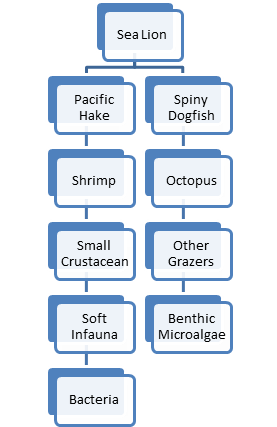
**–Select the ecosystem to be analyzed (at least 5 species) and provide the parameter estimates for the ecosystem as described in the lecture notes (lecture 15). The document should be placed in the team repo.**

The ecosystem that will be analyzed is depicted below. Our ecosystem includes two linear food chains that come together with the Sea Lion. The parameter estimates are provided below. All of our values were taken from the provided article, “A Mass-balance Model for Evaluating Food Web Structure and Community-scale Indicators in the Central Basin of Puget Sound.”



Parameter estimates:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | (P/B)i | (Q/B)j | Ri | Ai |
| Sea lion | 0.076 | 24.350 | 0.0006 | 0 |
| Pacific hake | 0.405 | 2.602 | 0 | 0 |
| Shrimp | 2.250 | 12.000 | 0.0094 | 0 |
| Small crustaceans | 3.410 | 25.000 | 0 | 0 |
| Soft infauna | 4.400 | 22.000 | 0 | 0 |
| Bacteria | 150.000 | 300.000 | 0 | 0 |
| Spiny dogfish | 0.103 | 2.692 | 0.047 | 0 |
| Octopus | 0.860 | 2.500 | 0.00002 | 0 |
| Other grazers | 0.753 | 8.859 | 0 | 0 |
| Benthic microalgae | 100.000 | N/A | 0 | 0 |

Actual values for diet fractions (DCji) ratio

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Sea lion | Pacific hake | Shrimp | Small crustaceans | soft infauna | bacteria | spiny dogfish | Octopus | other grazers | benthic micro-  algae |
| Sea lion |  |  |  |  |  |  |  |  |  |  |
| Pacific hake | 0.150 |  |  |  |  |  |  |  |  |  |
| Shrimp |  | 0.145 |  |  |  |  |  |  |  |  |
| Small crustaceans |  |  | 0.200 |  |  |  |  |  |  |  |
| soft infauna |  |  |  | 0.100 |  |  |  |  |  |  |
| bacteria |  |  |  |  | 0.100 |  |  |  |  |  |
| spiny dogfish | 0.075 |  |  |  |  |  |  |  |  |  |
| octopus |  |  |  |  |  |  | 0.061 |  |  |  |
| other grazers |  |  |  |  |  |  |  | 0.250 |  |  |
| Benthic micro-  algae |  |  |  |  |  |  |  |  | 0.450 |  |

Simplified diet fractions (DCji) ratio

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Sea lion | Pacific hake | Shrimp | Small crustaceans | soft infauna | bacteria | spiny dogfish | Octopus | other grazers | benthic micro-  algae |
| Sea lion |  |  |  |  |  |  |  |  |  |  |
| Pacific hake | 0.67 |  |  |  |  |  |  |  |  |  |
| Shrimp |  | 1.0 |  |  |  |  |  |  |  |  |
| Small crustaceans |  |  | 1.0 |  |  |  |  |  |  |  |
| soft infauna |  |  |  | 1.0 |  |  |  |  |  |  |
| bacteria |  |  |  |  | 1.0 |  |  |  |  |  |
| spiny dogfish | 0.33 |  |  |  |  |  |  |  |  |  |
| octopus |  |  |  |  |  |  | 1.0 |  |  |  |
| other grazers |  |  |  |  |  |  |  | 1.0 |  |  |
| Benthic micro-  algae |  |  |  |  |  |  |  |  | 1.0 |  |