

**SOUTH AFRICA. PROGRESS REPORT ON CETACEAN RESEARCH, JANUARY
2005 TO DECEMBER 2005, WITH STATISTICAL DATA FOR THE CALENDAR
YEAR 2005**

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This report summarizes information obtained from: Mammal Research Institute Whale Unit,
University of Pretoria (**MRIWU**); Natal Sharks Board (**NSB**); Centre for Dolphin Studies
(**CDS**); Department of Mathematics and Applied Mathematics, University of Cape Town
(**UCT**) and Port Elizabeth Museum (**PEM**)

1. Species and stocks studied

Common name	Scientific name	Area/stock(s)	Items referred to
Antarctic blue whale	<i>Balaenoptera musculus intermedia</i>	Southern Hemisphere	2.2; 9
Antarctic minke whale	<i>Balaenoptera bonaerensis</i>	Southern Hemisphere	9
Atlantic Ocean bottlenose dolphin	<i>Tursiops truncatus</i>	South Africa	2.1.1; 2.1.2; 4.3
Bryde's whale	<i>Balaenoptera edeni</i>	South Africa	2.1.1; 2.1.2; 3.1.1
Common dolphin	<i>Delphinus spp.</i>	South Africa	2.1.1; 4.3; 11.1
Dusky dolphin	<i>Lagenorhynchus obscurus</i>	South Africa	11.1
False killer whale	<i>Pseudorca grassidens</i>	South Africa	2.1.1; 2.1.2
Fin whale	<i>Balaenoptera physalis</i>	East Greenland-Iceland stock	9; 11.1
Heaviside's dolphin	<i>Cephalorhynchus heavisidii</i>	South Africa	11.1
Humpback whale	<i>Megaptera novaeangliae</i>	Western Indian Ocean and Southern Atlantic	2.1.1; 3.1.1; 4.3; 6.2; 9; 11.1
Indo-Pacific humpback dolphin	<i>Sousa chinensis</i>	South Africa	2.1.1; 2.1.2; 3.1.1; 4.3; 7.1
Indian Ocean bottlenose dolphin	<i>Tursiops aduncus</i>	South Africa	2.1.1; 3.1.1; 4.3; 7.1
Killer whale	<i>Orcinus orca</i>	South Africa	2.1.1; 2.1.2
Long-beaked common dolphin	<i>Delphinus capensis</i>	South Africa	7.1
Minke whale	<i>Balaenoptera acutorostrata</i>	South Africa	4.3
Pygmy blue whale	<i>Balaenoptera musculus brevicauda</i>	Southern Hemisphere	2.2; 9

Shepherd's beaked whale	<i>Tasmacetus shepherdi</i>		11.1
Southern right whale	<i>Eubalaena australis</i>	South Africa	2.1.1; 3.1.1; 4.3; 11.1
Sperm whale	<i>Physeter macrocephalus</i>	South Africa	4.3
True's beaked whale	<i>Mesoplodon mirus</i>	South Africa	4.3

2. Sightings data

2.1 Field work

2.1.1 Systematic

MRI, Whale Unit

Between 7 and 15 October 2005, the whole coastline between Nature's Valley, Plettenberg Bay, and Muizenberg, False Bay on the south coast was searched from the air by helicopter and 684 southern right whales (including 260 calves) and 3 Bryde's whales were seen in 31 h 48 min of flying. All southern right whale cow-calf pairs were photographed for individual ID purposes.

Between September and November 2005, 45 days were spent at sea in the St Helena Bay area of the west coast in a study of a summer feeding ground for southern right whales. In total, 151 sightings of 371 southern right whales, 14 sightings of 32 humpback whales, 5 sightings of 7 Bryde's whales and a sighting of 4 killer whales were made. Between 25 and 37% of right whales seen each month were exhibiting behaviour believed to be associated with feeding, and 11 faecal samples were collected. CTD and plankton hauls were made next to feeding whales on 11 occasions, and a line of 5 oceanographic stations through the centre of the putative feeding ground was successfully completed on 5 occasions

Center for Dolphin Studies

During 2005 the Centre for Dolphin Studies (CDS) completed five cetacean research projects.

Boat Based:

- 1/. Indian Ocean bottlenose dolphins in Plettenberg Bay, South Africa: Population estimates and temporal dynamics of groups (Nelson Mandela Metropolitan University M.Sc. thesis submitted December 2005).
- 2/. A photo-identification study of the inshore stock of Bryde's whales in Plettenberg Bay, South Africa (presented at the European Cetacean Society conference, 2005).
- 3/. Insights into population size, group dynamics and site fidelity of Indo-Pacific humpback dolphins in Plettenberg Bay, South Africa (Nelson Mandela Metropolitan University M.Sc. thesis submitted December 2005).

Land Based:

- 1/. Diurnal patterns of distribution, habitat use and behaviour of Indian Ocean bottlenose dolphins in Plettenberg Bay, South Africa (presented at the European Cetacean Society conference, 2005).
- 2/. Seasonal occurrence and numbers of cetaceans passing Plettenberg Bay, South Africa.

In addition, during some 180 hours at sea photo-identification photographs were taken of the following species: humpback whales, southern right whales, killer and false-killer whales and common and Atlantic Ocean bottlenose dolphins.

Amongst a number of seal strandings, the CDS attended six cetacean strandings during 2005.

2.1.2 Opportunistic, platforms of opportunity

Center for Dolphin Studies

Photographs of killer whales, false killer whales, Atlantic Ocean bottlenose dolphins, Bryde's whales, and Indo-Pacific humpback dolphins were either collected from or taken aboard commercial whale and dolphin watching vessels in Plettenberg Bay and Knysna.

2.2 Analyses/development of techniques

UCT

The blue whale collaboration (Branch et al.) is collating positions of catches, sightings, strandings, mark-recaptures and acoustic detections of blue whales (pygmy and Antarctic) in the Southern Hemisphere and northern Indian Ocean. Distribution maps, migration patterns, subspecies separation and the relationship between distribution and environmental features will be investigated.

3. Marking data

3.1 Field work

3.1.1 Natural marking data

Species	Feature	Area/stock	Number photograph ed	Catalogued (Y/N)	Cat. Total	Contact person/institute
Southern right whale	Callosities coloration	S coast, RSA	275 ads 260 calves	N	793 ad females	MRI
Southern right whale	Callosities coloration	W coast, RSA	3,600 frames	N	Unknown	MRI
Humpback whale	Dorsal fin flukes	W coast, RSA	35 individuals	Y	266 individual	MRI
Indo-Pacific humpback dolphin	Dorsal fins	E coast	89			CDS
Indian Ocean bottlenose dolphin	Dorsal fins	East coast	540			CDS
Humpback whale	Dorsal fins & flukes	East coast	64			CDS
Bryde's	Dorsal fins	East Coast	116			CDS

- Number of frames exposed

3.1.2 Artificial marking data

None

3.1.3 Telemetry data

Species	Tag type	No. successfully deployed	Maximum time transmitting	Contact person/institute

3.2 Analyses/development of techniques

4. Tissue/biological samples collected

4.1 Biopsy samples

Species	Area/stock	Number collected	Archived (Y/N)	No. analysed	Total holdings	Contact person/institute

4.2 Samples from directed catches or bycatches

Species	Area/stock	Calendar year / Season total	Archived	Tissue types	Contact person

S=skin, B=blubber, T=teeth, W=baleen, G=gonads, C=ext parasites, P=internal parasites, K=skeletal remains, A=pathology samples, CV=cardiovascular systems, ST=Stomach

4.3 Samples from stranded animals

Species	Area/stock	No .	Archived	Tissue tyoe	Contact person/inst.
Atlantic Ocean bottlenose dolphin	W coast	1	Y	K	MRI
Common dolphin sp	W coast	1	Y	Still frozen	MRI
Common dolphin sp	S coast	1	Y	Still frozen	MRI
Common dolphin sp	W coast	1	Y	Still frozen	MRI
Minke whale subsp	W coast	1	Y	K	MRI
True's beaked whale	W coast	1	Y	S,B,T,G,P,K, ST	MRI
Indian Ocean bottlenose dolphin	S coast	1	Y	S,K	MRI
Southern right whale	S coast	1	N		MRI
Sperm whale	W coast	1	Y	S,T	MRI
Southern right whale	S coast	1	Y	S,B,W,C	MRI
Southern right whale	S coast	1	N		MRI
Indian Ocean bottlenose dolphin,	S coast	1	Y	K, St, foetus	CDS
Indian Ocean dolphin,	S coast	1	Y	K, St	CDS

Indian Ocean bottlenose dolphin,	S coast	1	Y	K,St	CDS
Atlantic Ocean bottlenose dolphin	S coast	1	Y	K, St	CDS
Atlantic Ocean bottlenose dolphin	S coast	1	Y	K, St	CDS
Humpback whale	S coast	1	Y	W	CDS
Indian Ocean bottlenose dolphin	E coast	1			PEM
Sperm whale	E coast	1			PEM

S=skin, B=blubber, T=teeth, W=baleen, G=gonads, C=ext parasites, P=internal parasites, K=skeletal remains, A=pathology samples, CV=cardiovascular systems, ST= stomach

4.4 Analyses/development of techniques

5. Pollution studies

6. Statistics for large cetaceans

6.1 Direct catches

None

6.2 Other non-natural mortality for the calendar year 2001

Species	Area/stock	Directed catch		Incidental catch			Source*
		Reported	Est. total	Reported	Est. total	Released alive	
Humpback whale	KwaZulu-Natal	0		1	1	1	Shark nets
Suspected whale* (unknown species)	KwaZulu-Natal	0		39	39	39	Shark nets

* These data are for holes found in the shark nets that are attributed to possible whale entanglement.

7. Statistics for small cetaceans

7.1 For the calendar year 2001

Species	Area/stock	Directed catch		Incidental mortality			Live-capture
		Reported	Est. total	Reported	Est. total	Source*	Reported
Indian Ocean bottlenose dolphin	KwaZulu-Natal	0		29		Shark nets	1 released
Indo-Pacific humpback	KwaZulu-Natal	0		9		Shark nets	

dolphin							
Long-beaked common dolphin	KwaZulu-Natal	0		39		Shark nets	

8. Strandings

The MRI Whale Unit, c/o South African Museum, Box 61, Cape Town, and the Department of Environmental Affairs and Tourism, P. Bag X2, Cape Town, attend strandings in the Western and Northern Cape; the Port Elizabeth Museum and Centre for Dolphin Studies attend strandings in the Eastern Cape; and Natal Sharks Board, P. Bag 2, Umhlanga Rocks, and Durban Sea World, P.O. Box 10712, Marine Parade, attend strandings in Kwa-Zulu Natal.

9. Other studies and analyses

NSB

The NSB continues with its assessment of active acoustic devices (pingers), ellipsoidal air-filled floats (sonar reflectors), time-area closure of the fishery and drum-lines (baited hooks) as bycatch mitigation measures to reduce cetacean captures. Whale alarms were deployed at three shark net installations in an attempt to reduce large cetacean entanglements in the shark nets.

UCT

Estimating proportion of pygmy blue whales in the Antarctic by examining relationship between ovarian corpora counts and length – Branch

Estimates of humpback abundance south of 60°S by Management Area, circumpolar and for feeding areas corresponding to the breeding groups – Branch

Assessment of the current status of the East Greenland-Iceland stock of fin whales in the North Atlantic – Branch, Butterworth

Analysing simulated Antarctic minke whale sighting data using standard line transect methods – Branch

Summarising possible reasons for the appreciably lower recent Antarctic minke whale estimates from the IDCR/SOWER surveys – Branch (compiler)

Past and present distribution of pygmy and Antarctic blue whales in the Southern Hemisphere and northern Indian Ocean – Branch (and 29 coauthors)

Finalised Antarctic minke whale estimates south of 60°S from three circumpolar sets of IDCR/SOWER surveys – Branch

Preliminary catch series for Southern Hemisphere blue whales divided into pygmy and Antarctic subspecies – Branch [with C. Allison]

Estimating the proportion of pygmy blue whales in Antarctic catches using mixture models of pregnant length frequencies – Branch [with S. Mkango, E. Nasr]

Southern Hemisphere humpback whale population dynamics and assessments – Johnston, Butterworth, Brandao

Antarctic ecosystem modeling extensions – Butterworth (with M. Mori)

Antarctic minke catch-at-age analyses – Butterworth (with M. Mori)

10. Literature cited

11. Publications

11.1 Published or Inpress papers only

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