



Department of
Parks and Wildlife



AAMC

FINAL REPORT JANUARY 2014: PROJECT 12/15

1. Project Details

1.1 Project title

Validation of methods for the humane treatment of moribund cetaceans

1.2 Funding recipient

Perth Zoo

1.3 Lead investigator

Dr Peter Mawson

1.4 Project officer

Dr Jordan Hampton BSc (Hons) BVMS (Hons)

1.5 Time elapsed since the commencement of the funding agreement

12 months

2. Project Activities

Milestones

February 2013	Project officer appointed
March-April 2013	Permits, equipment and media strategy prepared
April-October 2013	Field work and animal sampling
November 2013-January 2014	Manuscript and SOP preparation

3. Project Progress

3.1 Logistics

All key logistical components for project fieldwork were acquired and planned

in the first two months of the project. These included a suitable vehicle, access to the designated firearm calibres (.308 Win, .300 WM, and .300 WSM), necessary ammunition, post-mortem equipment, a media strategy, and necessary government permits.

3.2 Cetacean sampling

Ten animals meeting the criteria of the project, and comprising six separate species, were sampled (see Table below). All animals were sampled very soon after death, and all specimens exhibited minimal post-mortem decomposition. All sampled animals were shot with one of the three primary calibres being studied, the .300 WSM, the .300 WM and the .308 Win.

3.3 Ballistic behaviour

The projectiles used were all Woodleigh® hydrostatically stabilised projectiles, based on best scientific advice from previous projects. All specimens were shot through the midline hindbrain with complete penetration of both the dorsal and ventral surfaces of the skull, an ideal outcome for an instantaneous physical euthanasia method. Minimal deviation was observed from the indicative trajectory of each shot with the three calibres of projectiles tested. Degree of fragmentation of each projectile was found to be zero. Radiological documentation and key morphometric parameters were recorded for all specimens (Table).

3.4 Data analysis

Data analysis from collected specimens has been completed, along with the review and collation of instantaneous death rates (IDRs) from the use of .30 calibre firearms for euthanasing cetaceans in previous published programs.

3.5 Draft manuscript

A manuscript documenting the background, methodology, results and application of the work has been produced and will shortly be submitted to the

science journal of the International Whaling Commission, the *Journal of Cetacean Research and Management*. A copy of the draft manuscript is attached to this document.

3.6 Draft SOP

A Standard Operating Procedure (SOP) documenting the methods developed by this study has been produced and submitted for consideration by the Animal Ethics Committee of the Department of Parks and Wildlife. On 31st January 2014. A copy of the draft SOP is attached to this document.

4. Project benefits and outcomes

The project has been successful in developing a reliable euthanasia method for stranded small cetacean species. The SOP developed will be of practical use to wildlife management agencies world-wide and the manuscript developed should be of high interest to the international science community.

5. Project evaluation

The project was highly successful in achieving its stated program objectives. Key milestones were met, documents produced and no significant delays were encountered. A close collaboration between the two agencies involved in the research permitted productive and cost-effective research to be performed. Access to specimens met required minimum numbers for sample size and species diversity. The key methodologies tested were reliably and repeatedly effective and conducive to use by non-specialised field staff.

Table: Details of animals examined in this study

Species	Body length (m)	Head diameter (m)	Firearm Calibre	Projectile	Aim point	Dorsal skull Penetration	Ventral skull penetration	Projectile fragmentation	Indirect skull fractures
Risso's Dolphin (<i>Grampus griseus</i>)	2.7	0.36	.308 WIN	Hydrostatic 180 grain	Dorsal	Yes	Yes	No	Yes
Common Dolphin (<i>Delphinus delphis</i>)	1.8	0.18	.308 WIN	Hydrostatic 180 grain	Dorsal	Yes	Yes	No	Yes
Bottle Nosed Dolphin (<i>Tursiops aduncus</i>)	1.3	0.18	.300 WSM	Hydrostatic 180 grain	Dorsal	Yes	Yes	No	Yes
	2.7	0.26	.300 WSM	Hydrostatic 180 grain	Dorsal	Yes	Yes	No	Yes
Pygmy Sperm Whale (<i>Kogia breviceps</i>)	2.5	0.41	.300 WSM	Hydrostatic 180 grain	Dorsal	Yes	Yes	No	Yes
	1.8	0.29	.300 WSM	Hydrostatic 180 grain	Dorsal	Yes	Yes	No	Yes
	1.9	0.31	.308 WIN	Hydrostatic 180 grain	Dorsal	Yes	Yes	No	Yes
Cuvier's Beaked Whale (<i>Ziphius cavirostris</i>)	4.2	0.55	.300 WSM	Hydrostatic 180 grain	Dorsal	Yes	Yes	No	Yes
Humpback Whale (<i>Megaptera novaeangliae</i>)	4.2	0.51	.300 WM	Hydrostatic 180 grain	Dorsal	Yes	Yes	No	Yes
	4.3	0.60	.300 WSM	Hydrostatic 180 grain	Dorsal	Yes	Yes	No	No