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New Red Algal Seaweed Species

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Why in News

Recently, two **new red algal seaweed species** have been discovered along India's coastline.

India has a **vast coastline** of over 7,500 kms.



Hypnea indica sp. nov.

Hypnea bullata sp. nov.

Key Points

- **About:**

- They grow in the **intertidal regions of the coast**, namely the area that is submerged during the high tide and exposed during low tides.
- The genus **Hypnea consists of calcareous, erect, branched red seaweeds.**

There are 61 species of which **10 were reported in India.** With two new species, the **total number of species now would be 63.**

- **Location:**

- **Hypnea indica** was discovered in Kanyakumari in Tamil Nadu, and Somnath Pathan and Sivrajpur in Gujarat.
- **Hypnea bullata** was discovered from Kanyakumari and Diu island of Daman and Diu.

- **Significance:**

Hypnea variants of seaweeds can **fetch good monetary value if commercial-scale cultivation is taken up.** Hypnea contains Carrageenan, a biomolecule commonly used in the food industry.

Seaweeds

- **About:**

- They are the **primitive, marine non-flowering marine algae without root, stem and leaves**, play a major role in marine ecosystems.
- Large seaweeds form dense underwater forests known as **kelp forests**, which act as underwater nurseries for fish, snails and sea urchins.
- Some species of seaweeds viz. Gelidiella acerosa, Gracilaria edulis, Gracilaria crassa, Gracilaria verrucosa, Sargassum spp. and Turbinaria spp.

- **Location:**

- Seaweeds, **found mostly in the intertidal region**, in shallow and deep waters of the sea and also in estuaries and backwaters.
- The southern **Gulf of Mannar's rocky intertidal and lower intertidal regions have rich populations** of several seaweed species.

- **Ecological Importance:**

- **Bioindicator:**

- When waste from agriculture, industries, aquaculture and households are let into the ocean, it causes nutrient imbalance leading to algal blooming, the sign of marine chemical damage. **Seaweeds absorb the excess nutrients** and balance out the ecosystem.

- **Iron Sequestrator:**

- These aquatic organisms heavily rely on iron for **photosynthesis**. When the quantity of this mineral exceeds healthy levels and becomes dangerous to marine life, seaweeds trap it and prevent damage. Similarly, most **heavy metals found in marine ecosystems are trapped and removed by seaweeds**.

- **Oxygen and Nutrient Supplier:**

- On their part, the **seaweeds derive nutrition through photosynthesis of sunlight and nutrients present in seawater**. They release oxygen through every part of their bodies. They also **supply organic nutrients to other marine life forms**.

- **Role in Climate Mitigation:**

- Seaweed has a significant role in mitigating climate change. By afforesting 9% of the ocean with seaweed, it is possible to sequester 53 billion tons of carbon dioxide annually. Hence, there is a proposal termed as '**ocean afforestation**' for farming seaweed to remove carbon.

- **Other Utilities:**

- They can be used as fertilizers and to **increase aquaculture production**.
 - When **livestock** is fed with seaweed, methane emission from cattle may be reduced substantially.
 - They can be buried in beach dunes to **combat beach erosion**.
 - It is **used as an ingredient in preparing toothpaste, cosmetics and paints**.

- **Related Initiative:**

- Recently, the Technology Information, Forecasting and Assessment Council (TIFAC) has launched a **Seaweed Mission**.

Source: IE