

Growth and Development of Organisms: Factors influencing growth:

Examples of local environmental conditions could include availability of food, light, space, and water.

Ex. Oyster population

Shapes of intertidal oysters are varied. The ultimate shape of the shell depends upon growing conditions. The most common intertidal growth is that which produces oyster clusters. These are formed by successive sets, one upon another. Each oyster in a cluster is used by succeeding generations. The cluster continues to grow as each new set occurs. Sometimes clusters reach a foot or more in thickness. The added weight of additional individuals tends to push the lowermost oysters into the mud where they eventually suffocate. Only the outermost oysters remain alive. Harvesters are encouraged to cull-in-place, that is, to break apart clusters while harvesting, thereby leaving smaller oysters in place for future growth. Harvesting is done by hand at low tide.

Oyster predators suffer more from exposure to the elements than do oysters. Therefore, intertidal oysters are subjected to less predation than oysters which grow subtidally. The blue crab, as well as other crab species, oyster drills, starfish and boring sponges cause mortality, especially among small oysters.

Earth's Place in the Universe: Tides- Neap & Spring new terms

On Earth, the Moon's gravitational pull causes the oceans to bulge out (tidal bulge) on the side of Earth facing the moon (due to the Moon's gravitational pull) and the side of the Earth opposite the moon (tidal bulge due to inertia).

- Twice an Earth-month, when the Earth, Sun, and Moon are in line (full moon or new moon), their combined gravitational force:
 - A coastal point on Earth may experience an exceptionally high tide (**spring tide**) or **king tides**.
 - A coastal point on Earth may experience an exceptionally low tide where water has been displaced.
- **Neap tides** occur when the Sun and the Moon are at right angles to each other during (First and Last Quarter Moon Phases). When the Sun and Moon are pulling on Earth in two different directions it causes lower high tides and higher low tides to be experienced on Earth.
- **Neap tides** Twice an Earth-month, the Sun is at a right angle to the Moon (first or last/third quarter moon), their opposing gravitational forces result in moderate tides with very little difference between high and low tide (neap tide).
- Southeastern salt marsh- tidal creek ecosystem has **semi-diurnal tides** (two high tides, two low tides each day).

Flooding (water flowing inland) and **ebbing** (water flowing seaward) tides happen as Earth's landmasses rotate through the tidal bulges.

