



# CALIFORNIA STATE SCIENCE FAIR

## 2008 PROJECT SUMMARY

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| Name(s)<br><b>Kenneth Pessino</b>   | Project Number<br><b>S2014</b>   |
| <b>Project Title</b><br><b>Investigation into the Spatial and Temporal Patterns of Purple/Red Sea Urchins and Kelp Bass in the S. Barbara Channel</b>   |  |
| <b>Objectives/Goals</b><br>My objective was to determine if there are spatial and temporal patterns of recruitment that vary among species. Also if recruitment differs between mainland and island site (Santa Barbara Channel). If there is a difference between the eastern and western Channel Islands, and how does the timing of recruitment differ among species.  | <b>Abstract</b><br>I focused on Red and Purple sea urchins ( <i>Strongylocentrotus franciscanus</i> and <i>Strongylocentrotus purpuratus</i> ) for invertebrates, and the kelp bass ( <i>Paralabrax clathratus</i> ) for vertebrates. To collect sea urchins Tuffys and brushes were deployed on fixed mooring lines throughout the Channel Islands and mainland sites in the Santa Barbara Channel. Standard Monitoring Unit for Recruitment of Fishes or #SMURFs# were deployed in the same areas to collect juvenile kelp bass. The Tuffys, Brushes, and SMURFs are placed in the water for 2-4 weeks and then collected by the PISCO Dive Team. The samples were collected, identified and counted. All the data were recorded and analyzed. |
| <b>Results</b><br>Through the data analysis process I found that the abundance of kelp bass increases on the islands when moving from west to east and also from south to north. The amount of juvenile kelp bass recruited from the mainland is significantly lower than that recruited at the Channel Islands. The sea urchin recruitment data is similar to that of the kelp bass. Mainland recruitment was lower than recruitment at the Channel Islands. Channel Island recruitment of sea urchins from east to west is a little scattered and not as uniform as that of the kelp bass pattern of recruitment. The recruitment on the eastern islands was also more than the amount on the west islands. |  |
| <b>Conclusions/Discussion</b><br>My investigation shows that there are spatial and temporal patterns in the recruitment of sea bass and sea urchins in the Santa Barbara channel. The recruitment differs between the mainland and the island and from east to west of the islands. Also there is a very distinct peak for sea urchins during the months of May and June. For kelp bass a peak occurs during July, August and September.  |  |
| <b>Summary Statement</b><br>It investigates if there are spatial and temporal patterns of recruitment that vary among species in the SB Channel.  |  |
| <b>Help Received</b><br>Used equipment at the PISCO Laboratory in the Marine Science Institute, UC Santa Barbara.   |  |