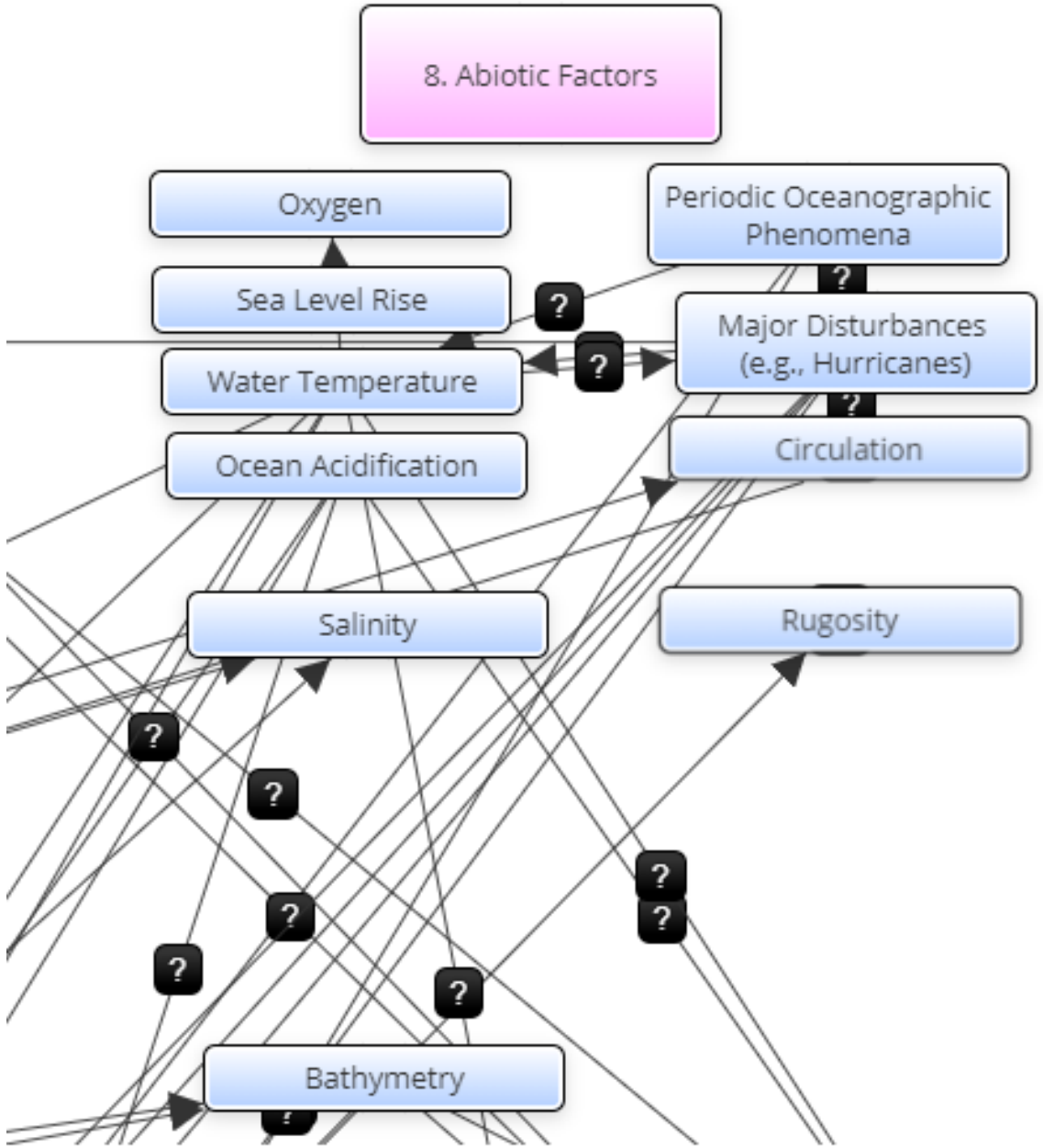
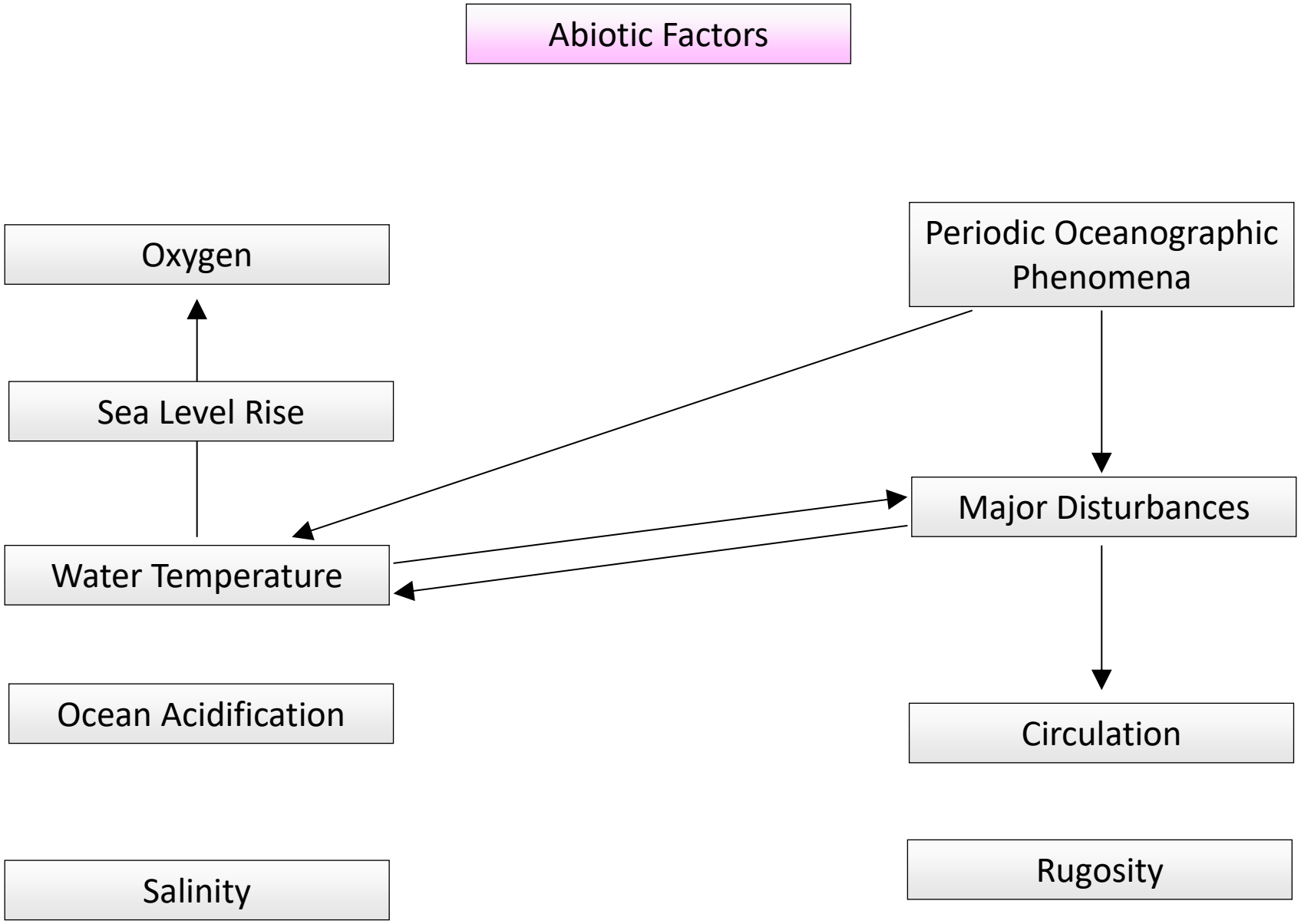
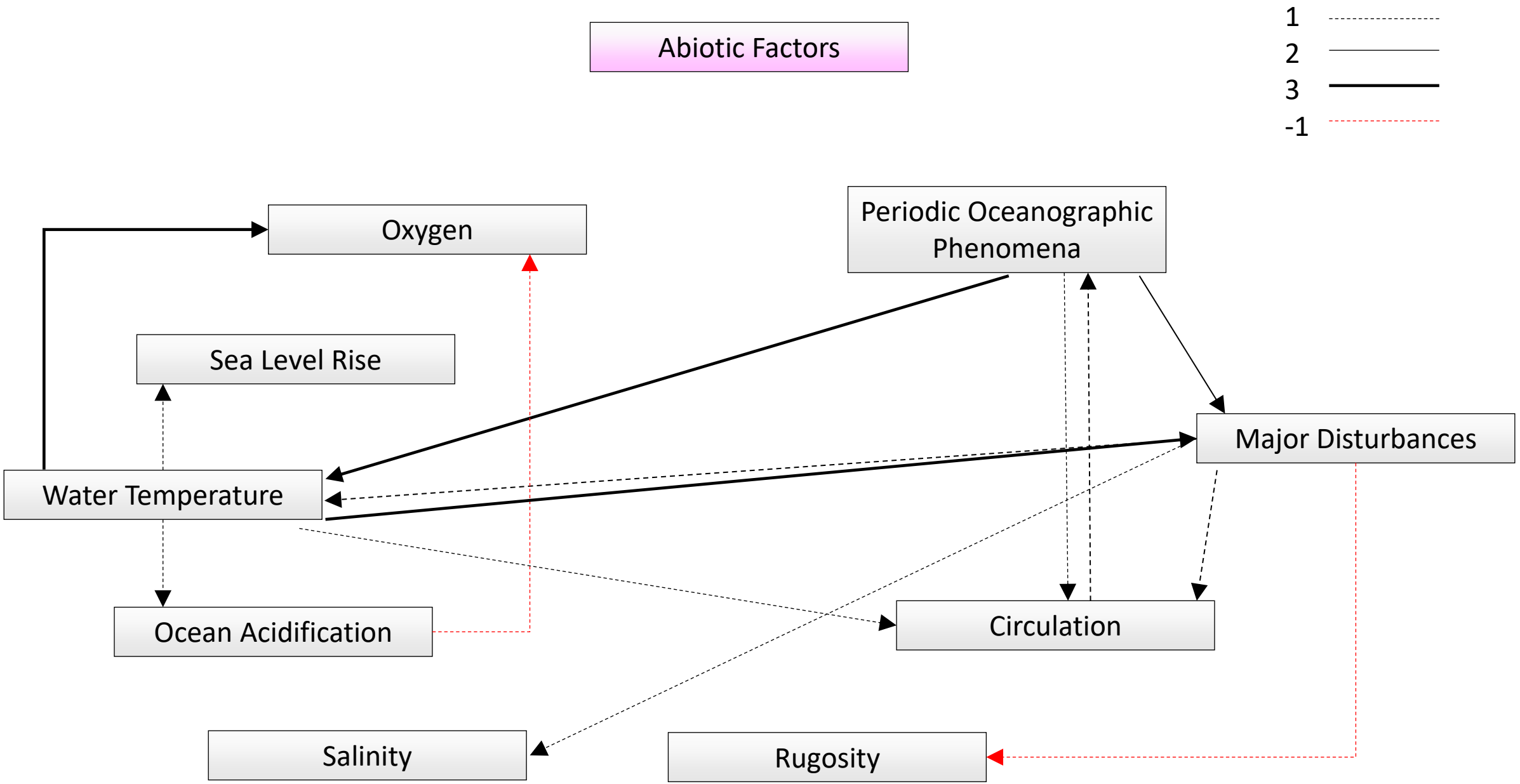
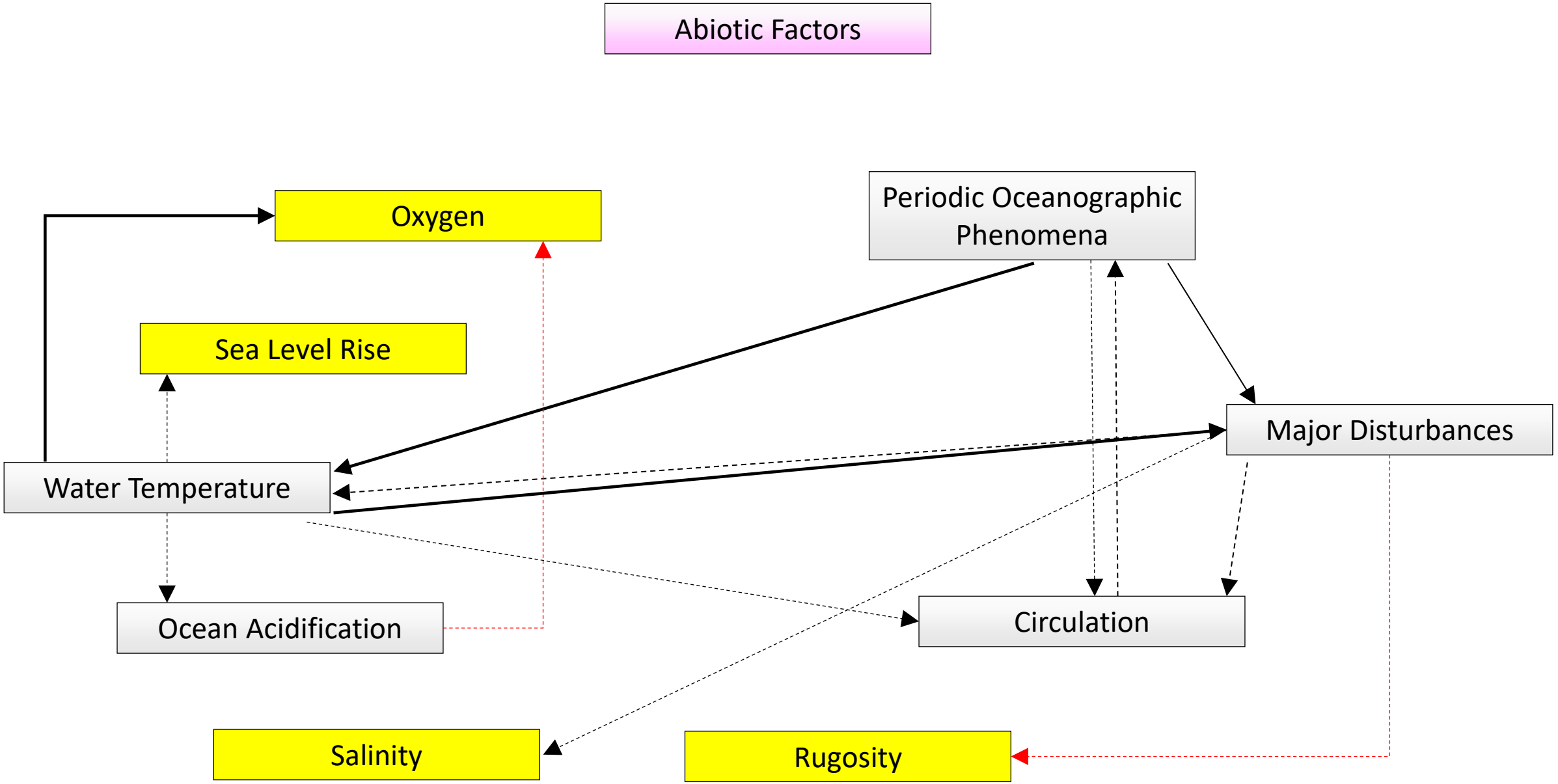

8. Abiotic Factors
Oxygen
Periodic Oceanographic Phenomena
Sea Level Rise
Major Disturbances (e.g., Hurricanes)
Water Temperature
Circulation
Ocean Acidification
Salinity
Rugosity
Bathymetry

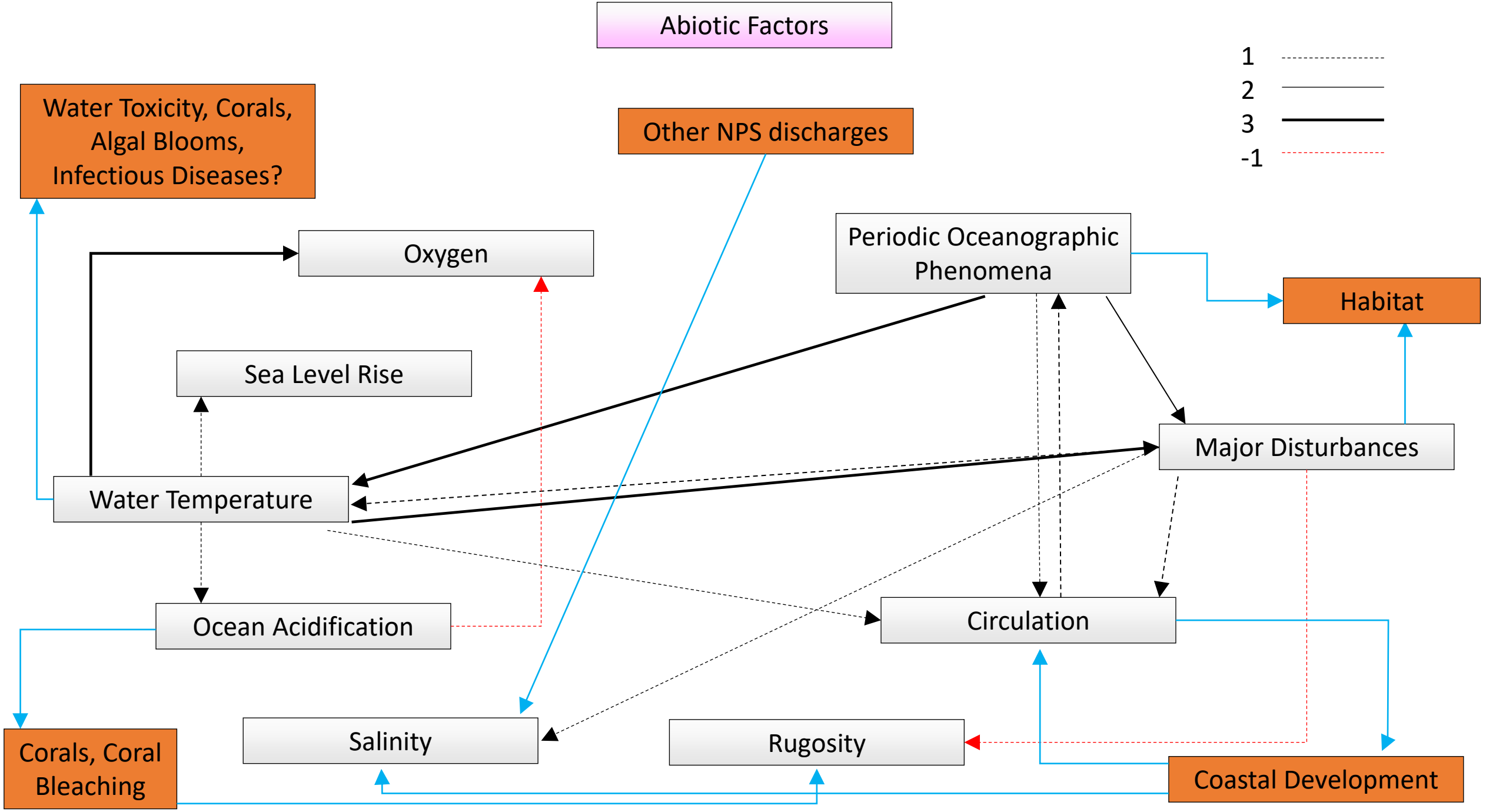
8. **Abiotic Factors**
    a. **Oxygen** – affects organisms directly, associated with water toxicity
    b. **Sea Level Rise** – discussed on local scale, changes can lead to regime shifts
    c. **Water Temperature** – affects many components, has synergistic effect with light penetration on coral bleaching
    d. **Ocean Acidification** – part of climate change that affects fisheries
    e. **Salinity** – affected greatly by riverine runoff
    f. **Periodic Oceanographic Phenomena** – refers to large-scale oceanographic events, such as El Nino Southern Oscillation (ENSO), and the Atlantic Multidecadal Oscillation (AMO). Can have direct impacts on bleaching, and affect hurricanes
    g. **Major Disturbances (e.g., Hurricanes)** – includes wave energy(?), which is a determinant factor of coral reefs (type, existence, seagrass, mangroves). Changes in reef health determined in part by wave energy
    h. **Circulation** – refers to ocean circulation that influences recruitment dynamics and residence time of pollutants, as well as shallow water circulation that is affected by activities like dredging and coastal development
    i. **Rugosity** – a measure of small-scale bathymetry of reef
    j. **Bathymetry** – determines the existence of EFH within the shelf, including the location, extension, and distribution of reefs. Large determinant for fisheries


Abiotic Factors
Oxygen
Sea Level Rise
Water Temperature
Ocean Acidification
Salinity
Periodic Oceanographic Phenomena
Major Disturbances
Circulation
Rugosity

	Circulation	Major Disturbances (e.g., hurricanes)	Periodic Oceanographic Phenomena	Salinity	Ocean Acidification	Water Temperature	Sea Level Rise	Oxygen	Rugosity
Circulation		0	1	0	0	0	0	0	0
Major Disturbances (e.g., hurricanes)	1		0	1	0	1	0	0	-1
Periodic Oceanographic Phenomena	1	2		0	0	3	0	0	0
Salinity	0	0	0		0	0	0	0	0
Ocean Acidification	0	0	0	0		0	0	-1	0
Water Temperature	1	3	0	0	1		1	3	0
Sea Level Rise	0	0	0	0	0	0		0	0
Oxygen	0	0	0	0	0	0	0		0
Rugosity	0	0	0	0	0	0	0	0	


Abiotic Factors
1
2
3
-1
Oxygen
Periodic Oceanographic Phenomena
Sea Level Rise
Major Disturbances
Water Temperature
Ocean Acidification
Circulation
Salinity
Rugosity


Abiotic Factors
Oxygen
Periodic Oceanographic Phenomena
Sea Level Rise
Major Disturbances
Water Temperature
Ocean Acidification
Circulation
Salinity
Rugosity


Abiotic Factors
1
2
3
-1
Water Toxicity, Corals, Algal Blooms, Infectious Diseases?
Other NPS discharges
Oxygen
Periodic Oceanographic Phenomena
Habitat
Sea Level Rise
Major Disturbances
Water Temperature
Ocean Acidification
Circulation
Corals, Coral Bleaching
Salinity
Rugosity
Coastal Development