

FOR SEA photo cd
Script #3

Sea Forest
Seaweeds & Grasses of the Rocky Shore

8-86 Imagine trying to survive where the surf crashes into the beach. Surely very little could survive the tremendous energy released in the pounding of the waves!

7-26 It is in the crashing waves of exposed shorelines, however, that kelp forests thrive. Kelp, a type of algae, or seaweed, is flexible and bends in the surf instead of breaking. The beds of resilient kelp, in turn, shelter whole communities of sea otters, fish and other marine life. These are the forests of the sea.

7-28 Plants in the sea, just like plants on land, are often the first links in food webs. In most ocean food webs, marine algae are the primary producers. They capture energy from the sun, and then, through the process of photosynthesis, use the energy to make the sugars and starches necessary for life.

8-49 This highly complicated process requires the green pigment chlorophyll. Algae, like land plants, also contain the green pigment chlorophyll and other yellow and red pigments.

Kelp and other seaweeds, however, are also quite different from land plants. Algae are relatively simple plants that do not form true root, stem or leaf systems.

7-53 One group of algae, the green algae, grow in sheets that may look like lettuce or in filaments that look something like green noodles or shredded green cellophane.

8-52 They usually grow in intertidal areas or in very shallow water.

7-24 The giant kelp, the "trees" of the undersea forest, are in a group of algae known as the brown algae.

8-83 The brown algae have parts that look like roots, stems and leaves,

but, since they do not function like true roots, stems and leaves, they are given different names: holdfast, stipe and blades.

8-28A land plant must pick up water and nutrients from the soil with its roots and then transport those materials through the stem and to the leaves. Marine algae, on the other hand, are surrounded by water which contains the necessary nutrients. The marine algae simply absorb them through all parts of the plant body.

7-25The holdfast in brown algae, then, only serves to anchor the algae. The holdfast literally holds the algae in place.

7-22The stipe reaches up to the lighted surface water. The holdfast of a giant bull kelp may be attached 30 meters or about 100 feet deep, so its stipe must reach about 30 meters or 100 feet up to the water surface.

7-27The blades at the top of the stipe have a large surface area for capturing the sun's energy.

8-40A third group of algae, the red algae, are much smaller than the brown kelps.

8-51They come in an incredible variety of shapes and textures and can appear reddish-orange, purple or even black. They live at many depths from high up on the beach in intertidal areas to the maximum depth of light penetration. In the kelp forest, the red algae tend to grow in red carpets below the bull kelp or actually on the blades of other seaweeds.

7-28Seaweeds play an important role in coastal areas. They produce food and oxygen, and provide protection for many small animals and other algae species.

8-26Close examination of seaweed will reveal small crabs, fish and snails with shapes and colors that allow them to blend in with the seaweed.

8-88The seaweeds also assist in reducing the full force of storm waves.

7-68The sea forest are colorful and important jewels of the wave swept coast.