Experiment

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### ***Procedure***

The first, and probably most important task in monitoring a tide pool is selecting an appropriate pool in and appropriate location. After discussing the topic with a variety of sources, I was referred to the wildlife reserve located seven miles north of Half Moon Bay in Moss Beach, CA. I wanted to select a pool at a relatively low tide level (a negative tide) because of the fact that the majority of organisms are found at the lower end of the intertidal zone. Within this pool were all organisms discussed in the research section. The pool selected (pictured below), is approximately six feet in length and two and a half to three feet in width. One important characteristic about tide pools that must be kept in consideration is the tide height when the following readings are done. Acquiring this information is relatively easy with the use of a tide table book. For the purposes of this experiment, the tide height was kept relatively constant at -0.3 ft.

Because the purpose of the experiment is to determine the effect of El Ni�o on tide pool life, it is necessary to take the temperature of the pool using a standard celsius thermometer. The tip of the thermometer should be submerged at least 10 cm into the tide pool at the deepest location (near the center in this case). It should be allowed to sit at least 2 minutes for an accurate reading. This data should be recorded.

The next reading to take involves the use of a hydrometer. This is a glass cylinder that is to be filled with water, and a weighted, glass bubble that is attached to a long piece of glass with measurement units on it(parts salt per thousand). The cylinder should be filled approximately half way with water from the tide pool. The bubble should then be submerged and allowed to sink until it reaches level on the measure. This value should be recorded, as it represents the number of parts of salt per thousand parts water.

Lastly, but not without great importance, is the task of counting the selected organisms to be monitored. This should only take place within the bounds of the specific pool to be monitored. The organisms should be identified and their numbers recorded on the same table as the previous three values (tide level is one piece of data).

This task must be performed over and over; in the case of my tide pool, it was monitored once a month for four months. Any value greater than this would be acceptable.

### ***The Tide Pool***

Below is an overhead view of the tidepool surveyed. The area labled A is a shallow area near the edge of the tide pool. The B area is the deepest, containing the most abundant growth of Giant Green Anemones and Pink Corraline Algae. Area C is another shallow area, containing mostly small Black Turban shells and Grainy Hermit Crabs that have inhabited empty ones. The surface area, D, in the home to many mussels and barnacles, as well as small creatures that prey on such vulnerable organisms.

**Detailed pictures of the tide pool organisms monitored will be loaded**

**by clicking on the species.**

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| [**Ochre Sea Star *(Pisaster ochraceus)***](http://docs.google.com/ochre.jpg) |
| [**Giant Green Anemone *(Anthopleura xanthogrammica)***](http://docs.google.com/anemone.jpg) |
| [**Grainy Hermit Crab *(Pagurus granosimanus)***](http://docs.google.com/crab.jpg) |
| [**California Mussel *(Mytilus californianus)***](http://docs.google.com/mussel.jpg) |

### ***Data***

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| **Date** | **Tide Level** | **Water Temperature �C** | **Salinity Reading (ppt)** | **Organisms present & #'s** |
| **December (12/27/97)** | **-0.3 ft.** | **13�C** | **33 ppt** | **Giant Green Anemones- 13** |
|  |  |  |  | **Ochre Sea Stars- 2** |
|  |  |  |  | **Hermit Crabs/Black Turbans- abundant** |
|  |  |  |  | **Pink Coralline Algae- abundant** |
| **January (1/25/98)** | **-0.4 ft.** | **13.5�C** | **30 ppt** | **Giant Green Anemones- 12** |
|  |  |  |  | **Ochre Sea Stars- 1** |
|  |  |  |  | **Hermit Crabs/Black Turbans- abundant** |
|  |  |  |  | **Pink Coralline Algae- abundant** |
| **February (2/28/98)** | **0.0 ft.** | **14�C** | **30 ppt** | **Giant Green Anemones- 12** |
|  |  |  |  | **Ochre Sea Stars- 1** |
|  |  |  |  | **Hermit Crabs/Black Turbans- abundant** |
|  |  |  |  | **Pink Coralline Algae- abundant** |
| **March (3/27/98>** | **-0.3 ft.** | **15�C** | **32 ppt** | **Giant Green Anemones- 12** |
|  |  |  |  | **Ochre Sea Stars- 0** |
|  |  |  |  | **Hermit Crabs/Black Turbans- abundant** |
|  |  |  |  | **Pink Coralline Algae- abundant** |

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