

Ecosystem Survey of *Delphinus* Species



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Weekly Report No. 8: 1-7 November 2009

Eric Archer, Cruise Leader

Leg 2 of the Ecosystem Survey of *Delphinus* Species completed this week as the *McArthur II* returned to San Diego on Thursday. During the final four days of the leg, we completed the last bits of trackline in the northern section of our Baja study area. The high winds from late last week died down by Sunday, however Monday brought coastal fog early in the morning. We didn't have many sightings on Monday, but some onboard did get to witness the spectacular sight of a mako shark (*Isurus oxyrinchus*) repeatedly leaping and twisting in the air. Suzanne Yin managed to snap some photos of the event. Closer inspection of a few photos showed some lines trailing off the animal, which may have been the cause of this aerial behavior.

On Tuesday, while dodging in and out of fog banks a few miles outside of Bahia San Quintín, we managed to complete a paired biopsy session with the *McArthur II* and RHIB on a school of long-beaked common dolphins (*Delphinus capensis*). On Wednesday, our final day of work, we started with a few sightings of short-beaked common dolphins (*D. delphis*) further offshore that were behaving as evasively as we had come to expect during this leg, so our hopes for more biopsies from this species was looking slim. However, midday a few miles closer, we came upon a large school of short-beaks that was very cooperative and easy to sample from both the *McArthur II* and the RHIB giving us our only paired set of biopsies of this species for this leg.

Normally, we don't have the opportunity to spend this much time along the Pacific coast of Baja, so we deeply appreciate the hospitality of the government of Mexico. Much thanks also goes to Iris Segura and Heriberto Santana for joining us on this leg and participating in the various projects onboard. It's been a pleasure getting to know them both and we're looking forward to working with them again in the future.

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

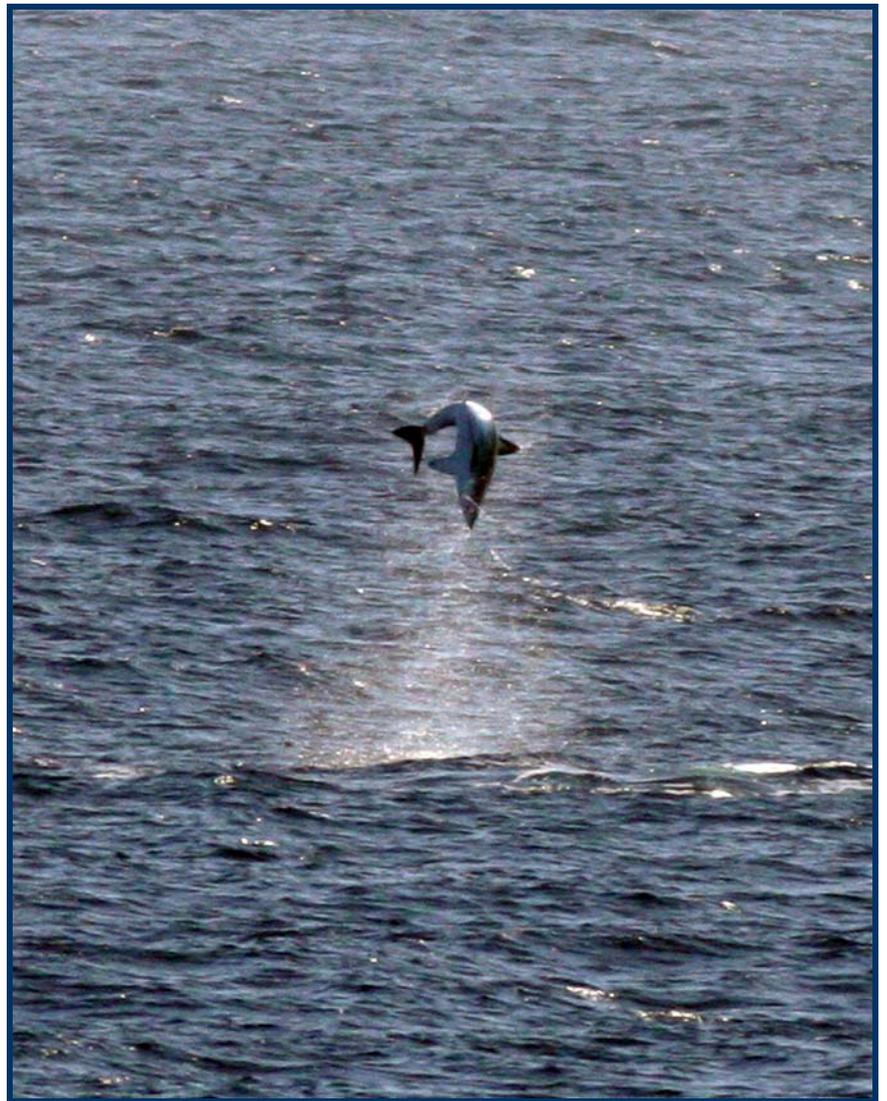
ADDITIONAL CRUISE INFORMATION:
<http://swfsc.noaa.gov/prd-delphinus.aspx>



As always, the crew and command of the *McArthur II* were amazing to work with. They are true professionals and have done a great job of making us feel at home. Finally, I never cease to be amazed at the level of dedication of our at-sea scientists. Without their experience, insight, and hard work, projects such as this would never be half as successful as they are.

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>.



Leaping mako shark. Photo credit: Suzanne Yin.



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

Noreport this week – stay tuned.

Seabird Report – Michael Force & Sophie Webb

The past four days have felt not only as though we have left the tropics, but as though we are heading into winter. The birds reflected these transitions, with no more Sabine's Gulls gracing us as they fly south, no flocks of Red-footed Boobies chasing flyingfish, and no more tropicbirds. Black-vented Shearwaters remained abundant and one suspects that we saw the last big push of phalaropes moving south. Other indicators of cooler weather to come, besides 17° C sea surface temperatures, were a Fork-tailed Storm-Petrel seen today (possibly a first for Mexico), a Glaucous-winged Gull, and the continued increase in Northern Fulmars.



Black-vented Shearwaters and Pacific white-sided dolphins. Photo credit: Sophie Webb.

A beautiful adult female Brown Booby, perhaps our last of the cruise, spent a few hours yesterday on the jack staff, once again splattering the newly painted deck with their unique avian signature (much to the crew's chagrin). Landbird migrants were few, although on 1 November we did have a morning of Icterids: a Western Meadowlark, a male Brown-headed Cowbird and a female Red-winged Blackbird (the latter with a deformed crossed bill). Other migrants included Cliff and Barn Swallows and a small flock of Green-winged

Teal. The 28 species we saw this week is the fewest we've seen since leaving San Francisco, although the daily average of 15 is about average.

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

As November 5th draws closer we can happily say that we've achieved all of our objectives for this leg. Apart from our *Delphinus* sampling protocol of a surface chlorophyll and UCTD/XBT station every two hours, four HAB stations, daily CTD, Squid, Bongo and IKMT operations, we've managed an intensive chlorophyll experiment testing extraction periods at increments between 6 and 120 hours; two stations where UCTD's, CTD's and XBT's are cast and dropped at the same station to compare data accuracy between the data sets; and two 3 and 6 hour UCTD Yo-Yo stations, where the UCTD probe is repeatedly dropped to investigate variability and internal waves.

For the final three days of leg 2, we did not see much of a change in terms of our net tow diversity. It has been, and continues to be, primarily made up of gelatinous zooplankton. The rest of the sample is a mix between phytoplankton and micro-zooplankton, with the occasional fish larvae. Hard work by the squid jigging group has paid off these final two days with 4 squid caught between the two nights of effort; the largest of these squid weighing 24.2 pounds.

Thank you to Eric Archer, the officers, and crew for accommodating our many tasks. Eric, always a pleasure to sail with you! Corey, you're not leaving, so forget it. Huge thanks must go to Corey and Heriberto, for their hard work and dedication each night to all of the mid-trophic projects. Their help has been greatly appreciated this leg.

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
110109	0641	N31:02.65	W116:41.18	83.4	2.3
	1650	N30:02.68	W117:15.07		
110209	0640	N30:20.70	W116:07.14	50.1	3.1
	1650	N29:10.65	W116:05.94		
110309	0731	N30:16.16	W115:59.14	28.4	2.1
	1451	N29:52.10	W116:19.94		
110409	0919	N31:11.93	W117:06.09	30.3	2.7
	1640	N31:48.02	W116:59.03		

Summary of Marine Mammal Sightings

Species	Number of groups
<i>Delphinus sp.</i>	2
<i>Delphinus capensis</i>	6
<i>Delphinus delphis</i>	6
<i>Grampus griseus</i>	1
<i>Lagenorhynchus obliquidens</i>	4
<i>Physeter macrocephalus</i>	1
<i>Balaenoptera sp.</i>	1
<i>Balaenoptera physalus</i>	2
<i>Balaenoptera musculus</i>	6
<i>Megaptera novaeangliae</i>	4
Unid. small delphinid	7
Unid. medium delphinid	1
Total	41



Red-necked Phalaropes and kelp. 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	0	0	10	211
<i>Stenella longirostris orientalis</i>	Eastern spinner dolphin	0	0	5	125
<i>Stenella coeruleoalba</i>	Striped dolphin	0	0	3	39
<i>Steno bredanensis</i>	Rough-toothed dolphin	0	0	1	2
<i>Delphinus capensis</i>	Long-beaked common dolphin	4	631	55	9,257
<i>Delphinus delphis</i>	Short-beaked common dolphin	5	502	21	3,807
<i>Tursiops truncatus</i>	Bottlenose dolphin	0	0	15	934
<i>Grampus griseus</i>	Risso's dolphin	2	8	4	16
<i>Lagenorhynchus obliquidens</i>	Pacific white-sided dolphin	1	7	11	261
<i>Globicephala macrorhynchus</i>	Short-finned pilot whale	0	0	8	859
<i>Balaenoptera edeni</i>	Bryde's whale	0	0	1	67
<i>Balaenoptera physalus</i>	Fin whale	0	0	1	442
<i>Balaenoptera musculus</i>	Blue whale	0	0	7	1,864
<i>Balaenoptera borealis/edeni</i>	Rorqual identified as a Sei or Bryde's whale	0	0	5	27
Total		12	1,148	147	17,911

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	0	4	4	
<i>Balaenoptera physalus</i>	Fin whale	0	0	3	3
<i>Delphinus capensis</i>	Long-beaked common dolphin	32	32	514	808
<i>Delphinus delphis</i>	Short-beaked common dolphin	30	45	459	753
<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	0	0	2	6
<i>Tursiops truncatus</i>	Bottlenose dolphin	0	0	49	71
Total		62	77	1,062	1,691



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
11/01/09	0	6	4	3 (3)	1	1	1
11/02/09	1	6	4	6 (0)	1	1	1
11/03/09*	1	6	4	7 (1)	1	1	1
11/04/09**	1	3	2	31 (1)	1	0	0
Week Total	3	21	14	47 (5)	4	3	3
Grand Total	50	293	201	278 (83)	47	45	40

* Leg 2 Comparison UCTD, CTD and XBT station 1.

** Leg 2 Comparison UCTD, CTD and XBT station 1 and Leg 2 UCTD 6 hour Yo-Yo Cast 2.



Mid-trophic team cleaning the IKMT net before inport. Photo credit: Candice Hall.

