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Binturong and Small-clawed otter

Two mammal species, the binturong and small-clawed otter, were newly found in Kaziranga National Park and Tiger Reserve.

Binturong

- **Scientific name –** Arctictis binturong
- **Native to –** South and Southeast Asia.
- **Other name –** Bearcat (meaning young in Assamese).
- **Characteristics –** It is not easily found due tis nocturnal (active at night) and arboreal (living in trees) habits.
- They live in elevated areas and prefer dense forests with a lot of canopy cover.
- **Distribution –** In India it is known to have a distribution exclusive to the Northeast.
- **Conservation Status –**
    1. **Wildlife Protection Act 1972 –** Schedule I
    2. **IUCN Status –** Vulnerable

Small-clawed otter

- **Scientific name –** Aonyx cinereus
- **Other name –** Asian small-clawed otter.
- **Characteristics –** Small-clawed otter is the smallest otter species in the world.
- Small-clawed otters have partially webbed feet with short claws, which make them skilled hunters in aquatic environments.
- Small-clawed otters are highly social animals, living in family groups and communicating through a variety of vocalizations.

The claw of the smooth coated otter is like that of a dog but the claws of small-clawed otter is like a human finger.

- **Types –** Three different otter species are found in India, namely – Smooth-coated otters, Eurasian otters and small-clawed otter species.
- With the identification of the small-clawed otters, all three species are now present in the Kaziranga national park.
- **Distribution –** It has wide distribution range, extending through India in South Asia to eastwards in Southeast Asia and Southern China.
- **In India –** It is found mostly in the protected areas of West Bengal, Assam, and

Arunachal Pradesh and in Karnataka, Tamil Nadu and some parts of Kerala in the Western Ghats region.

- It was previously reported from western Himalayas and parts of Odisha, however no recent records of its presence has been found in these regions.
- **Found in –** They are primarily found in freshwater habitats such as rivers, streams, and wetlands.
- **Diet –** They feed on fish, crustaceans, and mollusks.
- **Prefer –** In Western Ghats of India, it prefers high-elevation areas with streams and pools.
- It also prefers narrow fast flowing rocky streams with densely vegetated banks to provide secure escape cover.
- **Conservation Status –**
    1. **Wildlife Protection Act 1972 –** Schedule I
    2. **IUCN Status –** Vulnerable

This identification of the elusive binturong and the small-clawed otter, increases the number of mammal species in Northeast India's biggest national park to 37.

Quick Facts
Kaziranga National Park and Tiger Reserve (KNPTR)
• Kaziranga National Park in Assam hosts two-thirds of the world's great one-horned rhinoceroses. • It is a World Heritage Site and located on the edge of the Eastern Himalaya biodiversity hotspot. • It is home to the highest density of tigers and was declared a Tiger Reserve in 2006. • It also hosts large breeding populations of elephants, wild water buffalo, and swamp deer. • The rivers Brahmaputra, Diphlu, Mora Diphlu and Mora Dhansiri flow through it. • The great one-horned rhinoceros is native to India and listed as Vulnerable on the IUCN Red List • The list of top 5 mammals in Kaziranga includes: 1. The great Indian one-horned rhinoceros (*Rhinoceros unicornis*), 2. Indian elephant (*Elephas maximus*), 3. Bengal tiger (*Panthera tigris*), 4. Wild water buffalo (*Bubalus bubalis*), 5. Eastern swamp deer (*Cervus duvauceli*) *The other mammals found in KNPTR include the Indian wild boar (Sus scrofa), Indian gaur (Bos gaurus), sambar (Cervus unicolor), hoolock or white-browed gibbon (Hylobates hoolock), Gangetic dolphin (Platanista gangetica), capped langur or leaf monkey (Presbytis pileatus), sloth bear (Melursus ursinus), leopard (Panthera pardus), and the jackal (Canis aureus).*

References

1. Mongabay – Two new mammal species identified in Kaziranga
2. Times of India – Two species added to Kaziranga's mammalian list

3. The Hindu – Two new mammalian species added to Kaziranga's fauna

Whales and Effects of Entanglement

Researchers have found that the female right whales may never breed after entanglement in a fishing gear.

Right Whales
• **Name –** The species' name originates from the fact that historically whalers considered right whales the right whale to hunt. • **Characteristics –** These whales yielded high quantities of oil and baleen, and were easy to catch and process because they were found close to shore, swam slowly, and floated when they were dead. • **Types –** There are three recognized species of right whales that occur in different parts of the world. • These are Southern right whales (Eubalaena australis), North Atlantic right whales (Eubalaena glacialis) and North Pacific right whales (Eubalaena japonica). • The North Atlantic right whale is one of the world's most endangered large whale species. *North Atlantic right whales are legally protected, both internationally and in U.S. waters.* • The North Pacific right whale is found in the North Pacific Ocean, and the Southern right whale is found in the southern hemisphere. • **Differ –** While they differ genetically, and in conservation status, they do not differ significantly in their external appearance. • **IUCN Status –** 1. **Southern right whales –** Least Concern. 2. **North Atlantic right whales –** Critically Endangered. 3. **North Pacific right whales –** Endangered.

Effects of Entanglement

- **Entanglement –** The entanglement of marine mammals, is considered a type of bycatch.
- It occurs when fishing gear and marine debris become wrapped around the animal, weighing it down or hampering its movement, often leading to the animal's death, or serious welfare issues.
    - The different types of fishing gears includes ropes, buoys, nets, and fish aggregating devices.

Research suggests that over 300,000 whales and dolphins die annually due to entanglement in fishing gear, with additional unknown numbers also entangled in marine debris.

- **Effects –** Entangled animals may drown or starve because they are restricted by fishing gear, or they may suffer physical trauma and infections from the gear cutting into their flesh.
- Entangled animals may also be unable to avoid vessels like they normally would, thus increasing the risk of vessel strikes.

- Smaller marine animals, like sea turtles, seals, porpoises, dolphins, and smaller whales, may drown immediately if the gear is large or heavy.

Entanglement is considered a primary cause of human-caused mortality in many whale species, especially right whales, humpback whales, and gray whales.

- **Impact on Whales –** When whales become entangled in fishing gear, they use extra energy dragging it as they swim.
- If the rope is caught around their mouths, they may struggle to feed and slowly starve.
- Ropes wrapped around whales' bodies, flippers or tails can cut into the animals' skin and become deeply embedded in their flesh, as happened to whale.
- This can cause infections, chronic emaciation and damage to whales' blubber, muscle, bone and baleen, the bristly structures in their mouths that they use to filter prey from the water.
- **Breeding –** Even when entanglement does not kill a whale, it can affect their ability to reproduce, which is critically important for a species with such low numbers.
- North Atlantic right whales historically started breeding by around 9 years of age and gave birth to a single calf every three to four years thereafter for several decades.
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- Entanglement is attributed to the low calving rates in North Atlantic right whales' decline.

References

1. The Hindu – Female right whales may never breed after entanglement
2. IWC – Right Whale
3. NOAA – Entanglement of Marine Life
4. IWC – Whale Entanglement

Aurangzeb

Shiv Sena leader equated Prime Minister with Mughal emperor Aurangzeb, saying that both were born in Gujarat.

- **Born –** Aurangzeb was born in Dohad (or Dahod) in present-day Gujarat on November 3, 1618.
- **Parents –** He was prince Khurram's (not yet Emperor Shah Jahan and Mumtaz Mahal) sixth child, and third son, after Darah Shukoh and Shah Shuja.
- **Early Life –** At the time, Khurram had been made the governor of the Gujarat province, appointed to the post by his father, Emperor Jahangir in 1618.
- Aurangzeb would, thus, spend his early years in Gujarat until his father decided to (unsuccessfully) rebel against the Emperor in 1622.
- Khurram had to submit to his father his young sons, Dara and Aurangzib, as hostages.
- **Character –** Aurangzeb grew up as a serious-minded and wedded to the Muslim

orthodoxy of the day and free from the royal Mughal traits of sensuality and drunkenness.

- **Positions –** He commanded troops against the Uzbeks and the Persians with distinction and, as viceroy of the Deccan provinces in two terms, reduced the two Muslim Deccan kingdoms to near-subjection.
- **Emperor of India –** Aurangzeb ruled India between 1658 to 1707.
- In the struggle for power (1657–59), Aurangzeb defeated Dara and confined his father in his own palace at Agra.
- Aurangzeb's reign is often characterised by his strict Islamic policies, including the imposition of the Jizya (tax on non-Muslims) and the destruction of Hindu temples.
- In 1675 Aurangzeb arrested and executed the Sikh Guru (spiritual leader) Tegh Bahadur, who had refused to embrace Islam.
- The succeeding Guru, Gobind Singh, was in open rebellion for the rest of Aurangzeb's reign.
- **Architecture built –** Moti Masjid, Badshahi Mosque, and Bibi Ka Maqbara.
- **Death –** Aurangzeb died as the emperor of India on March 3, 1707.

Gujarat in the Mughal Empire

- Gujarat fell to Mughal rule in 1573, when then Emperor Akbar defeated the Gujarat Sultanate under Muzaffar Shah III.
- It was subsequently governed by viceroys and officers appointed by the Mughal state, and became one of its most important provinces.

Most notably, in 1612, then Emperor Jahangir (reign 1605-27) permitted the British East India Company to set up factories (trading posts/warehouses) in the port of Surat.

- East India Company steadily increased its presence in the province after that.
- During the reign of Aurangzeb (1657-1708), the region was marred by significant instability, with Chhatrapati Shivaji Maharaj raiding Mughal outposts in the province, including the port of Surat.

References

1. The Indian Express – Was Aurangzeb born in Gujarat?
2. Britannica – Aurangzeb
3. DNA – Aurangzeb

Virtual Reality vs Augmented Reality vs Mixed Reality

Apple asked app developers, building applications for its Vision Pro, to call their apps 'spatial computing apps'.

- **Immersive Reality –** Immersive reality creates a new virtual reality by using 360-degree space.

- Like in Vortex, one can recreate a physical space, and enhance it with virtual objects to create an entirely new world with a perfect blend of real and virtual objects.
- Immersive-reality technologies use sensing technologies and spatial computing to help users see the world differently through mixed or augmented reality or see a different world through virtual reality.

Extended Reality (XR) is an umbrella term encapsulating Augmented Reality (AR), Virtual Reality (VR), Mixed Reality (MR), and everything in between.

- **Spatial computing –** It allows to use computer graphics, images and other functions in the backdrop of a physical space instead of a computer screen.
- It enables computers to blend in with the physical world in a natural way.

Virtual Reality (VR)	Augmented Reality (AR)
• It is a simulated 3D experience projected by a device into the user's sight. • These immersive simulations can create almost any visual or place imaginable for the player using special equipment such as computers, sensors, headsets, and gloves. • The users need to wear devices such as headgears or goggles to interact with the environment. • **360 VR –** This technology is an interactive and immersive VR that allows the user to be in the middle of a virtually created scene.	• This technology is used to add digital images on top of real-world scenarios. • The Snapchat filters and Pokemon Go are a great example of augmented reality. • It is the overlay of digital content on the real-world environment. • It uses different tools to make the real and existing environment better and provides an improved version of reality.
Mixed Reality (MR)	
• It is a mix of virtual reality and augmented reality in which one can interact with the digital as well as the real world simultaneously. • It integrates digital objects and real-world in such a way that it makes it look like the objects really belong there.	

References

1. The Hindu – Slow and steady rise of mixed reality technology
2. First Post – Virtual Reality and Augmented Reality

The Global E-waste Monitor 2024

According to the Global E-waste Monitor (GEM), the world's generation of electronic waste is rising five times faster than documented e-waste recycling.

- **E-waste** - Electronic waste refers to all items of electrical and electronic equipment (EEE) and its parts that have been discarded by its owner as waste without the intent of re-use.
- It is also referred to as ***WEEE (Waste Electrical and Electronic Equipment).***
- **Regulation of e-waste in India** - The ***E-Waste (Management) Rules, 2022***

provided for a new Extended Producer Responsibility (EPR) regime for e-waste recycling in India.
- Producers of notified EEE, have been given annual E-Waste Recycling targets starting from 60% for 2023-2024 and 2024-25; 70% for 2025-26 and 2026-27 and 80% for 2027-28 and 2028-29 and onwards.

The Global E-waste Monitor 2024

- It provides the most up-to-date overview of global e-waste data, statistics, and progress in policy and regulation since 2014.
- **Prepared by** - Global E-waste Statistics Partnership (GESP) with the support from Fondation Carmignac, a corporate foundation.

Global E-waste Statistics Partnership (GESP)
• In 2017, the International Telecommunication Union (ITU), United Nations University – Sustainable Cycles (UNU-SCYCLE) and the International Solid Waste Association (ISWA), joined forces to create the GESP. • Since 2022, Sustainable Cycles (SCYCLE) became a programme under the United Nations Institute for Training and Research (UNITAR). • The GESP is now a Partnership managed by the ITU and UNITAR-SCYCLE.

Findings of Global E-waste Monitor 2024

- **E-waste production** - A record 62 million tonnes of e-waste was produced in 2022, 82% up from 2010.
- It will rise another 32% to 82 million tonnes in 2030.
- Just 1% of rare earth element demand is met by e-waste recycling.
- **Recycled waste** - Less than one quarter (22.3%) of the year's e-waste mass was documented as having been properly collected and recycled in 2022.
- Among regions, Europe has the highest rate of documented formal collection and recycling of e-waste at 42.8% while Africa generates the lowest rates of e-waste but struggles to recycle it.
- **Per-capita e-waste** - Europe (17.6 kg), Oceania (16.1 kg) and the Americas (14.1 kg) generated the highest amount of e-waste per capita in 2022.
- **Challenges** - Technological progress, higher consumption, limited repair options, shorter product life cycles, society's growing electronification, design shortcomings, and inadequate e-waste management infrastructure.
- **Future perspective** - If countries could bring the e-waste collection and recycling rates to 60% by 2030, the benefits through minimizing human health risks would exceed costs by more than 38 billion dollars.

	E-waste generated	E-waste generated	E-waste documented as formally collected and recycled
Global Scenario	62 billion kg	7.8 kg/capita	13.8 billion kg
India's Case	4137 million kg	2.9 kg/capita	59.6 million kg

References

1. DTE | Global E-waste Monitor 2024
2. UNITAR | Global E-waste Monitor 2024