



## **SIMBA**

**1 September through 31 October 2007**

### **Marine Mammal and Seabird Studies**

*Brent S. Stewart, Ph.D., J.D.  
Hubbs-SeaWorld Research Institute  
2595 Ingraham Street  
San Diego, CA 92109 USA*

#### *Southbound and northbound transits*

I made continuous systematic line-transect surveys for marine mammals and sea-birds were made during daylight hours during southbound and northbound transits (Figure 1; Table 1) of the *RVIB Nathaniel B. Palmer* between Punta Arenas, Chile, and during the drift of the research site ice floe *Ice Station Belgica* (Figure 2). The diversity of species observed during transits was high though densities of most species were low. Overall, twelve species of marine mammals and 25 species of seabirds were observed (Table 2). Crabeater seal densities were particularly high during the first 24 hrs of transit into the pack ice south of Peter I Island and also during the first 24 hrs of transit from *Ice Station Belgica* toward Peter I Island on 25 and 26 October. About 200 sightings of crabeater seals were counted within 1 mile of the *RVIB Nathaniel B. Palmer's* transit during that latter period; about 85% of those sightings were of triads (mother and pup and attending male), some with nearly weaned pups. A few solitary recently weaned pups were also observed.

#### *Drift of Ice Station Belgica*

Daily surveys: I made observations of marine mammals and seabirds while aboard ship and when on the ice throughout each day of the drift. Five species of marine mammals and eight species of seabirds were observed during the drift period (Table 2). Diversity and abundances of all species were relatively low, though a few species (crabeater seals, minke whales, snow petrels) were seen on virtually all days.

Behavioral observations: I made observations of the haulout patterns and behaviors of crabeater seals that were hauled out on the *Ice Station Belgica* floe and nearby floes from the ship whenever weather and visibility permitted. Peak numbers of seals were hauled out daily between 1400 and 1900 hrs (local time = 1900 to 2300 hrs GMT). I also periodically visited two breeding groups (diads and triads) of crabeaters near the ship and monitored their status until pups were born and then the development of pups by direct observation, video recordings, and audio recordings during the drift *Ice Station Belgica*. There appears to be a pre-partum, fasting haulout period of several days until females give birth. Males are continuously vigilant during that period and remain within about a meter of the female until she gives birth. They remain vigilant for potential male competitors but are chased further away by the females once the pup is born. Mating appears to occur mostly when seals are hauled out on ice rather than in the water as has been previously speculated.

Survey of Peter I Island (26 October 2007): I made continuous observations of marine mammals and seabirds as the *RVIB Nathaniel B. Palmer* circled Peter I Island (about 5 miles offshore). The few beaches or beach platforms are few and small; we did not get close enough to inspect them directly, though elephant seals have been reported to haul out on one small beach. Southern fulmars and snow petrels were abundant offshore on the eastern side of the island suggesting moderate breeding colonies, probably on the ice and snow-free volcanic bluffs on the south and north ends of the island.

Table 1. Summary of marine mammal and seabird observation phases during SIMBA Expedition: 1 September through 31 October 2007.

Date	Leg Phase Number	Event
1 September 2007	1	Depart Punta Arenas
2 September 2007	2	Transit Magellan Straits to West
3 September 2007	3a	Southbound transit of Drake Passage 0900 hrs: Begin surveys in ice tower
4 September 2007	3b	0210 hrs: Fire in NBP Bio-Lab, change in course to west.
4 September 2007	3c	0440 hrs: Change course towards Palmer Station to replenish fire extinguishing supplies
6 September 2007	3d	1500 hrs: Arrive Palmer Station; End southbound transit surveys
8 September 2007	4a	1430 hrs: Depart Palmer Station enroute to Punta Arenas; Begin northbound transit surveys
12 September 2007	4b	1400 hrs: Arrive Punta Arenas; End northbound surveys.
20 September 2007	5a	1030 hrs: Depart Punta Arenas; Begin southbound surveys
24 September 2007	5b	2300 hrs: Arrive Peter I Island
25 September 2007	5c	Arrive pack ice edge
27 September 2007	6	1700 hrs: Arrive and establish <i>Ice Station Belgica</i> ; end transit surveys
27 September – 24 October 2007	7	Drift of <i>Ice Station Belgica</i>
24 October 2007	8	0630 hrs: Depart <i>Ice Station Belgica</i> enroute to Peter I Island; begin northbound surveys
25 October 2007	9a	2330 hrs: Arrive Peter I Island
26 October 2007	9b	0530 hrs: Begin survey of Peter I Island 1300 hrs: End survey of Peter I Island
26 October 2007	10	1420 hrs: Depart Peter I Island & begin transit to pack ice edge; resume underway transit surveys.
27 October 2007	11	0530 hrs: Depart pack ice edge enroute to Peter I Island; continue underway transit surveys
31 October 2007	12	0930 hrs: Arrive Punta Arenas; end cruise surveys

Table 2. Marine mammals and seabirds observed during transits and drift of Ice *Station Belgica*, 3 September – 31 October 2007.

Species	Leg phase of SIMBA expedition				
	1-3	4	5-6	7	8-12
<b>Marine Mammals</b>					
Peale's dolphin ( <i>Lagenorhynchus australis</i> )			X		
Dusky dolphin ( <i>Lagenorhynchus obscurus</i> )		X			
Hourglass dolphin ( <i>Lagenorhynchus cruciger</i> )	X				
Commerson's dolphin ( <i>Cephalorhynchus commersonii</i> )		X			
Southern bottlenose whale ( <i>Hyperodon planifrons</i> )		X			
Killer whale ( <i>Orcinus orca</i> )			X	X	
Minke whale ( <i>Balaenoptera bonaerensis</i> )	X	X	X	X	X
Crabeater seal ( <i>Lobodon carcinophaga</i> )	X	X	X	X	X
Weddell seal ( <i>Leptonychotes weddellii</i> )					
Leopard seal ( <i>Hydrurga leptonyx</i> )			X	X	
Ross Seal ( <i>Ommatophoca rossii</i> )			X		X
Southern elephant seal ( <i>Mirounga leonina</i> )		X			
South American fur seal ( <i>Arctocephalus australis</i> )	X				
South American sea lion ( <i>Otaria flavescens</i> )					X
Antarctic fur seal ( <i>Arctocephalus gazella</i> )	X	X			
<b>Seabirds</b>					
Sooty shearwater ( <i>Puffinus griseus</i> )		X	X		X
Imperial shag ( <i>Phalacrocorax magellanicus</i> )		X			X
Southern fulmar ( <i>Fulmarus glacialisoides</i> )	X	X	X	X	X
Kelp gull ( <i>Larus dominicanus</i> )	X	X			
Antarctic tern ( <i>Sterna vitatta</i> )	X				
South American tern ( <i>Sterna hirundinacea</i> )		X			X
Skua ( <i>Catharctos skua</i> )					X
Giant petrel ( <i>Macronectus halli</i> )	X	X	X	X	X
Cape petrel ( <i>Daption capense capsens</i> )	X	X	X		X
White chinned petrel ( <i>Procellaria aequinoctialis</i> )		X	X		X
Blue petrel ( <i>Halobaena caerulea</i> )	X	X	X		X
Magellanic diving petrel ( <i>Pelcanoides magellani</i> )		X	X		
Wilson's storm petrel ( <i>Oceanites oceanicus</i> )			X		
Black bellied storm petrel ( <i>Fregetta tropica</i> )			X		
Kerguelen petrel ( <i>Pterodroma brevirostris</i> )		X			
Snow petrel ( <i>Pagodroma nivea</i> )	X	X	X	X	X
Antarctic petrel ( <i>Thalassoica antarctica</i> )	X	X	X	X	X
Slender-billed prion ( <i>Pachyptila belcheri</i> )	X	X	X	X	X
Antarctic prion ( <i>Pachyptila desolata</i> )	X			X	X
Adelie penguin ( <i>Pygoscelis adeliae</i> )			X	X	X
Chinstrap penguin ( <i>Pygoscelis antarctica</i> )					X
Emperor penguin ( <i>Aptenodytes forsteri</i> )			X	X	X
King penguin ( <i>Aptenodytes patagonicus</i> )	X				
Magellanic penguin ( <i>Spheniscus magellanicus</i> )		X	X		
Black-browed albatross ( <i>Thalasssarche melanophrys</i> )	X	X	X		X
Grey-headed albatross ( <i>Thalasssarche chrysostoma</i> )	X	X	X		X
Wandering albatross ( <i>Diomedea exulans</i> )	X	X	X		X
Antipodean albatross ( <i>Diomedea exulans antipodensis</i> )	X				
Sooty albatross ( <i>Phoebastria fusca</i> )		X			

Figure 1. Transit and drift of the RVIB Nathaniel B. Palmer between 1 September and 31 October 2007. Colored sections represent different leg phases of transit and drift (see Table 1).

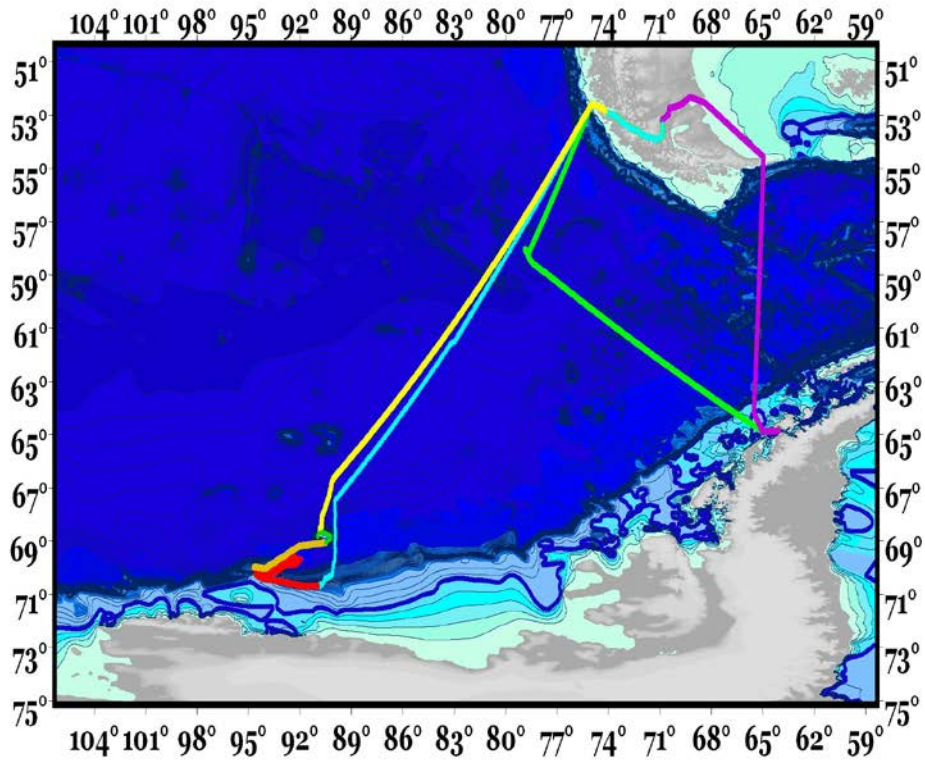


Figure 2. Drift of the RVIB Nathaniel B. Palmer with Ice Station Belgica from 27 September through 24 October 2007 (Peter I Island is in the upper right).

