

**STAR 2006: NOAA Ship *McArthur II***  
**Weekly Science Report**

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**Science Summary: 17-23 August 2006**

We've spent the week caught between two tropical storms, which have led to confused seas (i.e., concurrent swells from multiple directions) and high winds. You can see in the effort summary that we have spent very little time in sea states less than Beaufort 6. Unfortunately, the periods of reduced winds were, without exception, accompanied by rain!

So how does a group of 13 scientists spend a full week of rough weather conditions? Your best option is to be a seabird observer; in fact, we've given their report a bit of extra space to herald their banner week! You may also want to be an oceanographer, so that you can continue regular operations. It's not so good to be an acoustician because the rough seas damage equipment (see the Squeakly report below). It's also not good to be a marine mammal observer, because your probability of detecting animals becomes so low that you eventually have to stop survey effort. When effort stops, observers take turns checking the weather at regular intervals, hoping to see signs of improvement. The end result is a week with only four sightings; we were able to identify two of the sightings to the species level (spotted and whitebelly spinner dolphins).

In these scenarios, you do have to find some way to pass the time. Watching movies becomes a popular activity; we've had individuals rack up three in a day. We've also just completed a major cribbage tournament. I am proud to announce that our own Isabel Beasley was the undefeated champion!

We are expecting to wrap up this leg of STAR 2006 on a high note. We will spend our last day of effort in the lee of the Big Island of Hawaii. We are sincerely hoping for good weather and lots of interesting animals! During our inport, we will be saying goodbye to our teacher-at-sea, Cyndy Martin, and I want to thank her for all of her help with oceanographic operations. I will also be passing the cruise leader baton to Lisa Ballance, so I would like to take this opportunity to thank all of the scientists, officers and crewmembers for making it such a great leg! I have sincerely appreciated how we have worked together to overcome the challenges we have faced, and the laughter we have shared along the way. I have truly enjoyed sailing with all of you!

**Sightings and Effort Summary for Marine Mammals**

Date	Start/Stop Time	Position	Total nm	Average Beaufort
081706	0638	N14:19.99 W132:40.04	12.9	5.5
	0757	N14:28.40 W132:50.14		
081806	0648	N14:19.14 W134:16.06	50.8	5.3
	1531	N12:57.52 W134:13.73		
081906	0655	N11:54.89 W135:08.83	87.2	5.5
	1743	N12:29.44 W136:43.71		
082006	0734	N13:00.01 W138:16.53	86.5	5.3
	1709	N13:31.84 W139:48.80		
082106	0623	N14:05.03 W141:25.60	119.4	4.9
	1850	N14:48.29 W143:25.53		
082206	0624	N15:12.74 W144:46.42	96.1	5.3
	1902	N15:54.25 W146:50.11		
082306	1047	N16:34.00 W148:49.14	20.8	5.7
	1813	N16:58.76 W150:03.15		

Code	Species	Number of Sightings
002	<i>Stenella attenuata</i> (offshore)	1
011	<i>Stenella longirostris</i> (whitebelly)	1
078	unid. small whale	1
177	unid. small delphinid	1
<b>Total</b>		4

**Flying Bridge Report (Richard Rowlett)**

This week we find our intrepid selves on the flying bridge slogging through nearly incessant Beaufort 5 and 6 sea states, and still keeping the effort going when the ‘sixes’ weren’t too bad. Cetaceans are few and far between out here, but when we do encounter a school of dolphins it can be a good one indeed. Such was the case on Aug 18 when we encountered an “ETP classic” – a very large school of mostly ‘whitebelly’ spinners. The “money school” was densely packed, forming a lengthy ‘breezer’ or flat spot on the ocean teeming with tons of Yellow-fin Tuna below and a cloud of seabirds above. As we approached, these dolphins remained relatively non-evasive. They did not up, scatter, and run like many other schools often do, but rather remained calm yet alert in maintaining a safe distance from the ship throughout our observation.

**Biopsies (Susanne Yin and Erin LaBrecque)**

Species	Common Name	Weekly		Total	
		Samples	Takes	Samples	Takes
<i>Delphinus delphis</i>	Short-beaked common	0	0	2	3
<i>Tursiops truncatus</i>	Bottlenose dolphin	0	0	3	3
<b>Total</b>		0	0	5	3

### **Photo Project (Isabel Beasley and Jim Cotton)**

Species	Weekly		Total	
	Sightings	Photos	Sightings	Photo
<i>Stenella longirostris</i>	2	7	4	
<i>Globicephala</i>	1	1		
<i>Tursiops truncatus</i>			3	38
<i>Globicephala</i>			1	6
<i>Orcinus orca</i>			1	146
<i>Balaenoptera musculus</i>			1	37
<i>Physeter macrocephalus</i>			1	4
<i>Stenella coeruleoalba</i>			2	22
<i>Delphinus delphis</i>			4	32
<b>Total</b>				

### **Seabird and Marine Debris Report (Michael Force and Sophie Webb)**

Could we be getting spoiled by the fantastic avian diversity we've encountered this past week, indeed, the past two weeks? Why does getting drenched to the bone equate to good seabirding in the ETP? These are questions we unfortunately have plenty of time to ponder as we enter the Great Empty Zone. In the meantime, we may as well enjoy our seabird bonanza while we can. Our average daily species total for the past couple of weeks has been around 15! We maintained this impressive average this week although it started out slow on Thursday with six species. The following day we hit the jackpot, logging an amazing 20 species of seabirds—our best day ever for STAR 2006! There were thousands of Juan Fernandez Petrels and dark morph Wedge-tailed Shearwaters everywhere, many in flocks. One of these flocks, associating with a large school of spinner and spotted Dolphins and fish, contained at least 2000 birds of 10 species. Obtaining an accurate count of this swirling mass of flying and loafing birds was truly a challenge (yes, much like counting dolphins). Juans and dark morph Wedgies made up the bulk of this flock, as well as a remarkable 35 Pink-footed Shearwaters. The high numbers of Pink-footed Shearwaters this far west was surprising; on previous cruises finding one or two was noteworthy. While becalmed in a bucketing down rainstorm one afternoon, a serendipitous glance outside revealed our first Flesh-footed Shearwater of the cruise. We found 26 species this week, down one from last week. This includes eight species of petrels in the genus *Pterodroma* (aka gadfly petrels); four *Puffinus* shearwaters; our first Solander's Petrel; and all four *Stercorariids* (jaegers and skua). We also saw a possible Hawaiian Petrel. If anyone has any thoughts on the "Dark-rumped" Petrel identification conundrum out here in the zone of possible overlap between Hawaii and the Galapagos, we're all ears. A shotgun isn't an option! We found migrating Buller's Shearwaters this week—about 20—all flying southwest to their New Zealand nesting grounds. Brown Boobies were seen almost every day, somewhat unexpected for this species, which tends to

remain closer to the nesting colonies than does Masked and Red-footed. On the other hand, Sooty Terns remain quite scarce. Very little marine debris was seen, mostly concentrated on a single day, consisting of the usual plethora of fishing floats, ubiquitous plastic bottles and bits of styrofoam. A first for the cruise, however, was a propane cylinder.

### **Oceanographic Operations (Melinda Kelley)**

As Leg 1 oceanographic operations come to a halt, we look back smiling. With everyone's help we achieved great success and overcame all obstacles. Thank you to the ship's crew and officers as well as the many scientists who stepped forward offering a helping hand. We particularly want to thank all of the outgoing folks: teacher-at-sea, Cyndy Martin and crewmembers Eva Taylor, Jay Dylan and Hutch. This last week of sampling has been different from the previous weeks; the CTD and XBT profiles have presented some interesting features in the upper water column, while we have observed low densities in the acoustic backscatter data and sparse samples in the net tows. As we move closer to the islands, sea surface temperature holds steady at 26.8°C.

<b>Date</b>	<b>CTD</b>	<b>XBT</b>	<b>Bongo tow</b>	<b>Manta tow</b>
Thursday	2	2	1	0*
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	2	2	1	1
<b>Total</b>	14	19	7	7

### **Squeakly Report (Shannon Rankin and Liz Zele)**

The slow, painful death of scientific equipment is something I hope that none of the readers must endure. Unfortunately, I have become somewhat of a professional in these affairs. The tragedy I was unprepared for was the death of such a youthful, vibrant array of hydrophones. The cause of death has yet to be determined; an autopsy is planned for this evening. Services will be held upon arrival in Honolulu.

### **Dipnetter's Delight (Jim Cotton)**

We've seen very few flyingfish this past week but lots of rain and windy conditions. Our nightly efforts produced only three specimens for the collection: one four-winged flyingfish and two of the two-winged variety (*Exocetus volitans*).

Leg 1 totals to date:

- 1 Unidentified Flyingfish
- 6 Unidentified Four-winged Flyingfish

- 5 Two-winged Flyingfish
- 17 Short-winged Flyingfish
- 49 Lanternfish
- 22 *Elassichthys*

Halobates collected at 10 of the 26 stations.