PICEAS – Pacific Island Cetacean and Ecosystem Assessment Survey
Weekly Report, August 11-17, 2005

This is the third week of the PICEAS-05 cruise. We left Honolulu last Thursday and spent all of that day and the next night getting to our study area at the southern edge of the Hawaiian Exclusive Economic Zone (EEZ). On Friday we entered the world where no one has gone before. (Well, at least no one with four pairs of big eyes and an espresso machine). Unfortunately, we were in the jaws of the trade winds for the first five days out of Honolulu. We finally broke out of the predominant northeasterly trade winds when we entered the US EEZ of Palmyra Atoll. Palmyra is a small coral island that barely reaches a palm tree's height above the high tide mark and just happens to be a US territory. The US EEZ around Palmyra is one of the focal study areas for the PICEAS cruise, in part because the Hawaii-based longline fishery is fishing here and in part because it is one of the few pieces of the US where marine mammals have never been surveyed.

We didn't manage to see many marine mammals those first few days, and we blamed our bad luck on the windy conditions. However, weather has improved dramatically now that we are in truly equatorial waters. We even saw some Beaufort 1 conditions yesterday morning. The number of seabirds and flying fish picked up amazingly as we traveled equator-ward (see separate reports, below). Tuesday's CTD station was in the North Equatorial Current, and we were drifting westward at 3 knots while we were trying to trying to hold station. Despite all of these changes, the one constant thing has been a very low density of marine mammals. Mostly we have been seeing small groups of striped dolphins and pilot whales, with an average of only 2 sightings per day. One unidentified baleen whale (probably a Bryde's whale) was the only surprise for us this week. The soup at the cod end of the plankton nets has been very thin, and the screen of our EK-60 (a high tech version of a glass bottom boat) shows almost nothing in the water below us. It is clear why the mammals are so scarce … the few fish which exist for them to eat are dipnetted away each night by Jim, Juan Carlos, and backup dipper, Shannon.

The marine mammals out here are being difficult even when they can be found. We didn't get biopsies from the pilot whales or the probable Bryde's whales this week. Everybody runs from us and from the small boat. At least partially, I think this is because they've never seen a small boat before. And then there is Juan Carlos with a crossbow. However, I think the driving factor is that Jim Cotton is eating raw garlic again.

I cannot help but mention that the marine mammal situation has improved astonishingly today. Suffice it to say that acoustics rock! And Juan Carlos brought home the bacon. More in next week's report. Stay tuned.

Marine Mammal Sighting Summary

081105	1122	N21:11.47 W157:57.55	69.3 nmi	4.3
	1843	N20:06.32 W158:29.26		
081205	0904	N18:02.95 W159:28.76	89.1 nmi	4.0
	1818	N16:45.75 W160:24.18		
081305	0634	N15:37.89 W161:12.47	119.6 nmi	5.0
	1905	N13:55.03 W162:25.56		
081405	0640	N12:52.65 W163:09.38	61.1 nmi	4.6
	1825	N11:21.32 W164:13.23		
081505	0645	N10:04.56 W163:53.34	97.7 nmi	4.8
	1857	N08:41.83 W164:50.77		
081605	0657	N08:02.41 W165:17.16	71.1 nmi	3.0
	1912	N06:44.93 W166:11.83		
081705	0655	N06:25.80 W165:10.00	81.5 nmi	2.8
	1906	N07:38.72 W164:19.88		

CODE	SPECIES	TOT#
002	Stenella attenuata (offshore)	1
013	Stenella coeruleoalba	4
036	Globicephala macrorhynchus	4
049	ziphiid whale	1
077	unid. dolphin	3
098	unid. whale	1
	TOTAL	14

Acoustics Squeakly Report

Rankin & Oswald

The acoustics team has had a little o' this and a little o' that this week. We had 13 unidentified dolphin detections that we could not locate (or, they were very far away), and even a faint distant sperm whale detection. We did obtain good recordings from pilot whales, spotted dolphins, and striped dolphins. We had two acoustics chases this week: an unsuccessful chase after uncooperative blackfish in the rain, and a troublesome school of striped dolphins that took an hour to find!

The highlight for acoustics is our new real-time species ID program, ROCCA, built by our own Julie! This program is up and running, and we've finally incorporated it into our daily regiment (Shannon was a bit of a slow learner, but she's a good monkey and is finally catching on!). ROCCA has successfully ID'd striped dolphin and pilot whale groups, with high correct classification scores. Don't worry, observers, we still can't tell group size!

Biopsy Weekly Report	**Weekly Total**	**Cruise Total**
Humpback whale	0	3
Melon-headed whale	0	19
False killer whale	0	12
Rough-toothed dolphins	0	2
Spotted dolphins	2	2

Photo-ID Weekly Report	**Weekly Total**	**Cruise Total**
Humpback whale fluke IDs	0	4
Melon-headed whale (# groups)	0	1
False killer whales (# groups)	0	1
Pilot whales (# groups)	3	3
Striped dolphins (# groups)	1	1
Spotted dolphins (# groups)	1	1

Birder Blurb
Michael Force & Sophie Webb

It was a fabulous week for the seabird team. Sure, the weather became increasingly soggy as we worked our way south, but it seems that foggy binoculars and waterlogged birders coincide with good birding. Perhaps the subtle shifts we observed in bird diversity as we slowly worked our way south reflect what could be subtle shifts in habitat. White-necked and Hawaiian Petrels were seen daily southwest of the Hawaiian Islands, but mysteriously disappeared after our third day, being "replaced" by Black-winged and Phoenix Petrels. The days of heavy rain were our most productive, recording up to 15 species in a single day! This included seven species of petrels: Tahiti, Phoenix, White-winged, Black-winged, Collared, Kermadec and Bulwer's. Put another way, seabirder heaven. This week we also saw Christmas and Newell's Shearwaters, Pycroft's Petrel as well as an unidentified skua, all first for PICEAS. Another highlight, a gift from our gracious cruise leader, was several passes through a large mixed flock of seabirds feeding over tuna and flying fish. Perhaps it was for some recreational fishing, but we knew his true intentions: to look at birds, obviously.

Cruise leader bird report: We saw mostly large birds this week (LGBD), and not very many.

Flying Fish Account
(Jim Cotton, your flying fishing accountant)

Armed with the appropriate fish guide for our study area, thanks to Bruce Mundy at the Honolulu lab, we watched Diamond Head disappear in our wake as we set a course to the S.W. heading for warmer water (+27ºC) and prime habitat for flying fish. These wondrous critters seldom get the press they deserve but since we are seeing more fish than dolphins it's time to elaborate a little.

Taking place at the same time as the evening oceanographic station, our dedicated team of fish collectors, Juan Carlos Salinas and Shannon Rankin, filling in for myself, spend an hour dipping for fish that collect beneath the flood lights. The primary targets for our 20 foot long dip nets are flying fish which can be divided into two categories, the two-winged and four-winged types.

As of this writing, 22 of the two-winged type and four of the four-winged variety have been collected along with three samples of the short-wing flying fish. It is interesting that all of the flying fish caught or seen during the evening stations have been juveniles with the exception of a large pink winged specimen (HIAL) and one adult clear stripe. Several of the four-wing specimens that we collected are seldom caught; this will aid in the distribution atlas of flying fish that Bob Pitman is preparing.

In addition to flying fish, 19 lantern fish, two squids and several vials of Halobates, ocean going insects that are related to pond striders, have been collected for other investigators. Last night, we caught our first tropical fish for the aquarium; we hope to have a fine collection of unusual fish to donate to the Waikiki Aquarium upon our return to Honolulu.

A special thanks to the entire engineering department for installing the flood lights and plumbing our aquariums. Without their help, we would be operating in the dark with water spilling onto the deck.

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

Full-scale oceanographic observations began when we entered the study area last Thursday.

DATE RANGE	DAY	CTD	XBT	Bongo	Manta
PICEAS05 Leg 2 Week 1 8/11 to 8/17	Thursday	0	3	0	0
	Friday	1	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
	Totals	11	20	6	6