

Stormy Seas: In the Rocky Intertidal Zone

By Devon Harrington

The New England coastline is home to one of the most fluctuating ecosystems on earth, the Rocky Intertidal zone. This is where the land meets the sea, and because of the great contrast between the two forces it creates a situation where animals need to adapt. Basically this means that there are many components involved in the environment that have an effect on every organism in the ecosystem and organisms must



adapt to survive there. When the components become more extreme it creates a situation of stress on the living organisms in the environment. These living organisms such as Sea Stars and Algae are known in the scientific world as biotic factors. Their stresses are all caused by nonliving components, the nonliving factors are known as abiotic factors. The abiotic factors such as waves, tides, and temperature change according to weather patterns. Extreme weather, like storms, takes everyday stresses and multiplies them. Organisms already need to deal with pounding waves, temperature changes in tides pools due to receding tides and changing water levels between tides. When the tides change along beaches small pools of water are trapped between rocks. These tide pools are home to enormous amounts of animals. So during stormy seasons survival is a keyword for everyday life.

In the Rocky Intertidal zone major components in the environment that play a significant role are the following: tides, waves, sunlight, and even factors like the distribution of nutrients. All of these abiotic factors have a huge impact on the zone but only one honestly holds the greatest impact. Tides are the single most important abiotic factor in the Rocky Intertidal zone. The Intertidal zone is the area between the tides. There are four tides everyday, so, four times a day

organisms need to cope with the changing water levels. During low tide in the high zone (the area of land furthest away from the ocean) there will be no water. During this situation animals that hold water to keep their bodies moist are able to survive. Blue Mussels are animals who are able to withstand these changes.

During a storm large tides can displace organisms, debris and foreign organisms, meaning very high tides and waves can move them beyond their normal habitat. Organisms that are the best at surviving displacement would be any species of crab. Crabs are a mobile species meaning, they are able to move and control where they go. This helps them survive through violent storms because if they are displaced they have the ability to move themselves back to a safe location.



Common species found in the Rocky Intertidal zone, like Sea Stars and Green Sea Urchins have special ways to survive everyday. These creatures hold onto rocks to withstand the breaking of waves in the zone. Animals like Sea Stars, Green Sea Urchins, and Blue Mussels have developed a way to survive in their habitat even when times are more extreme like during a storm.

Storms in the Rocky Intertidal zone basically take the everyday components and make them more extreme. These components, like tides and waves, become even more of a stress to the life in the Intertidal zone. In a stormy area, waves become larger and they occur more often. This shows how important it is for organisms to be able to protect themselves from being crushed on rocks. Storms “stir” up the ocean carrying more nutrients, debris, and foreign organisms to the Intertidal zone as well as taking those things out in their tides. Although storms cause an increased amount of stress on living creatures in the Rocky Intertidal zone, living creatures are still able to survive and thrive in a stormy sea because they have adapted to this chaotic environment.