

Credit - Drishti Ias

Biodiversity Beyond National Jurisdiction (BBNJ) Agreement



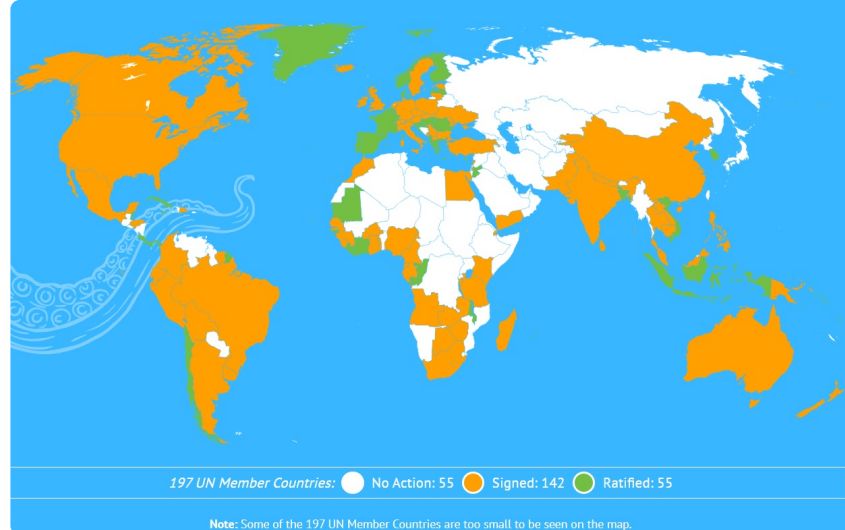
Source: IE

Why in News?

The **Ministry of Earth Sciences** has set up a 12 member panel to implement a new law to safeguard its interests in **international ocean waters**, aligning with the **Biodiversity Beyond National Jurisdiction (BBNJ) Agreement (High Seas Treaty)** agreement.

What is the Biodiversity Beyond National Jurisdiction (BBNJ) Agreement ?

- **About:** The **BBNJ Agreement or High Seas Treaty** is a **legal framework** under the **United Nations Convention on the Law of the Sea (UNCLOS)** to safeguard the ecological health of oceans.
 - Adopted in **2023**, it aims to **curb pollution**, **conserve biodiversity**, and **ensure sustainable use of marine resources** in waters beyond national boundaries.
- **Scope of the Treaty:**
 - Establish **Marine Protected Areas (MPAs)** like **national parks** and **wildlife sanctuaries** to regulate activities and conserve ocean ecosystems.
 - **Regulates extractive activities** such as **seabed mining** & ensures **fair distribution of benefits from marine resources and organisms**.
 - Make **EIAs** **mandatory for major oceanic projects** that may **harm the high seas**, even if carried out within national waters.
 - **Support developing nations** in accessing marine technologies and resources while ensuring conservation.
- **Signing and Ratification:** As of August 2025, **over 140 countries have signed the treaty and 55 have ratified it**.
 - India has **signed the BBNJ Agreement in 2024** but has **not yet ratified it**.
 - **Signing shows intent**, while **ratification legally binds a country to the treaty**, with the process differing across nations.



UN HIGH SEAS TREATY

aka BBNJ (Biodiversity Beyond National Jurisdiction) Agreement

For the first time, UN members have agreed on a unified (legally-binding) treaty to protect biodiversity in the high seas

High Seas (HS)	All the saltwater bodies across Earth that aren't part of territorial sea/internal waters of a state	Need to Protect HS	<ul style="list-style-type: none"> Only 1.2% of HSs are currently protected 10% of global marine species at risk of extinction High exploitation due to commercial fishing, mining, acidification, pollution
Background of Treaty	Demand for an updated framework to protect marine life in the High Seas, is about 20 years-old		

The last int'l agreement on ocean protection was UNCLOS signed in 1982

This treaty is the 3rd "implementing agreement" under UNCLOS

KEY FEATURES	<ul style="list-style-type: none"> Create a new body to manage conservation of ocean life and establish marine protected areas in the high seas Estd. ground rules for conducting EIAs for commercial activities in oceans
KEY PLAYERS	EU, US, UK and China (in brokering the deal)
SIGNIFICANCE	<ul style="list-style-type: none"> Achieving the 30x30 Target set at UN CBD COP15 Legal protection of 2/3rd of the ocean (+ livelihoods of coastal communities) Comprehensive protection of endangered species/habitats on >40% of Earth's surface
ROADBLOCK	How to fairly share marine genetic resources (MGR) & eventual profits among developed/developing nations

Drishti IAS

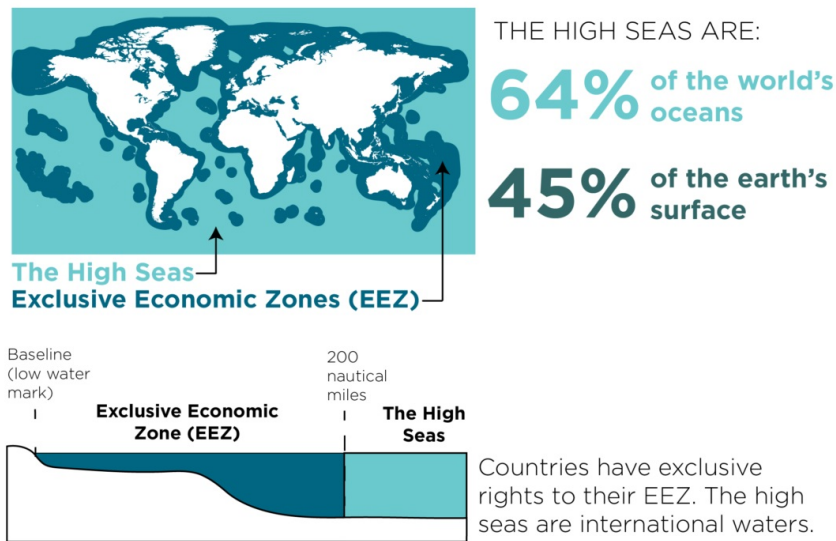
Ocean ecosystems produce half the oxygen we breathe, represent 95% of the planet's biosphere and soak up CO₂ (world's largest carbon sink)

High Seas

- **About:** High seas refer to **regions beyond the national jurisdiction** of any country.
 - Generally, national jurisdictions extend up to **200 nautical miles (370 km) from a country's coastline**, known as the **Exclusive Economic Zone (EEZ)**.
 - No country has **jurisdiction** or responsibility for **resource management** in these waters.
 - Only about **1%** of the **high seas** are currently protected.
- **Significance:** The high seas cover **64% of oceans** and **50% of Earth's surface** & are vital for **marine biodiversity**, **climate regulation**, **carbon absorption**, **solar energy storage**, and **heat distribution**.

- They provide key resources like **seafood** , **raw materials** , **genetic resources** , and **medicinal compounds** .

WHAT ARE THE HIGH SEAS?



United Nations Convention on the Law of the Sea (UNCLOS)

- **UNCLOS**, also called **Law of the Sea**, is an international treaty **adopted and signed in 1982**, replacing the **1958 Geneva Conventions** .
- It provides the **legal framework** for marine and maritime activities.

UNITED NATIONS CONVENTION ON THE LAW OF THE SEA (UNCLOS)

The 1982 United Nations Convention on the Law of the Sea (UNCLOS), also called Constitution for the oceans, has 168 parties, and sets out the legal framework within which all activities in the oceans and seas must be carried out.



The Convention has created three new institutions on the International level



THE INTERNATIONAL TRIBUNAL FOR THE LAW OF THE SEA

01

An independent judicial body. It has jurisdiction over any dispute concerning the interpretation or application of the Convention, and over all matters specifically provided for in any other agreement which confers jurisdiction on the Tribunal

02

THE INTERNATIONAL SEABED AUTHORITY

ISA has the mandate to ensure the effective protection of the marine environment from harmful effects that may arise from deep-seabed related activities

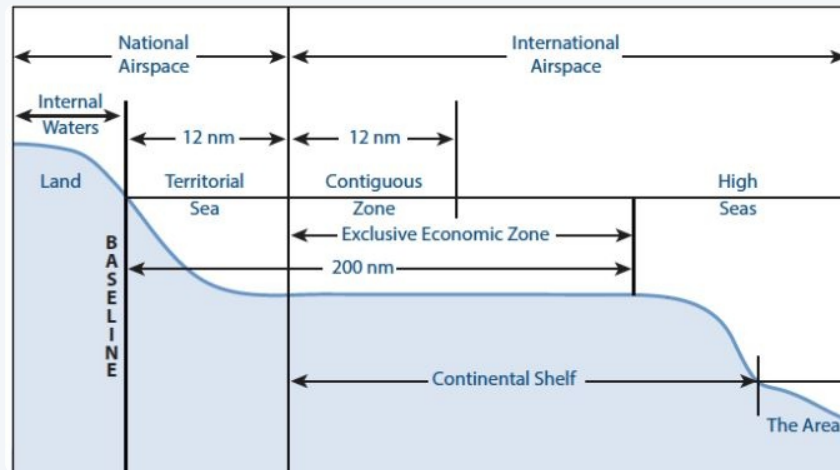


THE COMMISSION ON THE LIMITS OF THE CONTINENTAL SHELF

03

To facilitate the implementation of the UNCLOS in respect of the establishment of the outer limits of the continental shelf beyond 200 nautical miles (M) from the baselines from which the breadth of the territorial sea is measured

- It divides ocean space into **5 zones** - **Internal Waters, Territorial Sea, Contiguous Zone, Exclusive Economic Zone (EEZ), and High Seas** .



[Watch Video on YouTube:

▶ <https://www.youtube.com/embed/Pf4G36LoG4Y>

]

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q. With reference to the 'Trans-Pacific Partnership', consider the following statements: (2016)

1. It is an agreement among all the Pacific Rim countries except China and Russia.
2. It is a strategic alliance for the purpose of maritime security only.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans: (d)

Q. With reference to 'Indian Ocean Rim Association for Regional Cooperation (IOR-ARC)', consider the following statements: (2015)

1. It was established very recently in response to incidents of piracy and accidents of oil spills.
2. It is an alliance meant for maritime security only.

Which of the statements given above is/ are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans: (d)

Mains

Q. With respect to the South China sea, maritime territorial disputes and rising tension affirm the need for safeguarding maritime security to ensure freedom of navigation and overflight throughout the region. In this context, discuss the bilateral issues between India and China. (2014)

Environment Audit Rules, 2025



Source: PIB

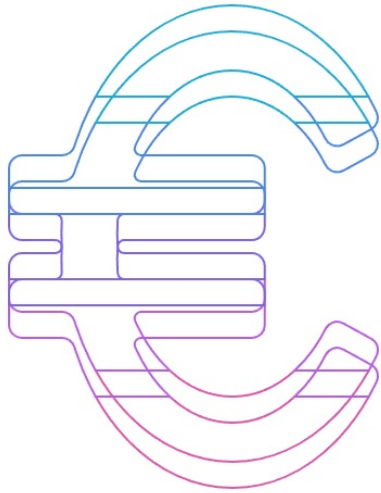
Why in News?

The **Ministry of Environment, Forest and Climate Change (MoEFCC)** has notified the **Environment Audit Rules, 2025** under the **Environment (Protection) Act, 1986** , to establish a comprehensive framework for **environmental accountability** across India.

What are the Key Features of the Environment Audit Rules, 2025?

- **Certification and Registration of Environmental Auditors: Environment Auditors (EAs) are to be Certified and Registered by the MoEFCC-notified Environment Audit Designated Agency (EADA). EADA is responsible for:**
 - Certification, registration, and oversight of auditors.
 - Monitoring performance and providing training.
 - Taking disciplinary action when required.
- **Registered Environment Auditors (REAs): Audits will be conducted by Registered Environment Auditors (REAs) .**
 - REAs will be assigned projects randomly to ensure impartiality.
 - REAs will undertake activities including sampling, analysis, compensation calculation, and audits under various environmental and forest-related legislations.
- **Two-Tiered System of Compliance:**
 - **Tier-1** : Government regulators (**CPCB** , **SPCBs** , MoEFCC regional offices) will review compliance.
 - **Tier-2** : Audits will be conducted by REAs for third-party verification.
- **Oversight and Monitoring: A Steering Committee , led by an Additional Secretary from MoEFCC, will oversee the implementation of these rules.**

Key Regulatory Stakeholders under the Environment Audit Rules, 2025



Certified Environment Auditor

Individuals qualified through
RPL or NCE



Registered Environment Auditor

Certified individuals
registered to perform audits



Environment Audit Designated Agency

Responsible for
certification, registration,
oversight, and training



MoEFCC

Oversees implementation of
the Rules and issues
guidelines



CPCB/SPCB/Regional Offices

Continue inspection and
verification, assisting
MoEFCC

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q1. Which of the following can be threats to the biodiversity of a geographical area? (2012)

1. Global warming
2. Fragmentation of habitat
3. Invasion of alien species
4. Promotion of vegetarianism

Select the correct answer using the codes given below:

- (a) 1, 2 and 3 only
- (b) 2 and 3 only
- (c) 1 and 4 only
- (d) 1, 2, 3 and 4

Ans: (a)

Q2. Biodiversity forms the basis for human existence in the following ways: (2011)

1. Soil formation
2. Prevention of soil erosion
3. Recycling of waste
4. Pollination of crops

Select the correct answer using the codes given below:

- (a) 1, 2 and 3 only
- (b) 2, 3 and 4 only
- (c) 1 and 4 only
- (d) 1, 2, 3 and 4

Ans: (d)

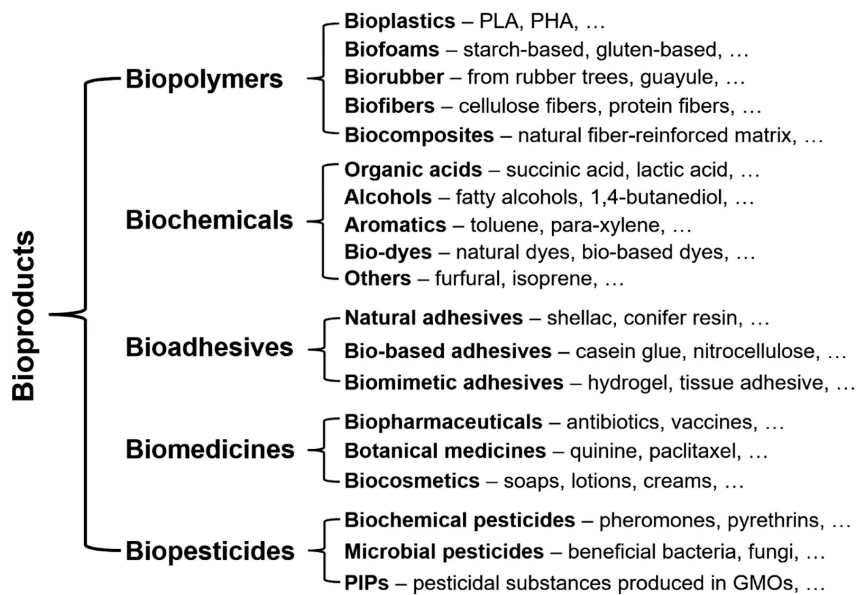
Why in News?

The **Department of Biotechnology (DBT)** , under its **BioE3 Policy** , is setting up **16 biomanufacturing hubs** across India to **boost domestic production** of **bioproducts** such as **APIs, biofuel enzymes, reagents for biofertilizers**.

- These hubs, also known as **National Bio-Enablers or Mulankur** , are specialized facilities supporting **indigenous production of bioproducts** and fostering innovation across sectors like **health, agriculture, energy, environment**, and AI-driven biomanufacturing.

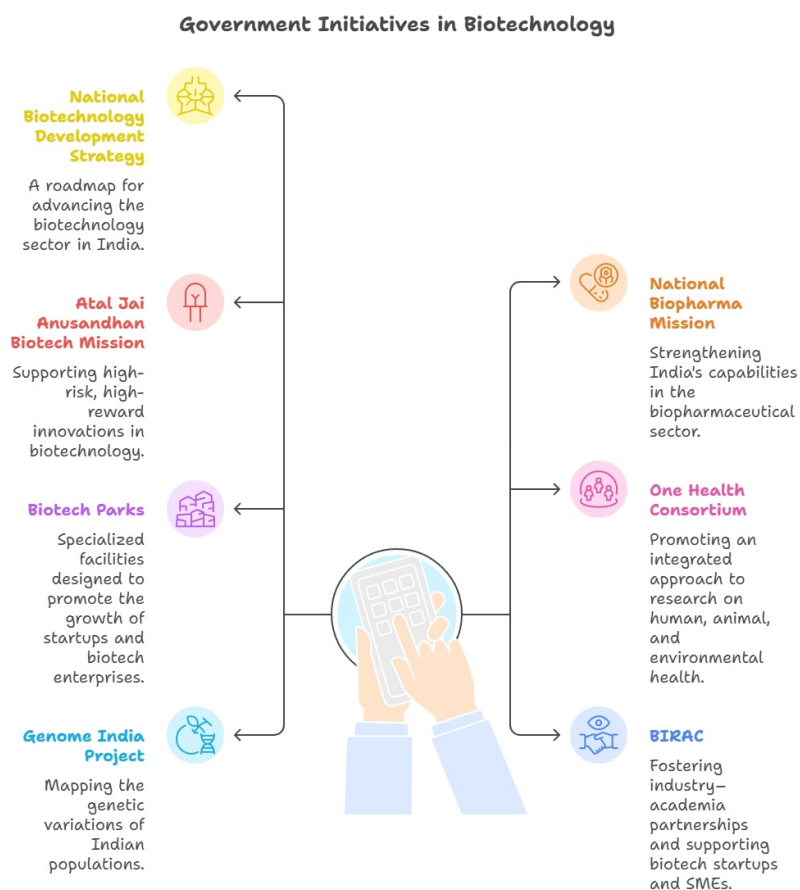
What are Bioproducts?

- **About:** Bioproducts are **fuels, materials, and chemicals** derived from **renewable biomass** such as **crops, trees, algae, and agricultural waste** .
 - Eg: **Biofuels (ethanol, biogas), bioplastics, bio-based cosmetics, and plant-derived medicines** .
- **Types of Bioproducts:**



- **Production Methods:** Generated using **fermentation, pyrolysis, enzymatic conversion, or chemical synthesis** .
 - They are made from **soybeans, sugarcane, algae, mycelium** , etc., and often use **agri-forestry residues** , reducing stress on food crops. Eg: **Sunflower residue** converted into **biofuel** .
- **Significance:**
 - **Reduce fossil fuel dependence** and help mitigate **air pollution, deforestation** , and **biodiversity loss** .
 - Promote **climate-resilient development** through **biotechnological innovation** .
 - Extend beyond laboratories to support **sustainability** via **biodegradable packaging** and **eco-friendly products** , while also generating **rural employment** and fostering **green jobs** .

- **Biodegradability:** Not all bioproducts are biodegradable, it varies by use (e.g., **bio-based paint is not biodegradable**).



Did You Know?

- Despite being the world's **3rd largest pharmaceutical producer (volume)** and the **largest supplier of generic drugs**, India relies heavily on imports for **key bioproducts**.
- Nearly 70% of **active pharmaceutical ingredients (APIs)** are sourced from China, with India being 100% dependent on China for 45 out of 58 critical APIs.

[Watch Video on YouTube:

▶ <https://www.youtube.com/embed/6D1bISkUDEI>

]

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q. Other than resistance to pests, what are the prospects for which genetically engineered plants have been created? (2012)

1. To enable them to withstand drought
2. To increase the nutritive value of the produce
3. To enable them to grow and do photosynthesis in spaceships and space stations
4. To increase their shelf life

Select the correct answer using the codes given below:

- (a) 1 and 2 only
- (b) 3 and 4 only
- (c) 1, 2 and 4 only
- (d) 1, 2, 3 and 4

Ans: (c)

Sample Registration System (SRS) Statistical Report 2023



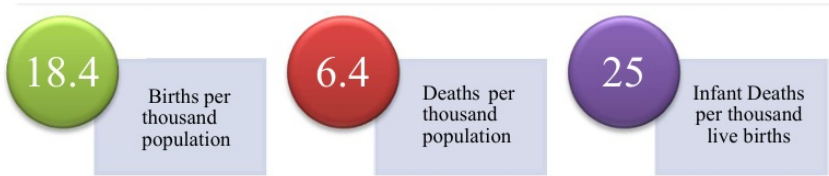
Source: TH

The **Sample Registration System (SRS) Statistical Report 2023** highlights significant demographic shifts in fertility, mortality in India.

- **Total Fertility Rate (TFR)** : TFR fell to **1.9 in 2023** , below the **replacement level fertility of 2.1** .
 - **Highest TFR:** Bihar (**2.8**), **Lowest TFR:** Delhi (**1.2**).
 - **TFR** is the **average number of children a woman is expected to have during her reproductive years (15-49 years)** .
 - **Replacement level TFR** is the **average number of children required per woman for one generation to replace itself** .
- **Crude Birth Rate (CBR)**: CBR declined from **19.1 (2022) to 18.4 (2023)** .
 - CBR indicates the number of live births occurring during the year, **per 1000 population**.
- **Sex Ratio at Birth (SRB)**: SRB for India in 2021-23 was 917 girls per 1,000 boys.
 - Highest: **Chhattisgarh (974)** . Lowest: **Uttarakhand (868)** .
- **Mortality Trends**: The **Crude Death Rate (CDR)** was **6.4 in 2023** , while the **Infant Mortality Rate (IMR)** stood at **25 in 2023**.

About SRS

- The **SRS** conducted by the **Office of the Registrar General of India** , is a large-scale demographic survey that collects population data by **age, sex, and marital status** .
- It measures indicators like **CBR, TFR, Age-Specific Fertility Rate (ASFR), General Fertility Rate (GFR)** , and related statistics at **national and sub-national levels** .



Read More: Human Development Report 2025

Total Lunar Eclipse and 'Blood Moon'

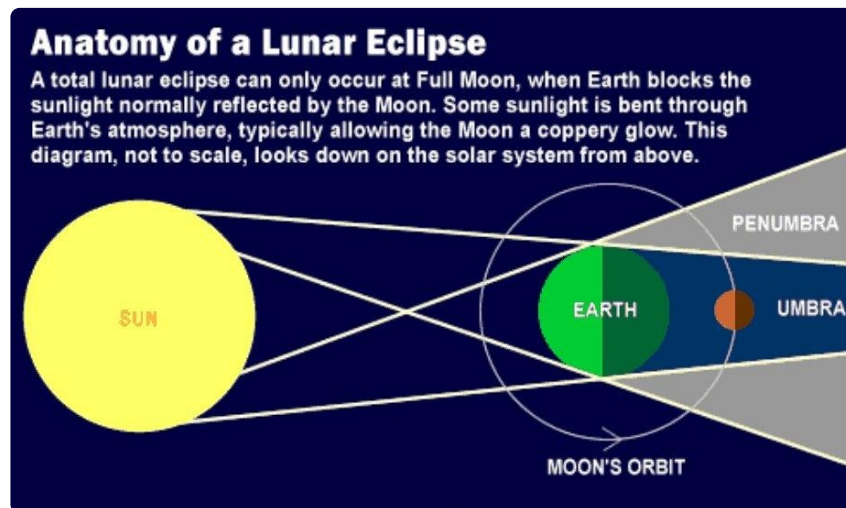


Source: TH

A **total lunar eclipse** is set to occur on the night of **7 th September 2025** . At this time, the moon will be completely covered by the **Earth's shadow** , turning copper red (**Blood Moon**).

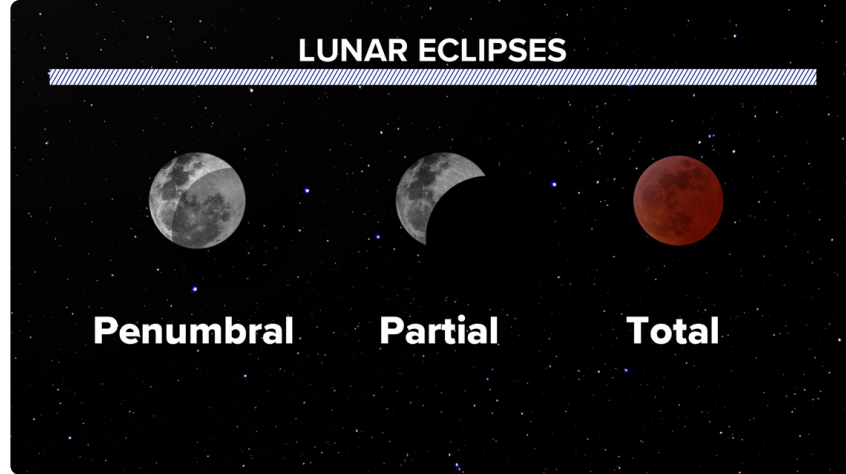
Total Lunar Eclipse

- **About:** A total **lunar eclipse** occurs when the **Moon passes entirely through Earth's umbra (darkest part of its shadow)** , with the **Earth, Sun, and Moon perfectly aligned** , completely blocking direct sunlight.



Blood Moon

- A **Blood Moon** refers to the **reddish or coppery appearance of the Moon** and occurs **only during total lunar eclipses** , which take place **two to three times a year** .
- During total lunar eclipses, the **Earth blocks direct sunlight** from reaching the Moon.
 - However, **sunlight passes through Earth's atmosphere** , where it is **bent (refraction) and scattered** .
 - The **blue wavelengths** of light are scattered away, while the **red and orange wavelengths** pass through and fall on the Moon's surface.
 - This gives the Moon its **distinctive deep red or reddish-orange colour** .



[Read More: Types of Eclipses](#)