

NEWS TODAY

STARS TO BECOME INVISIBLE TO OUR EYES IN TWO DECADES DUE TO LIGHT POLLUTION, WARN SCIENTISTS

• Scientists stated that **increasing light pollution is brightening up night sky at rate of around 10 percent per year.**

➤ Light pollution has worsened rapidly, particularly since 2016 when **astronomers reported the Milky Way is invisible to nearly a third of the population.**

• Light pollution (photo pollution or luminous pollution) is **'excessive, misdirected, or obtrusive artificial (usually outdoor) light.**

• **Components of light pollution include**

➤ **Glare:** Excessive brightness that causes visual discomfort.

➤ **Skyglow:** Brightening of night sky over inhabited areas.

➤ **Light trespass:** Light falling where it is not intended or needed.

➤ **Clutter:** Bright, confusing and excessive groupings of light sources.

• **Impact of Light Pollution**

➤ Affect **human circadian rhythms** which regulate physiologic activities.

➤ **Interferes with astronomical research.**

➤ Disturb migratory and predatory **patterns of nocturnal wildlife especially birds (refer image).**

➤ Leads to **disorientation among terrestrial animals** such as **Olive Ridley Sea turtles.**

• **Steps to curb Light Pollution:** Limiting brightness of lights; avoid blue-white and ensure light have more red and orange components; Use of Motion Sensors to turn on only lights only when motion etc.

NATIONAL GREEN TRIBUNAL (NGT) MAKES CONSENT FROM STATE POLLUTION CONTROL BOARD (SPCB) MANDATORY FOR RIVER SAND MINING

• NGT has made it **mandatory to obtain consent from concerned SPCBs for river sand mining.**

➤ NGT directed **MoEFCC** to issue guidelines within two months to ensure that it is uniformly applicable.

➤ **No river sand mining will be allowed to continue in country without obtaining these consents** with effect from **1st September 2023.**

• Sand mining is **extraction of sand, mainly through an open pit** but sometimes mined from inland dunes from oceans, riverbeds and beaches.

➤ It is classified as a **'minor mineral'** under **section 3(e) of Mines and Mineral (Development and Regulation) i.e., MMDR Act 1957 and administrative control vests with State Governments.**

• **Impact of sand mining**

➤ **Alter river bed,** force river to change course, erode banks and lead to flooding.

➤ **Destroys habitat of aquatic animals** and micro-organisms besides **affecting groundwater recharge.**

• **Initiatives taken to curb sand mining**

➤ **Sustainable Sand Mining Management Guidelines 2016, issued by MoEFCC,** encourages scientific sand mining and environmentally friendly management method.

➤ **Sand Mining Framework, 2018,** prepared by **Ministry of Mines,** envisages **alternative sources of sand in form of Manufactured -Sand from crushed rock fines** (crusher dust), etc.

How does Light Pollution impact birds and people?

Light Pollution impacts an enormous diversity of birds that are active both nocturnally and diurnally. Each year, it contributes to the death of millions of birds from collisions, especially birds that migrate at night.



Light-induced collision

Light Pollution contributes to the death of millions of birds from collisions with buildings and other built infrastructure.



Disorientation during flight

Light Pollution attracts and disorients birds flying at night, causing them to circle illuminated areas, depleting their energy reserves and putting them at risk of exhaustion, predation and lethal collision.



Disruption of biological rhythms

Light Pollution can alter birds' behaviors, including migration, foraging, and vocal communication, disrupting daily and annual biological cycles of birds.



Disruption of Ecosystems

Light Pollution impacts not only birds, but also other animals and plants.



Harms Human Health

More than 80% of the world's population lives under a "lit sky," Light Pollution harms human health and can contribute to sleep disorders, diabetes, and other problems.

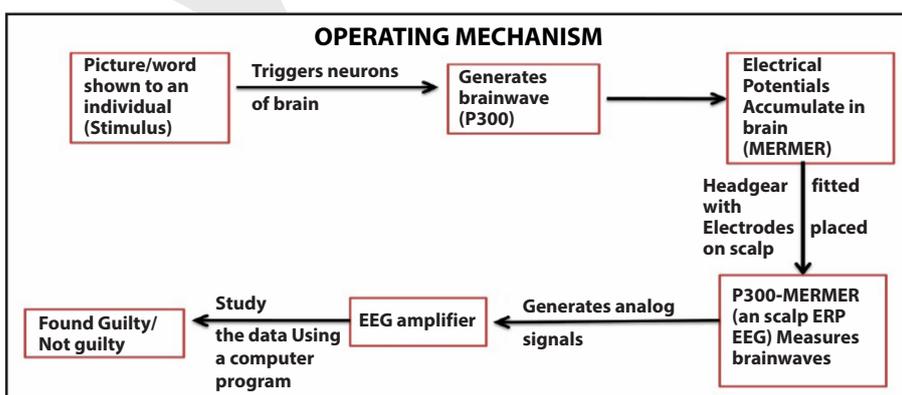


THREE THEATRE COMMANDS TO BE ESTABLISHED AS ARMED FORCES REACH CONSENSUS

- **Indian Army, Navy, and Air Force** have achieved a consensus on **establishment of three theatre commands** by 2024, each headed by a senior **three-star general** (Lieutenant Generals, Air Marshals, or Vice Admirals).
 - These commands will be responsible for managing **northern borders with China, western front with Pakistan, and a maritime command** in peninsular India.
 - Original proposal for an **Air Defence Command (ADC)** has been discarded.
- Theatre Command means **putting specific number of personnel from three services** (Army, Navy and Air Force) **under a common commander** in a specified geographical territory.
 - **Shekatkar committee and Kargil review committee** had recommended the creation of theatre commands.
 - India has 19 military commands with **17 (Army 7, IAF 7, and Navy 3) of them service-oriented**.
- Currently, **India has two unified commands**:
 - Andaman and Nicobar Command, which is geographical.
 - Strategic Forces Command, which is functional and handles the country's nuclear arsenal.
- **Significance of Theatre Command**
 - **Build integrated war-fighting machinery** in a cost-effective manner.
 - **Enhance synergy and coordination** among three services and **enabling more effective management of national security** challenges.
 - **Streamline planning and military operations**.

BRAIN ELECTRICAL OSCILLATION SIGNATURE PROFILING (BEOSP)

- **BEOSP, also known as Brain Fingerprinting/Brain mapping/ P-300 test, is a neuro psychological method of interrogation.**
 - It is designed to **bring up the information** which could be **hidden in a person's brain by sensing brain wave responses** respective to words, phrases, or pictures presented.
 - BEOSP test is carried out via a **process known as electroencephalogram**, conducted to study the electrical behaviour of human brain.
- **How is it different from polygraph test?**
 - **Unlike polygraph test**, it does not involve a question answer session with accused.
 - In a **polygraph test**, accused person's **physiological indicators are taken into account** which includes blood pressure, pulse rate, respiration and skin conductivity.
 - Brain mapping is considered much **more credible than polygraph test**.
- **Applications of Brain fingerprinting**
 - **Determine the participation of accused** in a crime.
 - **Medical diagnosis and treatment** of Neurological diseases like Alzheimer.
 - **Counter Terrorism** by probing the possibility of a terrorist act by an individual.
- **In Selvi versus State of Karnataka case (2010), SC stated that narco analysis, polygraph and brain mapping tests cannot be forced upon any individual without their consent and test results cannot be admitted solely as evidence.**



MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE (MOEF&CC) RELEASED "NATIONAL WORKING PLAN CODE (NWPC)-2023"

- NWPC-2023 was released for **scientific management of forests and evolving new approaches**.
 - It was **first adopted in 2004** with a **subsequent amendment in 2014**.
- **Key highlights of NWPC-2023**
 - NWPC will incorporate **India Forest Management Standards (IFMS)**, a set of **eight comprehensive guidelines and rules applicable to all states**. These eight standards are holistic as they **independently focus upon**
 - **Soil and water conservation**, productivity and utilisations of forest resources, enhancement of social-economic and cultural benefits related to forests, **extent and condition of forest and tree cover and adequacy of policy**, legal and institutional framework.
 - These standards developed form **Bhopal-India process (1998)**, which is **one of the nine global initiatives for forest management**.
 - It will **bring uniformity** and acts as **guiding principle for State Forest Departments in preparation of working plan for different forest divisions** in country.
 - It deals in detail with **essentials of forest management planning, incorporating the principles of sustainable management of forests**.
 - For the first time, NWPC-2023 has prescribed **state forest departments to engage in continuous data collection and its updation in a centralized database**.

G20 AGRICULTURE MINISTERS' MEETING CONCLUDED

- G20 Agriculture Ministers' meeting adopted agreed outcome document titled **"Outcome Document and Chair's Summary"** and reaching a consensus for the first time.
- **Four priority areas were highlighted i.e.**
 - Promotion of **agricultural diversity** and improvement of **social security systems** to enhance food security and nutrition.
 - Financing **climate-friendly technologies** for sustainable agricultural production.
 - **Inclusive growth** through a **resilient agriculture supply chain**.
 - **Digitization of agricultural sector** and **standardization** of agricultural data platforms.
- **Two key outcomes in "Outcome Document and Chair's Summary" are**
 - **Deccan High Level Principles:**
 - Demonstrated G20 **collective responsibility** in response to **global food security crises**.
 - **Facilitating humanitarian assistance** to countries and populations in vulnerable situations.
 - **Strengthen food safety nets** and access to nutritious food.
 - **Focus on climate smart and climate resilient agricultural supply chains**.
 - **International Millets and Other Ancient Grains Research Initiative (MAHARISHI):**
 - Aims at **advancing research collaborations and generating awareness** about millets and other ancient grains during **International Years of Millets 2023 and after**.
- In related development, India has proposed that **African Union will be given full membership of G20 at upcoming Delhi Summit**.
 - African Union is **made up of 55 Member States** which represent all countries on African continent. It has the status of a **permanent observer at United Nations General Assembly**.

ALSO IN NEWS



TAPAS (Tactical Airborne Platform for Aerial Surveillance) Unmanned Aerial Vehicle (UAV)

- Indian Navy and DRDO have **successfully carried out control capabilities of TAPAS UAV** from a distant ground station to onboard INS Subhadra.
- Indigenously developed TAPAS 201 is a **Medium Altitude Long Endurance (MALE) UAV**.
 - It is **designed and developed by Bengaluru based Aeronautical Development Establishment (ADE)**.
 - It is **capable to carry different combinations of payloads** like Medium Range Electro Optic, Long Range Electro Optic, Synthetic Aperture Radar etc. to perform **missions during day and night**.
 - It has an **endurance of more than 18 hours** and can operate at **altitudes of up to 28,000 feet**.
 - It can carry **payloads up to 350 kg**.



One Health approach

- **European Commission adopted a proposal of actions to combat Antimicrobial Resistance (AMR)** in One Health approach.
- **Proposal included a series of actions to:**
 - **Strengthen national action plans** against AMR.
 - **Reinforce surveillance and monitoring of AMR** and Antimicrobial Consumption (AMC).
- One Health is an **integrated, unifying approach to balance and optimize the health of people, animals and the environment. It can**
 - **Prevent outbreaks of zoonotic disease** in animals and people.
 - **Improve food safety and security**.
 - **Reduce AMR infections** and improve human and animal health.



National Water Awards

- President of India conferred **4th National Water Awards, 2022. Prominent winners** are Madhya Pradesh (Best State), Ganjam in Odisha (Best District).
- **About National Water Awards:**
 - **First launched in 2018** by Department of Water Resources, River Development & Ganga Rejuvenation.
 - **2nd and 3rd editions** were given for the **years 2019 and 2020**.
 - Awards were **not given in the year 2021** due to COVID pandemic.
- **Objective:** To encourage various stakeholders towards adopting a **holistic approach towards water resources management** in the country.

 <p>Orchids</p>	<ul style="list-style-type: none">• Recently, a decline in wild orchids, especially epiphytic orchids, has been recorded in hills of Darjeeling in North Bengal.<ul style="list-style-type: none">➤ Wild orchids are those that grow and have evolved naturally in a particular area or habitat without human intervention.• Orchids belong to family Orchidaceae. They flourish in bright light and are divided into three temperature groups: cool, medium, and warm.<ul style="list-style-type: none">➤ Most orchid species grow in tropical forests, but others can be found in semi-desert regions, near seashore and in tundra.➤ Orchids are harvested for ornamental, human consumption and medicinal purposes.
 <p>Alligator Gar Fish (Atractosteus spatula)</p>	<ul style="list-style-type: none">• Recently, a non-native alligator gar fish was found in Kashmir's Dal Lake is threatening the native fish species.• Alligator Gar Fish is a ray-finned euryhaline fish and is one of the biggest freshwater fish in North America and largest species in the 'gar' family.<ul style="list-style-type: none">➤ Sometimes, they will appear in backwaters of lowland rivers, brackish waters of estuaries and bays, too.➤ This predator fish has an alligator-like head and razor-sharp teeth.➤ It was also found in some parts of India like Bhopal, Kerala and from waterbodies of Maharashtra and Kolkata➤ IUCN status is least concerned.
 <p>Gandhi Peace Prize 2021</p>	<ul style="list-style-type: none">• Gandhi Peace Prize 2021 will be conferred on Gita Press, Gorakhpur.• Annual Gandhi Peace Prize was instituted in 1995 on occasion of 125th birth anniversary of Mahatma Gandhi.<ul style="list-style-type: none">➤ Award is open to all persons regardless of nationality, race, language, caste, creed or gender.➤ Award carries a cash prize of ₹1 crore, a citation, a plaque and an exquisite traditional handicraft/handloom item.➤ Past awardees include organisations such as ISRO and Ramakrishna Mission.
 <p>Henley Private Wealth Migration Report 2023</p>	<ul style="list-style-type: none">• As per report, India is expected to lose 6,500 High Net-Worth Individuals (HNWIs) in 2023, second-highest estimated outflow number globally.<ul style="list-style-type: none">➤ HNWIs, also known as 'millionaires', are those having investable wealth of \$1 million or more.➤ Top five destinations for net inflows of HNWIs are expected to be Australia, United Arab Emirates (UAE), Singapore, United States, and Switzerland.➤ Political stability, low taxation, and personal freedom had traditionally been key factors in their decision-making.
 <p>Groundwater extraction tilted Earth's spin</p>	<ul style="list-style-type: none">• A new study found that Groundwater pumping has tilted the planet nearly 80 centimetres east between 1993 and 2010 alone.• Planet's geographic north and south poles are where its axis intersects the surface; however, they are not fixed.<ul style="list-style-type: none">➤ The axis and hence the poles fluctuate due to variations in Earth's mass distribution.➤ Water circulated across the planet determines how mass is distributed.
 <p>Telegram bots</p>	<ul style="list-style-type: none">• Reports suggest instances where Telegram bots have been misusing private data of individuals.• About Telegram Bots:<ul style="list-style-type: none">➤ Bots are computer programs that act as agents of a user or another computer program.➤ Bots on Telegram are small applications that run entirely within the platform and can be designed to support any kind of task or service.➤ Not all of them are secure and safe.➤ Bots are listed on the platform as special accounts that do not require a phone number to set up.➤ Users can send commands to bots that they respond to with relevant information or perform tasks they are designed to do.
 <p>Mobile Satellite Service (MSS) terminals</p>	<ul style="list-style-type: none">• NewSpace India Ltd (commercial arm of ISRO), is setting up MSS terminals on at least one lakh motorised and fishing boats across 13 coastal states.<ul style="list-style-type: none">➤ The system will be powered by India's own navigation satellite system, NavIC (Navigation with Indian Constellation).• Advantages: Establish better communication with vessels in sea; Better security to fishermen; Monitor Indian waters more efficiently and improve national security.