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Foras na Mara
Marine Institute

Life in a DROP OF WATER

Phytoplankton are single celled plants usually floating near the surface of the water. They are one of the most important organisms on Earth, producing most of the oxygen that we breathe. They also help regulate our climate by absorbing carbon dioxide from the atmosphere.

Phytoplankton are at the base of the marine food web. All animal life that lives in or off the oceans, from crabs and fish, to whales and sea birds, are directly or indirectly dependent on phytoplankton as a source of food.

Individual cells are microscopic - too small to be seen with the naked eye. Some species of phytoplankton appear in high numbers and produce green and dark red hues in the water, commonly known as an 'algal bloom'. As these blooms can sometimes be seen from space, satellites provide a useful tool in monitoring the location and extent of these blooms.

Rapid population growth of phytoplankton typically occurs when temperature and nutrient levels rise. While blooms can provide more food to organisms higher up the food web, too much phytoplankton can use up all the oxygen in the water and affect other marine life.

The Marine Institute Phytoplankton Monitoring programme monitors coastal waters around Ireland for harmful species of phytoplankton and offer advice on potential toxicity in shellfish and warn against possible fish kills. This information is also used to study trends in water quality.

Seawater samples are collected from designated areas and analysed at Marine Institute labs in Galway or Bantry. The presence of harmful or toxic species are reported by the Marine Institute. Staff are highly trained in phytoplankton identification and ecology, and the Programme is one of the few worldwide to carry ISO 17025 Quality accreditation.

Did you know?

Phytoplankton inhabit the strange world in between animal and plant called Protists. Like plants, they can manufacture their own food by photosynthesis, but they can also move by swimming with whip-like flagellae, and in some species they hunt and capture other small cells upon which they feed. Some species can even produce their own light, producing an eerie blue luminescence in water when disturbed by waves.