LiMPETS Rocky Intertidal Monitoring Protocols: White's Point

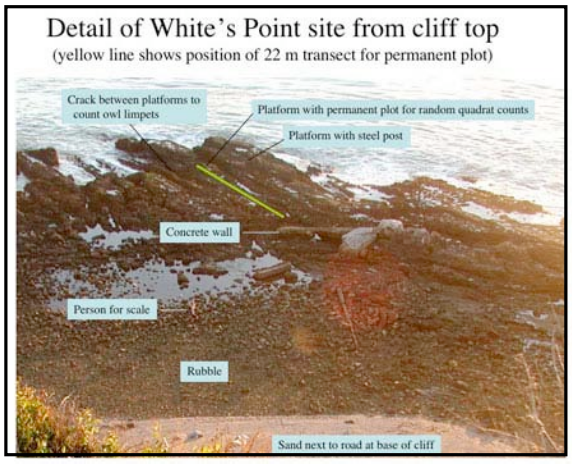
Directions:

This site is located on the eastern portion of Royal Palms State Park/White Point County Beach in San Pedro, Los Angeles County. To reach the site, take Highway 110 south until it ends at the Gaffey Street exit. Continue south on Gaffey Street to 25th Street. Turn right on 25th Street, then left on Western. At the end of Western turn left on Paseo del Mar, then right into the Park. The road goes down to the beach where you should turn left and go to the end of the pavement to park. The study site is on the left of the large rock outcrop as you are standing in the parking lot facing south toward the ocean.

Monitoring Protocols

Three monitoring procedures are used at White's Point for monitoring:

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



1. Random Quadrats in a Permanent Plot

On the ocean side of the concrete wall are four flat, elongated platforms that extend toward the ocean. The largest and highest is on the west and has a high point with a steel post embedded in it. The permanent plot within which random quadrat counts are taken is located on the next platform to the east and is approximately 55m^2 in size. Survey 20 random quadrats in total.

- Lay a transect tape from the base of the platform toward the ocean to 22m.
- Using the random number table, choose a number between 00.0 and 22.0. Locate this number along tape.
- Choose a second random number between 0.0 and 1.5. 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 second transect tape, perpendicular to the first, to find this location.
- Center the quadrat over the meter tape.

Random Quadrats *(continued)*

- 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 1/4m^2 quadrat containing any attached portion (total possible, 25).

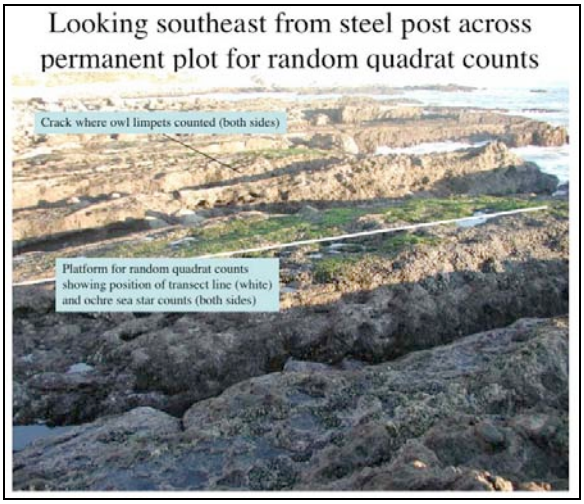
Note: In some cases, the random numbers will place the quadrat in a deep pool or drop-off. When this happens, place the quadrat on a level area as close to the designated coordinates as possible, or halve the random number.

---

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 1/4m^2 quadrats.

Total counts of ochre sea stars are made on the inner 2/3rds of the permanent plot platform, both sides of the platform and the walls of the adjacent platforms. The area extends from the base of the platform out 15m, directly opposite of the steel post in the western platform, and is roughly 8.3m wide to comprise an area of 125m^2.

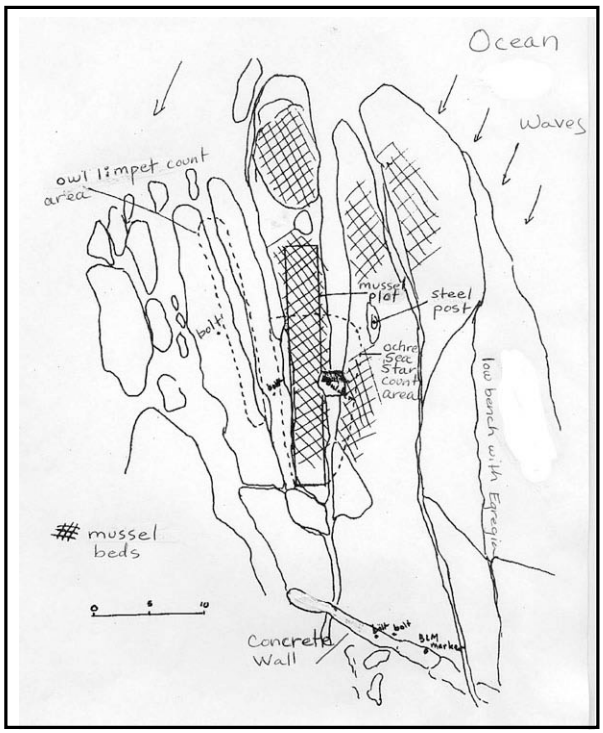


- Mark the boundaries of the permanent area with cones or a transect tape.
- Systematically search the whole area in teams of 2 or 3. Look carefully in cracks and crevices, and under ledges.
- Record ochre sea stars as “orange” or “purple/ brown.” Record all the ochre sea stars you can find as you go.

---

3. Size Measurements

Total counts and size measurements of owl limpets are done on the walls of the crack that separate the two platforms to the east of the platform with the permanent plot and the delineated area for sea star counts. The delineated area for the total counts and size measurements of owl limpets is about 20m long and 2m wide, for a total area of $40m^2$.



- 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.