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Poster presentation

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# Collection of baseline data on humpback whale (*Megaptera novaeangliae*) health and causes of mortality for long-term monitoring in Western Australia

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**Background:** Since 2008, an unprecedented number of humpback whales (HBW) have been found dead or dying on WA beaches. The HBW that migrate up the WA coastline are from Breeding Stock D. This population was historically decimated by unsustainable whaling practices and by 1963 the population was thought to consist of < 600 animals (Bannister 1964). The population has since made a remarkable recovery increasing at an annual rate of 10% (Bannister and Hedley, 2001). The most recent estimate of the abundance of Breeding Stock D calculated in 2008 was 21,750 (95% CI = 17,550-43,000) (Hedley *et al.* 2009). As the population of HBW increases it is reasonable to expect an increase in mortality events. However, the drastic increase in mortalities recorded annually since 2008 vary considerably from all previous years.

Speculation on causes of increased marine mammal mortalities usually focuses on starvation, disease or anthropogenic impacts, or some synergistic combination of these (Moore *et al.* 2001).

### **Aims and Objectives:**

The aims of this project include:

- 1) identification and characterisation of factors associated with HBW strandings and;
- 2) determination of baseline and epidemiological information on disease levels and the nutritional status of stranded HBW.

### Specific objectives include:

- a) collect morphometric and life history data (e.g. size, sex, age class)
- b) undertake partial and where feasible full post-mortem examinations to acquire information on causes of morbidity and mortality, and to collect tissues for pathogen identification, histopathology and toxicology;
- c) quantify the nutritional status of stranded HBW by measuring blubber thickness, analysing blubber lipid content, and examining for the presence and degree of muscle and liver atrophy;
- d) isolate and identify pathogenic viruses, bacteria, protozoa, or fungi from tissue samples (where appropriate);
- e) archive tissue samples for long-term disease surveillance, toxicological monitoring, and retrospective study;
- f) identify possible biomarkers in skin and blubber biopsy samples as possible indicators of nutrition and health in free swimming HBW and;
- g) establish beneficial collaborations within WA, nationally and internationally in order to enhance the information gained from the samples collected.

An understanding of the diseases that affect HBW and causes of mortality are an important component in the identification and evaluation of threats to the population.

### **Acknowledgements:**

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### **References:**

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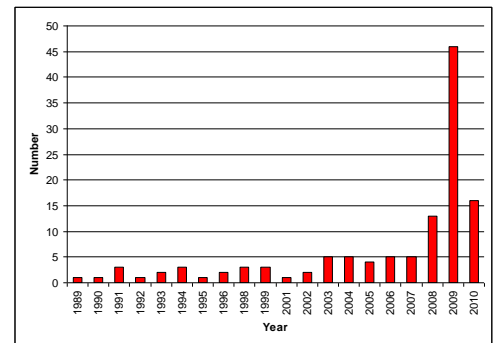


Figure 1: Number of stranded humpback whales recorded on West Australian beaches between 1989 and 2010 (derived and adapted from Coughran and Gales, 2010)



Figure 2: Stranded humpback whale calf



Figure 3: Post-mortem examination of a humpback whale calf. (removing blubber)