



Fort Ross Harbor Seal Survey Instructions

Author: Jamie Hall

Contents

Why We Survey: Objectives.....	1
Safety Precautions	2
Fort Ross Harbor Seal Survey Equipment List.....	2
Filling out Data Sheets	3
California Regional Harbor Seal Disturbance Survey Form.....	4
Timing and Process of Harbor Seal Survey	5
Fort Ross Harbor Seal Site Description	6
Fort Ross Harbor Seal Site Coordinates	10

Why We Survey: Objectives

The objectives of monitoring each site and the population as a whole are to:

- detect changes in population size,
- detect changes in reproductive success as indicated by pup production, and
- identify anthropogenic or environmental factors that may affect the condition of the population.

More information can be found on the following sites:

http://science.nature.nps.gov/im/units/sfan/vital_signs/pinnipeds/HarborSeals.cfm

http://science.nature.nps.gov/im/units/sfan/vital_signs/pinnipeds/pinnipeds.cfm.

Safety Precautions

When in the field please be aware of any inherent dangers.

- Be aware of your surroundings and use common sense to avoid injury. This is more important than getting the data.
- Parking sites may require climbing over fences to access the survey areas.
- Watch where you walk –cattle hoof prints, vegetation, and critters digging holes can catch unwary feet. Always pay primary attention to where you're walking and only secondly to the beautiful scenery.
- Cliff edges crumble! Stay back from cliff edges as they are unstable and can easily give way under your weight.
- Dress appropriately. Fort Ross weather can change drastically within a very short time, going from warm and balmy to foggy and very cold and vice versa. Layer, and have a light raincoat/windbreaker in your daypack as well as gloves and warm hat.

Fort Ross Harbor Seal Survey Equipment List

1. Binoculars (can be provided by FRC) or spotting scope (optional)
2. Clipboard (provided by FRC)
3. Survey forms (provided by FRC)
4. Digital Camera, with fully charged battery, and 2 memory cards
5. Backpack
6. "Writes in the rain" notebook (optional)
7. Pencils and small Pencil Sharpener
8. Compass (optional)
9. Pocket anemometer and temperature gauge (optional)

Personal Equipment

1. Personal binoculars, spotting scope, and/or camera
2. Cap or knit hat for sun and cold weather
3. Sunglasses (polarized)
4. Shell or windbreaker
5. Gloves, light gloves and/or fingerless for operating camera
6. Layered clothing for good and bad weather
7. Sturdy hiking/walking shoes
8. Sunscreen
9. Drinking water/thermos
10. Snacks
11. Cell phone

Filling out Data Sheets

The following pages provide information on how to fill out the data sheets for harbor seal monitoring. Return your data sheets to Fort Ross staff so that they can be input into spreadsheet and analyzed.

California Regional Harbor Seal Survey at Fort Ross

Survey Form Header: Fill out appropriate information at the start of the survey.

- **Date:** Month/Day (MMDD) example: 0308, **Day of week:** Friday, **Year:** 2013
- **Location:** Fort Ross
- **Start and End Time:** Start time is when the actual count begins and end time is when you stop counting. Use Military or 24 hour format. Add one digit for every hour after 12:00 noon. For example:
start time: 11:00 am= 1100.
End time: 1:00 pm= 1300.
- **Observers:** First and last names of any and all persons participating in the survey.
- **Weather: Visibility (1, 2, or 3)** The code for these are found at the bottom of the survey form.
 - **1=** clear,
 - **2=** slightly obscured but still able to count,
 - **3=** unable to conduct an accurate of full count.
 - **Rain=** Yes or No,
- **Low tide level closest to survey time:** Record the low tide height either before or after the survey start time. Example: **Start Time:** 1100, **Low Tide:** 1130 @ 0.5 ft. Fort Ross Visitor Center has tide tables available.

Fill out at end of survey:

- **# of White Pelicans, # of Brown Pelicans:** keep a running count of pelicans observed on the survey and put totals in these spaces.
- **All subsites surveyed? (Y or N)** Fill in Yes if all subsites were surveyed, and No if not.

Filling in Main count form: Filling out separate fields in the rows and columns.

- **Time:** Fill in the time (military or 24hr) for each separate sub-site when you start that section of beach, example: **Windermere: Time=** 1100, **Clam Beach: Time=** 1115.
- **Sub-Site*:** The name of the separate sections being counted. These are listed at the bottom of the page and pre filled in on the Sub-Site rows. Also descriptions of these are available on the site description page and maps of this document.

- **# of Adults and Imm:** total count of **Adult** and **Immature** Harbor Seals counted on each section/ sub-site.
- **# of Live and Dead pups:** total count of live and dead pup Harbor Seals counted on each section/ sub-site.
- **Sub-site total:** Overall total number of Harbor Seals, Adult, Immature and live and dead pups counted on each section/ sub-site.
- **# Dead Pups:** Overall total number of dead pups counted on each section/ sub-site.
- **# of Red Seals:** Overall total number of red Harbor Seals counted on each section/ sub-site. These are seals with obvious rust colored heads/bodies.
- **# of Shark Bite:** Total number of Harbor Seals with shark bites counted on each section/ sub-site. These seals will have large round or jagged scars or exposed muscle on their bodies.
- **Disturbance Sources Y/N:** Fill in yes or no if there was or wasn't a disturbance for each sub-site. Fill out disturbance data sheet accordingly (described in next section).
- **Survey Total all sub-sites:** Put the total Harbor Seal counts for each sub-site, and at the bottom of this column put the total of all Harbor Seals counted for entire survey.
- **Comments:** Any comments you have about each sub-site go here. Also extended comments can be written on the back of the datasheet.

California Regional Harbor Seal Disturbance Survey Form

Filling out the form: If you witness any disturbance during your survey please fill out this form.

- **Form Header:** Fill out Date, Year, Location and Observers as described in the instructions above.
- **Time:** The specific time at the start of the incident.
- **Source:** What caused the incident, i.e. aircraft, motor boat, non-motor boat, surfer, abalone diver, dog, fisherman, researcher, you, unknown, etc. A list is given at the bottom of the data sheet, please note anything that is not included in this list.
- **Number of Source?**
- **Sub-Site:** In which sub-site or section of the beach did you observe the disturbance?
- **Seal Behavior:** Use the code list at the bottom of the disturbance sheet to determine the behavior of the seals relative to the disturbance. **NR**= no response, **HA**= head alert, (the raising of the seals head in response to a disturbance), **F**= flush (the movement of one or more seals to the disturbance), **FW**= flush into water (the abandonment of one or more of the seals into the water due to the disturbance).

- **Total No. Before Disturbance:** Record how many seals were there prior to disturbance.
- **No. Adult/Imm Seals Remain on Site:** Record how many adult and immature seals are left on site after the disturbance.
- **No. Pups Remain on Site:** Record how many pups are left on site after the disturbance.
- **Total No. Seals Flush into Water:** Record how many seals went into water due to disturbance.
- **Seals Re-haul Time Y/N:** Did the seals come back to the site during your observation? Yes or no.

Timing and Process of Harbor Seal Survey

Harbor Seal Survey should be conducted within two days before or after, but preferably on the targeted dates as set by PRNS (Point Reyes National Seashore).

Surveys should start within one half hour of the low tide for the target day and will take approximately one hour to complete.

Survey consists of walking from the parking site 1 or 2 to Windermere #1 south to Fort Ross Cove and counting all Harbor Seals within this area. Complete walk from parking site to visitor center is approximately two miles.

All sites are described in this document in “Site Description” and accompanying maps.

Photos of seals, haul-out sites, unusual sightings and disturbances are encouraged.

1. Pick up equipment at the Fort Ross visitors center, check the contents against the Equipment list on page 4 to see that all the equipment is there.
2. Fill out the appropriate information on the data form header (see filling out data sheets above)
3. Count all Harbor seals according to categories per data entry sheet. Described on pages 1 and 2.
4. Drive to either North or Middle parking, see map on Page 7. Then walk to Windermere #1, the start of the Harbor Seal survey area. Walk south to Windermere #2 and count all Harbor Seals between these points. Record these in the sub-site Windermere.

5. Start the Clam Beach sub site count at the point where the Windermere count ends. Count animals from the end of Windermere to the beginning of the Northwest Cape #1 site Clam Beach this section includes Clam Beach #1 and #2, primary haul-out sites.
6. Start the Northwest Cape sub site where the Clam Beach count ends, Northwest Cape #1 on the map, proceed south to Northwest Cape #2. Most of the seals are at the Northwest Cape #1 location and about one third of the way down the Northwest Cape site. Record the numbers in the Northwest Cape sub site row of the datasheet.
7. Start the Fort Ross Cove site where the NW Cape site ends, NW Cape #2. This site stretches from NW Cape #2 to Fort Ross Cove #2. Harbor Seals can be on all rocks within the Fort Ross Cove and walking at least half way around the cove is necessary to see and count them all. Fort Ross Cove #1 is the largest single site in this section and a place where births can occur.
8. Meyers Grade: This is a separate site about 6 miles south of Fort Ross. Ideally, this site should be surveyed on the same day as Fort Ross and as close to low tide as possible. Park at the pullout on the ocean side of the road at mile marker #27-38. A small path on the furthest point of the parking area leads down to OP #1 when the tide is lowest. Seals can be seen on the rocks in the shallow area adjacent to the shore. For a more complete view of the beach area as well, you must walk down to OP #2. This is a steep arduous trail and should not be attempted by those who are not up to it. Be aware of poison oak along trail as well.

Fort Ross Harbor Seal Site Description

GPS Site Coordinates are found on the site coordinate sheet and are for the beginning and End and actual haul-out sites, not the overlook (OP*) sites.

Refer to FORT ROSS HASE MAP for view of all points.

North Parking: Mile Marker 34.00. The beginning of the Harbor Seal Survey can be accessed from this site by walking 1330 feet in a South Southeast (147 degree) direction to Windermere #1 overlook site. This has the best view of the Main Sea-Lion Rocks.

Middle Parking: Mile Marker 33.52. Alternately the beginning of the Harbor Seal Survey can be accessed from this site by walking 1600 feet in a Westerly (256 degree) direction to Windermere #1 overlook site.

South Parking: Mile Marker 33.00. If two surveyors with separate cars are surveying the site, one can leave a car here or at the Fort Ross visitor center to transport surveyors back to the starting point.

Windermere #1: This is the northernmost starting point of the Windermere sub-site/section, refer to Survey Protocols for survey instructions.

Windermere #2: This is the southernmost end point of the Windermere sub-site/section, refer to Survey Protocols for survey instructions.

Clam Beach: The Clam Beach section starts at the point of land where Windermere Ends.

Clam Beach #1: This is a main flat rock haul-out site.

Clam Beach #2: This is the southernmost end point of the Clam Beach sub-site/section, refer to Survey Protocols for survey instructions.

Northwest Cape #1: This is the northernmost starting point of the Northwest Cape section, refer to Survey Protocols for survey instructions.

Northwest Cape #2: This is the southernmost end point of the Northwest Cape section, refer to Survey Protocols for survey instructions.

Fort Ross Cove: The Fort Ross Cove section Starts at the Northwest Cape #2 and extends all the way to the south end of Fort Ross Cove.

Fort Ross Cove #1: This is a main flat rock haul-out site.

Fort Ross Cove #2: This is the end of the Fort Ross Cove count area.

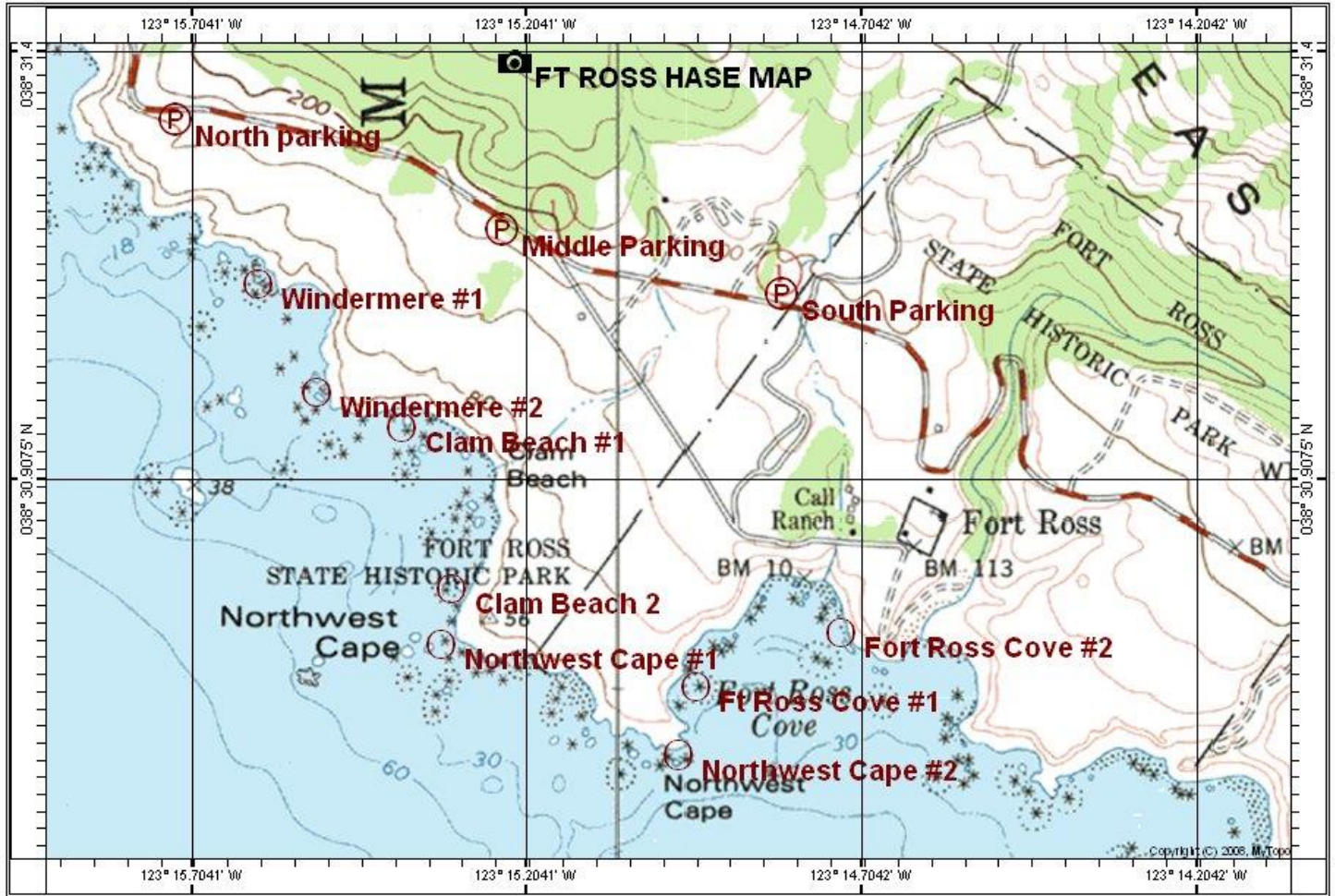
Meyers Grade haul-out: This site, approximately 6 miles south of Fort Ross, is the Meyers Grade haul-out.

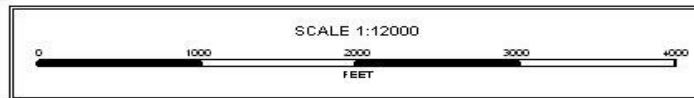
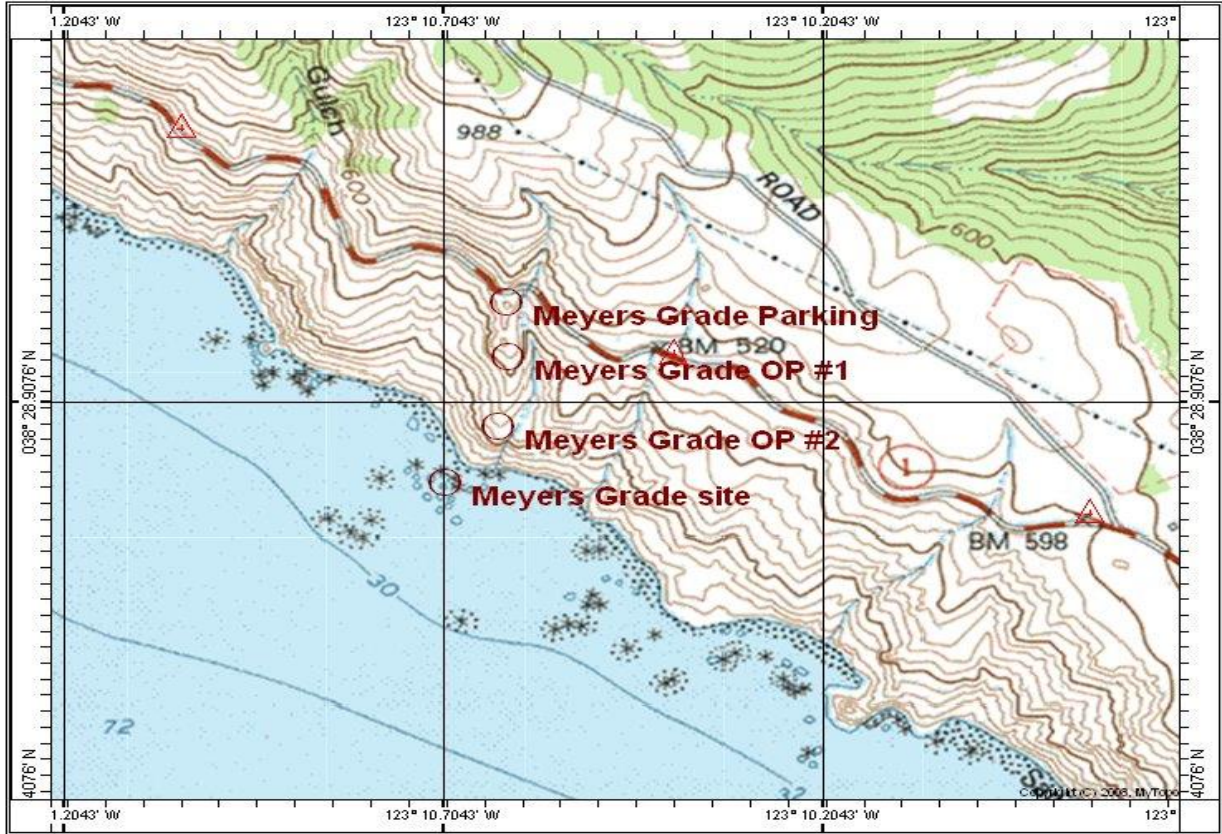
Meyers Grade parking: On the right hand side of the road at mile marker 27.38 there is a large turnout on a bend in the road. This is the access to the Meyers overlook.

Meyers Grade OP#1: A short walk down a path at the point of the parking lot is the OP* for the Meyers Grade haul-out.

Meyers Grade OP#2: A longer, steep walk down the path from the parking lot is the OP* for the Meyers Grade haul-out. The haul-out beach can be seen more completely from this point.

Meyers Grade site: This is the actual haul-out site consisting of many small rocks and beach only visible at low tide.





Fort Ross Harbor Seal Site Coordinates

NAD 83 from USGS Topographic Map

North Parking: 0.38⁰31.3268'N 123⁰15.7215'W

Middle Parking: 0.38⁰31.2048'N 123⁰15.2412'W

South Parking: 0.38⁰31.1283'N 123⁰14.8212'W

Windermere #1: 0.38⁰31.1304'N 123⁰15.6034'W

Windermere #2: 0.38⁰31.0125'N 123⁰15.5142'W

Clam Beach #1: 0.38⁰30.9629'N 123⁰15.3882'W

Clam Beach #2: 0.38⁰30.7747'N 123⁰15.3121'W

Northwest Cape #1: 0.38⁰30.7127'N 123⁰15.3278'W

Northwest Cape #2: 0.38⁰30.5872'N 123⁰14.9742'W

Fort Ross Cove #1: 0.38⁰30.6609'N 123⁰14.9604'W

Fort Ross Cove #2: 0.38⁰30.7313'N 123⁰14.7337'W

Meyers Grade Parking: 0.38⁰29.0255'N 123⁰10.7217'W

Meyers Grade OP#1: 0.38⁰28.9571'N 123⁰10.6217'W

Meyers Grade OP#2: 0.38⁰28.8750'N 123⁰10.6296'W

Meyers Grade Site: 0.38⁰28.8018'N 123⁰10.7030'W

OP*= Observation Point