

**YEAR 2002
SANCTUARY OCEAN COUNT RESULTS**

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INTRODUCTION

For the sixth consecutive year (since 1997) the Hawaiian Islands Humpback Whale National Marine Sanctuary (HIHWNMS) sponsored the Annual Sanctuary Ocean Count, an educational event involving volunteers throughout the Hawaiian Islands in the census of humpback whales from shore sites on O‘ahu, Hawai‘i and Kaua‘i. In addition to learning about humpback whales and getting hands on experience in observing them in their natural habitat, volunteers contribute important information about the number of humpback whales present near-shore, their general activity patterns, and their distribution. The format of the ocean count has been evolving significantly from its inception and the data collection procedures have been formatted to both be easily understandable by non-scientists and useful to the HIHWNMS in providing reasonable estimates of whale numbers and distribution at the selected count sites.

Humpback whales arrive in Hawai‘i between October and November, and their numbers peak in January and February, tapering down again in March with most whales gone by May. During their stay in Hawaiian waters, female humpback whales give birth to their calves, and subsequently mate. Recent estimates suggest a steady recovery of the North Pacific humpback whale stock, with population numbers close to 5,000 whales visiting Hawaiian waters every winter and increasing.

CENSUS DATES AND TIMES

For the first time since the Sanctuary Ocean Count’s inception, the census was conducted on three dates (26 January, 23 February, 26 March) on the islands of O‘ahu, Kaua‘i, and Hawai‘i. The Count started at 0800 and stopped at 1215 each time. In general the count is scheduled for the last Saturday of January, February, and March.

VOLUNTEER TRAINING

Similarly to last year’s count, HIHWNMS staff identified two types of volunteers: Site Leaders, and regular volunteers. Site Leaders were people willing to participate in training sessions to become able to coordinate, manage and train regular volunteers at the shore-based sites assigned to them. Regular volunteers did not have to undertake any formal training (except on Kaua‘i where both Site Leaders and volunteers were trained by Sanctuary staff) and, after pre-registering with a Sanctuary staff member, and then with a Site Leader, could show up at their chosen shore-based site on the day of the count to assist in data collection and whale observation.

Site Leader training was conducted during two sessions on O‘ahu, on January 9 and 12, 2002 at the Public Library in Hawai‘i Kai, on January 20 on Kaua‘i, and on

January 21 in Kona and later in the afternoon, in Hilo, on the Big Island. All Site Leaders were provided with a Site Leader Handbook describing their duties and the data collection procedures.

Trained Site Leaders were instructed to meet regular volunteers at their shore-based site on the day of the count to conduct a brief training session on how to collect behavioral information, before 0800 hrs, the beginning of the Count. Site Leaders were instructed to report the preliminary results of the census immediately after the official closing of the event, (1215 hrs) by calling the HIHWNMS staff at the appropriate Sanctuary office.

CENSUS SITES

The 2002 Sanctuary Ocean Count was conducted at 25 sites around the Island of O‘ahu (Figure 1), 16 sites on Kaua‘i (Figure 2), and 20 sites around the Big Island (Figure 3). Each of these sites was manned by at least one Site Leader who was responsible for the collection of census data and for the coordination of regular volunteers.

TYPE OF DATA COLLECTED

This year, three types of data were collected: census data, which were reported on a Census Sheet (Figure 4); behavioral information, which were reported on a Behavior Sheet (Figure 5); and exact whale location data, which were reported on a Map Sheet (Figure 6).

CENSUS PROCEDURES

The purpose of the census data was to obtain an estimate of the average number of humpback whales present in coastal waters between 0800 and 1215 at three times during the breeding season (last Saturday of January, February, March). By keeping the current methodology consistent, these data will be comparable and will give an indication of the trends in population size over the years.

The census was done by Site Leaders only, to limit the number of datasheets per site to one, and to ensure that only trained personnel participated in this portion of the Sanctuary Ocean Count. Nine times for a 15-minute period (0800-0815, 0830-0845, 0900-0915, 0930-0945, 1000-1015, 1030-1045, 1100-1115, 1130-1145, and 1200-1215), the waters visible from land-based sites were scanned for the presence of humpback whales. When a whale was sighted, it was tallied on the data sheet and not re-counted during the same 15-minute period. Calves and adult whales were tallied in separate columns, if a distinction between adult whales and calves

could be made. Only whales seen at the surface during the 15-minute period were counted. Site Leaders were asked not to record whales that surfaced before the start of the count or immediately after the 15 minutes even if they were aware of the whale's presence.

If other species of marine mammals were sighted during the 15-minute periods their estimated number was also tallied, in this case without making a distinction between adults and calves, given the difficulty of this task at a distance and with untrained observers. Other species likely to be sighted from land were spinner, spotted and bottlenose dolphins.

BEHAVIORAL OBSERVATION PROCEDURES

Behavioral information was collected in a simplified manner to improve consistency among volunteers with different levels of experience. The general trends in whale behavior at each site may provide an insight on the use patterns of a particular area. For example, a site where mothers spend a lot of time socializing or interacting with their calf will have a higher frequency of aerial and social behaviors than an area where whales pass through. Again, trends over years of observation using a consistent methodology may provide a gauge of the importance of a particular site.

All volunteers at the site other than Site Leaders paired up to collect behavioral observations, generating one data sheet per pair. While one of the volunteers monitored the waters to observe whale behavior, the other filled out the data sheet. Behavioral observations started at 0830 and continued uninterrupted until 1200. Volunteers monitored all whales visible from their post and tallied any occurrence of specific behaviors as follows:

BREACH – the act of jumping out of the water by the whale. A breach may show the full body of the whale or only a portion depending on the speed of exit from the water.

SLAP – the forceful beating of the water surface by the whale with any part of the body such as the flukes, the pectoral fins, or the rostrum.

FLOAT – the motionless and prolonged floating of the whale at the surface

FLUKE UP DIVE – the arching of the tailstock until the flukes are completely out of the water during a dive.

The tally of behavioral events was broken up into half-hour time slots (0830-9000, 0901-0930, 0930-1000, 1001-1030, 1031-1100, 1101-1130, 1131-1200). The number of adults and calves present was estimated for each time slot so that the number of behavioral events was standardized against the number of whales present at the site to get a relative index of behavioral activity that could be compared across sites.

LOCATIONAL INFORMATION

Whale locational data was collected for the first time during the 2002 Sanctuary Ocean Count. This data collection procedure was designed to freeze a moment in time around all three islands where data was being collected and get a feel for the exact position of all whales observed during that time.

At exactly 1030 a pre-drawn map of the site was completed by entering the exact location and distance from shore of all whales visible between 1030 and 1100 (Figure 6 provides an example), with each location (represented by a circle) containing information about number of whales observed at that location and pod composition (M/C for mother calf or M/C/E for mother calf escort for example) if known.

Data on locational information was collected as an exploratory method and has not been analyzed in this report because of the inconsistent results across sites. This method nonetheless promises good results once the procedures are mastered by the volunteers. A supplemental report on this method will be provided next year.

VOLUNTEER PARTICIPATION AND DATA REPORTING

Nine hundred and sixty-five volunteers participated in the 2002 Sanctuary Ocean Count on the Island of O'ahu (as compared to approximately 300 in the year 2000), 444 participated on the Big Island, and 219 on Kaua'i. Participation was comparable for all three counts on all islands (Figure 7). Also, some volunteer participants took part in more than one count. All sites on O'ahu were manned during the three census dates. One site on Big Island (Miloli'i Lookout) did not report their findings to the Sanctuary staff. One site on Kaua'i (Port Allen Cemetery) was not used for lack of volunteers, and two sites on Kaua'i, Waimea Canyon Drive and St. Theresa School, lacked participants on the second and the third census, and the first one respectively. Nonetheless, not all sites reported their results to the HIHWNMS office and some data sheets were never turned in (see Table 1-9 for details on reported sightings per site).

O‘AHU: CENSUS RESULTS

Number of whales present increased slightly from an average of one whale ($\bar{x}=1.26$; S.E.=0.08) per site in January to an average of two whales ($\bar{x}=2.48$; S.E.=0.18) in February and March ($\bar{x}=2.21$; S.E.=0.15).

Average number of whales was calculated for all sites located along the same coastline (Wai‘anae, North Shore, Windward, South Shore) around O‘ahu to compare distribution and abundance (Figure 8). A major problem with data collection is that sites located higher up cover a much larger area of water during counts than sites at lower elevation. For this reason, direct comparison of averages is not an accurate procedure. In reality, probability of detection of any whale decreases with increasing distance from the observer so that at sites where the observers could see several miles from shore, whale detections would have been affected by sea state, weather conditions, whale behavior and observer training. These variables are extremely difficult to control with so many untrained observers and so many different sites, and were not taken into account. Extreme caution should be therefore exercised when comparing data obtained and the results should be corroborated by more in depth scientific studies.

Average number of whales varied each month along the four main shorelines of O‘ahu with peak abundance along the North Shore in January, similar number of whales all around the island in February, and a shift to peak abundance along the South Shore in March. Very few whales were present along the Wai‘anae coast during the January and March counts (Figure 8).

There was little variation in average number of whales present throughout the morning for all sites combined, although numbers seemed to consistently decrease toward midday (Figure 9). Sites with the most sightings were Ka‘ena Point (North Shore), Mokule‘ia (North Shore) and Shark’s Cove (North Shore) in January; Makapu‘u Point (Windward/South Shore), Hālonā Blowhole (South Shore), Spitting Caves (South Shore) in February, and Makapu‘u Point (Windward/South Shore), Ma‘ili Point (Wai‘anae), Spitting Caves (South Shore) and Ka‘ena Point (North Shore).

HAWAII: CENSUS RESULTS

Coverage on the Big Island was spread across the entire island, but more effort was concentrated along the Kona coast and at a few sites along the Windward coast (Hilo side). Three main coastlines, enjoying different exposure to the trades were identified: South Coast, between Kumakahi and South Point, the Kona/Kohala

Coast, between South and 'Upolu Point, and the Hilo Coast, between 'Upolu and Kumakahi Point.

Coverage along these coastlines was different and long stretches where no effort occurred are located along all coastlines. Adequate comparisons are therefore hard to make. As for O'ahu sites are located at different altitudes and therefore cover different areas of water. Number of whales peaked in February and diminished significantly in March, a more pronounced difference than for O'ahu and Kaua'i. Number of whales was between 80-110 in January, 118-196 in February and 21-80 in March (Table 10). Number of whales sighted was higher than for O'ahu, with an average of four whales per site in January ($\bar{x}=4.02$; S.E.=0.29), seven whales per site in February ($\bar{x}=6.72$; S.E.=0.48), and three whales per site in March ($\bar{x}=2.64$; S.E.=0.19, Table 10). The largest concentrations of whales were at 'Upolu Point, Kapa'a Beach Park and Ka Lae Park in January, Pauka'a Point, 'Upolu Point and Kumakahi Lighthouse in February, and Ka Lae Point, and Onekahakaha Beach Park in March. There was little variation in average number of whales per time slot throughout the morning.

KAUA'I: CENSUS RESULTS

On Kaua'i number of whales varied from 30-56 in January, 62-94 in February, and 18-54 in March. Average whales sighted was higher than for O'ahu and slightly lower than for Big Island, with 3 whales per site in January ($\bar{x}=2.93$; S.E.=0.34), 6 whales per site in February ($\bar{x}=5.70$; S.E.=0.30) and 2 whales per site in March ($\bar{x}=2.21$; S.E.=0.15). As for O'ahu and Big Island, sites are located at different altitudes and therefore cover different areas of water.

BEHAVIORS

Humpback whales exhibit a wide range of behaviors, few of which are visible at the surface. The behavioral patterns chosen were deemed representative of general activity states. Breaches and slaps are indicative of a high energy, socially active behavior. Floating is typical of whales resting at the surface. Fluke up dives are indicative of deeper diving patterns and are used during travel.

Volunteers tended to confuse floats with surfacing events (which are represented by a blow). Float data were unreliable and were eliminated from the analysis. For next year, it is advisable to add the category blow to determine whale surfacing patterns.

Behavioral data are intended to be collected over a long period of time, to determine the general use patterns of a particular site. Data over one single year may or may not be representative of the long-term use of a site and should also be interpreted with caution.

Data are expressed as number of events per whales (number of times the behavioral event occurred divided by the number of whales present), and averaged across months where repeated samples of the same location are available. If more than one observer was available for a site, data were averaged. The value was an estimate of the behavioral activity pattern at each site.

More sophisticated analysis will be possible when a long-term database of behavioral activities will be available for each site. Therefore, the current analysis was not extensively interpreted.

SUMMARY OF RESULTS PER SITE

KO'OLINA (O'ahu)

COUNT RESULTS

2002

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	2	3	1	2	3	0	2	1

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
4	5	5	3	0	2	3	4	2

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.10	0.48	0.07	0.00

Three whales present remaining close to the surface (no fluke up dives recorded). Low aerial activity some slapping. No calves recorded.

February

Breach	Slap	Float	Fluke Up
0.41	0.42	0.02	0.12

Up to seven whales recorded with possibly one calf. Moderate aerial activity and slapping. Low diving (fluke up)

March

No whales recorded.

MA'ILI POINT (O'ahu)

COUNT RESULTS

2002

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	0	0	0	0	0	0	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
8	9	9	7	2	1	1	4	5

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	1

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

No behaviors recorded. Only one whale seen that probably left the area.

February

Breach	Slap	Float	Fluke Up
0.14	1.46	0.04	1.32

Up to six whales recorded with possibly one calf. Low aerial activity. High rate of slapping. High frequency of fluke up dive per whale. It appears whales transited this site, based on the varying numbers with time during the count.

March

No behaviors recorded. Only one whale seen that probably left the area.

MĀKUA CAVE (O‘ahu)

COUNT RESULTS

2002

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	0	0	0	0	0	0	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
4	4	2	1	0	0	0	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	1	1	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

No activity recorded.

February

Breach	Slap	Float	Fluke Up
1.03	1.06	0.94	0.51

Up to 4 whales recorded with possibly one calf. Highly active whales. Floats recorded higher than expected. It is possible that volunteers confused floats with blows here.

March

No activity recorded.

KA'ENA POINT WEST SIDE (O'ahu)

COUNT RESULTS

2002

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	1	0	0	0	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
6	5	3	4	3	2	0	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

No activity recorded.

February

Breach	Slap	Float	Fluke Up
0.70	0.80	0.16	0.49

Up to 4 whales recorded with possibly one calf. Highly active whales. Floats recorded higher than expected. It is possible that volunteers confused floats with blows here.

March

No activity recorded.

KA'ENA POINT NORTH SHORE (O'ahu)

COUNT RESULTS

2002

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
5	6	5	6	3	7	8	5	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	4	4	7	7	9	6	6	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	1	2	2	3	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
<i>0.23</i>	<i>0.79</i>	<i>0.01</i>	<i>0.04</i>

Whales at the site displayed mainly aerial behaviors.

February

Breach	Slap	Float	Fluke Up
<i>0.47</i>	<i>0.46</i>	<i>0.08</i>	<i>0.08</i>

Up to 4 whales recorded with possibly one calf. Highly active whales. Floats recorded higher than expected. It is possible that volunteers confused floats with blows here.

March

No activity recorded.

MOKULE'IA (O'ahu)

COUNT RESULTS

2002

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
8	10	4	4	0	6	4	4	4

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	1	3	2	0	2	1	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	4	2	2	4	3	3	4	4

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
1.09	0.30	2.29	0.65

Anomalous number of floats. Volunteers did not know what behavior to look for. High aerial activity.

February

Breach	Slap	Float	Fluke Up
0.86	0.01	0.32	0.00

Up to 4 whales recorded with possibly one calf. Highly active whales. Floats recorded higher than expected. It is possible that volunteers confused floats with blows here.

March

No activity reported.

PUA'ENA POINT (O'ahu)

COUNT RESULTS

2002

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	0	3	3	2	2	1	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	2	2	0	0	1	0	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	1	1	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.19	0.71	0.20	0.04

February

Breach	Slap	Float	Fluke Up
0.63	0.60	0.28	0.20

High level of aerial activity.

March

Breach	Slap	Float	Fluke Up
2.14	0.71	0.00	0.14

High level of aerial activity.

SHARK'S COVE (O'ahu)

COUNT RESULTS

2002

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	5	5	3	0	3	10	0	5

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	4	4	6	5	3	3	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	1	6	4	2	1	3	3	1

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
<i>0.31</i>	<i>0.78</i>	<i>0.00</i>	<i>0.17</i>

Whales at the site displayed mainly aerial behaviors.

February

Breach	Slap	Float	Fluke Up
<i>0.00</i>	<i>0.12</i>	<i>1.70</i>	<i>0.68</i>

Anomalous number of floats. Whales appeared to be moving through the site.

March

Breach	Slap	Float	Fluke Up
<i>0.13</i>	<i>0.29</i>	<i>0.00</i>	<i>0.02</i>

Moderate aerial activity.

TURTLE BAY (O'ahu)

COUNT RESULTS

2002

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	0	0	0	1	2	0	0	1

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	1	2	2	3	3	1	1	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	1	0	2	0	3	3	1	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
1.57	0.68	0.00	0.00

Whales at the site displayed mainly aerial behaviors.

February

Breach	Slap	Float	Fluke Up
0.50	0.28	0.01	0.26

March

Breach	Slap	Float	Fluke Up
0.57	0.29	0.00	0.00

Whales at the site displayed mainly aerial behaviors.

LA'IE POINT (O'ahu)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	1	0	2	1	2	2	3	3

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	4	5	5	3	6	6	6

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
8	4	3	3	0	2	0	1	1

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.00	0.05	0.04	0.00

February

Breach	Slap	Float	Fluke Up
0.10	0.73	0.00	0.02

March

Breach	Slap	Float	Fluke Up
0.45	0.43	0.01	0.06

Whales at the site displayed mainly aerial behaviors.

HAU'ULA (O'ahu)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
				3	1	2	2	3

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported.

February

None reported.

March

None reported.

KUALOA RANCH (O'ahu)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	1	0	0	0	3	0	1	1

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	2	5	3	6	4	1	1	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	1	0	0	0	0	0	1	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
<i>0.51</i>	<i>0.27</i>	<i>0.13</i>	<i>0.00</i>

February

Breach	Slap	Float	Fluke Up
<i>0.93</i>	<i>1.11</i>	<i>0.00</i>	<i>0.04</i>

High aerial activity and high energy behavior.

March

Breach	Slap	Float	Fluke Up
<i>0.00</i>	<i>0.18</i>	<i>0.71</i>	<i>0.29</i>

If number of float are real whale(s) resting at the surface. Suspect floats are actually blows.

PYRAMID ROCK (O'ahu)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	4	3	1	1	1	0	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	2	2	1	2	0	0	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	4	4	4	5	3	3	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.20	0.19	0.04	0.09

February

Breach	Slap	Float	Fluke Up
0.26	0.13	0.00	0.16

March

Breach	Slap	Float	Fluke Up
0.02	0.26	0.00	0.03

MŌKAPU POINT (O‘ahu)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	1	1	0	3	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	3	7	3	2	4	1	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	2	3	0	1	2	3	0	1

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported

February

Breach	Slap	Float	Fluke Up
0.45	0.33	0.04	0.08

March

Breach	Slap	Float	Fluke Up
2.22	2.59	0.11	0.00

LANIKAI BEACH (O'ahu)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	1	2	2	0	0	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	1	1	0	0	0	1	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
-	-	-	-	-	-	-	-	-

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported

February

None reported.

March

None reported.

WAIMĀNALO (O‘ahu)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	2	0	2	0	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported

February

None reported

March

Breach	Slap	Float	Fluke Up
0.29	0.09	0.00	0.04

Volunteers reported up to nine whales in the area while counters only two. Suspicious results.

MAKAPU'U POINT (O'ahu)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	1	0	0	0	0	0	1

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	7	5	11	11	10	13	8	8

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
7	5	12	5	4	8	12	11	12

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported

February

Breach	Slap	Float	Fluke Up
0.12	0.23	0.02	0.10

March

Breach	Slap	Float	Fluke Up
0.21	0.50	0.04	0.36

HĀLONA BLOWHOLE (O‘ahu)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	2	1	0	0	1	2	4	1

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
4	2	6	1	6	8	5	2	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	2	4	5	16	16	18	9	3

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
<i>1.04</i>	<i>3.11</i>	<i>0.04</i>	<i>0.04</i>

February

Breach	Slap	Float	Fluke Up
<i>0.34</i>	<i>0.13</i>	<i>0.00</i>	<i>0.09</i>

March

Breach	Slap	Float	Fluke Up
<i>0.17</i>	<i>0.11</i>	<i>0.12</i>	<i>0.12</i>

LĀNA'I LOOKOUT (O'ahu)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	0	0	2	1	2	3	1	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	2	2	2	4	7	6	7	2

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	3	4	12	13	11	5	3	-

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
<i>1.41</i>	<i>0.67</i>	<i>1.65</i>	<i>0.21</i>

February

Breach	Slap	Float	Fluke Up
<i>0.38</i>	<i>0.31</i>	<i>0.09</i>	<i>0.57</i>

March

Breach	Slap	Float	Fluke Up
<i>0.17</i>	<i>0.17</i>	<i>0.04</i>	<i>0.30</i>

HANAUMA BAY (O'ahu)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	0	0	3	3	0	1	2	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
4	2	3	0	0	4	0	0	1

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	0	1	4	11	3	4	1	1

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
<i>0.23</i>	<i>0.63</i>	<i>0.00</i>	<i>0.29</i>

February

None recorded

March

Breach	Slap	Float	Fluke Up
<i>0.18</i>	<i>0.09</i>	<i>0.61</i>	<i>0.14</i>

Suspect blows were mistaken for floats. A high variation in number of whales seen by each pair of observers (17-59 adults, 0-23 calves), make these data difficult to interpret. Were the observers looking at the same area?

SPITTING CAVES (O'ahu)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	1	3	4	4	1	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
5	3	5	6	10	4	9	1	2

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	7	15	25	4	2	7	8	3

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported

February

Breach	Slap	Float	Fluke Up
0.26	0.16	0.31	0.41

March

Breach	Slap	Float	Fluke Up
0.00	0.26	0.04	0.13

DIAMOND HEAD (O'ahu)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	3	0	3	3	1

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	4	2	5	1	5	5	2	2

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	1	1	2	0	0	0	0	6

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported

February

Breach	Slap	Float	Fluke Up
0.49	0.48	0.02	0.02

March

Breach	Slap	Float	Fluke Up
0.13	0.00	0.00	0.13

MAGIC ISLAND (O'ahu)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	2	1	2	2	2	2	0	3

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	0	0	0	0	0	0	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported

February

None reported

March

None reported

KAKA'AKO BEACH PARK (O'ahu)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	0	2	2	2	0	2	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported

February

None reported

March

None reported

LAHILAH POINT (O‘ahu-UNOFFICIAL SITE)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	2	2	1	0	1	0	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	4	2	1	3	9	0	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
8	5	3	2	3	8	5	6	-

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
<i>0.02</i>	<i>0.34</i>	<i>0.23</i>	<i>0.41</i>

February

None reported

March

None reported

‘EWA BEACH (O‘ahu)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	1	0	0	0	0	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	3	2

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Two breaches by one whale

February

None reported

March

None reported

PUNALU’U BLACK SAND BEACH PARK (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
8	5	6	1	0	0	0	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported

February

None reported

March

None reported

KA LAE BEACH PARK (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	2	7	22	12	20	14

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	0	3	0	3	0	3	12	30

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	0	6	42	23	34	21	6	10

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.05	0.01	0.02	0.05

February

Breach	Slap	Float	Fluke Up
0.06	0.37	0.00	0.04

March

Breach	Slap	Float	Fluke Up
0.04	0.50	0.00	0.00

HO‘OKENA BEACH PARK (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	4	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	2	0	0	0	0	0	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

BEHAVIOR

January

Two breaches by one whale.

February

One breach and two fluke up dives by a mother/calf pair

March

None reported

HONAUNAU LOOKOUT (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
5	3	3	5	2	3	1	1	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
6	7	7	10	7	9	6	5	4

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	0	0	0	1	1	0	1	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported

February

Breach	Slap	Float	Fluke Up
0.05	0.35	0.18	0.30

March

Breach	Slap	Float	Fluke Up
0.00	0.25	1.75	0.00

Blows mistaken for floats?

KEAUHOU (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	2	2	0	2	1	4	1	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	1	1	1	0	0	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
1.41	0.67	1.65	0.21

February

Breach	Slap	Float	Fluke Up
0.07	0.66	0.07	0.00

Observers saw up to 13 whales but count only reports a maximum of four?

March

Breach	Slap	Float	Fluke Up
0.00	0.25	1.75	0.00

KEĀHOLE OTEC (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	1	0	0	5	5

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	1	0	1	2	5	0	2

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
6	5	2	5	6	7	7	7	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
<i>0.40</i>	<i>0.00</i>	<i>0.10</i>	<i>0.75</i>

February

Breach	Slap	Float	Fluke Up
<i>0.22</i>	<i>0.36</i>	<i>0.07</i>	<i>0.87</i>

March

Breach	Slap	Float	Fluke Up
<i>0.40</i>	<i>0.19</i>	<i>0.10</i>	<i>0.35</i>

HUALĀLAI (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	0	0	0	1	0	0	5	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	0	0	0	1	5	3	1	1

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	1	1	4	2	2	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
<i>0.261</i>	<i>0.27</i>	<i>0.00</i>	<i>0.66</i>

February

Breach	Slap	Float	Fluke Up
<i>0.44</i>	<i>0.48</i>	<i>0.02</i>	<i>1.62</i>

March

Breach	Slap	Float	Fluke Up
<i>0.15</i>	<i>0.50</i>	<i>0.35</i>	<i>0.42</i>

MILE MARKER 7 (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	1	7	5	8	4	8	7	6

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
4	9	7	12	11	0	8	8	13

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	3	4	1	1	2	3	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
<i>0.22</i>	<i>0.36</i>	<i>0.07</i>	<i>0.38</i>

February

Breach	Slap	Float	Fluke Up
<i>0.29</i>	<i>0.21</i>	<i>0.32</i>	<i>0.29</i>

March

Breach	Slap	Float	Fluke Up
<i>0.04</i>	<i>0.17</i>	<i>0.04</i>	<i>0.38</i>

PU‘UKOHOLĀ HEIAU (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
4	7	3	2	10	5	6	6	3

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
13	11	9	8	6	2	5	4	10

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
4	5	4	4	5	4	4	3	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
<i>0.14</i>	<i>0.76</i>	<i>0.06</i>	<i>0.30</i>

February

None reported.

March

Breach	Slap	Float	Fluke Up
<i>0.07</i>	<i>0.52</i>	<i>0.10</i>	<i>0.02</i>

LAPAKAHI STATE PARK (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
4	8	10	8	3	5	5	3	6

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
7	11	7	11	14	9	9	3	8

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
6	7	3	5	6	1	1	1	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.11	0.45	0.03	0.25

February

Breach	Slap	Float	Fluke Up
0.09	0.46	0.00	0.21

March

Breach	Slap	Float	Fluke Up
0.15	0.72	0.00	0.47

KAPA'A BEACH PARK (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
30	16	18	8	11	5	7	6	11

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
16	14	12	17	8	15	11	12	16

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
5	4	0	2	2	0	1	2	2

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
1.83	0.90	0.10	0.43

February

Breach	Slap	Float	Fluke Up
0.32	0.27	0.16	0.46

March

Breach	Slap	Float	Fluke Up
0.37	0.56	0.00	0.59

OLD COAST GUARD ROAD (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
8	13	10	10	10	10	8	10	11

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
8	10	11	11	14	16	8	7	4

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
9	7	7	9	7	0	0	0	2

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported.

February

Breach	Slap	Float	Fluke Up
0.99	0.87	0.19	0.07

March

None reported.

‘UPOLU POINT (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
8	13	15	22	20	20	11	10	10

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
21	18	28	28	20	30	27	26	13

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
4	3	3	2	5	1	4	7	5

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.59	0.51	0.00	0.09

February

Breach	Slap	Float	Fluke Up
1.42	2.27	0.06	1.27

March

None reported.

WAIPI‘O VALLEY LOOKOUT (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	8	2	0	0	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	2	0	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.00	0.11	0.00	0.00

February

None reported.

March

None reported.

LAUPĀHOEHOE SCENIC LOOKOUT (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	3	5	3	2	2	2	9	6

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	4	1	0	0	0	0	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	2	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported.

February

None reported.

March

Breach	Slap	Float	Fluke Up
0.67	0.00	0.33	0.33

ONEKAHAKAHA BEACH PARK (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
9	15	9	21	19	0	0	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	0	1	0	0	0	0	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
17	28	7	3	8	6	22	19	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
1.14	0.14	0.00	0.03

February

None reported.

March

Breach	Slap	Float	Fluke Up
0.66	0.15	0.01	0.02

KUMAKAHI LIGHTHOUSE (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	2	2	0	0	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
9	15	10	17	16	9	27	46	-

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	3	0	0	0	1

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.25	0.00	0.63	2.63

February

None reported.

March

Breach	Slap	Float	Fluke Up
0.18	0.71	0.00	0.76

KAHENA LOOKOUT (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	1	2	2	1	0	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported.

February

Breach	Slap	Float	Fluke Up
0.50	0.00	0.00	0.25

March

None reported.

KA'ENA POINT (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	2	1	0	0	0	0	2

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	1	3	3	0	0	0	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	1	1	0	0	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported.

February

None reported.

March

None reported.

PAUKA'A POINT (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
5	3	6	0	6	0	0	8	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
13	11	18	25	41	37	78	56	17

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
10	6	4	0	0	0	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.94	0.35	0.00	0.76

February

None reported.

March

Breach	Slap	Float	Fluke Up
0.50	5.20	8.20	0.30

Blows were mistaken for floats?

O'ŌKALA (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	1	3	3	3	2	3	6	5

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
5	7	4	4	4	2	2	1	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	0	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported.

February

Breach	Slap	Float	Fluke Up
<i>0.10</i>	<i>0.37</i>	<i>0.76</i>	<i>0.00</i>

Blows were mistaken for floats?

March

None reported.

ROYAL KONA (Big Island)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	3	2	3	3	0	1	2	1

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	1	1	2	0	0	0	1	7

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	1	1	1	0	0	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.13	0.39	0.02	0.29

February

Breach	Slap	Float	Fluke Up
0.30	0.10	0.00	0.10

March

Breach	Slap	Float	Fluke Up
0.00	0.00	0.00	0.00

LUMAHA'I LOOKOUT (Kaua'i)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
4	1	0	3	1	1	0	0	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	3	4	4	5	5	3	1	3

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	2	1	0	1	1	0	0	1

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
<i>2.70</i>	<i>0.10</i>	<i>0.50</i>	<i>0.00</i>

February

Breach	Slap	Float	Fluke Up
<i>0.99</i>	<i>0.65</i>	<i>1.75</i>	<i>0.17</i>

March

Breach	Slap	Float	Fluke Up
<i>0.33</i>	<i>1.00</i>	<i>0.83</i>	<i>0.00</i>

PRINCEVILLE (Kaua'i)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
4	2	3	4	4	0	1	3	-

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
5	9	5	7	6	9	9	4	-

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	3	0	3	0	1	0	0	-

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.75	2.08	0.08	0.33

February

Breach	Slap	Float	Fluke Up
0.44	1.15	0.02	0.23

March

Breach	Slap	Float	Fluke Up
0.46	0.85	0.00	0.00

KĪLAUEA LIGHTHOUSE (Kaua‘i)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	2	5	4	2	4	4	6	3

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
5	5	6	4	7	9	11	11	10

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	4	1	6	7	3	6	6	7

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.63	0.39	0.00	0.09

February

Breach	Slap	Float	Fluke Up
0.16	0.21	0.05	0.16

March

Breach	Slap	Float	Fluke Up
0.92	2.31	0.38	0.46

CRATER HILL EAST (Kaua‘i)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	1	4	4	3	1	1	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
7	7	8	7	8	7	10	12	11

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	1	1	2	4	0	1	2	3

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.20	0.25	0.00	0.00

February

Breach	Slap	Float	Fluke Up
0.13	0.13	0.04	0.06

March

Breach	Slap	Float	Fluke Up
0.13	0.00	0.06	0.19

KAPA'A LOOKOUT (Kaua'i)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	0	1	0	0	0	0	1	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
4	8	2	5	11	3	7	6	3

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	2	0	2	2	4	5	6	2

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
<i>0.60</i>	<i>0.10</i>	<i>0.10</i>	<i>0.00</i>

February

Breach	Slap	Float	Fluke Up
<i>0.07</i>	<i>0.19</i>	<i>0.06</i>	<i>0.05</i>

March

Breach	Slap	Float	Fluke Up
<i>0.17</i>	<i>0.57</i>	<i>0.00</i>	<i>0.22</i>

AHUKINI LANDING (Kaua'i)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	8	11	3	2	2	0	0	30

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	13	10	11	2	2	0	12	13

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	9	5	3	0	2	2	0	4

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

None reported.

February

Breach	Slap	Float	Fluke Up
<i>0.54</i>	<i>0.57</i>	<i>0.34</i>	<i>0.57</i>

March

Breach	Slap	Float	Fluke Up
<i>0.17</i>	<i>0.57</i>	<i>0.00</i>	<i>0.22</i>

NININI POINT (Kaua'i)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	2	2	2	3	3	3	4	5

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
5	6	5	5	9	0	4	4	5

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	4	4	9	6	6	2	3	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.26	0.21	0.04	0.11

February

Breach	Slap	Float	Fluke Up
0.09	0.68	0.23	0.23

March

Breach	Slap	Float	Fluke Up
0.00	0.16	0.00	0.65

MĀHĀ‘ULEPŪ HA‘ULA (Kaua‘i)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	3	10	2	5	5	3	3	3

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
8	9	5	6	8	7	5	10	8

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	6	7	8	8	9	2	4	3

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.71	0.20	0.10	0.03

February

Breach	Slap	Float	Fluke Up
0.13	0.19	0.02	0.14

March

Breach	Slap	Float	Fluke Up
0.02	0.55	0.00	0.43

MĀHĀ‘ULEPŪ MAKAWAHI (Kaua‘i)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	2	0	0	0	2	0	2

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
9	12	2	7	7	5	7	7	10

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	2	5	4	6	7	4	8	4

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
0.50	0.02	0.00	0.00

February

Breach	Slap	Float	Fluke Up
0.13	0.02	0.06	0.16

March

Breach	Slap	Float	Fluke Up
0.66	4.45	0.00	0.43

MAKAHŪ'ENA (Kaua'i)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
7	11	14	10	1	9	10	12	0

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
9	8	5	7	4	-	10	5	11

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	0	2	5	4	4	7	3	4

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
<i>0.59</i>	<i>0.41</i>	<i>0.07</i>	<i>0.37</i>

February

Breach	Slap	Float	Fluke Up
<i>0.15</i>	<i>0.08</i>	<i>0.02</i>	<i>0.45</i>

March

Breach	Slap	Float	Fluke Up
<i>0.64</i>	<i>1.09</i>	<i>0.04</i>	<i>0.42</i>

PO‘IPŪ BEACH PARK (Kaua‘i)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	1	2	2	0	2	4	4	1

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	2	5	0	1	5	9	4	12

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	0	0	0	0	8	8	4	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
<i>0.45</i>	<i>0.88</i>	<i>0.17</i>	<i>0.16</i>

February

Breach	Slap	Float	Fluke Up
<i>0.05</i>	<i>0.05</i>	<i>0.00</i>	<i>0.23</i>

March

Breach	Slap	Float	Fluke Up
<i>0.64</i>	<i>1.09</i>	<i>0.04</i>	<i>0.42</i>

KA'IWA POINT (Kaua'i)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
4	5	4	8	8	6	4	5	3

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	4	3	3	7	5	2	1	1

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	2	3	4	8	9	3	1	0

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Breach	Slap	Float	Fluke Up
<i>0.13</i>	<i>0.36</i>	<i>0.02</i>	<i>0.11</i>

February

Breach	Slap	Float	Fluke Up
<i>0.06</i>	<i>0.03</i>	<i>0.00</i>	<i>0.09</i>

March

Breach	Slap	Float	Fluke Up
<i>0.03</i>	<i>0.23</i>	<i>0.00</i>	<i>0.10</i>

WAIMEA CANYON DRIVE (Kaua'i)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
1	2	1	4	0	2	2	0	2

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
-	-	-	-	-	-	-	-	-

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
-	-	-	-	-	-	-	-	-

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Not reported.

February

Not reported.

March

Not reported.

ST. THERESA SCHOOL (Kaua'i)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
2	2	0	1	0	0	0	0	2

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
3	0	0	0	0	0	0	11	0

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
-	-	-	-	-	-	-	-	-

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Not reported.

February

Not reported.

March

Not reported.

PACIFIC MISSILE RANGE FACILITY (Kaua'i)

COUNT RESULTS

January

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
-	-	-	-	-	-	-	-	-

February

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
7	8	7	5	4	5	2	6	4

March

0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
0	2	3	3	1	3	2	2	2

BEHAVIOR

Expressed as average number of behavioral events per whale present.

January

Not reported.

February

Not reported.

March

Not reported.

Table 1 – Summary of results for the Island of O‘ahu: January 2002

Site Name	0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
Ko' Olina	1	2	3	1	2	3	0	2	1
Mali Point	1	0	0	0	0	0	0	0	0
Makua Beach	1	0	0	0	0	0	0	0	0
Ka' ena Point	0	0	0	1	0	0	0	0	0
Ka' ena Point (NS	5	6	5	6	3	7	8	5	0
Mokuleia	8	10	4	4	0	6	4	4	4
Pua ena Point	1	0	3	3	2	2	1	0	0
Shark's Cove	0	5	5	3	0	3	10	0	5
Turtle Bay	1	0	0	0	1	2	0	0	1
Laie	1	1	0	2	1	2	2	3	3
Hau'ula	0	0	0	0	0	0	0	0	0
Kualoa	0	1	0	0	0	3	0	1	1
Pyramid Rock	3	4	3	1	1	1	0	0	0
Mokapu Point	0	0	0	1	1	0	3	0	0
Lanikai Beach	0	0	1	2	2	0	0	0	0
Waimanalo	0	0	0	0	0	0	0	0	0
Makapu'u Point	0	0	1	0	0	0	0	0	1
Halona Blowhole	1	2	1	0	0	2	2	4	0
Lanai Lookout	3	0	0	2	1	2	3	1	0
Hanauma Bay	3	0	0	3	3	0	1	2	0
Spitting Caves	0	0	0	1	3	4	4	1	0
Diamond Head	0	0	0	0	3	0	3	3	1
Magic Island	2	2	1	2	2	2	2	0	3
Kakahako	1	0	2	2	2	0	2	0	0
Lahilahi Point	2	2	2	1	0	1	0	0	0
Ewa Beach	0	0	1	0	0	0	0	0	0

Table 2 – Summary of results for the Island of O‘ahu: February 2002.

Site Name	0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
Ko' Olina	4	5	5	3	0	2	3	4	2
Mali Point	8	9	9	7	2	1	1	4	5
Makua Beach	4	4	2	1	0	0	0	0	0
Ka' ena Point	6	5	3	4	3	2	0	0	0
Ka' ena Point	0	4	4	7	7	9	6	6	0
Mokuleia	0	1	3	2	0	2	1	0	0
Pua ena Point	2	2	2	0	0	1	0	0	0
Shark's Cove	3	4	4	6	5	3	3	0	0
Turtle Bay	2	1	2	2	3	3	1	1	0
Laie	0	0	4	5	5	3	6	6	6
Hau'ula	-	-	-	-	3	1	2	2	3
Kualoa	2	2	5	3	6	4	1	1	0
Pyramid Rock	0	2	2	1	2	0	0	0	0
Mokapu Point	3	3	7	3	2	4	1	0	0
Lanikai Beach	0	0	1	1	0	0	0	1	0
Waimanalo	0	0	0	0	0	0	0	0	0
Makapu'u Point	2	7	5	11	11	10	13	8	8
Halona Blowhole	4	2	6	1	6	8	5	2	0
Lanai Lookout	3	2	2	2	4	7	6	7	2
Hanauma Bay	4	2	3	0	0	4	0	0	1
Spitting Caves	5	3	5	6	10	4	9	1	0
Diamond Head	3	4	2	5	1	5	5	2	2
Magic Island	1	0	0	0	0	0	0	0	0
Kakahako	0	0	0	0	0	0	0	0	0
Lahilahi Point	2	4	2	1	3	9	0	0	0
Ewa Beach	0	0	0	0	0	0	0	3	2

Table 3 - Summary of results for the Island of O‘ahu: March 2002.

Site Name	0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
Ko' Olina	0	0	0	0	0	0	0	0	0
Mali Point	0	0	0	0	0	0	0	0	1
Makua Beach	0	0	0	0	1	1	0	0	0
Ka' ena Point	0	0	0	0	0	0	0	0	0
Ka' ena Point	0	0	0	1	2	2	3	0	0
Mokuleia	0	4	2	2	4	3	3	4	4
Pua ena Point	0	0	0	0	1	1	0	0	0
Shark's Cove	3	1	6	4	2	1	3	3	1
Turtle Bay	3	1	0	2	0	3	3	1	0
Laie	8	4	3	3	0	2	0	1	1
Hau'ula	0	0	0	0	0	0	0	0	0
Kualoa	0	1	0	0	0	0	0	1	0
Pyramid Rock	0	0	4	4	4	5	3	3	0
Mokapu Point	2	2	3	0	1	0	3	0	1
Waimanalo	0	0	2	0	2	0	0	0	0
Makapu'u Point	7	5	12	5	4	8	12	11	12
Halona Blowhole	2	2	4	5	16	16	18	9	3
Lanai Lookout	0	3	4	12	13	11	5	3	-
Hanauma Bay	2	0	1	4	11	3	4	1	1
Spitting Caves	3	7	15	25	4	2	7	8	3
Diamond Head	1	1	1	2	0	0	0	0	6
Magic Island	0	0	0	0	0	0	0	0	0
Kakahako	0	0	0	0	0	0	0	0	0
Lahilahi Point	8	5	3	2	3	8	5	6	-
Ewa Beach	0	0	0	0	0	0	0	0	0

Table 4 - Summary of results for the Island of Hawai'i: January 2002.

Site Name	0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
Punalu'u Black Sand Beach Park	0	0	0	0	0	0	0	0	0
Ka Lae Park	0	0	0	2	7	22	12	20	14
Hookena Beach Park	0	0	0	0	0	0	4	0	0
Honaunau Lookout	5	3	3	5	2	3	1	1	0
Keauhou	0	0	0	0	0	0	0	0	0
Keahole OTEC	0	0	0	0	1	0	0	5	5
Hualalai 4-seasons	1	0	0	0	1	0	0	5	0
Mile Marker 7	1	1	7	5	8	4	8	7	6
Pu'ukohola Heiau	4	7	3	2	10	5	6	6	3
Lapakahi State Park	4	8	10	8	3	5	5	3	6
Kapa'a Beach Park	30	16	18	8	11	5	7	6	11
Old Coast Guard Road	8	13	10	10	10	10	8	10	11
Upolu Point	8	13	15	22	20	20	11	10	10
Waipo Valley Lookout	0	0	0	8	2	0	0	0	0
Laupahoehoe Scenic Lookout	1	3	5	3	2	2	2	9	6
Onekahakaha Beach Park	9	15	9	21	19	0	0	0	0
Kumakahi Lighthouse	0	0	0	2	2	0	0	0	0
Kehena Lookout	0	0	0	0	0	0	0	0	0
Ka'ena Point	0	0	2	1	0	0	0	0	2
Pauka'a Point	5	3	6	0	6	0	0	8	0
O'okala	3	1	3	3	3	2	3	6	5
Royal Kona	1	3	2	3	3	0	1	2	1

Table 5 - Summary of results for the Island of Hawai'i: February 2002.

Site Name	0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
Punalu'u Black Sand Beach Park	8	5	6	1	0	0	0	0	0
Ka Lae Park	2	0	3	0	3	0	3	12	30
Miloli'i Lookout	-	-	-	-	-	-	-	-	-
Hookena Beach Park	1	2	0	0	0	0	0	0	0
Honaunau Lookout	6	7	7	10	7	9	6	5	4
Keauhou	0	2	2	0	2	1	4	1	0
Keahole OTEC	0	0	1	0	1	2	5	0	2
Hualalai 4-seasons	1	0	0	0	1	5	3	1	1
Mile Marker 7	4	9	7	12	11	0	8	8	13
Pu'uukohola Heiau	13	11	9	8	6	2	5	4	10
Lapakahi State Park	7	11	7	11	14	9	9	3	8
Kapa'a Beach Park	16	14	12	17	8	15	11	12	16
Old Coast Guard Road	8	10	11	11	14	16	8	7	4
Upolu Point	21	18	28	28	20	30	27	26	13
Waipo Valley Lookout	0	0	0	0	0	2	0	0	0
Laupahoehoe Scenic Lookout	2	4	1	0	0	0	0	0	0
Onakahakaha Beach Park	1	0	1	0	0	0	0	0	0
Kumakahi Lighthouse	9	15	10	17	16	9	27	46	
Kehena Lookout	0	0	1	2	2	1	0	0	0
Ka'ena Point	0	0	1	3	3	0	0	0	0
Pauka'a Point	13	11	18	25	41	37	78	56	17
O'okala	5	7	4	4	4	2	2	1	0
Royal Kona	1	1	1	2	0	0	0	1	7

Table 6 - Summary of results for the Island of Hawai'i: March 2002.

Site Name	0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
Punalu'u Black Sand Beach Parl	0	0	0	0	0	0	0	0	0
Ka Lae Park	3	0	6	42	23	34	21	6	10
Mibli'I Lookout	-	-	-	-	-	-	-	-	-
Hookena Beach Park	0	0	0	0	0	0	0	0	0
Honaunau Lookout	1	0	0	0	1	1	0	1	0
Keauhou	0	1	1	1	0	0	0	0	0
Keahole OTEC	6	5	2	5	6	7	7	7	0
Hualalai 4-seasons	0	1	1	4	2	2	0	0	0
Mile Marker 7	3	3	4	1	1	2	3	0	0
Pu'ukohola Heiau	4	5	4	4	5	4	4	3	0
Lapakahi State Park	6	7	3	5	6	1	1	1	0
Kapa'a Beach Park	5	4	0	2	2	0	1	2	2
Old Coast Guard Road	9	7	7	9	7	0	0	0	2
Upolu Point	4	3	3	2	5	1	4	7	5
Waipo Valley Lookout	0	0	0	0	0	0	0	0	0
Laupahoehoe Scenic Lookout	0	0	0	0	0	2	0	0	1
Onakahakaha Beach Park	17	28	7	3	8	6	22	19	0
Kumakahi Lighthouse	0	0	0	0	3	0	0	0	1
Kehena Lookout	0	0	0	0	0	0	0	0	0
Ka'ena Point	0	0	1	1	0	0	0	0	0
Pauka'a Point	10	6	4	0	0	0	0	0	0
O'okala	0	0	0	0	0	0	0	0	0
Royal Kona	0	0	0	1	1	1	0	0	0

Table 7 - Summary of results for the Island of Kaua'i: January 2002.

Site Name	0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
Lumahai Lookout	4	1	0	3	1	1	0	0	0
Princeville	4	2	3	4	4	0	1	3	-
Kilauea Lighthouse	2	2	5	4	2	4	4	6	3
Crater Hill East	0	0	1	4	4	3	1	1	0
Kapaa Lookout	1	0	1	0	0	0	0	1	0
Ahukini Landing	3	8	11	3	2	2	0	0	30
Ninini Point	1	2	2	2	3	3	3	4	5
Mahaulepu Haula	2	3	10	2	5	5	3	3	3
Mahaulepu Makawehi	0	0	2	0	0	0	2	0	2
Makahuena	7	11	14	10	1	9	10	12	0
Poipu Beach Park	3	1	2	2	0	2	4	4	1
Kaiwa Point	4	5	4	8	8	6	4	5	3
Waimea Canyon Drive	1	2	1	4	0	2	2	0	2
Kekaha	2	2	0	1	0	0	0	0	2

Table 8 - Summary of results for the Island of Kaua'i: February 2002.

Site Name	0800-0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
Lumahai Lookout	3	3	4	4	5	5	3	1	3
Princeville	5	9	5	7	6	9	9	4	-
Kilauea Lighthouse	5	5	6	4	7	9	11	11	10
Crater Hill East	7	7	8	7	8	7	10	12	11
Kapaa Lookout	4	8	2	5	11	3	7	6	3
Ahukini Landing	3	13	10	11	2	2	0	12	13
Ninini Point	5	6	5	5	9	0	4	4	5
Mahaulepu Haula	8	9	5	6	8	7	5	10	8
Mahaulepu Makawehi	9	12	2	7	7	5	7	7	10
Makahuena	9	8	5	7	4	-	10	5	11
Poipu Beach Park	0	2	5	0	1	5	9	4	12
Kaiwa Point	2	4	3	3	7	5	2	1	1
Waimea Canyon Drive	-	-	-	-	-	-	-	-	-
Kekaha	3	0	0	0	0	0	0	11	0
PMRF	7	8	7	5	4	5	2	6	4

Table 9 - Summary of results for the Island of Kaua'i: March 2002.

Site Name	0800	0815	0830-0845	0900-0915	0930-0945	1000-1015	1030-1045	1100-1115	1130-1145	1200-1215
Lumahai Lookout	2	2	1	0	1	1	0	0	1	
Princeville	3	3	0	3	0	1	0	0	-	
Kilauea Lighthouse	1	4	1	6	7	3	6	6	7	
Crater Hill East	1	1	1	2	4	0	1	2	3	
Kapaa Lookout	0	2	0	2	2	4	5	6	2	
Ahukini Landing	2	9	5	3	0	2	2	0	4	
Ninini Point	3	4	4	9	6	6	2	3	0	
Mahaulepu Haula	3	6	7	8	8	9	2	4	3	
Mahaulepu Makaweh	0	2	5	4	6	7	4	8	4	
Makahuena	1	0	2	5	4	4	7	3	4	
Poipu Beach Park	0	0	0	0	0	8	8	4	0	
Kaiwa Point	2	2	3	4	8	9	3	1	0	
Waimea Canyon Driv	-	-	-	-	-	-	-	-	-	
Kekaha	-	-	-	-	-	-	-	-	-	
St Theresa	-	-	-	-	-	-	-	-	-	
PMRF	0	2	3	3	1	3	2	2	2	

Table 10 – Comparison of count results among the three islands: O‘ahu, Hawai‘i and Kaua‘i.

		O‘ahu	Hawai‘i	Kaua‘i
January	Number of Whales	20-45	80-110	30-56
	Average per Site	1.26 (S.E.=0.08)	4.02 (S.E.=0.29)	2.93 (S.E.=0.34)
February	Number of Whales	29-82	118-196	62-94
	Average per Site	2.48 (S.E.=0.18)	6.72 (S.E.=0.48)	5.70 (S.E.=0.30)
March	Number of Whales	33-71	21-80	18-54
	Average per Site	2.21 (S.E.=0.15)	2.64 (S.E.=0.19)	2.21 (S.E.=0.15)

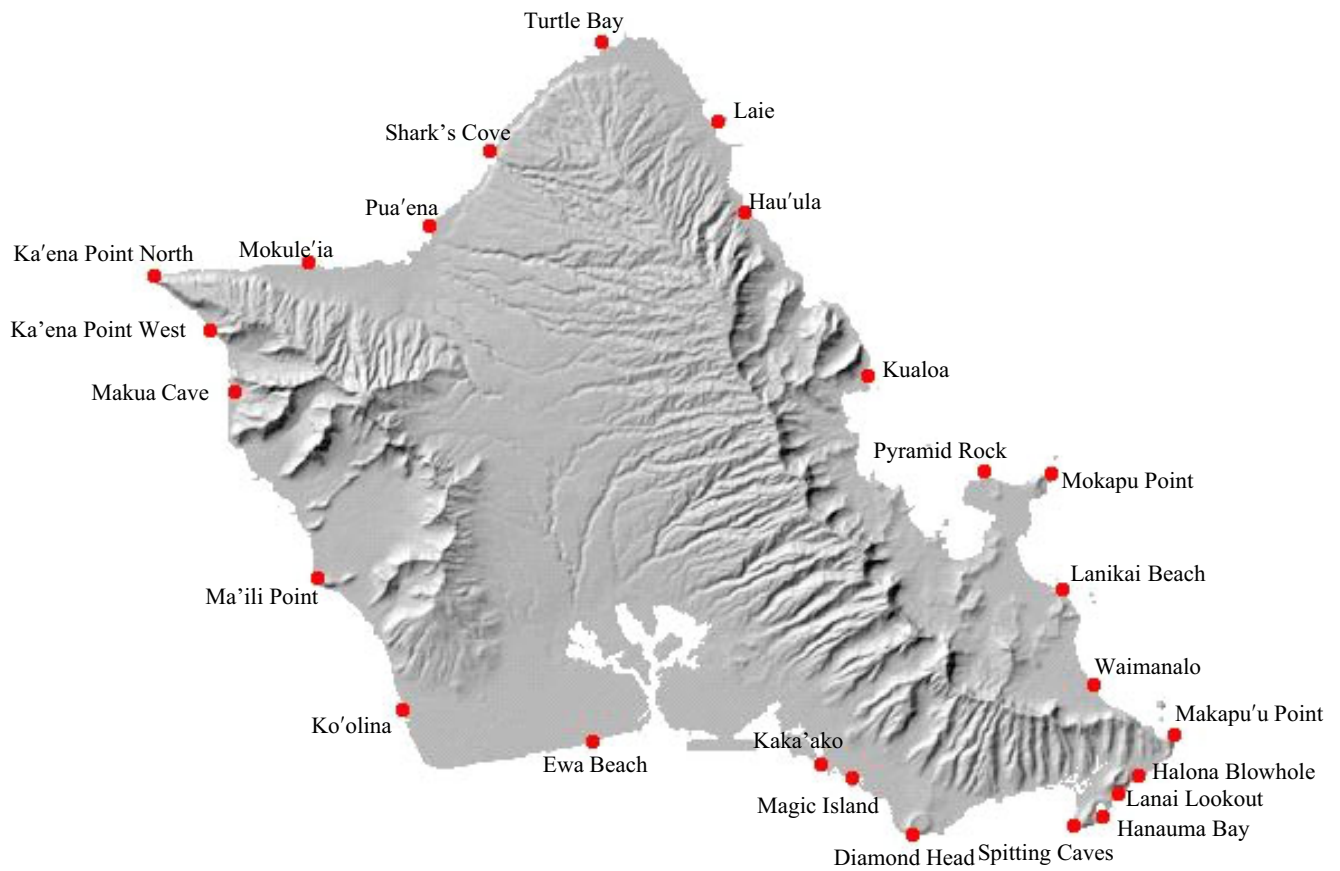


Figure 1 – Map of O'ahu Sites

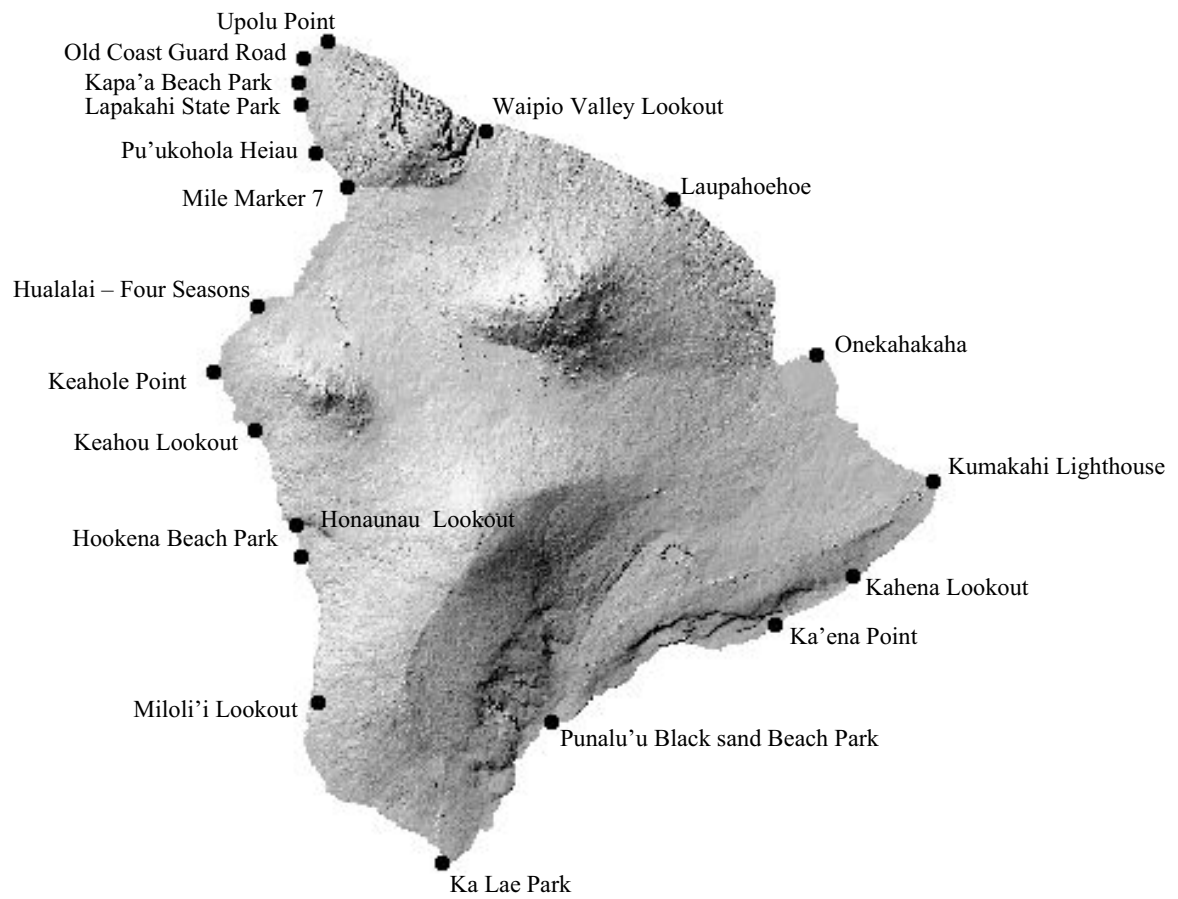


Figure 2 – Map of Hawai'i Sites

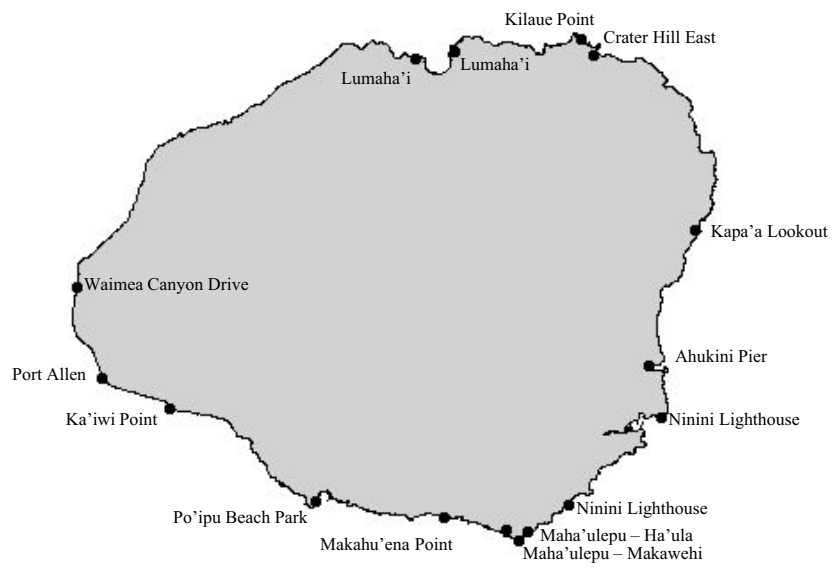


Figure 3 – Map of Kaua'i Sites

Date _____ Site # _____ Site Name _____

Site Leader _____ Phone # _____ - _____

Observe area for 15 minutes then tally all observations:

Time	Species	Adults	Calves	Comments
0800	Humpback Whales			
	Spinner Dolphins			
	Other Species			Specify species here if known:
	Other Species			Specify species here if known:

Time	Species	Adults	Calves	Comments
0830	Humpback Whales			
	Spinner Dolphins			
	Other Species			Specify species here if known:
	Other Species			Specify species here if known:

Time	Species	Adults	Calves	Comments
0900	Humpback Whales			
	Spinner Dolphins			
	Other Species			Specify species here if known:
	Other Species			Specify species here if known:

Time	Species	Adults	Calves	Comments
0930	Humpback Whales			
	Spinner Dolphins			
	Other Species			Specify species here if known:
	Other Species			Specify species here if known:

Figure 4 – Census Sheet

ISLAND _____

SITE NUMBER /NAME: #_____/

Name of Observer _____

Date _____

Address _____

Start Time _____

End Time _____

Phone Number _____

E-Mail _____

Observe activity of whales at your site:

Time	Number Of Adults	Number Of Calves	Breach	Slap (Tail, fluke, head)	Float (not moving)	Fluke Up Dive
0930-1000						
1001-1030						
1031-1100						
1101-1130						
1131-1200						

Describe the behavior if none of this is occurring. Are the whales moving out of the area? Are they diving for long periods of time?

Figure 5 – Behavior Sheet

SITE NAME _____
Vounteer Name _____

SITE NUMBER _____

DRAW A MAP OF YOUR SITE AND SPECIFY YOUR OBSERVATION SPOT

At **exactly 1030** map all the pods present at your site using a dot. Next to the dot write number of whales in the pod (could be only one), and if there is a mother/calf pair write next to the number (M/C) or for a mother/calf/escort write (M/C/E) and estimate their distance from you using the distance estimation sheet included in your package. Draw lines from you to the whale and write the distance along the line. See example in the back of this sheet.

Figure 6 – Map Sheet

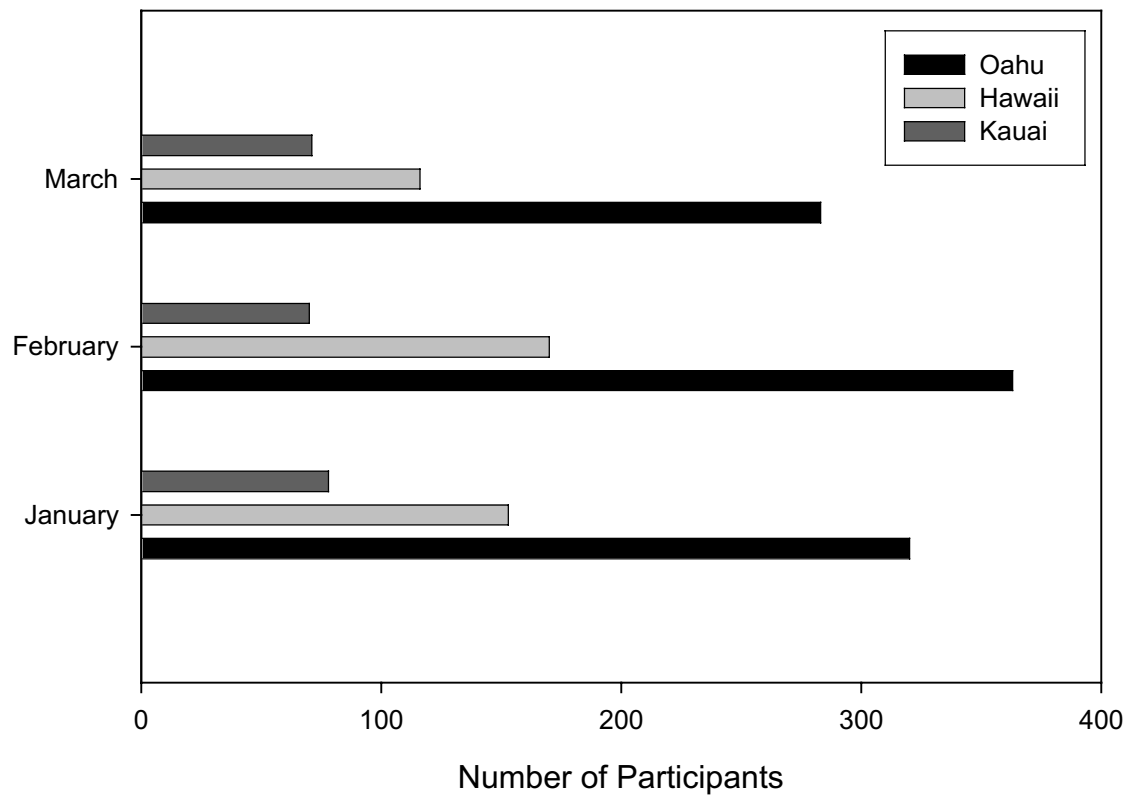


Figure 7 – Number of volunteer participants to the 2002 Annual Sanctuary Ocean Count for the islands of O‘ahu, Hawai‘i, and Kaua‘i.

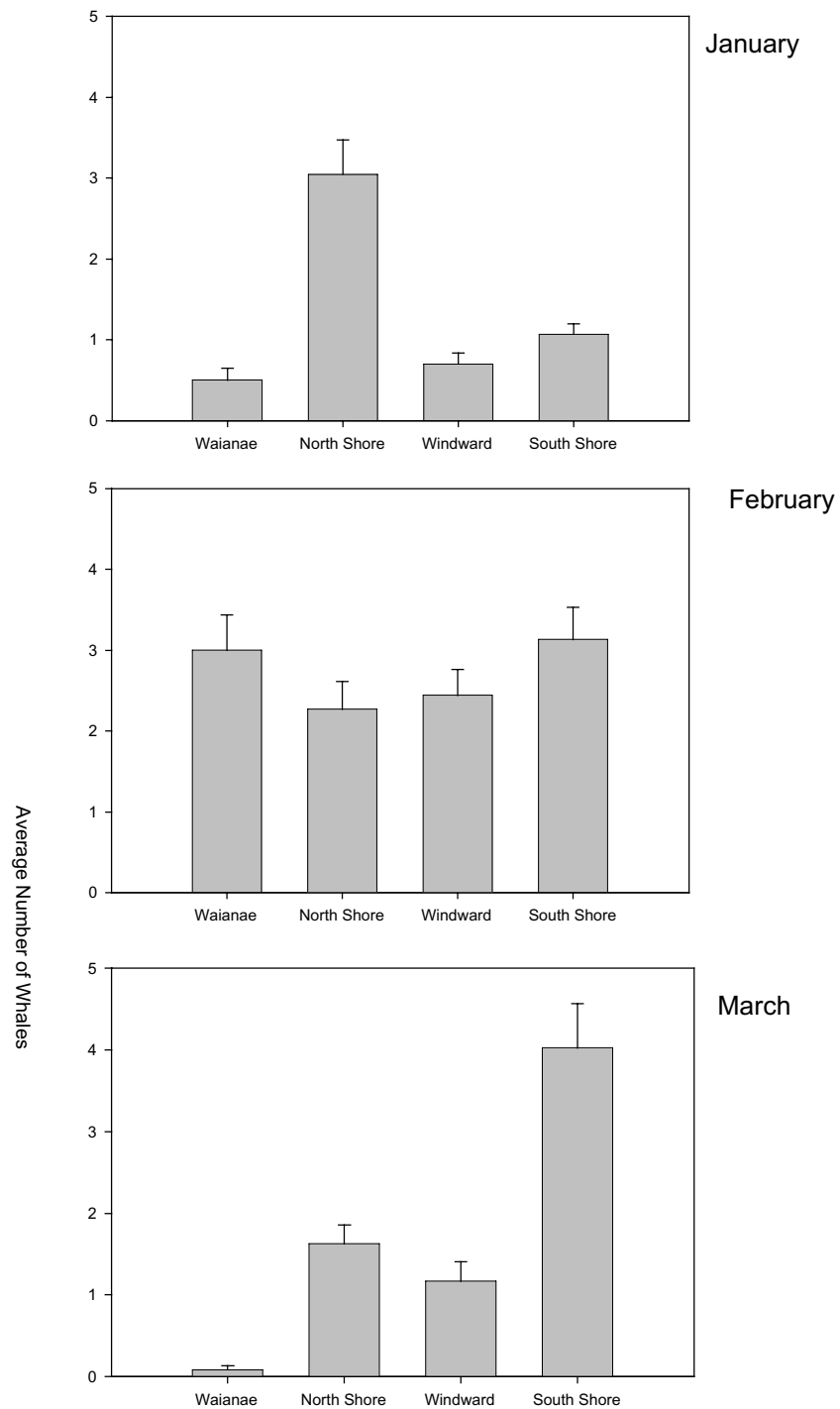


Figure 8 – Average number of whales per site for the four main coastlines of O‘ahu during January, February and March 2002 between 0800 and 1215.

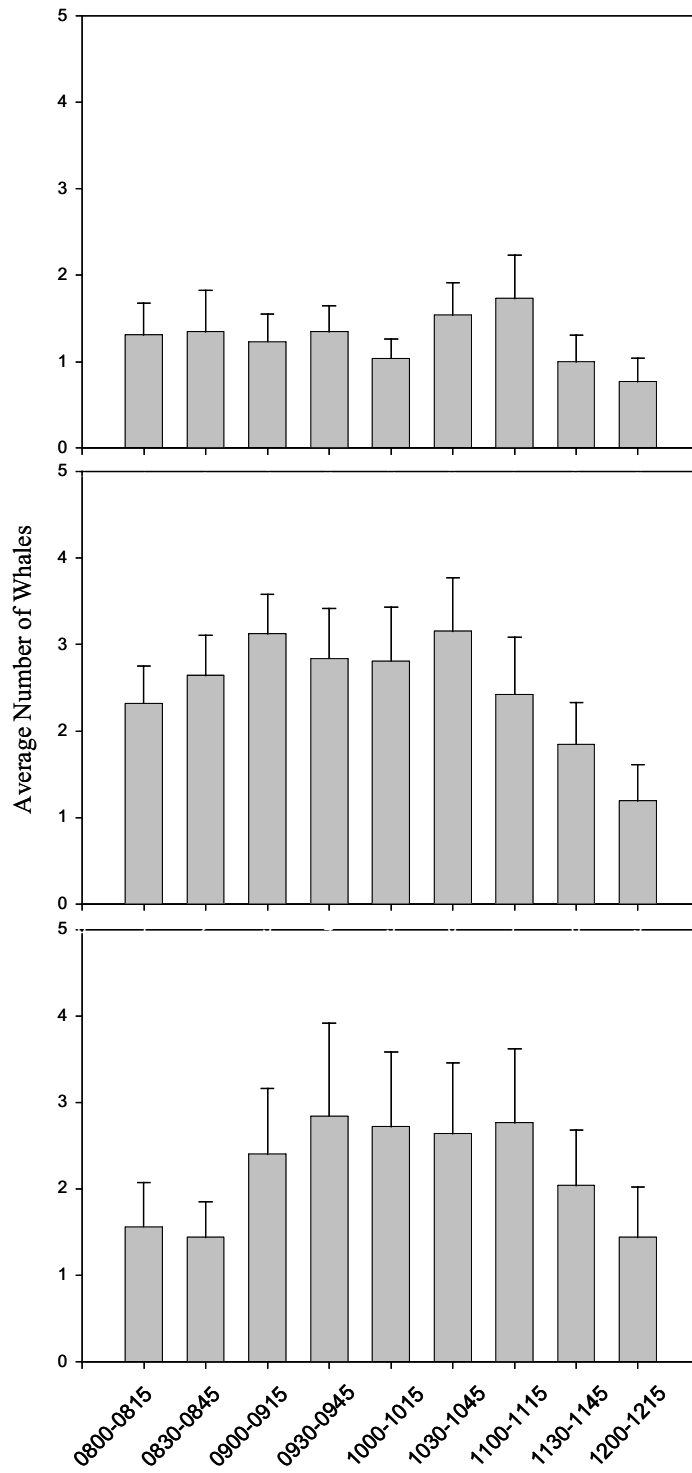


Figure 9 – Average number of whales counted for all sites during each census time slot during January, February and March 2002.

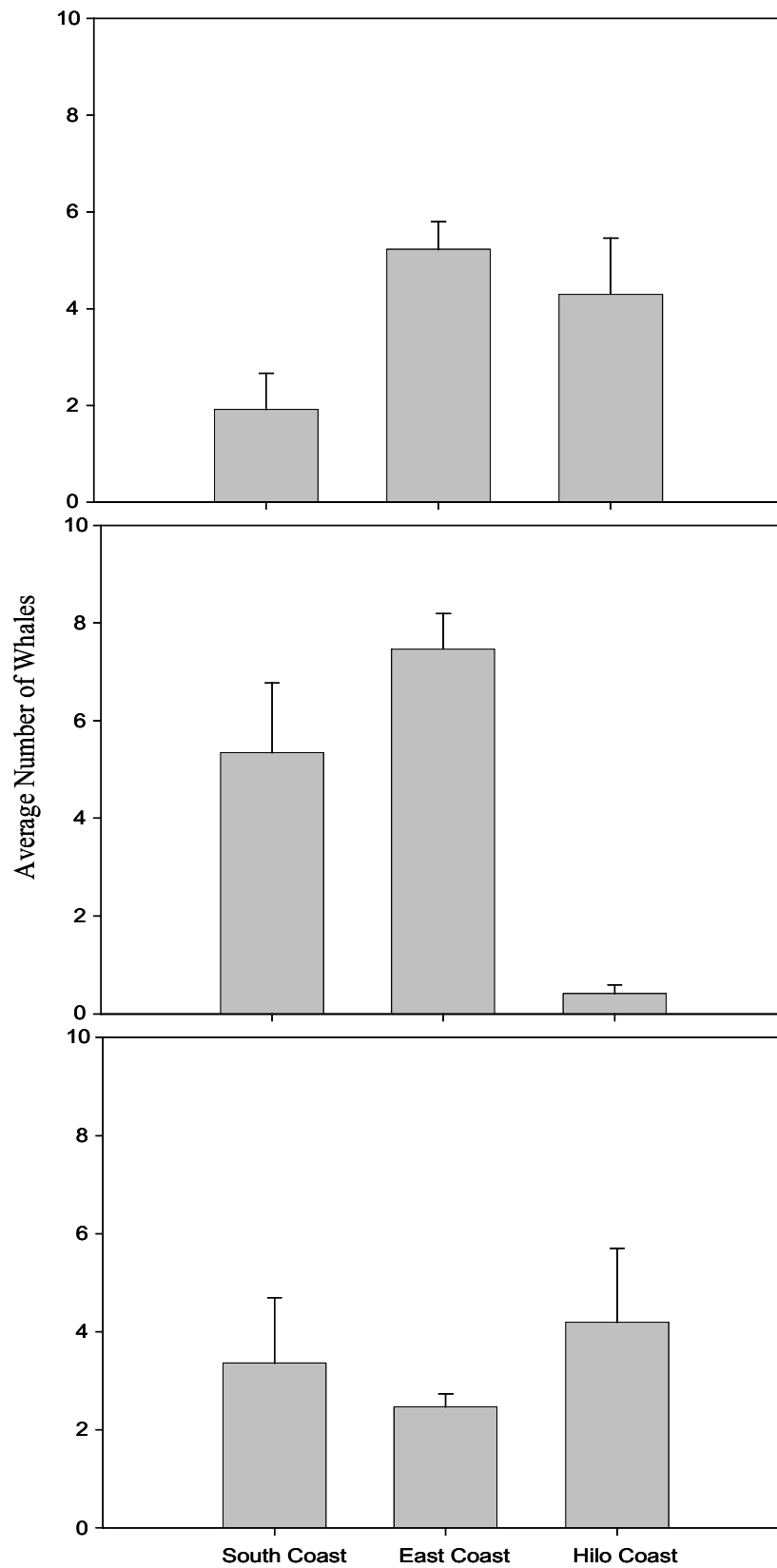


Fig. 10 – Average whales between South Coast, Kona Coast and Hilo Coast sites during Jan, Feb, Mar 2002

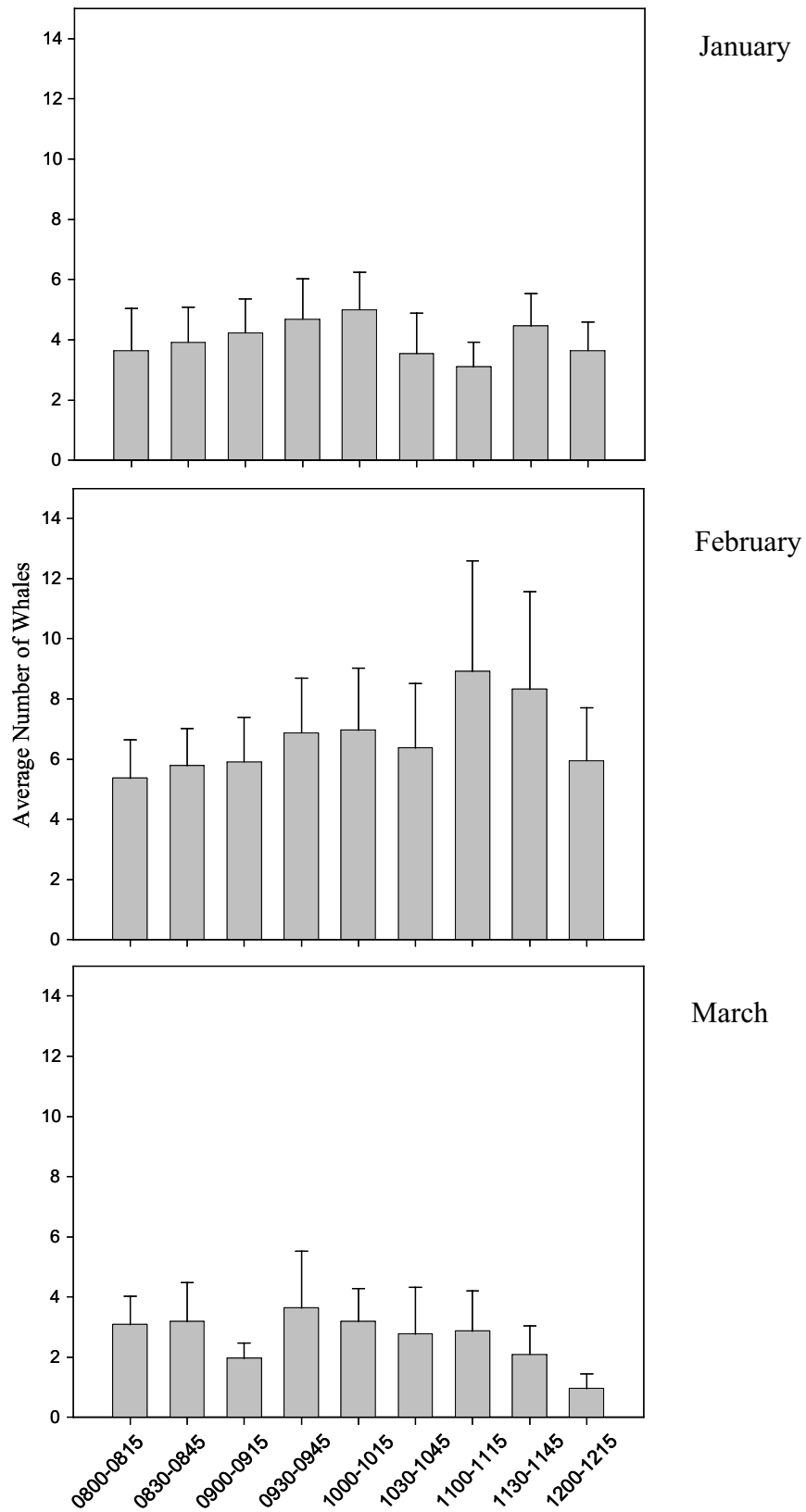


Fig. 11 – Average number of whales counted for all sites during each census time slot during January, February and March 2002.on the Island of Hawai‘i.

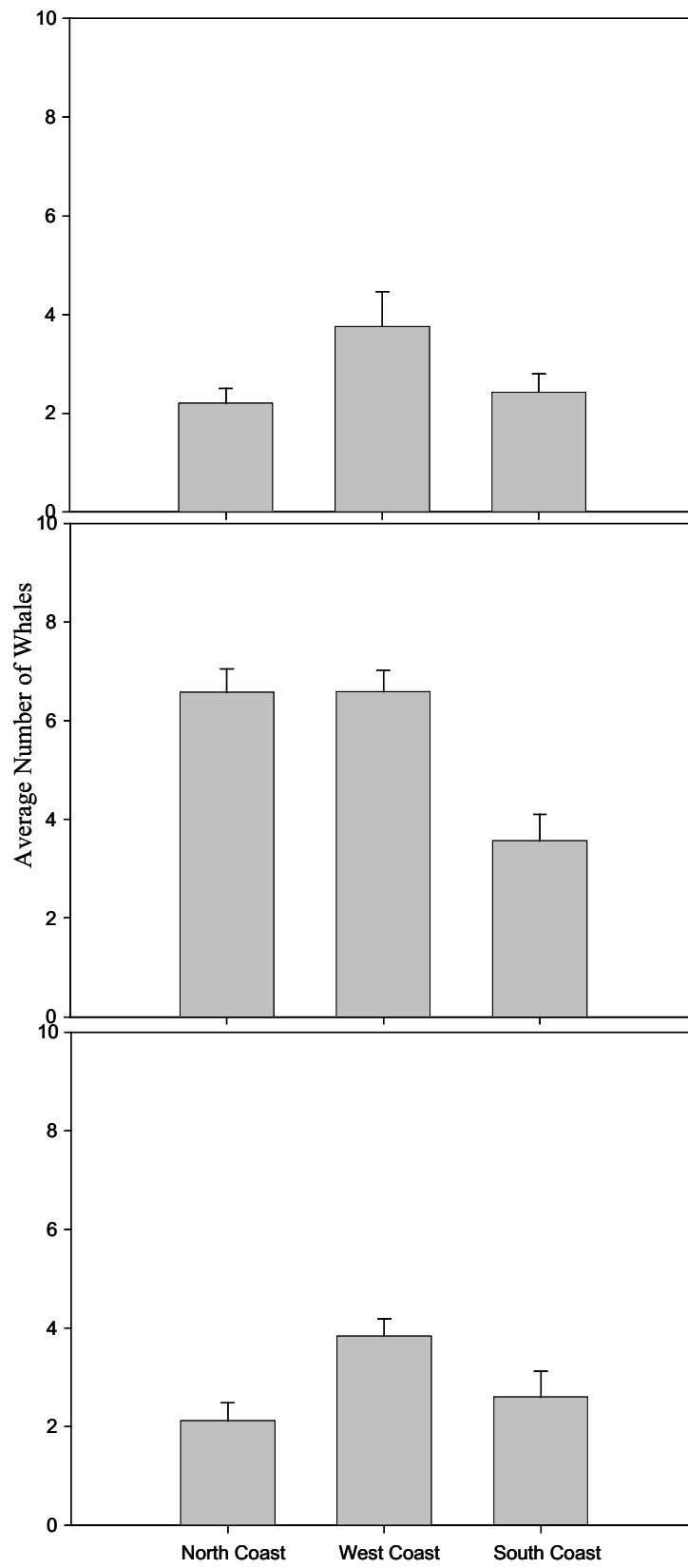


Fig. 12 – Average whales for all sites along three coastlines around Kaua‘i

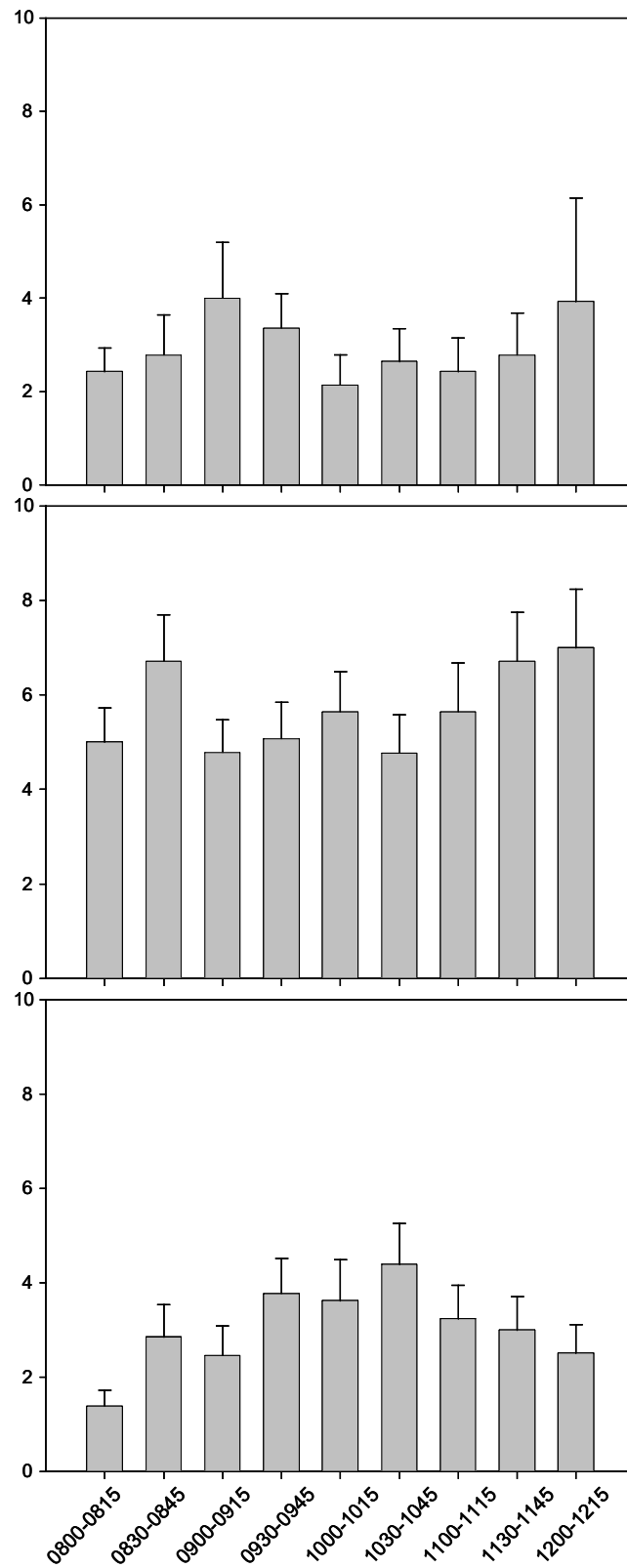


Fig. 13 – Average number of whales counted for all sites during each census time slot during January, February and March 2002 on the Island of Kaua‘i.