

## Emma Betty

### PhD Student Research Officer

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### Research Interests/Experience:

My research background is in the ecology and conservation of marine mammals in New Zealand waters. Specific interests include investigations on stranded and by-caught cetaceans; particularly in regard to the life history and feeding ecology of deep-diving species, and the interactions between cephalopods, cetaceans and fisheries.

Prior to beginning this PhD programme, I completed a Graduate Diploma in Marine Studies at Bay of Plenty Polytechnic and a BAppSc (Hons) in Environmental Science at Auckland University of Technology. My honours research focused on the diet of pygmy sperm whales stranded on the New Zealand coast.

Since the completion of my honours thesis in 2007, I have been employed as a Research Officer in the Earth & Oceanic Sciences Research Institute (EOSRI) and School of Applied Science at AUT, and been active in cetacean research and stranding response (including necropsy work) throughout New Zealand.

### Thesis Title:

Pilot whales (*Globicephala* spp.) in New Zealand waters: Strandings, life history and conservation.

### Supervision:

Dr Barbara Breen (Auckland University of Technology)  
Dr Sinead Murphy (Institute of Zoology, London)  
Dr Karen Stockin (Massey University, Albany)  
Prof. Mark Orams (Auckland University of Technology)

### Study Aims:

The overall goal of this PhD research programme is to improve understanding of the life history of pilot whales stranded on the New Zealand coast, and to identify any relationships between mass stranding events and life history characteristics that may have implications for the conservation of

pilot whales in New Zealand waters. Specifically, this research will (1) investigate both historical and recent stranding patterns, (2) examine age structure, growth rates and growth patterns/allometry, (3) investigate male gonadal/sexual development and reproductive seasonality, (4) determine female reproductive parameters and (5) describe the diet of pilot whales stranded on the New Zealand coast. This study will make an important contribution to our scientific understanding of pilot whales in New Zealand waters, provide some of the first data on the poorly understood southern subspecies of the long-finned pilot whale, and will also serve as part of a basic framework from which further work in the field can be undertaken.

### Funding:

- ❖ New Zealand Federation for Graduate Women 'Postgraduate Fellowship'.
- ❖ New Zealand Marine Sciences Society First Overseas Conference Travel Award.
- ❖ Society of Marine Mammalogy Student Travel Award.
- ❖ Auckland University of Technology, Faculty of Health & Environmental Sciences, 'Contestable Travel Grant'.
- ❖ Department of Conservation Research Contract.
- ❖ Auckland University of Technology Contestable Research Grant (Faculty of Health and Environmental Sciences).
- ❖ Earth & Oceanic Sciences Research Institute, Auckland University of Technology.
- ❖ BayerBoost Environmental Scholarship (administered by the Royal Society of New Zealand).
- ❖ Auckland University of Technology Full Fee Scholarship.

### Relevant Publications/Reports:

Beasley I, Cherel Y, Robinson S, **Betty E**, Gales, R. 2013. Pygmy sperm whale (*Kogia breviceps*) stranding record in Tasmania, Australia, and diet of a single specimen. *Papers and Proceedings of the Royal Society of Tasmania* 147:25-32.

**Beatson E**, O'Shea S. 2009. Stomach contents of long-finned pilot whales, *Globicephala melas*, mass-stranded on Farewell Spit, Golden Bay 2005-2008. *New Zealand Journal of Zoology* 36:47-58.

**Beatson E**, O'Shea S. 2008. Hector's dolphin (*Cephalorhynchus hectori hectori*) stomach content analysis. *Internal report to the Department of Conservation, Auckland Conservancy, New Zealand*.

**Beatson E**, O'Shea S, Stone C, and Shortland T. 2007. Notes on New Zealand mammals 6. Second report on the stomach contents of long-finned pilot whales, *Globicephala melas*. *New Zealand Journal of Zoology* 34(4):359-362.

**Beatson E**, O'Shea S, and Ogle M. 2007. First report on the diet of long-finned pilot whales, *Globicephala melas*, stranded in New Zealand. *New Zealand Journal of Zoology* 34(1):51-56.

**Beatson E**. 2007. The diet of pygmy sperm whales, *Kogia breviceps*, stranded in New Zealand: implications for conservation. *Reviews in Fish Biology & Fisheries* 17(2-3):295-303.

**Beatson E**. 2007. The diet of pygmy sperm whales, *Kogia breviceps*, stranded on the New Zealand coastline. *BAppSc (Hons) dissertation*. School of Applied Sciences, Auckland University of Technology, 178pp.

Zemke-White WL, **Beatson E.** 2005. Algal community composition within territories of the Damselfish *Stegastes nigricans* (Pomacentridae, Labroidae) in Fiji and the Cook Islands. *The South Pacific Journal of Natural Science* 23:43-47.

### Conferences/Presentations:

**Betty E,** Stockin KA, Grover D, Boren L. 2013. Workshop on Cetacean mass stranding response 2: Rescue and research. *20th Biennial Conference on the Biology of Marine Mammals, Dunedin, New Zealand.*

**Betty E,** Breen B, Stockin KA, Murphy S, Boren L. 2013. The New Zealand pilot whale stranding record, 1978-2012. *20th Biennial Conference on the Biology of Marine Mammals, Dunedin, New Zealand.*

**Beatson E,** O'Shea S. 2011. Recent mass strandings of pilot whales on the New Zealand coast: a video presentation. *19th Biennial Conference on the Biology of Marine Mammals, Tampa, Florida, USA.*

**Beatson E,** Stockin KA and O'Shea S. 2011. Two recent mass-strandings of long-finned pilot whales on the New Zealand coast. *19th Biennial Conference on the Biology of Marine Mammals, Tampa, Florida, USA.*

**Beatson E,** O'Shea S, Stockin KA and Dewas S. 2011. Recent mass strandings of long-finned pilot whales on Stewart Island. *New Zealand Marine Sciences Society (NZMSS) Conference, Oban, Stewart Island, New Zealand.*

**Beatson E.** 2009. Stomach contents of beaked whales stranded on the New Zealand coast. *New Zealand Marine Sciences Society (NZMSS) and Meteorological Societies Joint Conference, Auckland, New Zealand.*

**Beatson E.** 2008. The diet of marine mammals stranded on the New Zealand coast. *Wanganui Marine Mammal Hui, Kaipo Marae, Waiototara, New Zealand.*

**Beatson E.** 2008. Stomach contents of long-finned pilot whales mass-stranded on Farewell Spit, Golden Bay. *New Zealand Marine Sciences Society (NZMSS) and Australian Marine Science Association (AMSA) Joint Conference, Christchurch, New Zealand.*

**Beatson E,** O'Shea S, & Ngatiwai Trust Board. 2007. Report on the stomach contents of long-finned pilot whales stranded on the Ruakaka Coast, New Zealand. *New Zealand Marine Sciences Society (NZMSS) Annual Conference, Hamilton, New Zealand.*

**Beatson E.** 2007. The diet of toothed whales stranded on the New Zealand coast: implications for conservation. *National Whale Recovery Wananga, Takahiwai Marae, Ruakaka, New Zealand.*

**Beatson E.** 2007. The diet of cetaceans stranded on the New Zealand coast: implications for conservation. *Golden Bay Marine Mammal Hui, Onetahua Marae, Takaka, Golden Bay, New Zealand.*

**Beatson E.** 2006. The composition of cephalopods in the diet of pygmy sperm whales, *Kogia breviceps*, stranded in New Zealand. *New Zealand Marine Sciences Society Annual Conference, 20 – 22 September, Nelson, New Zealand.*

**Beatson E, O'Shea S, & Ogle M.** 2006. First report of the diet of long-finned pilot whales, *Globicephala melas*, stranded in New Zealand. *New Zealand Marine Sciences Society (NZMSS) Annual Conference, 20 – 22 September, Nelson, New Zealand.*