industry throughout the period of the GBRMPA swim-with dwarf minke whale tourism permits. The Project has also been awarded \$3,000 by the CRC Reef Extension Program for 2004-05 to develop interpretive materials for the industry and to assist in running the Pre-Season Workshop. In addition, a JCU Faculty of Law, Business and Creative Arts Internal Research Grant was awarded to the Project over 2004-05 (\$3,010) to develop a relational database for managing underwater digital images of individual dwarf minke whales. The database will facilitate storage, sorting, searching, retrieval and display of digital images of individual minke whales (initially from the 2004 winter field season) along with data on their unique individual colour patterns that can be used to identify (and subsequently key out) individual animals.

We are applying for a grant from the Australian Research Council (ARC-Linkage; to be submitted in April 2005) to expand our research over the years 2006-2008. The objectives are to support two PhD studies on the sustainability of the industry and the biology of the minkes (especially an expanded photo-ID study), to continue our fieldwork on minke behaviour and hopefully to undertake tracking studies using VHF and satellite tagging techniques. Linkage applications require a minimum of 20% cash upfront and as much in-kind as possible from Industry and other partners. It is hoped that the GBRMPA funding (2006-2008) would contribute to this and a very positive initial response has been received from CHARROA members, national and international whale conservation organisations and other researchers who are likely to be partners in the application.

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## Thanks

We would like to extend our thanks to those owners, managers, crew and office staff of the GBRMPA permitted minke vessels involved in the Minke Whale Project, for their continuing help and support with the research. These include the live-aboard vessels *Undersea Explorer*, *Super Sport*, *Nimrod Explorer*, *Taka III*, *Diversity* and *Floreat* and the day boats *Poseidon III*, *Quicksmart* and *Aristocat IV*, who assisted greatly with the research again this year and gave our researchers, students and volunteers vessel access to help study these marvellous animals and the sustainable management of tourism associated with them. We look forward to continuing this highly successful research collaboration in 2005 and beyond, to improve our understanding of these mysterious and beautiful little whales and promote sustainable interactions with them.

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## The Minke Whale Project team

Members of the Minke Whale Project in 2004 include: Dr Alastair Birtles (Project Leader, JCU), Dr Peter Arnold (Museum of Tropical Queensland), Assoc Prof Peter Valentine (JCU School of TESAG), Andy Dunstan (*Undersea Explorer*), Susan Sobotzick (University of Rostock, Germany), Matt Curnock (JCU), Bryony Barnett (CRC Reef Research Centre), Dean Miller (PhD Tourism student), Arnold Mangott (Master of Tourism student) and JCU research volunteers Rhona Barr, Rebecca Wilde and Silvia Figaro Morelli.

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Australian Government  
Great Barrier Reef  
Marine Park Authority



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