3rd International Year of Reef

The 3-day International Conference on Status and Protection of Coral Reefs (STAPCOR 2018) with the theme **“Reef for Life”** begun in Lakshadweep.

- The conference is organized by Zoological Survey of India.
- **International Coral Reef Initiative (ICRI)** has declared 2018 as the third International Year of the Reef (IYOR).
- The International Year of the Reef (IYOR) 2018 is a year-long campaign of events and initiatives to promote coral reef conservation.

The Objective of IYOR 2018 is to

- Strengthen awareness globally about the value of, and threats to, coral reefs and their associated ecosystems
- Promote partnerships between Governments, the private sector, academia and civil society on the management of coral reefs
- Identify and implement effective management strategies for conservation, increased resiliency and sustainable use of these ecosystems and promoting best practices
- Share information on best practices in relation to sustainable coral reef management.

International Year of the Reef

- **IYOR was first declared in 1997** International Coral Reef Initiative in response to the increasing threats on coral reefs and their associated ecosystems, such as mangrove forests and seagrass beds.
- The International Coral Reef Initiative designated **2008 as the second International Year of the Reef.**

What are Corals?

- Corals are made up of genetically identical organisms called **polyps**. These polyps have microscopic algae called zooxanthellae living within their tissues.
- The **corals** and **algae have a mutualistic relationship**.
- The coral provides the **zooxanthellae** with the **compounds necessary for photosynthesis**. In return, the zooxanthellae supply the coral with organic products of photosynthesis, like carbohydrates, which are utilized by the coral polyps for the synthesis of their calcium carbonate skeletons.
- In addition to providing corals with essential nutrients, zooxanthellae are responsible for the unique and beautiful colors of corals.
- They are also called the **“rainforests of the seas”.**
- There are 2 types of corals:
    - **Hard**, shallow-water corals—the kind that builds reefs.
    - **Soft** corals and deepwater corals that live in dark cold waters.

Benefits of Coral

- **Habitat**: Corals are home to over 1 million diverse aquatic species, including thousands of fish species.
- **Income**: Coral reefs and related ecosystems have a global estimated value of '$2.7 trillion per year, or 2.2% of all global ecosystem service values', this includes tourism and food.
- **Coastal protection**: Coral reefs reduce shoreline erosion by absorbing energy from the waves: they can protect coastal housing, agricultural land, and beaches.
- **Medicine**: Reefs are home to species that have the potential for treatments for some of the world's most prevalent and dangerous illnesses and diseases.

Threat to Corals

- **Overfishing:**
  - Overfishing of certain species on or adjacent to coral reefs can affect the reef's ecological balance and biodiversity. For example, overfishing of herbivorous fish can lead to high levels of algal growth.
- **Destructive fishing methods:**
  - Fishing with dynamite, cyanide, bottom trawling and Muro Ami (banging on the reef with sticks) can damage entire reefs and is unsustainable.
- **Recreational activities:**
  - Unregulated recreational activities and tourism cause damage to the very environment upon which the industries depend. Physical damage to the coral reefs can occur through contact from careless swimmers, divers, and poorly placed boat anchors.
- **Coastal development:**
  - Coastal areas have some of the fastest rates of growth in tropical countries. Airports and buildings are often built on land reclaimed from the sea. Sensitive habitats are destroyed or disturbed by the dredging of deep-water channels or marinas, and through the dumping of waste materials.
- **Pollution:**
  - Urban and industrial waste, sewage, agrochemicals, and oil pollution are poisoning reefs. These toxins are dumped directly into the ocean or carried by river systems from sources upstream. Some pollutants, such as sewage and runoff from farming, increase the level of nitrogen in seawater, causing an overgrowth of algae, which 'smothers' reefs by cutting off their sunlight.
- **Climate Change:**
  - **Coral Bleaching**
    - Coral bleaching is the loss of the algae and a rapid whitening of the coral. This is a stress response by the coral host that can be caused by various factors such as the rise in sea surface temperature. If the temperature decreases, the stressed coral can recover; if it persists, the affected colony can die.
  - **Ocean Acidification**
    - The decrease in the pH of the Earth's oceans, caused by their uptake of anthropogenic CO_2 from the atmosphere is known as Ocean Acidification. The decrease in pH has negative consequences for oceanic calcifying organisms such as coral reefs.
- **Illegal Wildlife Trade**
  - The Aquarium trade is a multi-million dollar industry. Tropical fish and corals are removed from reefs, often illegally and through damaging methods, and sold to aquariums all over the world.
  - All hard corals have been listed on Appendix II of Convention on International Trade in Endangered Species (CITES) since 1985, meaning any trade must be regulated and requires strict permits.

International Coral Reef Initiative

- The International Coral Reef Initiative (ICRI) is an **informal partnership between Nations and organizations** which strives to preserve coral reefs and related ecosystems around the world. Its decisions are not binding on its members.
- The Initiative was **founded** in **1994** by eight governments: Australia, France, Japan, Jamaica, the Philippines, Sweden, the United Kingdom, and the United States of America.

- It was announced at the First Conference of the Parties of the Convention on Biological Diversity in December 1994, and at the high-level segment of the Intersessional Meeting of the U.N. Commission on Sustainable Development in April 1995.
- ICRI now have more than 60 members including India.