|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Drivers*** | ***Variables*** | | ***Invoked Perturbation*** | | ***Response Variables*** | | | | | |
| ***Survival*** | ***Abundance*** | ***Fitness*** | ***Size*** | ***Residence*** | ***Other Salmon*** |
| *Environmental* | Sunlight | | ↑ | |  |  |  |  |  |  |
|  | Winter Storms | | ↑ | |  |  |  |  |  |  |
|  | Precipitation | | ↑ | |  |  |  |  |  |  |
|  | Upwelling | | ↓ | |  |  |  |  |  |  |
|  | Stratification | | ↑ | |  |  |  |  |  |  |
|  | Temperature | | ↑ | |  |  |  |  |  |  |
|  | River Flow | | ↑ | |  |  |  |  |  |  |
|  | Turbidity | | ↓ | |  |  |  |  |  |  |
|  | Dissolved Oxygen | | ↓ | |  |  |  |  |  |  |
| *Production* | Nutrients | | ↑ | |  |  |  |  |  |  |
|  | Microplankton | | ↑ | |  |  |  |  |  |  |
|  | Microbial Detritivores | | ↑ | |  |  |  |  |  |  |
|  | Diatoms | | ↓ | |  |  |  |  |  |  |
| *Food web* | Zooplankton | | ↓ | |  |  |  |  |  |  |
|  | Gelatinous Zooplankton | | ↑ | |  |  |  |  |  |  |
|  | Forage Fish | | ↓ | |  |  |  |  |  |  |
|  | Ichthyoplankton | | ↓ | |  |  |  |  |  |  |
|  | Other Salmon | | ↑ | |  |  |  |  |  |  |
|  | Piscivorous Fish | | ↓ | |  |  |  |  |  |  |
|  | Piscivorous Birds | | ↓ | |  |  |  |  |  |  |
|  | Marine Mammals | | ↑ | |  |  |  |  |  |  |
| *Anthropogenic* | Hatcheries | | ↑ | |  |  |  |  |  |  |
|  | Harvest | | ↑ | |  |  |  |  |  |  |
|  | Habitat Loss | | ↑ | |  |  |  |  |  |  |
|  | CO2 | | ↑ | |  |  |  |  |  |  |
|  | Global Warming | | ↑ | |  |  |  |  |  |  |
|  | Contaminants | | ↑ | |  |  |  |  |  |  |
|  | Disease | | ↑ | |  |  |  |  |  |  |
| Strong Neg. Effect (>80% of runs negative) | |  | |  |
| Weak Neg. Effect (60-80% of runs negative) | |  | |  |
| Neutral (40-60% of runs positive/negative) | |  | |  |
| Weak Pos. Effect (60-80% of runs positive) | |  | |  |
| Strong Pos. Effect (>80% of runs positive) | |  | |  |