



MINKE WHALE PROJECT RESEARCH NEWSLETTER // ISSUE # 14 // 30 May 2019

# MINKE WHALE

# PROJECT

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Image ©Matt Curnock

## Minke Whale Project 2018 Highlights

2018 was a great year for the Minke Whale Project (MWP), with new research team members, continuing and new research projects, two industry workshops, and a very successful Field Season. We started the year with the very welcome addition of a new f/t Senior Research Officer in February (Martha Brians) and an intake of six

new Research Volunteers joining the continuing team of Dr Alastair Birtles, Dr Matt Curnock, Dr Naomi Gardiner, p/t RA Genevieve Williams, f/t PhD candidate Suzanne Hillcoat, and Volunteers Brittany Butler and Emily Daley. Our team settled into our three new Minke Whale Project offices in JCU's College of Science & Engineering, Townsville and began preparing for the Minke Season. We had a very successful minke whale research season across June and July, with 13 researchers out collecting



Cairns Stakeholder Workshop, June 2018 Image ©MWP



MWP Volunteer Researcher Training, 16 April 2019; From left to right – Martha Brians, Alyx Terrell, Jazmin Fabish, Suzanne Hillcoat, Andi Laidlaw, Alastair Birtles, Marlee Jesson-Kerr, Emily Daley, Marissa Hutchings, Hope Sexton, Laura Missen, Natalie Swinhoe, and Claire Barr. Image ©MWP

data onboard Swim-with-minke tourism vessels, thanks to our generous friends in the industry. From August to November we had two work placement students and one JCU Master's Project student researching aspects of whale biology, ecology and sustainability indicators.

In preparation for 2019, seven new Volunteers were selected (from >40 Expression of Interest) and trained in data collection and analysis. The capacity of the Project to collect and analyse large volumes of data is only made possible by the outstanding efforts of our Volunteer Researchers who give us at least a day/week of their time. They undergo extensive training to prepare for working with the whales in the field and for interactions with passengers and crew aboard the commercial swim-with dive fleet, to ensure a high standard of data collection, analysis and communication. They are also trained in photo-ID analysis techniques which are critical in enabling us to process the high volumes of whale imagery collected each year, underpinning much of the MWP's research on behaviour and biology. We are very excited to see what these new Volunteers have already achieved in 2019.

### Cairns Stakeholder Workshop

For the first time in three years the MWP held a Stakeholder Workshop in Cairns to connect with Industry, government and NGOs on our recent and current research. This Workshop (01 June, 2018) helped to strengthen the Project's relationship with industry and management, refreshed industry on the best practice for whale encounters, and allowed an open forum for sharing information. With over 30 people in attendance, it was wonderful to see long-standing friends and meet new people who share our enthusiasm for the minkes. This Workshop would not have been possible without the funding support from the Great Barrier Reef Marine Park Authority awarded through a Reef Guardian Grant to PhD candidate Suzanne Hillcoat.

### 2018 Minke Season

In June and July the MWP researchers collected an extraordinary volume of data on the annual dwarf minke

aggregation in the northern GBR. Some of the highlights include:

- c.50,000 images collected by the Minke Whale Project research team
- c.505 whales seen during June and July 2018
- c.183 encounters with the whales
- 170 researcher days at sea
- 13 Researchers in the field

Some other highlights included spotting one of our 'old friends' Bento (the whale who inspired our logo) who we have now seen 11 of the last 12 years. It was also a good season for spotting calves, with 15 seen. It was a great season overall and we are excitedly looking forward to next year.



A mother and calf in the GBR. Image ©Matt Curnock

### Student Research Projects

Student research projects are an important contribution toward reaching our key MWP research goals of gaining more information about the population, life-history and vulnerabilities of this species. During 2018 we had two work placement students and one Master's Project research student working with us.

An undergraduate Professional Placement Project to collate our information and imagery of mothers and calves was conducted by Andi Laidlaw, and provides the Minke Whale Project with a database of calf information that can be used in future photo-identification and aging studies. Emily Daley undertook a JCU Master Professional

Placement Project to organize data from 2017 which she is now using in a Masters Research Project to examine use of the aggregation area by the 2017 cohort analyzing residence times and assessing various sustainability indicators such as cumulative interaction times. Dwarf minke whale sex ratios and sexual dimorphisms were evaluated by Master's research student Alessandra Sellini, the results of which will direct future research on the population sex identifications.

All of these projects contribute toward a better understanding of these whales and provide more information that can be used in the sustainable management of the whales and their tourism use.

### PhD Researcher Suzanne Hillcoat



PhD student Suzanne Hillcoat collecting images to measure whales. Image ©Alastair Birtles

Suzanne Hillcoat is continuing her PhD research on dwarf minke whale behaviour and biology. When our last Newsletter was published, Suzanne was deep into the analysis of her stereo-video footage, making as many precise body measurements as possible on the whales. She was also measuring how closely the whales approached swimmers in the water. Since then she has begun to explore whether life-history stage and sex influence how the whales interact with us – for example, do juvenile males approach swimmers closer than adult females?

She is also investigating whether any of the whales filmed in 2017 were also filmed in 2018, so she can measure the annual growth of some of these whales. The 2019 Season will be the third and last that she includes in her PhD study – and will hopefully give her a third year of data about dwarf minke lengths, patterns of growth and behaviour.

Suzanne is currently getting her first PhD research paper ready to publish, which is a very exciting milestone for any research student!

### Website Refresh

The Minke Whale Project website ([www.minkewhaleproject.org](http://www.minkewhaleproject.org)) is getting an upgrade. The website now has a refreshed format that works on mobile phones and tablets. The website also has a portal for submitting sightings of dwarf minke whales that is quick and easy to use. More updates will be added throughout 2019, so continue to check it out for the latest info.

### 2019 MWP Outlook

Our team has been working hard this year, with many exciting research efforts ongoing. In addition to Suzanne's study, Emily Daley, a Masters Research Project student, is working with the MWP to conduct a full census of all of the whales photographed over the 2017 Season and will report on their patterns of spatial and temporal use of the aggregation area and some key sustainability indicators. June and July 2019 will be the MWP's 24<sup>th</sup> consecutive season of collecting dwarf minke whale data in the Ribbon Reefs of the Great Barrier Reef (GBR).

Throughout 2019 the MWP research team will continue developing an Artificial Intelligence whale identification tool using Neural Network Analysis with JCU's eResearch Centre and IT academic Dr Dmitry Kononov. In collaboration with researchers from the Antarctic Division we are planning to develop a whale aging project in 2019 and beyond – and are awaiting news about its funding. Over the next year we plan to continue updating the MWP website ([www.minkewhaleproject.org](http://www.minkewhaleproject.org)) and expand our national Sightings Network to enhance the Project reach in data collection along the recently discovered migration path of the whales – as revealed by our satellite tagging in 2013-15.

Dr Alastair Birtles and PhD candidate Suzanne Hillcoat are planning to travel to Barcelona, Spain for the World Marine Mammal Conference in December, hosted by the Society for Marine Mammalogy and the European Cetacean Society. They have each submitted an abstract about their research and hope to earn a coveted slot to give an oral presentation to world leaders in cetacean research.

Alastair's abstract is titled, "New insights about the World's only known, predictable winter aggregation of dwarf minke whales (*Balaenoptera acutorostrata* subsp.) in the remote northern Great Barrier Reef (Australia) and their implications for sustainable swim-with-whales management." Additional authors include Suzanne, Susan Sobtzyck, Emily Daley, Russ Andrews, Matt Curnock, Martha Brians, Omar Ramirez-Flores, and Gena Williams. This presentation will provide an overview of some of our most interesting findings from the last two decades about the use of the aggregation area by the whales.

Suzanne's abstract is titled, "Is risk-taking behaviour among dwarf minke whales learned or innate?" Additional authors include Matt Curnock, Naomi Gardiner, and Alastair Birtles. This presentation relates to Suzanne's work on how close approaches to swimmers may be influenced by the demographics of the whales such as age and sex.

### **Updating the Code of Practice**

The Code of Practice (CoP) is used to manage encounters with dwarf minke whales. There are instructions for permitted swim with whale operators on how to best interact with the whale so that the encounters are as safe and sustainable as possible. The CoP was originally proposed in 1999 and revised in 2002 based on research and a minimal impact approach. It was voluntarily adopted by the industry in 2002 and became a permit requirement in 2003, when swimming with dwarf minke whales in the GBR became a permitted activity by the Great Barrier Reef Marine Park Authority (GBRMPA). The CoP was last updated in 2008 with extensive industry and management input.

It has now been over 10 years since that update and as an adaptive management tool it is probably time to review and potentially update it. The MWP Team is asking for suggestions for revisions to improve the protocols for sustainable management of these swim-with encounters.

Some examples of possible areas of improvement include reaching agreement about best practice for design and deployment of minke lines (ropes, floats, etc.); clear information about procedures when a mother and calf are found to be present, and clarifying the regulations and procedures associated with the use of drones.

Suggestions can be sent to the MWP Team ([martha.brians@jcu.edu.au](mailto:martha.brians@jcu.edu.au)).

### **Genetics Update**

Our Minke Whale Project JCU Honours student Omar Ramirez-Flores successfully completed his 2017 study based primarily on our historical collections of free-floating sloughed skin samples. Despite the often quite degraded quality of the DNA and bacterial contamination (from long immersion in the water and delayed preservation after collection he was able to show that our dwarf minkes are genetically identical to the dwarf minkes from the Southern Ocean that have occasionally been killed by the Japanese as part of their long-standing 'scientific whaling' on the Antarctic minkes. His Honours was jointly supervised by Dr Lynne van Herwerden and Professor Kyall Zenger (JCU Marine Biology) and some of his results have just been published in Australian Mammalogy.

### **Funding Update**

The Minke Whale Project has received another \$100,000 in funding from the Estate of Winifred Violet Scott Charitable Trust (the 2nd consecutive year). This grant supports the full time employment of Martha Brians as a Senior Research Officer through 2019 and up to about March of next year. It is vital to the Minke Whale Project, immensely increasing our capacity in all aspects of our field and laboratory research and the vital area of communications. Without Martha's Volunteer Coordination role, we could not select and train such a large group (of 10!) Volunteer Researchers – and their extraordinarily generous donation of their time (c. 1 day/week each) is what has enabled us to process nearly 50,000 photo-ID images from 2017 and to be well on the way with our 2018 photo-ID analysis.

Since our competitive grant funding (AMMC and IFAW) ended for the satellite tagging (2013-2015) our field season activities have largely been funded by passenger and dive-industry donations. However, our 2017 passenger donations (\$2,475) and industry/vessel contributions (\$3,780) were among the lowest totals ever and we were only able to put a full team in the field in 2018 because Alastair was able to donate his \$10,000 fee from the BBC for help with the Sir David Attenborough Great Barrier Reef Film (Episode 2). This was discussed at our last Workshop and we were immensely grateful that in 2018, passenger donations (\$10,774) and industry contributions (\$9,392) were at record levels – thus guaranteeing our field operations for 2019. It is of particular note that \$16,307 of this was generated from onboard a single vessel (Spoilsport) and the Minke Whale Project is deeply grateful to Mike Ball and Mike Ball Dive Expeditions for their outstanding support for our research activities.

### **Contact Us**

To get in touch with the MWP Team, contact Dr Alastair Birtles or Martha Brians, or visit our website ([www.minkewhaleproject.org](http://www.minkewhaleproject.org)).

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