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IN SCHOOL

Mangrove matters

The Sundarbans, a UNESCO World Heritage Site, was battered by super-cyclone Amphan recently. Here's why conservationists are concerned...

The super-cyclone Amphan, that tore into the coast of West Bengal and Odisha in India and neighbouring Bangladesh on May 20, has been described by experts as the Bay of Bengal's fiercest storm of the century. The raging 190 kmph winds blew away homes, snuffed out lives and ravaged infrastructure, while the five-metre high storm surges flooded swathes of land with seawater.

However, the region that bore the brunt of Amphan's fury was the UNESCO World Heritage Site, the Sundarbans, where the cyclone made landfall between Digha island in West Bengal and Hatiya island in Bangladesh.

Rich biodiversity

The Sundarbans supports exceptional biodiversity in its terrestrial, aquatic and marine habitats, ranging from micro to macro flora and fauna. The region is of universal importance for its globally endangered species such as the Royal Bengal tiger, Ganges and Irrawaddy dolphins, estuarine crocodiles and the critically endangered northern river terrapin. It is the only mangrove habitat of the Bengal tiger (*Panthera tigris tigris*). It also supports over 334 varieties of plant species, 165 algae and around 13 orchid species. A colourful variety of bird life — waterfowl, raptors and forest birds — including nine species of kingfisher and the majestic white-bellied sea eagle — can be spotted here.



from the Hooghly River in West Bengal as far as the Baleswar River in Bangladesh. The delta is an archipelago of around 102 islands that vary in topography from dense mangrove forests, crop land, mudflats and barren land, criss-crossed by numerous tidal streams and channels. The name 'Sundarban' ('Shundorbon' in Bengali) means 'beautiful forest' as the dominant species is the Sundri or Sundari tree (*Heritiera foemes*) or mangrove tree.

What is the Sundarbans?

The world's largest mangrove ecosystem, the Sundarbans, sprawls across the vast delta formed by the confluence of the Ganges, the Brahmaputra and the Meghna rivers as they enter the Bay of Bengal. It extends

What are mangroves?

Mangroves are a group of trees and shrubs that thrive in the coastal saline water. There are around 80 different mangrove species, all of which grow in low-oxygen soil, where slow-moving waters allow sediments to accumulate. Mangrove forests only grow in tropical and subtropical latitudes near the equator because they cannot survive in freezing cold. They can be recognised by their dense tangle of prop roots which literally hold up the trees in water. The roots help the trees withstand the tides, which means mangrove swamps get flooded twice a day during high tide. The advantage is that these trees help protect the coast from erosion, and sustain a rich variety of aquatic life from fish to tiny organisms.



UNESCO World Heritage Sites

The Sundarbans extends from Khulna division in Bangladesh to South 24 Parganas in West Bengal. Four protected areas in the Sundarbans are UNESCO World Heritage Sites — Sundarbans National Park, Sundarbans West, Sundarbans South and Sundarbans East Wildlife Sanctuaries.



Activity

1. Which is the world's second largest mangrove forest?
2. How do mangroves cope with excessive salinity?
3. Look at the image and name the critically endangered species that inhabits the Sundarbans



ANSWERS: 1. Pichavaram mangrove forest in Tamil Nadu. 2. By excreting the excess salt through their leaves. 3. Northern river terrapin

The Amphan effect

Amphan's fury has reportedly caused irreparable damage to the ecologically fragile Sundarbans region, which is already vulnerable to rising sea levels. As it made landfall on May 20, mud embankments protecting the islands were breached, the powerful surge submerging tiny islands in the delta, washing them off the map forever. With seawater entering agricultural land, the government fears that the livelihoods of over 2 lakh farmers could be severely affected. The fate of the 100-odd tigers that inhabit the region is not yet known. The marine ecosystem has also shifted shape after the onslaught of wind and water, with the mangroves in many places getting reduced to mere clumps.



QUEST

What was Mercury 13?

It was a group of 13 women who were trained to become the first women astronauts for NASA. However they never made it to space

In 1959, NASA announced the Mercury Seven the first seven American men to be trained as astronauts. The doctor who conducted medical tests on them, Dr. Randy Lovelace, wondered if women could also withstand the rigours of those tests. He invited Jerrie Cobb, an accomplished pilot to undergo the same rigorous physical and psychological tests as part of a privately funded program. When she successfully passed the first phase of testing, they recruited 19 other women in 1960. Finally 13 women pilots, including a pair of twins, were selected. They had to be healthy women with a bachelor's degree and over 2,000 hours of flying time. They came to be called the Mercury 13.

The women were subjected to numerous X-rays and eye exams. Their respiration was tested by making them ride stationary bikes to the point of exhaustion. Ice water was injected into their ears to induce vertigo to check how quickly they could recover. In some tests, the women actually performed



better than the men. Lovelace needed to use military facilities to conduct the more advanced tests, but was refused permission as the program

was not part of NASA. Cobb wrote to the US Vice-President and also appeared before Congress in 1962, appealing to them to continue the program but to no avail. NASA required that their astronauts be military jet test pilots. At the time, women were barred from becoming Air Force pilots. So though women pilots had considerable experience in flying civilian planes, they were not allowed to fly military jets. Moreover, NASA was keener on sending a man to the moon, and did not want to spare money and attention on a women's program. As a result, the Mercury 13 program was shelved.

NASA was criticised for its decision in 1963 when Soviet Russia sent the first woman into space. It was not until 1983 that USA sent its first woman astronaut Sally Ride into space.

(Content provided by Amrita Bharati)

HEADSTART

Testing, a profession

A career in product testing can be rewarding for young tinkerers...

How it works: Product testers help companies launch new products. They evaluate and provide feedback on items before they hit the shelves.

What are the prospects: Companies manufacturing luxury cars, video games, health and beauty products usually hire product testers to report on the performance of their products. Opportunities include product testing, writing reviews and product endorsements.



What to study: The required skills and educational qualifications depend on the product that one will be testing.

** A degree in Computer Science and Electronics is needed to test software, websites and apps. You can also get certified from the International Software Testing Qualification Board (ISTQB) or Certified Software Tester (CSTE). ** On the other hand, fields such as game testing, luxury car test driving do not require any specific educational qualification. Instead, they emphasise on technical knowledge and practical skills.

What now for cricket in 2020?

The COVID-19 pandemic threatens to have major implications for the game worldwide. Here's a look at the key issues confronting cricket...

Will teams go on tour?

West Indies and Pakistan, two of cricket's less well-off major teams, have both made encouraging noises about touring England.

Matches are set to be played at 'bio-secure' venues such as Hampshire's Ageas Bowl or Old Trafford that have on-site hotels. Australia were meant to play three Twenty20s and three one-day internationals in July but may delay their visit to later in the season after seeing how the West Indies and Pakistan series pan out.

"Obviously we won't jeopardise the safety of the players," Cricket Australia chief executive Kevin Roberts told the Sydney Daily Telegraph.



PHOTO: AP

What will cricket look like?

Even if a rescheduled series starts in July, the game itself will look very different.

Not only will there be no spectators but wicket celebrations such as 'high fives' are set to be banned.

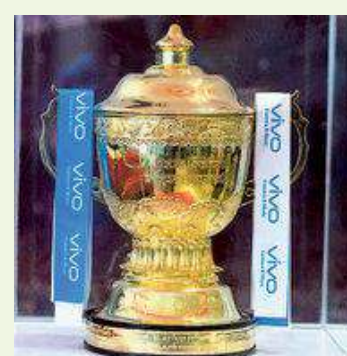
Umpires have also been instructed to wear gloves to minimise the risk of infection. Another 'interim' measure, which still requires approval at a June vote, would see bowlers banned from using saliva to shine the ball to aid swing, although they will still be allowed to apply their own sweat.

What will happen to the Twenty20 World Cup and IPL?

An ICC board meeting on Thursday May 28, could see the men's Twenty20 World Cup, due to be held in Australia from October 18, postponed.

Problems over flying in 16 teams to Australia may be reason enough to delay the event by a year.

That would allow the already postponed franchise Indian Premier League, the world's wealthiest T20 competition, to go ahead in its place.



IPL trophy. PHOTO: THE HINDU

What does this mean for women's cricket?

The women's game was riding the crest of a wave after a crowd of over 86,000 in Melbourne saw hosts Australia beat India in the final of the T20 World Cup in March, shortly before global sport went into lock-down.

But Clare Connor, the ECB's managing director of women's cricket, has accepted her side of the game may have to be sacrificed completely in order for more lucrative men's matches to go ahead this season. AFP

ARTIVITY



Artwork by Shiva.S, Class LKG, BGS National Public School, Bengaluru
 Read the newspaper and create an original artwork based on a news item that interests you and send your entry to school@thehindu.co.in with the subject - Artivity. Select entries will be published. Please mention your name, class, school and city.

TECH BYTES

What is open source?

Open source is used to refer to software and programs that are available for the public to use for free. Users can consume and modify such software according to their needs without the need for any copyright.

Unlike closed-source software, whose source code access is restricted, open source software's source code can be accessed and improved upon by users. Some of the many open source software available online include the Linux Operating System, Mozilla Firefox web browser, LibreOffice office suite, and GIMP, a photo editing software.

Open source software is helpful for users since it is free, customisable, secure and fast, and stable since anyone on the web can fix issues that crop up at any point in time.