

PICEAS – Pacific Island Cetacean and Ecosystem Assessment Survey Weekly Report, September 15-21, 2005

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Remember those beautiful satellite images of the Pacific depicting the productivity of surface waters in terms of chlorophyll *a* concentration per cubic meter (if you haven't seen one of these, please see Figure 1 below. Productivity level is color-coded, so that regions high in surface chlorophyll *a* appear yellow and green (the Bering Sea, Gulf of Alaska, the slivers of water along the west coasts of Canada and the U.S., and a larger sliver of water along the Peruvian coast, the Costa Rica Dome, and so on), regions of lower productivity appear turquoise in color (the Pacific north of 40° latitude, the band of equatorial upwelling, the Humboldt current), and regions of lowest productivity, the deserts of the Pacific, so to speak, are a deep and beautiful shade of blue. At this writing, we are 700 nautical miles to the southwest of the big island of Hawaii (see <http://info.nmao.noaa.gov/shiptracker>) and can attest to the fact that, not only are we deep into the blue region of this surface chlorophyll *a* continuum, we are surveying waters representing the far reaches on the low end of the cetacean abundance bell curve. In his spare time, one of our visiting scientists calculated that our sighting rate this week has been 0.75 schools per day. To put this into a more personal context, Tuesday afternoon's distant and squirrely school of spotted dolphins, which we chased for 40 minutes, ultimately discernable in the handheld binoculars at no closer than half a km and smack in the middle of the glare, brought 5 of the 6 mammal observers, both visiting scientists, and this Cruise Leader to the flying bridge to take in the excitement. (... negative data are valuable data, negative data are valuable data ...)

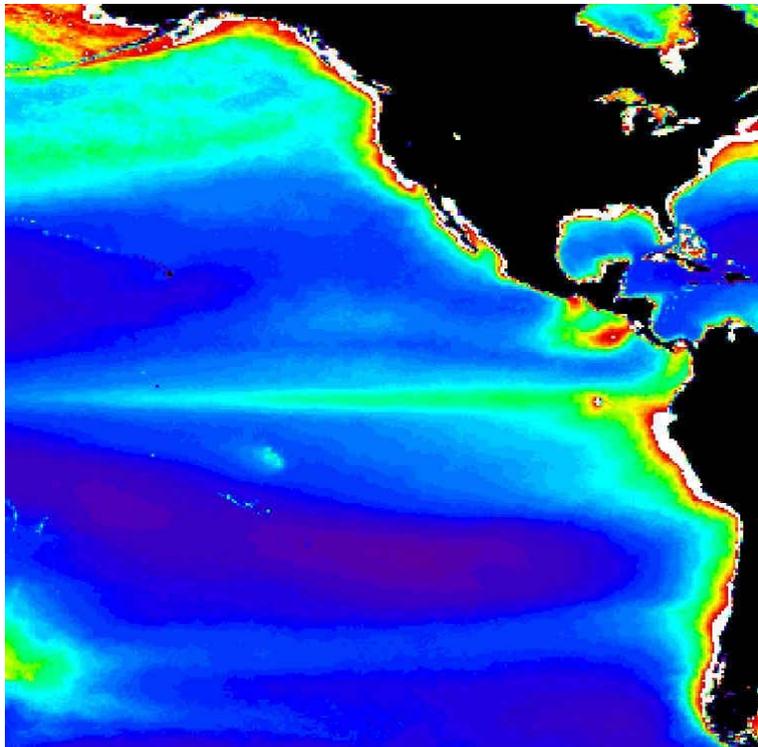


Figure 1. Satellite-derived estimates of primary production in the eastern Pacific (Bonin et al. 2005).

Nevertheless, we are not entirely without stories. The big sighting of the week is a big sighting for the project. For the first time since PICEAS began, *Indopacetus pacificus* (a.k.a. tropical bottlenose whale) made its rare appearance. (For the non Ziphiid-obsessed reader - this is a species of beaked whale first described in 1926 from a skull found on a remote beach in Australia. For the next 50 years, everything about this species remained a mystery, as it had never been seen alive in the wild. It was not until 1999 that scientists pieced the puzzle together from widespread sightings of what had previously been called an unidentified whale. We now know what the animal looks like but still any bits and pieces of knowledge concerning behavior, group sizes, associations, vocalizations, etc. are very valuable and there are many hard-core cetologists who have never seen this animal. This story is nicely told at <http://swfsc.nmfs.noaa.gov/PRD/PROGRAMS/ecology/default.htm> click on “Staff”, “Pitman” and scroll down to “Alive and Whale”) Needless to say, this sighting had everyone up on the flying bridge in a matter of a few breathless moments. In this particular case, the *Indopacetus* were mixed with pilot whales, an association that turns out to be not uncommon. We also know that groups typically stay tightly together, which this one did, and they can really swim when they want to! After a few dazzling minutes watching surfacing animals 300 m off the bow, they dove and next appeared a mile distant. We followed them at full speed for another 4 miles while they galloped dead away, moving faster than our top speed of 10 knots and throwing rooster tails in the water as they went. “Course and speed please.”

Other newsworthy items: The acousticians shifted from an 18-h work day to 13 hours when they got our back-up acoustic array up and running (nice work Shannon and Sara!); Our first small boat launch of the leg on pilot whales in a valiant (but failed) attempt to obtain biopsies using the ship to “trap” the school in a bubble wake worked like a charm until the small boat came into the wake circle too; Don Hilliard fixed the electrical switch on our broken big eyes stand (thanks engineers!); After 8 straight days of tying mesh bags full of styrofoam cups to the evening CTD, Yin finishes shrinking 394 of them decorated by elementary school children from Texas and Massachusetts (at 1000 m depth a regular-sized cup will squish to a size slightly larger than a thimble); Art and Luke treated us to a fan-tail cook out complete with KING CRAB!; We passed within 15 nautical miles of Johnston Atoll (and *still* don’t get a sighting). Next week – news of our visit.



Indopacetus pacificus (photo by Sophie Webb)

Marine Mammal Sighting Summary

091505	0646	N20:08.78	W164:20.60	113.5 nmi	5.2
	1900	N18:30.81	W165:28.93		
091605	0657	N18:08.75	W165:45.14	110.9 nmi	5.1
	1905	N16:26.78	W166:53.11		
091705	0655	N16:01.91	W167:10.67	95.7 nmi	3.2
	1909	N14:40.37	W168:06.10		
091805	0709	N15:47.88	W168:34.90	95.1 nmi	3.9
	1905	N17:13.00	W167:38.28		
091905	0657	N18:19.68	W166:50.66	106.1 nmi	4.3
	1852	N19:51.37	W165:48.56		
092005	0659	N20:15.12	W166:46.06	113.8 nmi	5.0
	1906	N18:34.54	W167:56.02		
092105	0703	N17:48.78	W168:24.59	117.9 nmi	4.6
	1904	N16:11.23	W169:33.55		

CODE	SPECIES	TOT#
002	Stenella attenuata (offshore)	1
018	Tursiops truncatus	1
036	Globicephala macrorhynchus	2
065	Indopacetus pacificus	1
	TOTAL	5

Acoustics Squeakly Report (Shannon Rankin & Sara Heimlich)

Despite a multitude of tests, I was unable to diagnose the illness that has consumed our primary array. I was on the brink of performing invasive surgery, when I decided to try one last test to see how she was feeling. It is amazing how the threat of a knife (or cable cutters) can cure the most desperate of ailments. I am still deciding the fate of my little hypochondriac array, although everything points to deep psychological issues.

Luckily for everyone on board, we have had great luck with our backup array (yippee!!!), which has confirmed the observers' findings that pickins' are indeed slim in these waters. The single highlight of the week was nearly 3 minutes of vocalizations from a (the?) spotted dolphin sighting. We also heard a few faint dolphin and sperm whales, but I cannot discount the possibility that these were auditory hallucinations.

Birder Blurb (Michael Force & Sophie Webb)

Our week can be summed up in one word: birds. Lots of them. It might not seem that way from one staring out from the flying bridge, but we found a whopping 26 species and plenty of feeding flocks (primarily Sooty Terns and Wedge-tailed Shearwaters). For those who keep track of such things, we found 8 species of *Pterodroma* petrels this week, the greatest diversity in over 3

weeks: Kermadec, Herald, Juan Fernandez, White-necked, Cook's, Black-winged, Stejneger's, and Pycroft's. The Stejneger's Petrel was a first for PICEAS and was part of a southward trend evident this week. Another PICEAS first was Short-tailed Shearwater—small groups were seen heading south—as well as several Sooty Shearwaters. Later in the week we noticed an increase of small *Pterodromas*, collectively known as Cookilaria, many of which were too far to identify, winging their way south. There are approximately six species of Cookilaria, all very similar in appearance and notoriously difficult to identify. Several were definitely Cook's Petrel, suggesting that this species is migrating through this area on its way to its New Zealand nesting islands. Not to be left out of this annual rush to vacate high northern latitudes were several Ruddy Turnstones and Pacific Golden-Plovers. A Parasitic Jaeger, one of the few seen on PICEAS, was this week's highlight.

Biopsy Weekly Report	Weekly Total	Cruise Total
Bryde's whales	0	1
Pilot whales	0	2
Humpback whales	0	3
Melon-headed whales	0	41
Sperm whales	0	4
False killer whales	0	18
Spotted dolphins	0	2
Spinner dolphins	0	3
Rough-toothed dolphins	0	2
Bottlenose dolphins	0	11

Photo-ID Weekly Report	Weekly Total	Cruise Total
Humpback whale fluke IDs	0	4
Bryde's whale	0	4
Melon-headed whale (# groups)	0	2
False killer whales (# groups)	0	3
Pilot whales (# groups)	2	13
Striped dolphins (# groups)	0	2
Spotted dolphins (# groups)	0	3
Spinner dolphins (#groups)	0	5
Fraser's dolphins (#groups)	0	2
Bottlenose dolphins (# groups)	1	1

TROPICAL BOTTLENOSE WHALE		
(# groups)	1	1

Oceanographic Data Collections (Mindy Kelly and Lacey O'Neal)

DATE RANGE	DAY	CTD	XBT	Bongo	Manta
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> PICEAS05 Leg 3 9/15 to 9/21 </div>	Thursday	2	3	1	1
	Friday	2	3	1	1
	Saturday	2	3	1	1
	Sunday	2	3	1	1
	Monday	2	3	1	1
	Tuesday	2	3	1	1
	Wednesday	1	4	1	1
	Totals		13	22	7

The week almost ran completely normal/smooth for our oceanographic team. We glided into Wednesday evening without any problems on our plate. Net tow operations have gone well for the week, XBT's have been launched regularly and CTD casts almost had a positive note to attach. As the Wednesday evening station began, we realized our small problem of the week. We could not squeak by this one, the CTD wire termination went bad. The station was cancelled but thanks to Stan (ET) and Lacey (ST), it will be fixed (re-terminated) by the morning, just in time to complete our next station. Thanks guys!

Fish Follies (Robert Pitman and Jim Cotton)

Our flyingfish count this week was 4-5 young *Exocoetus*; probably the single worst week in our illustrious decade of dipnetting. This part of the ocean apparently wasn't adequately stocked; not what I would call intelligently designed.