

Ecosystem Survey of *Delphinus* Species



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ADDITIONAL PRD INFORMATION:

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

ADDITIONAL CRUISE INFORMATION:

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

18 October 2009

Weekly Report No. 5: 08 – 17 October 2009

Eric Archer, Cruise Leader

Leg 2 of the “Ecosystem Survey of *Delphinus* Species” cruise successfully departed San Diego on 10/8. The focus of this leg will be to survey the coastal waters of Baja California. Our target species, *D. capensis* and *D. delphis*, the long and short beak common dolphins, are a multinational transboundary species, so this region is an important component of their habitat in the California Current. We’re delighted to be able to collaborate with our Mexican colleagues and are happy to welcome to our team Mr. Heriberto Santana Hernández and Ms. Iris Segura-Garcia. Heriberto works for the Instituto Nacional de Pesca (INAPESCA) in Manzanillo, Colima on reducing bycatch of turtles and other species in the shark longline fishery. Iris is a Ph.D. student at Durham University finishing her thesis on population structure and local adaption of common and bottlenose dolphins in the Sea of Cortez and along the Pacific coast of Baja California.

During this week, we have worked our way approximately two-thirds down the Baja Peninsula, usually staying within 20 miles of the coast, but with a few jogs out to offshore waters. We’ve been very successful with most of our sampling efforts, including collecting a full 30 samples from a school of long-beak common dolphins, with 15 taken from the RHIB (rigid-hull inflatable boat), followed by 15 from the bow of NOAA Ship *McArthur II*.

During the offshore leg of our survey, we had one day that seemed to be dominated by pilot whales (*Globicephala macrorhynchus*) with some distant sightings of sperm whales. With these two well-known deep divers in the vicinity, we expected to have some sizeable squid catches in our night stations, but this turned out not to be the case.

The following day we were treated to scattered pockets of manta rays (*Manta birostris*), some leaping clear of the water displaying impressive aerial feats.



Basing themselves out of Loreto on the southeastern coast of the peninsula, the NOAA Twin Otter aircraft joined us on Saturday to photograph some dolphin schools for shipboard observer group size calibration and length frequency measurements.

The week ends with us keeping an eye on the formation and movement of Hurricane Rick currently off the coast of Acapulco. Rick is predicted to continue moving North/Northwest before it heads Northeast over southern Baja. The largest classification of a Hurricane on the Saffir-Simpson scale is Category 5 which is defined as having wind speeds in excess of 135knots (= 155 mph). As of this writing, Rick is well over that speed with winds estimated at 150 knots (= 175 mph), gusting to 190 knots (= 220 mph). This is one serious storm that we're watching closely.

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>.



Manta rays leaping;



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

We exchanged our coats and gloves for shorts and t-shirts this week as we tacked southward into warmer climes and got used to compensating for glare instead of fog.

Despite the dolphins tendency to avoid the vessel it was a rewarding week with nearly 8000 photos catalogued. Much of the success of this project is due to the photographers who have volunteered their time. We especially wanted to recognize the efforts of Corey Sheredy this leg who has filled the void of vertical bow photographer, without her devotion this project would be a lot more difficult.

Aerial Photography Project Report – Wayne Perryman, Morgan Lynn, Jim Gilpatrick & Fiona Matheson



Photograph of Aerial Team.

Seabird Report – Michael Force & Sophie Webb

This week far exceeded our expectations for diversity and abundance. Furthermore, there were some true “spectacles of nature” that we were fortunate to witness. Not everyone gets to see a feeding concentration of 100,000 phalaropes—tens of thousands of them, leap-frogging each other in gently undulating silver waves. Or 15,000 storm-petrels in a restless raft on the water—

huge black clouds eerily reminiscent of oily smoke peeling off the edges and wafting across the surface. If this wasn't enough, we found 49 species of birds this week, easily surpassing our previous high of 39. Hard to come up with a single highlight when so much happened this week. Although we have yet to cross officially into the tropics, delineated in the Northern Hemisphere by the Tropic of Cancer, it sure feels as though we already have.



Juvenile Magnificent Frigatebird on the after-mast.

We saw our first Magnificent Frigatebirds and Wedge-tailed Shearwaters of the cruise and found four species of boobies: Masked, Brown, Blue-footed and Red-footed. Western Gull, a temperate species seen every day since leaving San Diego, was missed by one of us for the first time, further evidence of our southward progress. Another cruise first was a Laysan Albatross near the southern entrance to Bahía Rosario, just a few albatross

wing-flaps away from Isla Guadalupe, the likely source of this bird. Most of the world's Laysan Albatross population nests in the Northwestern Hawaiian Islands. A new colony, the first in the eastern Pacific Ocean, was discovered on Isla Guadalupe in 1983 and has since expanded to about 340 pairs. We also found our first Craveri's Murrelets of the cruise. Good numbers of this species, the southernmost nesting alcid in the world, were seen in the vicinity of Punta Colnett. Also here were hundreds of Cassin's Auklets. We doubt the nearby presence of a couple dozen Blue Whales was a coincidence since both of these marine creatures like to feed on krill. Lost, but not least, were the requisite displaced migrants: Cattle Egret, American Kestrel, Northern Rough-winged Swallow, Yellow-rumped Warbler, Lark and Vesper Sparrows, Brewer's Blackbird and Western Meadowlark.



Black Tern on olive ridley turtle.

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

Past cruises were not designed to sample as closely inshore as this Delphinus cruise (which has probably

accounted for fewer gray hairs over the years - expensive equipment is safer in deep water!). Hence, we find ourselves with the unique opportunity to study coastal waters, accumulating valuable data for use in our ecosystem models. As soon as we had passed the San Diego Harbor Buoy we started testing for the presence of harmful algal blooms, chlorophyll levels and investigating the water column properties. Heading south we've clocked an average surface water temperature of 26 °C, which, associated with millpond like sea conditions and humid sunshine, it's a sampling dream for us. In fact the water has been so warm that we've yet to hit the 15 °C isotherm during our coastal stations, with the 20 °C isotherm registering at between 50 – 100m depth. Of course, days like these insist on the reappearance of the fish box pool deck, which is drained and refilled every day soon after sunrise.

The squid project has seen a dramatic change from leg 1. After only catching one squid for the entire first leg, we were able to catch 13 small to medium sized Humboldt squid (*Dosidicus gigas*) the first night of the leg. Since then, we have seen schools of these small to medium sized squid on a fairly regular basis. We have yet to hook ourselves a large squid to this point, but we are hopeful that in the coming days we will be able to report some success. In the net tow department, we have been seeing an increase in pelagic and larval crustaceans. There has also been an abundance of krill in the nets south of latitude 26. A lot of effort has been devoted to fishing in the past week and in the last 2 days we have been reaping the benefits. We are all looking forward to a Sunday cookout with fresh Mahi Mahi, Yellowfin Tuna, and Bonita.

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

Photo



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
100909	0657	N33:08.16	W117:42.59	83.7	3.8
	1752	N31:47.40	W118:25.78		
101009	0700	N31:25.92	W118:20.96	86.4	4.0
	1743	N31:03.30	W116:31.73		
101109	0655	N31:04.25	W116:33.83	29.9	1.3
	1759	N30:14.71	W115:52.25		
101209	0658	N30:01.21	W115:56.59	74.0	3.8
	1807	N28:58.43	W114:47.21		
101309	0651	N28:52.36	W114:47.94	71.5	4.2
	1717	N27:40.66	W115:11.67		
101409	0646	N27:38.29	W115:10.62	77.1	4.1
	1800	N26:52.21	W113:54.35		
101509	0638	N26:42.04	W113:56.20	58.8	2.5
	1751	N25:49.76	W113:26.24		
101609	0645	N25:53.34	W113:37.05	78.9	2.8
	1752	N25:17.98	W112:21.74		
101709	0634	N25:15.57	W112:26.25	55.2	2.1
	1739	N24:21.34	W111:55.96		

Summary of Marine Mammal Sightings

Species	Number of groups
<i>Delphinus</i> sp.	10
<i>Delphinus capensis</i>	41
<i>Delphinus delphis</i>	9
<i>Tursiops truncatus</i>	12
<i>Lagenorhynchus obliquidens</i>	16
<i>Globicephala macrorhynchus</i>	9
<i>Physeter macrocephalus</i>	6
<i>Balaenoptera</i> sp.	10
<i>Balaenoptera physalus</i>	1
<i>Balaenoptera musculus</i>	10
Unid. dolphin	4
Unid. cetacean	2
<i>Balaenoptera borealis/edeni</i>	4
Unid. small delphinid	7
Total	141



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>Balaenoptera borealis/edeni</i>	Rorqual identified as a Sei or Bryde's whale	2	13	2	13
<i>Balaenoptera musculus</i>	Blue whale	2	167	2	167
<i>Balaenoptera physalus</i>	Fin whale	0	0	1	19
<i>Delphinus capensis</i>	Long-beaked common dolphin	33	5,102	38	5,989
<i>Delphinus delphis</i>	Short-beaked common dolphin	8	1,884	19	4,476
<i>Globicephala macrorhynchus</i>	Short-finned pilot whale	4	394	4	394
<i>Grampus griseus</i>	Risso's dolphin	1	1	2	8
<i>Lagenorhynchus obliquidens</i>	Pacific white-sided dolphin	7	73	7	73
<i>Orcinus orca</i>	Killer whale	0	0	0	0
<i>Tursiops truncatus</i>	Bottlenose dolphin	8	305	11	449
Grand Total		65	7,939	86	11,588

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	1	1	1	1
<i>Balaenoptera physalus</i>	Fin whale	0	0	2	2
<i>Delphinus capensis</i>	Long-beaked common dolphin	79	131	448	742
<i>Delphinus delphis</i>	Short-beaked common dolphin	31	52	411	667
<i>Globicephala macrorhynchus</i>	Short-finned pilot whale	2	5	2	5
<i>Lagenorhynchus obliquidens</i>	Pacific white-sided dolphin	8	10	17	25
<i>Lissodelphis borealis</i>	Northern right whale dolphin	0	0	1	1
<i>Orcinus orca</i>	Transient killer whale	0	0	6	7
<i>Tursiops truncatus</i>	Bottlenose dolphin	4	7	43	60
Grand Total		125	206	931	1510



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
10/08/09	0	1	1	0(1)	0	1	1
10/09/09	2	6	4	6	1	1	1
10/10/09	1	6	4	6	1	1	1
10/11/09	1	6	4	5(1)	1	1	1
10/12/09	1	6	4	6	1	1	0
10/13/09	1	6	4	5(1)	1	1	1
10/14/09	1	6	4	6	1	1	1
10/15/09	1	6	4	6	1	1	1
10/16/09	1	6	4	6	1	1	1
10/17/09	1	6	4	6	1	1	1
Week Total	10	55	37	52(3)	9	10	9
Grand Total	35	196	133	190(44)	32	35	30



IKMT samples collected this week, showing red crustaceans and an abundance of krill respectively. Photo credit: Justin Garver.

