Plastic debris in the ocean: a multiplicity of sources and pathways

Combined **sewers** carry sewage as well as storm water. During heavy rains, the handling capacity of the wastewater treatment system may be exceeded, resulting in the sewage and storm water not being treated, and are directly discharged into nearby rivers or oceans

Run-off from **landfills** that are located in coastal areas or near to rivers may find its way into the marine environment.

Rubbish from streets can be washed into storm drains and is then discharged straight into the ocean or to streams which, in turn, may carry the rubbish to the ocean

Storm drains collect runoff water which is generated during heavy rain events. The drains directly discharge this wastewater into nearby streams

Litter from inland areas can become marine debris if it gets into streams or rivers. In this way marine debris may result from rubbish left by workers in forestry, agriculture, construction and mining operations

Industrial products may become marine debris if they are improperly disposed of on land or if they are lost during transport or loading/unloading at port facilities

BUY-A-LOT

Fishermen may leave behind **fishing gear**

Beachgoers may carelessly leave litter at the coast: food packaging and beverage containers, cigarette butts and plastic beach toys will become marine debris

Boaters may deposit garbage overboard

Rubbish from **vessels** may be accidentally released or blown into the water or may be deliberately thrown overboard

Plastic debris can act as anoxic sediments, smothering benthic habitats

Commercial fishermen generate marine debris when they fail to retrieve fishing gear or when they discard fishing gear or other rubbish overboard

Plastics and microplastics are often **mistaken for food**. Toxic substances enter the food chain and toxicity is amplified by bioaccumulation

Marine debris **injures or kills** marine mammals, sea turtles,seabirds and other organisms due to entanglement or ingestion

Plastic debris floating on the oceans provides a raft surface for organisms leading to potential expansion of **invasive species**