

STAR 2000: MCARTHUR WEEKLY REPORT

Jim Carretta

SCIENCE SUMMARY: 2-8 November 2000

A week of gradients. The cold Peru current (15-18 C), with its *Delphinus capensis*, blue and humpback whales, white-chinned petrels, Waved and Salvin's albatross, has been replaced by warm water (25 C), roaming gangs of striped dolphin, Grampus, Nazca boobies, and frigatebirds. Along this gradient, we encountered a cooperative group of sperm whales. We launched two small boats within 8 minutes of each other and went to work. Our skilled drivers (thank you Leroy and Hermie) enabled us to return to the mother ship with 30 fluke photographs and 7 biopsies. It will be interesting to see if any of these sperm whales appear in Hal Whitehead's photo-ID catalog. We also encountered our first spotted dolphin school within 16 nmi of the Ecuador coast, animals that ranged in appearance from heavily spotted to the relatively unspotted offshore style. None of the spotters were as robust as coastal animals I've seen on past cruises. Ten biopsies were obtained from this school and may eventually help determine just what stock they belong to. Want more? We photographed and biopsied a blue whale from the bow of the McArthur in the Peru current on Nov. 2nd and retrieved the bolt after sunset (excellent ship-handling by Doug Krause). We also obtained fluke photographs from 3 humpback whales (2 of which were biopsied from the Mac).

SUMMARY OF MARINE MAMMAL EFFORT AND SIGHTINGS

110200 0606 S07:10.57 W082:55.50 89.9nmi 3.9
1719 S06:58.12 W081:14.64

110300 0711 S06:44.60 W080:27.86 15.4nmi 1.5
1404 S06:21.83 W081:11.10

110400 0604 S05:03.08 W081:23.53 72.2nmi 4.3
1707 S03:45.90 W080:59.23

110500 0608 S02:34.18 W081:06.20 81.0nmi 3.9
1712 S02:02.65 W082:34.17

110600 0622 S01:25.25 W083:41.66 87.1nmi 3.3
1752 S00:19.05 W083:02.71

110700 0620 S00:54.58 W081:44.35 67.3nmi 3.7
1754 S00:11.52 W080:39.04

110800 0609 N00:43.76 W081:30.80 101.2nmi 4.7
1740 N02:14.25 W081:37.38

Code	Species	Tot#
75	Balaenoptera musculus	1
05	Delphinus sp.	1
17	Delphinus delphis	9
16	Delphinus capensis	1
21	Grampus griseus	4
76	Megaptera novaeangliae	2
51	Mesoplodon sp.	4
46	Physeter macrocephalus	1
90	Stenella atten. subsp.?	1
13	Stenella coeruleoalba	8
18	Tursiops truncatus	6
49	unid. ziphiid	2
77	Unid. dolphin/porpoise	6
79	Unid. large whale	4
98	Unid. whale	1
OTHER		2
TOTAL		53

35 mm PHOTOGRAPHY SUMMARY (Paula Olson)

S. attenuata (unid. subsp.)	1 school (includes 10 biopsies)
D. capensis	1 school
D. delphis	4 schools
B. musculus	1 whale (with biopsy)
M. novaeangliae	3 flukes (2 with biopsy)
P. macrocephalus	30 flukes (3 with biopsy)

BIOPSY REPORT (Juan Carlos Salinas)

Species	This Week	Cumulative Total
B. edeni	0	1
B. musculus	1	1
D. capensis	7	45
D. delphis	2	2
G. macrorhynchus	0	7

M. novaeangliae	2	4
P. macrocephalus	7	7
S. attenuata graffmani	0	1
S. attenuata subsp.	10	11
T. truncatus	5	19
Grand Total	34	98

ACOUSTICS SQUEAKLY REPORT (Shannon Rankin and Tom Norris)

Another fantastic acoustics week, with recordings from nine species: common, striped and spotted dolphins, bottlenosed and risso's dolphins, pilot whales, sperm whales, humpback and blue whales. One of the highlights were sonobouy recordings of blue whale vocalizations (which Tom will present at a meeting in December) and some bonus humpback whale song. In addition to the standard tape recordings which record up to 25 kHz, we have been recording high frequency vocalizations (up to 150 kHz) directly to the computer. Most of the energy in echolocation clicks and burst pulses are found in these higher frequencies. We have made 141 recordings this week alone, out of a total of 576 so far for this cruise (Julie: you are now on the 8 year PhD plan, sorry!).

BIRD REPORT (Mike Force, Chris Hoefer, & special guest Jim Carretta)

This cruise leader and former birder saw several species for the first time, including Salvin's albatross and Westland Petrel. Since we also saw white-chinned and Parkinson's petrel this week, I was reminded of the challenges of Procellaria identification. It's a good thing we birders don't have to complete sighting forms! Who, save for Sophie Webb, could possibly do justice to these winged beauties? An exciting week and one of contrasts for the bird department. The first few days were spent in the productive green waters of the Humboldt Current, swamping data collection efforts with thousands of birds, almost too many to keep up with. By the end of the reporting period, the water temperatures increased, the water became bluer and bird numbers and diversity plummeted to a mere trickle. A memorable morning near Isla Lobos de Tierra in Beaufort 0 conditions when over 10,000 Red Phalaropes were counted in a matter of hours. Not long afterwards, Red-necked Phalaropes replaced the Reds. Also here were hundreds of Sabine's Gulls and Arctic Terns. Other highlights include several sightings of the rare Westland Petrel, directly compared with the more widespread White-chinned Petrel. We also recorded Parkinson's Petrel, almost always in association with marine mammals. South of its preferred tropical ocean habitat was an adult female Brown Booby, flying north to warmer waters with a Blue-footed Booby.

OCEANOGRAPHIC SUMMARY: (Dagmar Merkle)

This last week saw us leaving the productive cold upwelling Humbolt current for the warmer Equitorial current. What does this imply? Gone is the pea green water, with all its micro organisms. Gone is all the zooplankton that filled litre sample jars. What are we

left with? Very Little! Chlorophyll values are down to next to nothing. Bongo and Ring net tows are still catching a small number of Euphausiids and the Manta tow is catching fairly large quantities of blue Copipods and Portugese man of wars or Blue Bottles as they are called in South Africa. Other than that, there is very little out here. Except of course for the large population of squid, which was seen swimming around the ship at last nights CTD station. Water temperatures are back up to 27C and salinities have dropped down to 32.84 ppt from the 35.1 ppt found in the upwelling area.

Sample	This week	Total
CTDs	13	157
XBTs	18	260
Manta Tows	6	79
Ring Net Tows	4	36
Bongo Tows	6	81

As we are North of 5 degrees South Ring net sampling is being done again.