

Ecosystem Survey of *Delphinus* Species



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Weekly Report No. 7: 25 – 31 October 2009

Eric Archer, Cruise Leader

We've been trekking back north along the coast of Baja California this past week and in the span of a few days, shorts and tank tops have been replaced by long pants and fleece. Our journey from the tropics back to more temperate waters has been much faster than our trip south so the changes in fauna have been more drastic.

The week opened with us offshore of Cabo San Lucas with continued regular sightings of spotted (*Stenella attenuata*) and spinner (*S. longirostris*) dolphins as well as a few striped dolphins (*Stenella coeruleoalba*) which are signs of the warmer waters we were in. The short-beaked common dolphin (*Delphinus delphis*) schools that we came across were just as evasive as they had been the previous week. They have an uncanny knack of knowing where we are trying to go and not being there when we get there. Unfortunately, they often don't seem to be anywhere else. They have perfected the art of disappearing, and in some cases, we never see them again.

We had a few down days in the middle of this week due to some high winds driven by a system to the northwest of us, but were able to hide in a protected nearshore region, just outside of San Ignacio Lagoon until the worst had passed.

On Halloween we were treated to a boo-tiful aggregation of blue whales (*Balaenoptera musculus*) just north of Isla Cedros (the island off of the tip of Punta Eugenia on the Vizcaino Peninsula). On first approach all we saw were blows in a long ragged chain going off to the horizon. As we approached the animals they seemed to be arrayed in clumps of 2-4 every ½ mile or so to the point that in the middle of the "group" we could see blows out to either horizon. Everyone commented on how this was by far the largest assemblage of blue whales anyone on board had ever experienced. The whales did not appear to be travelling, but rather spending quite a bit of time at any one spot.

ADDITIONAL PRD INFORMATION:
<http://swfsc.noaa.gov/prd.aspx>

ADDITIONAL CRUISE INFORMATION:
<http://swfsc.noaa.gov/prd-delphinus.aspx>



They were quite likely feeding in this highly productive area (see the Oceanographic and Mid-trophic report for more details).

Saturday night, the mood on the ship turned frighteningly festive as ghouls, ghosts, and goblins began popping out of various nooks and crannies. The dry lab was dreadfully decked out and there was a vicious door decorating contest generating an impressive array of designs. Congratulations to Iris Segura and Linda Halderman for their awesome 3D rendering of a black squid emerging from the deep as well as all the other imaginative entries. Fun was had by all at the party on the fantail, complete with the oh-so traditional Halloween piñata.

More information about individual projects, including summaries of data collected follow. Additional information about the project and past weekly reports can be found on our cruise website:

<http://swfsc.noaa.gov/prd-delphinus.aspx>.



A bow-riding Blue Whale, plus paparazzi! Photo credit: Candice Hall.



Photography Report – James Cotton, Suzanne Yin, Corey Sheredy, Sophie Webb, & Iris Segura

On every cruise there is one photo shoot that stands out against the backdrop of hundreds of sightings and this week's sighting of a large concentration of blue whales near Cedros Island will no doubt take the prize with 1110 exposures recorded. A close second to the blue whale sighting was a pair of fin whales that swam just beneath the surface within meters of the bow exposing full views of their bodies as they surfed the waves.



Fin whale. Photo credit: James Cotton.

Seabird Report – Michael Force & Sophie Webb

It was expected, inevitable, and unavoidable: avian diversity and abundance is decreasing as latitude increases. We are, after all, heading north into the temperate zone where it is now late fall with winter lurking just around the corner, so many of our feathered friends have gone south. The relative lack of birds will take some getting used to after a busy and bird-filled whistle-stop in the eastern tropical Pacific Ocean. This impending avian scarcity is almost as frightening as some of our shipmates were on Halloween! Those few glorious days, where we reached the most southeasterly point of this cruise (34 nautical miles east-southeast of Cabo San Lucas), provided lots of excitement. There were mixed-species feeding flocks of seabirds over groups of spotted and spinner dolphins; five species of boobies (Sophie even had an ETP booby grand-slam, recording all five in a single day!); a single Great Frigatebird (a first for the cruise), Wedge-tailed Shearwaters (light, intermediate and dark morphs) and a scattering of Wedge-rumped Storm-Petrels. That's pretty

well it for all of these species on this cruise, unless we get very lucky and bump into one somewhere north of where they're supposed to be. We can only hope. Several seabirds put in cameo appearances this week after long absences: Black-footed Albatross, Cook's Petrel and Long-tailed Jaeger; a single Flesh-footed Shearwater off Isla Cedros was a first for ESODS 2009. Our total of 37 species this week was typical for the cruise, but our daily total of 15 species (three below the cruise average) is a tie with the lowest set over a month ago.



Pomeranian jaeger. Photo credit: Sophie Webb.

The seasonal progression is also apparent in the almost complete lack of displaced non-marine migrants this week. The only ones we saw were some Barn Swallows and a single Cattle Egret. A couple of Blue-winged Teal were seen as well, but only a few nautical miles from the beach.



Red-billed Tropicbird. Photo credit: Sophie Webb.

Oceanographic and Mid-trophic Project Report – Candice Hall, Justin Garver, Corey Sheredy, Iris Segura, Heriberto Santana and SST Lacey O’Neal.

This last week has been a productive one out here (excuse the pun)! The hot topic of course is the plethora of Blue Whales off the coast of Isla Cedros. Coupled with this incredible sight was a dense acoustic backscatter layer below 200m and 15°C isotherm that rose to around the 55m depth before and during the sighting. This is yet another interesting mammal/ecosystem association for study during post cruise analysis, once calibration coefficients have been applied to our data.

This week has also seen the completion of a chlorophyll extraction time period experiment, undertaken in an attempt to prevent us returning to the ship during imports to analyse samples. Would differing acetone extraction periods significantly affect the chlorophyll a and phaeophytin levels of a sample? One hundred 140ml samples were filtered and extracted for 6, 12, 18, 24, 30, 36, 42, 48, 72, 96, and 120 hours in the fridge before analysis, and ten 140ml samples were extracted and frozen in the -80°C freezer for 120 hours before analysis. Preliminary conclusions show that a) extracting for less than 24 hours results in significantly lower pigment values; b) for 30 to 120 hours does not affect chlorophyll, but might increase phaeophytin; and c) freezing for 120 hours has no significant effect on pigment levels. However, more statistical analysis is planned before we deliver our final verdict.

In mid-trophic this week, we had another squid station with large Humboldt squid. This time we were able to catch two squid, each over 30 pounds! These squid were both caught at approximately 150 meters deep and both of our jiggers got hooked up at just about the same moment. Unfortunately, after quickly recharging the jigs and sending them back down to depth we were unable to catch any others. To this point we are still quite surprised that neither of our encounters with these larger squid has led to larger catch numbers.

We have not seen any significant changes in the net tow samples aside from a decrease in the crustaceans we were seeing a week ago. We are however, still seeing an

abundance of gelatinous zooplankton on a nightly basis. During this trip into Mexican waters, we have been quite fortunate in terms of fishing, catching a number of Yellowfin Tuna, as well as a handful of Mahi Mahi. Needless to say we have been eating well, with fresh fish served at almost every meal.



TheBest Door Decoration: Iris Segura and Linda Halderman.

Outreach and Education Report – Siri Hakala

You can check out our wiki at the following website: <http://www.sbsd.k12.ca.us/groups/noaa/>.
Username: noaaproject
Password: read

Line transect Survey Report: Juan Carlos Salinas, Jim Cotton, Rich Pagen, Richard Rowlett, Ernesto Vázquez & Suzanne Yin

Summary of Marine Mammal Effort

Date	Time	Position		On Effort Survey Miles (nm)	Average Beaufort
102509	0619	N22:37.29	W109:22.26	85.3	3.8
	1736	N22:54.76	W110:54.40		
102609	0633	N23:00.19	W111:04.52	72.5	4.0
	1629	N23:45.06	W111:49.66		
102709	0631	N24:15.21	W111:44.12	73.2	3.3
	1743	N24:46.37	W112:56.62		
102809	0645	N24:51.73	W112:57.47	28.8	5.0
	1312	N25:23.44	W112:47.03		
102909	No effort due to weather conditions				
103009	1333	N27:08.66	W114:32.17	26.1	4.3
	1712	N27:32.47	W114:50.50		
103109	0658	N28:25.46	W114:55.40	13.3	5.3
	1626	N28:36.24	W115:45.37		

Summary of Marine Mammal Sightings

Species	Number of groups
<i>Stenella attenuata</i> (offshore)	4
<i>Stenella longirostris orientalis</i>	1
<i>Steno bredanensis</i>	1
<i>Delphinus capensis</i>	5
<i>Delphinus delphis</i>	4
<i>Tursiops truncatus</i>	4
<i>Grampus griseus</i>	1
<i>Lagenorhynchus obliquidens</i>	1
<i>Globicephala macrorhynchus</i>	1
<i>Physeter macrocephalus</i>	6
<i>Balaenoptera</i> sp.	10
<i>Balaenoptera edeni</i>	1
<i>Balaenoptera physalus</i>	1
<i>Balaenoptera musculus</i>	8
Unid. dolphin	3
Unid. small whale	2
Unid. large whale	2
<i>Balaenoptera borealis/edeni</i>	2
Unid. small delphinid	3
Total	60





Spotted dolphin. Photo credit: Sophie Webb.

Photographs Taken – James Cotton, Suzanne Yin, Corey Sheredy, Sophie Webb & Iris Segura

Species	Common Name	No. of Sightings this week	No. of Photos this week	Total No. of Sightings	Total No. of Photos
<i>Stenella attenuata</i> (offshore)	Offshore pantropical spotted dolphin	4	150	10	211
<i>Stenella longirostris orientalis</i>	Eastern spinner dolphin	1	82	5	125
<i>Stenella coeruleoalba</i>	Striped dolphin	0	0	3	39
<i>Steno bredanensis</i>	Rough-toothed dolphin	1	2	1	2
<i>Delphinus capensis</i>	Long-beaked common dolphin	3	173	50	8,198
<i>Delphinus delphis</i>	Short-beaked common dolphin	4	995	16	3,135
<i>Tursiops truncatus</i>	Bottlenose dolphin	2	268	14	931
<i>Grampus griseus</i>	Risso's dolphin	1	7	2	8
<i>Lagenorhynchus obliquidens</i>	Pacific white-sided dolphin	0	0	9	232
<i>Globicephala macrorhynchus</i>	Short-finned pilot whale	0	0	7	853
<i>Balaenoptera edeni</i>	Bryde's whale	1	67	1	67
<i>Balaenoptera physalus</i>	Fin whale	1	369	1	369
<i>Balaenoptera musculus</i>	Blue whale	4	1,254	7	1,481
<i>Balaenoptera borealis/edeni</i>	Rorqual identified as a Sei or Bryde's whale	2	11	5	27
Grand Total		24	3,378	131	15,678



Biopsy Samples Collected – Juan Carlos Salinas, Ernesto Vázquez & Rich Pagen

Species	Common Name	Weekly No. of Samples	Weekly No of Takes	Total No. of Samples	Total No. of Takes
<i>Balaenoptera musculus</i>	Blue whale	2	2	4	4
<i>Balaenoptera physalus</i>	Fin whale	1	1	3	3
<i>Delphinus capensis</i>	Long-beaked common dolphin	7	7	482	776
<i>Delphinus delphis</i>	Short-beaked common dolphin	15	37	429	708
<i>Globicephala macrorhynchus</i>	Short-finned pilot whale	0	0	2	5
<i>Lagenorhynchus obliquidens</i>	Pacific white-sided dolphin	1	3	18	28
<i>Lissodelphis borealis</i>	Northern right whale dolphin	0	0	1	1
<i>Orcinus orca</i>	Killer whale	0	0	8	9
<i>Stenella attenuata</i>	Pantropical spotted dolphin	0	0	1	1
<i>Stenella coeruleoalba</i>	Striped dolphin	0	0	1	2
<i>Stenella longirostris</i> subsp.	Unidentified spinner dolphin	1	1	2	6
<i>Tursiops truncatus</i>	Bottlenose dolphin	3	8	49	71
Grand Total		30	59	1000	1614

Oceanography Samples Collected and Stations Completed – Candice Hall, Justin Garver, Corey Sheredy, Iris Segura, Heriberto Santana and SST Lacey O’Neal

Date	CTD	Surface Chlorophyll	HAB	UCTD (XBT)	Squid Stations	Bongo Tows	IKMT
10/25/09	1	6	4	4 (2)	1	1	1
10/26/09	1	6	4	(6)	1	1	1
10/27/09	1	6	4	(6)	1	1	1
10/28/09*	1	6	4	(6)	1	0	0
10/29/09*	1	0	1	0	1	1	1
10/30/09	1	6	4	(6)	1	1	1
10/31/09**	1	6	4	(5)	0	0	0
Week Total	5	40	28	37(3)	5	5	5
Grand Total	47	272	186	231 (78)	43	45	40

* Stationary due to weather: 10/28: no bongo tow or IKMT; 10/29: no surface chlorophyll, UCTD or XBT; one HAB

** Transiting: no squid station, bongo tow or IKMT



A dreadfully decorated dry lab. Photo credit: Ernesto Vázquez.