

Giant Tube Worm

Scientific Name: *Riftia pachyptila*

Class: Polychaeta

Order: Sabellida

Family: Siboglinidae



The giant tube worms are marine invertebrates living on the floor of the Pacific Ocean near black smokers (hydrothermal vents that emit dark color material) and can tolerate extremely high hydrogen sulfide levels. These worms can reach a length of 8 feet and their tubular bodies have a diameter of 1.6 inches. Ambient temperature in their natural environment range is from 32 – 86 degrees Fahrenheit. They have a bright red plume resulting in several extraordinarily complex hemoglobins.

Range

Galapagos Rift, north of the Galapagos Islands.

Habitat

Bottom of the Pacific Ocean floor, about 8,000 feet down. They live where there are lots of underwater volcanoes and no sun.

Gestation

Riftia has the fastest growth rate of any known marine invertebrate. These organisms have been known to colonize a new site, grow to sexual maturity and increase in length to 5 feet in less than two years.

Litter

There has not been a count as to the number of eggs that are released at any one time for this worm.

Behavior

Development of the Riftia is from a free-swimming (pelagic) to a non-symbiotic trochophore larva, which becomes a juvenile development and then becomes a sessile and acquires the symbiotic bacteria. The bacteria on which the adult worms depend for sustenance is not present before, but is acquired from the environment via the skin in a process akin to an infection. The digestive tract transiently connects from a mouth at the tip to the foregut, midgut, hindgut and anus and is thought to have been the method by which bacteria is introduced into the adults. No digestive tract is found in the adults.

Reproduction

To reproduce the Riftia females release lipid-rich eggs into the surrounding water so they start to float upwards. The males then unleash sperm bundles that swim to meet the eggs. After the eggs have hatched, the larvae swim down to attach themselves to the rock.

Wild Diet

The worms feed on tiny bacteria that get their energy directly from the chemicals in the water through a process known as chemosynthesis. The worms depend on the bacteria as it lives inside of them. This type of mutually beneficial relationship is called symbiosis. The bacteria actually convert the chemicals from the hydrothermal vents into organic molecules that provide food for the worm.