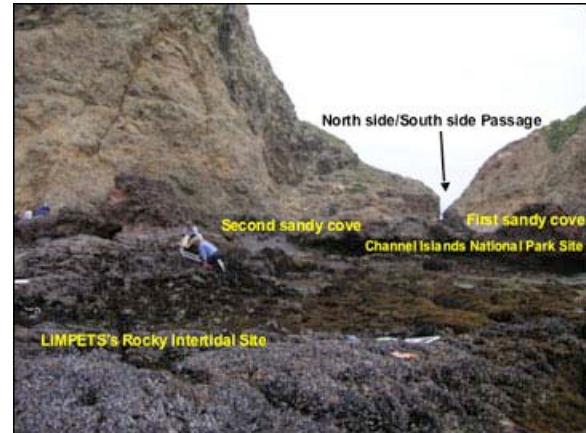


Directions:

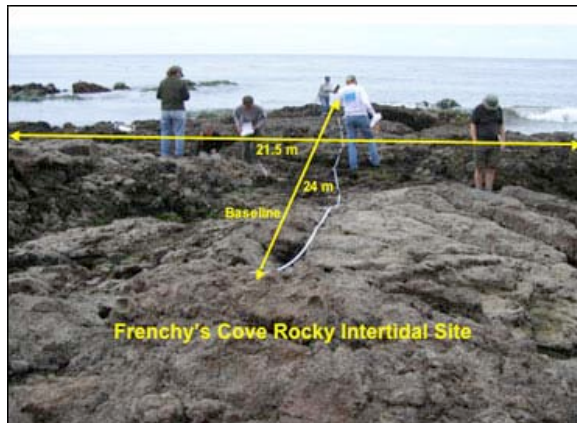
Boat transportation to Frenchy's Cove, Anacapa Island, is provided through Island Packers. From the beach, take the five-minute hike from the north side of the island through the gap to the south side. There is a trail located at Frenchy's Cove. Head west across the sandy beach to the second rocky bench. This is the LiMPETS rocky intertidal site. Do not sample at the first rocky bench. The Channel Islands National Park has a permanent sampling site here that should not be disrupted.



Monitoring Protocols

Three monitoring procedures are used at Frenchy's Cove for monitoring:

- 1) Random quadrats in a permanent area
- 2) Total organism counts
- 3) Size measurements



1. Random Quadrats in a Permanent Plot

Three permanent eyebolts are in place to make it easy to place the baseline transect. The eyebolt at the shoreward end of the bench marks the top of the LiMPETS sampling location. Place the top of a transect tape here and stretch it south toward the ocean 24m. The second bolt marks the midpoint and the third bolt marks the end of the transect. The area sampled is approximately 500m² in size. Survey 20 random quadrats in total.

- Lay a transect tape from the shoreward end of the bench toward the ocean for 24m. The plot for doing random quadrats is the entire top of the bench.
- Using the random number table, choose a number between 00.0 and 24.0. Locate this number along the base transect line.
- Choose a second random number between 0.0 and 21.0. This number indicates how far from the base transect line you will place your quadrat. Use the third random number table to decide whether your location will be east or west of the base transect. Lay down a

Random Quadrats (*continued*)

second transect tape, perpendicular to the first, to find this location.

- Center the quadrat over the meter tape.
- Record data for taxa within the quadrat as directed on the data sheet.
 - Some species will be counted as individuals.
 - Some species will be estimated as the number of squares in the $1/4\text{m}^2$ quadrat containing any attached portion (total possible, 25).



Note: In some cases, the random numbers will place the quadrat in a deep pool or drop-off. When this happens, place the quadrat on a level area as close to the designated coordinates as possible, or halve the random number.

2. Total Organism Count

Ochre sea stars are large invertebrates that can have a major impact on the rocky intertidal community, but are not adequately counted in the $1/4\text{m}^2$ quadrats.

Sea stars will be counted throughout the entire top of the rocky bench and along the walls/sides of the bench.

- Mark the boundaries of the permanent area with cones or a transect tape.
- Systematically search the whole area in teams of 2 or 3. Look carefully in cracks and crevices, and under ledges.
- Record ochre sea stars as “orange” or “purple/brown.” Record all the ochre sea stars you can find as you go.

3. Size Measurements

The area for counting and measuring owl limpets is along a 2m by 12m south-facing raised wall that is within the boundaries of the LiMPETS site. This area is 24m². The GPS coordinates for this site are 34° 00.386N, 119° 24.684W, from the crevice at the west end to the drop off at the east end, 34° 00.385, 119.24.678W.

- Mark the boundaries of the permanent area with transect tapes or cones.
- In teams of 2 or 3, systematically search the whole area. Look carefully in cracks and crevices and under ledges.
- Designate one person as the recorder. This person is responsible for completing the data sheet. The others should be searching for limpets and should tell the recorder what they see as they see it.
- Use the rulers or calipers to measure the length of individual limpets.

Note: Of course, some individuals will be missed, so total counts are just estimates of the true abundance. If 5-10 teams count the selected species in the same defined area, the average number counted provides a reasonable estimate that can be compared over time.

