

SANCTUARY OCEAN COUNT

SITE MAP INSTRUCTIONS

Prior to 10:30 a.m., the site leader should assign 2 volunteers to complete this task. This activity will be conducted from 10:30 a.m. to 11:00 a.m.

1. Prior to 10:30 a.m., draw a map of your site, with special care given to the geographic layout of the area. Note which direction is north, south, east and west.
2. Record the elevation of the site in the space provided. This information is available in the site description section of the handbook.
3. Complete the visibility section on the Site Map based on conditions between 10:30 a.m. and 11:00 a.m.
4. Mark your position at 10:30 a.m. and do not change this position until you have finished mapping all the whales present. Scan the water from 10:30 a.m. to 11:00 a.m.
5. Draw a circle for the position of each of the whales you spot. If you are recording a single whale, draw a small circle. Draw a larger circle for groups of more than one whale. Indicate how many whales each circle represents either next to, or inside of each circle.
6. If the circle represents a mother/calf pair, indicate this with "M/C." For a mother/calf/escort write "M/C/E."
7. Estimate your distance from the whales using the distance estimation table (explained below). It will be necessary to know the approximate elevation of your site (available online).
8. Draw lines from your location on the map to the whale and write the distance along the line.

How to measure the distance of a whale from the observer:

The distance between the observed whale and the observer will be calculated using a ruler and a distance table (see next page).

Using the Ruler:

1. The ruler is to be held vertically in one hand outstretched to the target whale's location. The 0 inch mark on the ruler is to be lined up with the horizon.
2. When the target is spotted, slide the encircling index card up or down the ruler so that the black line on the index card lines up with the whale.
3. Use your thumb to hold the index card in place and note the measurement on the ruler (in sixteenths of an inch).

Using the Table:

1. Determine your observation elevation by adding the elevation of your ocean count site (in feet above sea level) plus an additional 5 feet (to account for height of the observer's outstretched arm above the ground). Find the nearest observation elevation on the table. This is the second row of numbers starting at 10 feet.
2. Once you have found your nearest observation elevation, search down the column for the measurement you have taken from the ruler (in sixteenths of an inch).
3. Look over to the corresponding number (along the same row) in column one. This is the distance in miles between the observer and the whale. This number can be expressed as a range (example: .78 to .95 miles)
4. Note this distance on your observation form.

For additional help see the example on the back of the Map Sheet.

This is a distance-estimating cross-reference table for selected values of distance and elevation.

The distance (in miles) to an object of interest is listed in the left column.
 The observation elevation above sea level (in feet) is listed along the top row. The distance to the horizon is listed above each elevation value for reference.
 The calculated value for the "apparent space" (between "the horizon line" and an object of interest) is listed at the intersection of each row and column combination.
 Note: The calculated value for the "apparent space" is rounded to the nearest 1/16th of an inch.

- The use of the table requires the following steps:
- 1). The "apparent space", between the horizon line and the line of sight to the object of interest, is measured with a ruler held 24 inches from the observer's eyes.
 - 2). In the column labeled with the value nearest to that of the observer's elevation above sea level, locate the value nearest to that of the "apparent space" measured.
 - 3). In the left-hand column, on the same row as the selected value of "apparent space", is listed the value to the object of interest (in miles).
- Note: Although accuracy may be improved with the use of interpolation, accuracy will be most improved by careful measurement of the "apparent space".
 This is especially true when the "apparent space" is small and the distance to the object of interest is large.

Distance in miles	4.3	6.0	7.4	8.5	9.5	10.4	11.3	12.0	12.8	13.5	15.4	16.8	18.6	20.4	21.9	24.6	26.9	30.1	33.0
	10	20	30	40	50	60	70	80	90	100	130	155	190	230	265	335	400	500	600
0.25	3/16	6/16	8/16	11/16	14/16	1 1/16	1 4/16	1 7/16	1 10/16	1 13/16	2 5/16	2 12/16	3 7/16	4 2/16	4 12/16	6	7 3/16	9	10 13/16
0.28	2/16	5/16	8/16	10/16	13/16	15/16	1 2/16	1 5/16	1 7/16	1 10/16	2 2/16	2 8/16	3 2/16	3 12/16	4 5/16	5 8/16	6 9/16	8 3/16	9 13/16
0.30	2/16	5/16	7/16	9/16	12/16	14/16	1	1 3/16	1 5/16	1 8/16	1 15/16	2 5/16	2 13/16	3 6/16	3 15/16	5	5 15/16	7 7/16	8 15/16
0.33	2/16	4/16	6/16	8/16	11/16	13/16	15/16	1 1/16	1 3/16	1 5/16	1 12/16	2 1/16	2 9/16	3 1/16	3 9/16	4 8/16	5 6/16	6 12/16	8 2/16
0.37	2/16	4/16	6/16	8/16	10/16	12/16	13/16	15/16	1 1/16	1 3/16	1 9/16	1 14/16	2 5/16	2 13/16	3 4/16	4 2/16	4 14/16	6 2/16	7 6/16
0.40	2/16	3/16	5/16	7/16	9/16	10/16	12/16	14/16	1	1 2/16	1 7/16	1 11/16	2 2/16	2 9/16	2 15/16	3 12/16	4 7/16	5 9/16	6 11/16
0.44	1/16	3/16	5/16	6/16	8/16	9/16	11/16	13/16	14/16	1	1 5/16	1 9/16	1 14/16	2 5/16	2 11/16	3 6/16	4 1/16	5 1/16	6 1/16
0.49	1/16	3/16	4/16	6/16	7/16	9/16	10/16	11/16	13/16	14/16	1 3/16	1 6/16	1 12/16	2 2/16	2 7/16	3 1/16	3 11/16	4 9/16	5 8/16
0.54	1/16	2/16	4/16	5/16	6/16	8/16	9/16	10/16	12/16	13/16	1 1/16	1 4/16	1 9/16	1 14/16	2 3/16	2 12/16	3 5/16	4 3/16	5
0.59	1/16	2/16	3/16	5/16	6/16	7/16	8/16	9/16	11/16	12/16	15/16	1 2/16	1 7/16	1 12/16	2	2 8/16	3	3 12/16	4 9/16
0.65	1/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	10/16	11/16	14/16	1 1/16	1 5/16	1 9/16	1 13/16	2 5/16	2 12/16	3 7/16	4 2/16
0.71	1/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16	10/16	13/16	15/16	1 3/16	1 7/16	1 10/16	2 1/16	2 8/16	3 2/16	3 12/16
0.78	1/16	2/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16	11/16	14/16	1 1/16	1 5/16	1 8/16	1 14/16	2 4/16	2 13/16	3 6/16
0.86	1/16	1/16	2/16	3/16	4/16	5/16	5/16	6/16	7/16	8/16	10/16	12/16	15/16	1 3/16	1 5/16	1 11/16	2 1/16	2 9/16	3 1/16
0.95	1/16	1/16	2/16	3/16	3/16	4/16	5/16	6/16	6/16	7/16	9/16	11/16	14/16	1 1/16	1 3/16	1 9/16	1 14/16	2 5/16	2 13/16
1.04	1/16	1/16	2/16	2/16	3/16	4/16	4/16	5/16	6/16	6/16	8/16	10/16	12/16	15/16	1 2/16	1 6/16	1 11/16	2 2/16	2 8/16
1.15	0	1/16	2/16	2/16	3/16	3/16	4/16	5/16	5/16	6/16	8/16	9/16	11/16	14/16	1	1 4/16	1 8/16	1 14/16	2 5/16
1.26	0	1/16	1/16	2/16	2/16	3/16	4/16	4/16	5/16	5/16	7/16	8/16	10/16	12/16	14/16	1 2/16	1 6/16	1 12/16	2 1/16
1.39	0	1/16	1/16	2/16	2/16	3/16	3/16	4/16	4/16	5/16	6/16	7/16	9/16	11/16	13/16	1 1/16	1 4/16	1 9/16	1 14/16
1.53	0	1/16	1/16	2/16	2/16	2/16	3/16	3/16	4/16	4/16	6/16	7/16	8/16	10/16	12/16	15/16	1 2/16	1 7/16	1 11/16
1.68	0	1/16	1/16	1/16	2/16	2/16	3/16	3/16	3/16	4/16	5/16	6/16	7/16	9/16	11/16	13/16	1	1 4/16	1 9/16
1.85	0	1/16	1/16	1/16	2/16	2/16	2/16	3/16	3/16	3/16	4/16	5/16	7/16	8/16	10/16	12/16	15/16	1 2/16	1 6/16
2.04	0	0	1/16	1/16	1/16	2/16	2/16	2/16	2/16	3/16	4/16	5/16	6/16	7/16	9/16	11/16	13/16	1 1/16	1 4/16
2.24	0	0	1/16	1/16	1/16	2/16	2/16	2/16	2/16	2/16	3/16	4/16	5/16	7/16	8/16	10/16	12/16	15/16	1 2/16
2.46	0	0	1/16	1/16	1/16	1/16	2/16	2/16	2/16	2/16	3/16	4/16	5/16	6/16	7/16	9/16	11/16	14/16	1
2.71	0	0	1/16	1/16	1/16	1/16	1/16	2/16	2/16	2/16	3/16	3/16	4/16	5/16	6/16	8/16	10/16	12/16	15/16
2.98	0	0	0	1/16	1/16	1/16	1/16	1/16	2/16	2/16	3/16	3/16	4/16	5/16	6/16	7/16	9/16	11/16	13/16
3.28	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	2/16	2/16	3/16	3/16	4/16	5/16	6/16	8/16	10/16	12/16
3.61	0	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	2/16	2/16	3/16	4/16	4/16	6/16	7/16	9/16	11/16
3.97	0	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	2/16	2/16	3/16	3/16	4/16	5/16	6/16	8/16	10/16
4.36	-0	0	0	0	0	1/16	1/16	1/16	1/16	1/16	2/16	2/16	2/16	3/16	4/16	5/16	6/16	7/16	9/16
4.80	-0	0	0	0	0	0	1/16	1/16	1/16	1/16	2/16	2/16	2/16	3/16	3/16	4/16	5/16	6/16	8/16
5.28	-0	0	0	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	2/16	2/16	3/16	4/16	4/16	6/16	7/16
5.81	-0	0	0	0	0	0	0	1/16	1/16	1/16	1/16	1/16	2/16	2/16	2/16	3/16	4/16	5/16	6/16
6.39	-0	-0	0	0	0	0	0	0	1/16	1/16	1/16	1/16	1/16	2/16	2/16	3/16	3/16	4/16	6/16
7.03	-0	-0	0	0	0	0	0	0	0	0	1/16	1/16	1/16	2/16	2/16	2/16	3/16	4/16	5/16

Mahalo to the late Leon Brenaman who developed this distance tool in 2001.

SANCTUARY OCEAN COUNT SITE MAP

Date: _____ Island: _____

Site #: _____ Site Name: _____

Site Elevation listed in Handbook: _____ Site Elevation used on Distance Sheet: _____

Volunteer Name(s): _____

Visibility:

Fog: Y N Heavy Medium Light	Rain: Y N Heavy Medium Light	Haze: Y N Heavy Medium Light	Wind: Y N Strong Medium Light
Foam: Y N Lots Some None	Swell: Y N High Medium Small/None	Glare: Y N _____%	Visibility Code _____ <small>(do not write in here – code will be decided by data analyst)</small>

Observation Time: **1030 a.m. – 1100 a.m.**

Draw a map of your site and specify your observation spot

Between **1030 and 1100** map all the pods present at your site using a dot. Next to the dot, write the number of whales in the pod (could be only one), and if there is a mother/calf pair write (M/C) next to the number, or for a mother/calf/escort group, write (M/C/E). 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. Be sure to include the elevation of your site in the space provided above. See example provided on the back of this sheet.

Please mail or deliver completed forms to the appropriate Sanctuary office.

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SITE MAP SAMPLE

Date: January 28, 2017 Island: Hawai'i Island

Site #: 12 Site Name: Kapa'a Beach Park

Site Elevation listed in Handbook: 40ft Site Elevation used on Distance Sheet: 50ft

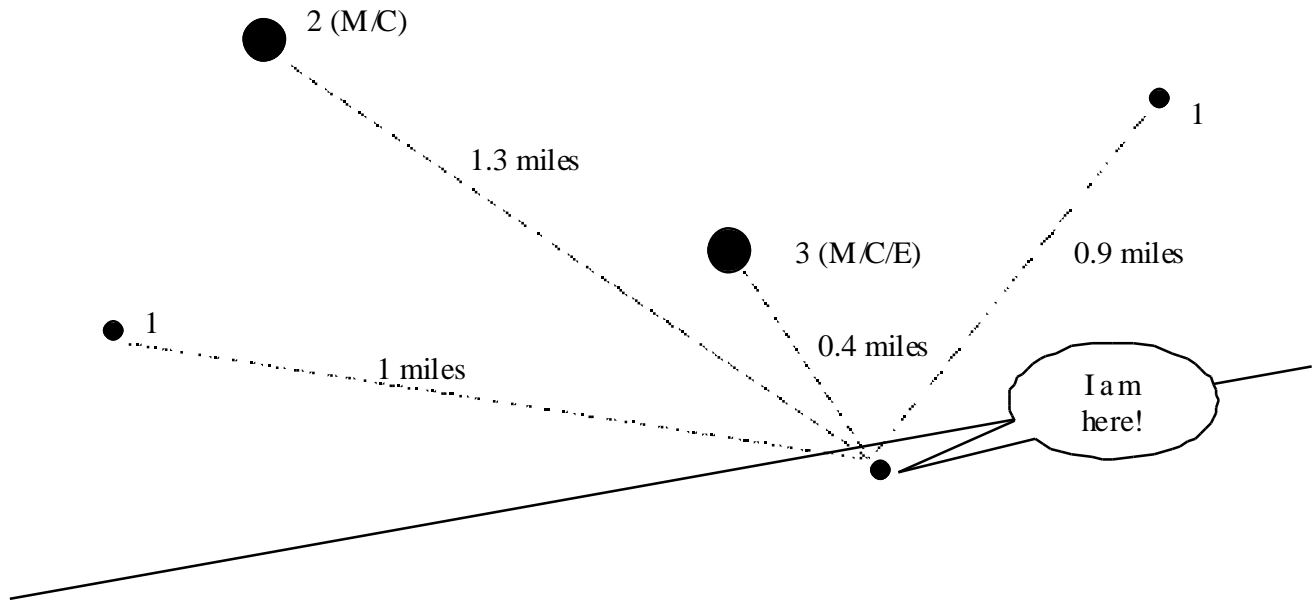
Volunteer Name(s): Moana & Kekai Aloha

Visibility:

Fog: Y <input checked="" type="radio"/> N Heavy Medium Light	Rain: Y <input checked="" type="radio"/> N Heavy Medium Light	Haze: Y <input checked="" type="radio"/> N Heavy Medium Light	Wind: <input checked="" type="radio"/> Y N <input checked="" type="radio"/> Strong <input checked="" type="radio"/> Medium Light
Foam: Y <input checked="" type="radio"/> N Lots Some None	Swell: <input checked="" type="radio"/> Y N <input checked="" type="radio"/> High <input checked="" type="radio"/> Medium Small/None	Glare: <input checked="" type="radio"/> Y N <u>25</u> %	Visibility Code _____ (do not write in here – code will be decided by data analyst)

Observation Time: **1030 a.m. – 1100 a.m.**

Draw a map of your site and specify your observation spot



Between **1030 and 1100** map all the pods present at your site using a dot. Next to the dot, write the number of whales in the pod (could be only one), and if there is a mother/calf pair write (M/C) next to the number, or for a mother/calf/escort group, write (M/C/E). 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. Be sure to include the elevation of your site in the space provided above. See example provided on the back of this sheet.

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