

## 1. Olive Ridley Turtles

### Why in News?

- Recently, the Mass hatching of Olive Ridley turtles has begun at **Odisha's Rushikulya rookery** near Ganjam district.

### About Olive Ridley Turtles:

- They are the Smallest and Most Abundant of all sea turtles found in the World.
- They are Carnivores and get their Name from their Olive Colored Carapace.
- They are found in warm waters of the Pacific, Atlantic and Indian oceans.
- They migrate thousands of kilometers between feeding and mating grounds in the course of a year.
- They are best known for their unique mass nesting called Arribada, where thousands of females come together on the same beach to lay eggs.
- They lay their eggs over a period **of five to seven days in conical nests** about one and a half feet deep which they dig with their hind flippers.
- The most severe **threat** they face is the accidental killing through entanglement in trawl nets and gill nets due to uncontrolled fishing during their mating season around nesting beaches.
- They are extensively poached for their meat, shell and leather, and their eggs.
- Its **Protection Status** in IUCN Red List is Vulnerable, CITES - Appendix I and Indian Wildlife (Protection) Act, 1972: Schedule I



## 2. Sal Forest Tortoise

### Why in News?

- A recent study by ecologists in the Wildlife Institute of India, Dehradun, has found that the area designated as a protected area network has only a small overlap with the actual habitat of Sal forest tortoise.
- Over 90% of the Potential Distribution of the species falls outside the Current Protected area's Network.



### Sal Forest/ Elongated Tortoise:

- Also known as the elongated tortoise (*Indotestudo elongata*), the sal forest tortoise, recently assessed as Critically Endangered, is heavily hunted for food.
- It is collected both for local use, such as decorative masks, and international wildlife trade.
- The Sal forest tortoise is widely distributed over eastern and northern India and Southeast Asia. It is one of the only four land tortoises found in India. It is legally protected under Schedule IV of the Indian Wildlife (Protection) Act, 1972 as amended up to 2006.
- According to the IUCN, the population of the species may have fallen by about 80% in the last three generations (90 years).

### Sal Forest:

- It is a forest type dominated by a single plant species, commonly known as Sal tree (*Shorea robusta*).
- It belongs to the category '**Tropical Moist Deciduous Forest**'.
- The distribution of Sal forests is controlled by the conditions of topography, geology, and soil.
- Sal forests are mainly distributed in the South and Southeast Asia, occurring along the base of Tropical Himalayas from Assam to Punjab, in the eastern districts of Central India, and on the Western Bengal Hills.

## **3. Artificial Chloroplasts**

### Why in News?

- Scientists Report Making an Artificial Chloroplast that Operates outside of cells to Harvest sunlight and use the Resulting Energy to Convert Carbon Dioxide (CO<sub>2</sub>) into Energy-Rich Molecules.

### Highlights:

- Synthetic biologists have remade chloroplasts, the engine at the heart of photosynthesis, by combining the light-harvesting machinery of spinach plants with enzymes from nine different organisms.
- Photosynthesis is a two-step process. In chloroplasts, chlorophyll molecules absorb sunlight and pass the extra energy to molecular partners that use it to generate the energy storing chemicals adenosine triphosphate (ATP) and nicotinamide adenine dinucleotide phosphate (NADPH).

- A suite of other enzymes working in a complex cycle then use ATP and NADPH to convert CO<sub>2</sub> from the air into glucose and other energy-rich organic molecules that the plant uses to grow.
- CO<sub>2</sub> conversion starts with an enzyme called RuBisCO, which prompts CO<sub>2</sub> to react with a key organic compound, starting a chain of reactions needed to make vital metabolites in plants.
- Each copy of the enzyme can grab and use just five to 10 CO<sub>2</sub> molecules per second. That puts a speed limit on how fast plants can grow. Researchers sought to ramp things up by designing a new set of chemical reactions.
- Instead of RuBisCO, they substituted a bacterial enzyme that can catch CO<sub>2</sub> molecules and force them to react 10 times faster.
- In combination with 16 other enzymes from nine different organisms, this created a new CO<sub>2</sub>-to-organic-chemical cycle they dubbed the CETCH cycle. The enzymes convert the CO<sub>2</sub> into a molecule called glycolate that can be used as a feedstock for making useful organic products.
- Researchers hope to modify their setup further to produce other organic compounds that are even more valuable than glycolate, such as drug molecules. They also hope to more efficiently convert captured CO<sub>2</sub> into organic compounds that plants need to grow.
- That would open the door to engineering the genes for this novel photosynthesis pathway into crops to create novel varieties that grow much faster than current varieties—a boon for agriculture in a world with a booming population.

#### 4. World Red Cross Day

##### Why in News?

- The World Red Cross Day was recently celebrated by the Indian Red Cross Society (IRCS).

##### About World Red Cross Day:

- It is observed on May 8 on the birth anniversary of **Henry Dunant**, who was the founder of the International Committee of the Red Cross.
- Henry Dunant was also the recipient of the **First Nobel Peace Prize**.



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- Its main aim is basically to inspire, initiate and encourage all kinds of humanitarian activities under all times and circumstances.
  - Their Programmes conducted broadly categorised into four parts including the promotion of humanitarian principles and values; disaster response; disaster preparedness; and health and care.

#### **About Indian Red Cross Society:**

- It is a voluntary humanitarian organization to protect human life and health with the help of its network of over 1100 branches throughout India.
- It is based on 7 principles namely, humanity, impartiality, neutrality, independence, voluntary, unity and universality.
- It was established in 1920 and has completed its 100 years of existence.
- It is a part of the largest independent humanitarian organisation in the world, the International Red Cross and Red Crescent Movement.
- Its mission is to provide relief at the time of disasters/emergencies and also promotes healthcare facilities among vulnerable people and communities.
- The President of India is the **President** and the Union Health Minister is the **Chairman** of the Society.