

UPSC CURRENT AFFAIRS NOTES 22-03-2024

Asbestos

Recently, the United States' Environmental Protection Agency (EPA) announced a comprehensive ban on all forms of the deadly carcinogen asbestos.

About Asbestos



Asbestos is a generic term for a group of six silicate minerals with similar but distinct properties.

These are generally divided into two sub-groups; serpentine and amphiboles. Serpentine asbestos (chrysotile or white asbestos) was the most commonly used type of asbestos.

Properties:

These are resistant to heat and corrosion.



It is non-flammable even at very high temperatures and is extremely flexible and durable.

It has good tensile strength.

It has low heat conductivity and high resistance to electricity.

It was once widely used in construction materials, insulation and consumer goods.

India's asbestos requirement is met through imports from Russia, Kazakhstan, Brazil and China.

The newly banned chrysotile asbestos in the USA was primarily used by the chlor-alkali industry, which produces chlorine bleach, caustic soda and other chemicals used in water treatment.

Health impacts:

According to the World Health Organization, all varieties of asbestos are associated with conditions such as lung cancer, mesothelioma, laryngeal cancer, ovarian cancer and asbestosis, a lung fibrosis.

If products containing asbestos are disturbed, tiny asbestos fibers are released into the air.

When asbestos fibers are breathed in, they may get trapped in the lungs and remain there for a long time.

National Internet Exchange of India (NIXI)

The National Internet Exchange of India (NIXI) is set to unveil the BhashaNet portal at the upcoming Universal Acceptance (UA) Day in a move towards advancing digital inclusion and promoting linguistic diversity in India.

About National Internet Exchange of India (NIXI)



It was established in 2003 as a not-for-profit organization under the Companies Act 2013.

NIXI was set up to extend the use of Internet Service Protocols (ISPs) for the purpose of routing domestic traffic within the country instead of taking it all the way abroad, thereby resulting in a better quality of service (reduced latency) and reduced bandwidth charges for ISPs by saving on international bandwidth.

It is tasked to increase Internet penetration and adoption in India by facilitating the various infrastructure aspects to enable the Internet ecosystem to be managed and used by the masses.

.IN is India's Country Code Top Level Domain (ccTLD). The Government of India delegated the operations of INRegistry to NIXI in 2004. The INRegistry operates and manages India's .IN ccTLD.

Another activity being carried out by NIXI is that of National Internet Registry (NIR). The NIR is known as the Indian Registry for Internet Names and Numbers (IRINN).

It offers IXPs towards building Internet Exchange Points.

Held annually and organized by the community-led Universal Acceptance Steering Group (UASG) and the Internet Corporation for Assigned Names and



Numbers (ICANN), UA Day was established as a means to rally local, regional, and global stakeholders to spread awareness and encourage UA adoption through a mix of virtual, in-person, and hybrid informational and training sessions.

UA is a technical requirement that ensures all valid domain names and email addresses, regardless of script, language, or character length, can be equally used by all Internet-enabled applications, devices, and systems.

Achieving UA ensures everybody has the ability to experience the full social and economic power of the Internet using their chosen domain name and email address that best align with their interests, business, culture, language, and script.

The first UA Day was held on 28 March 2023 and marked the first time a diverse set of technical and language communities, companies, governments, and Domain Name System (DNS) industry stakeholders mobilized to champion UA and a multilingual Internet on a global scale.

LIANAS

A study published by the University of the Sunshine Coast in Australia identifies 'Lianas', a woody vine that climbs trees, are a threat to carbon storage because they compete for sunlight, limiting tree growth and decreasing carbon sequestration capacity.



Key Highlights of the Study

According to the study, lianas restrict tree growth by competing for sunlight in the canopy. Their lower carbon sequestering capacity compared to trees increases this threat to carbon storage.

Lianas have the potential to accelerate global warming by reducing the efficacy of forests as carbon sinks and disrupting carbon cycles.

What are the challenges?

Lianas grow in disturbed forests and at higher temperatures, frequently surpassing trees for sunshine and resources.

Their resilience to climatic stress gives them a competitive advantage, particularly in areas experiencing more extreme conditions due to global warming.

Increased lianas can harm tree growth, reduce regeneration, and disrupt nutrient cycles, making forests less resilient to future disturbances.

Way Forward

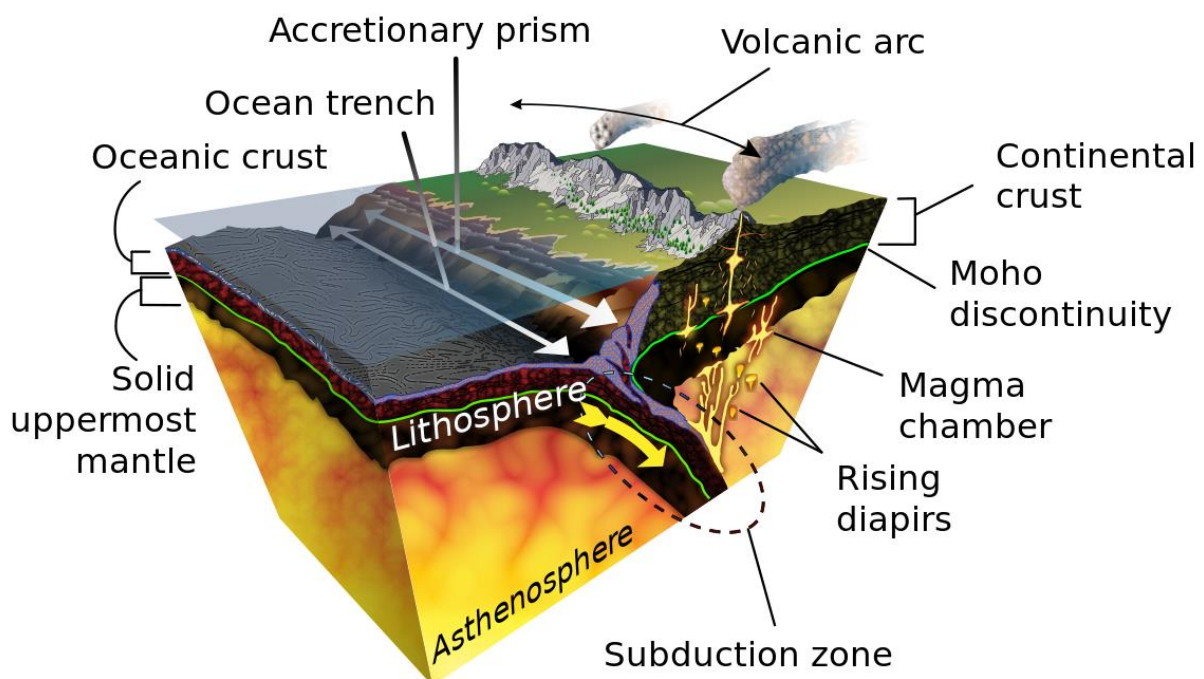
The study highlights the importance of taking a balanced approach to forest management and conservation.

Understanding the factors of liana expansion and their influence on forest ecosystems allows stakeholders to develop methods to limit their impact and promote sustainable forest management practices.

Instead of attempting to eradicate lianas from forests, efforts should be directed towards maintaining a balance of lianas and trees to aid in forest recovery and biodiversity conservation.

SUBDUCTION ZONE

Subduction Zones (SZs) or Benioff Zones are locations of convergent plate boundaries where one tectonic plate is pushed below the other tectonic plate and sinks into the mantle (a process called subduction).



Subduction initiation

This subduction process frequently occurs because of the two different types of lithosphere that make up tectonic plates: Continental and oceanic.



Because oceanic material is denser than continental lithosphere, when the two collide or converge, the oceanic portion sinks into the mantle beneath the more buoyant continental lithosphere and subduction zone occur.

Subduction zones can also occur when both colliding plate sections consist of oceanic material. In these cases, older, denser oceanic lithosphere sinks below younger, more buoyant oceanic lithosphere.

The process and result

The impact of the colliding plates can cause the edges of one or both plates to buckle up into a mountain ranges or one of the plates may bend down into a deep seafloor trench.

A chain of volcanoes often forms parallel to convergent plate boundaries and powerful earthquakes are common along these boundaries. The Pacific Ring of Fire is an example of a convergent plate boundary.

At convergent plate boundaries, oceanic crust is often forced down into the mantle where it begins to melt.

Magma rises into and through the other plate, solidifying into granite, the rock that makes up the continents.

Thus, at convergent boundaries, continental crust is created and oceanic crust is destroyed.

Subduction produces deep trenches, earthquakes, and volcanoes that often form arcs of islands along the convergent boundary

Not always resulted into subduction zone

Tectonic plate smash-ups don't always result in a subduction zone.

When two sections of continental lithosphere converge, it creates a collision zone and the plates crumple together like crashing cars, pushing up material.

Himalaya mountain chain was created this way, when the Indian tectonic plate slammed into the Asian plate.

Recent Developments

A recent study from scientists in Portugal has raised concerns about the future of the Atlantic Ocean.



They have identified a subduction zone, known as the 'Ring of Fire', that could potentially swallow the Atlantic Ocean.

Currently located beneath the Gibraltar Strait, between Spain and Morocco, this subduction zone is predicted to expand westwards over the next 20 million years.

Eurasian Plate and the African Plate

The Gibraltar Strait, a 10-mile gap separating Europe and Africa, marks the meeting point of the Eurasian Plate and the African Plate.

The African Plate is currently subducting beneath the Eurasian Plate in this region, leading to seismic events and earthquake risks.

Despite the slow movement of the subduction zone beneath the strait, experts believe it could grow and extend into other parts of the ocean, a phenomenon known as 'subduction invasion'.

New Atlantic subduction system

Although the current subduction zone below the Gibraltar Strait is relatively small, measuring about 125 miles in length, projections suggest it could expand to around 500 miles in the next 20 million years. Using computer simulations, researchers traced the evolution of this subduction zone from its formation millions of years ago to its potential future development.

The model indicates that the subduction zone will progress westwards through the Gibraltar Strait, forming a new Atlantic subduction system referred to as the 'Ring of Fire'.

This process, similar to the Pacific Ocean's Ring of Fire, involves the gradual pulling of the ocean floor beneath the continents, leading to the closure of the ocean basin.

The study highlights the possibility of the Atlantic Ocean 'closing up' in the distant future. The researchers suggest that the extended subduction zone will propagate further into the Atlantic, eventually reshaping the ocean's geography.

While the timeline for these changes spans millions of years, the implications could be significant for the planet's geological landscape.

IMT Trilateral Exercise

INS Tir and INS Sujata will participate in the forthcoming edition of India Mozambique Tanzania (IMT) TriLateral (TRILAT) Exercise.

About IMT Trilateral Exercise

It is a joint maritime exercise scheduled from 21-29 Mar 24.

The first edition of IMT TRILAT exercise conducted in Oct 22, saw participation of INS Tarkash with the Tanzanian and Mozambique Navies.

The current edition of the exercise is planned in two phases. As part of the harbour phase scheduled from 21-24 Mar 24, Naval ships Tir and Sujata will engage with the respective Navies at the ports of Zanzibar (Tanzania) and Maputo (Mozambique).



This phase would begin with a Planning Conference followed by conduct of joint harbour training activities like Damage Control, Fire Fighting, Visit Board Search and Seizure procedures, Medical Lectures, Casualty Evacuation and Diving operations.

The sea phase of the exercise covers practical aspects of countering asymmetric threats, Visit Board Search and Seizure procedures, boat handling, manoeuvres and firing exercise. A joint EEZ surveillance is also planned during the sea phase.

The exercise will conclude with a joint debrief scheduled at Nacala (Mozambique).

During the harbour stay, Indian Naval ships would be open for visitors and partake in sports & cultural exchanges with host Navies.

WORLD SPARROW DAY

Context: World Sparrow Day is an annual event held annually on 20th March to raise awareness about the value of sparrows to the ecosystem.

Key Points

World Sparrow Day aims to highlight the role of sparrows in biodiversity and ecological balance. It is designed to inform people about the importance of these birds to the ecosystem and biodiversity.

The theme for World Sparrow Day 2024 is “Sparrows: Give them a tweet-chance!”, “I Love Sparrows” and “We Love Sparrows”.

Background

The first World Sparrow Day was celebrated on March 20, 2010, initiated by The Nature Forever Society in India.



The Nature Forever Society was founded by Indian conservationist Mohammed Dilawar, who began efforts to protect sparrow populations in Nasik.

Sparrows are essential for ecosystems, contributing to biodiversity and plant growth, and resulting in healthier environments. However, their population has declined significantly over time, adversely affecting ecosystems. Thus, spreading awareness about the importance of sparrows and strategies to maintain their population is important.

Usha Mehta

The movie 'Ae Watan Mere Watan' was released recently, which is based on the biography of Indian freedom fighter Usha Mehta.

About Usha Mehta

Usha Mehta was born in a village named Saras, near Surat in Gujarat in 1920.

She was a true Gandhian at heart and was popularly known as Ushaben.

At the age of eight in 1928, she participated in a protest march against the Simon Commission.

On 14 August 1942, she and her associates established the Secret Congress Radio during the Quit India Movement, a covert radio station that went on air on 27 August.

It played a crucial role in keeping the freedom movement leaders connected with the public.





Setting up an underground station

Background: At the advent of the War in 1939, the British had suspended all amateur radio licences across the Empire. Operators were supposed to turn in all equipment to the authorities, with severe punishment for those who failed to do so.

Alongside Mehta, Babubhai Khakar, Vithalbhai Jhaveri, and Chandrakant Jhaveri were key figures in organising Congress Radio.

Congress Radio case

The trial of the five accused in the— Mehta, Babubhai Khakar, Vithalbhai Jhaveri, Chandrakant Jhaveri, and Nanak Gainchand Motwane (who sold key pieces of equipment to the team) — generated a lot of excitement in Bombay.

Vithalbhai and Motwane were acquitted, Mehta, Babubhai, and Chandrakant received stern sentences.

Usha Mehta was released from Pune's Yerawada Jail in March 1946, and hailed in the nationalist media as "Radio-ben".

The Quit India Movement, also known as the August Movement or Bharat Chodo Andolan, was a significant civil disobedience movement launched by Mahatma Gandhi and the Indian National Congress on August 8, 1942 at Gowalia Tank Maidan also known as August Kranti Maidan in Bombay.