

Oil Spills: A serious threat to the ecosystem

Biswajit Nayak, Rashmiranjan Behera, Raghunath Satpathy and Rajesh Ku. Guru

Majhighariani institute of Technology & Science, India

An oil spill is the release of liquid petroleum into the environment, especially marine areas, due to human activity, and is a form of pollution. The Main Sources of Oil Spills includes: Accidents involving oil tankers or offshore platforms or oil pipelines, Spills from Offshore drilling, Spills from Pipelines, Leakages from sunken, grounded or abandoned ships and so on petroleum is a complex mixture of hydrocarbons. The oil initially floats in a layer up to several inches thick. Immediately, more volatile components begin to separate and disperse into the atmosphere and water soluble components (called polycyclic aromatic hydrocarbons, PAHs) leach into the surrounding water. The warmer the ocean and air temperature, the more rapidly these components separate by wind and water currents & spread throughout the sea in the shape of an emulsion.

These spills have direct toxic effects and may instantly kill an organism by passing through the food chain to other organisms. The effects include blocking feeding, photosynthesis or respiration. It also does extensive damage to the marine ecosystem from the basic foundations of phytoplankton, algae, coral and seagrass to the largest and most mobile organisms. Additionally, the spill contaminates the tissues of organisms and plants which then pass into the food chain and affect the marine environment from the open sea to the shore and coastal estuaries and marshes. The oil spills also cause hypothermia in marine animals. As oil mixes with water, it forms a substance called "mousse," which sticks with feathers and fur the feathers lose their insulating ability and the bird could die of hypothermia. Young animals like seal pups are particularly vulnerable towards this. Animals can be poisoned or suffer internal damage from ingesting oil. Effects include ulcers and damage to red blood cells, kidneys, liver and to the immune system. Oil vapors can injure to the eyes and lungs, and can be hazardous while new oil is still hitting the surface and vapors are evaporating.

biotech.biswajitnayak@gmail.com