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## Komodo Dragon

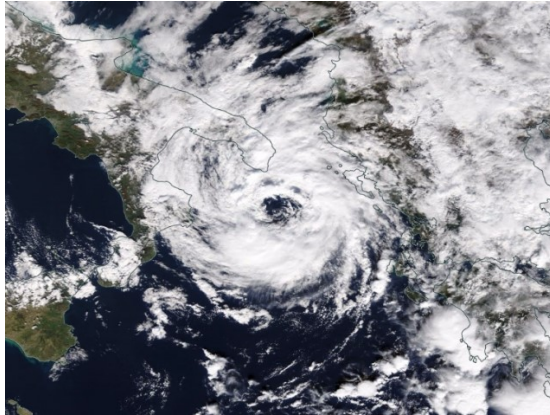


- A recent study finds that the Komodo dragon, the world's largest lizard, could become extinct in the next few decades due to climate change
- The study conducted by the University of Adelaide and Deakin University, both in Australia states that the Komodo Dragon could become extinct in the next few decades due to climate change unless measures are taken to change the status quo
- The study used models to predict that the dragon could become extinct on three of the five island habitats where it is currently found
- According to it, climate change was likely to cause a sharp decline in the availability of habitat for Komodo dragons, reducing their populations, according to the authors of the study.
- The Komodo dragon, also known as the Komodo monitor, is a species of lizard found in the Indonesian islands of Komodo, Rinca, Flores, and Gili Motang.
- Also known as the Komodo monitor, is a species of lizard found in the Indonesian islands of Komodo, Rinca, Flores, and Gili Motang.
- A member of the monitor lizard family Varanidae, it is the largest extant species of lizard, growing to a maximum length of 3 metres (10 ft) in rare cases and weighing up to approximately 70 kilograms (150 lb).
- Scientific Name: *Varanus komodoensis*
- Type: Reptiles
- Diet: Carnivore
- Average LifeSpan in the Wild: Up to 30 years
- They have long, flat heads with rounded snouts, scaly skin, bowed legs, and huge, muscular tails.
- Komodo dragons have thrived in the harsh climate of Indonesia's Lesser Sunda Islands for millions of years.
- They prefer the islands' tropical forests but can be found across the islands.
- Though these athletic reptiles can walk up to seven miles per day, they prefer to stay close to home rarely venturing far from the valleys in which they hatched.

### Unique reproduction (a sexual):

- When there aren't any males around, female Komodo dragons have other means of reproducing: As they have both male and female sex chromosomes, female dragons can reproduce asexually in a process called parthenogenesis
- IUCN status: Vulnerable

## Medicanes



- Extra tropical storms in the Mediterranean Sea are known as 'Medicanes' or 'Mediterranean Hurricanes'
- It is a term that is being used more often that refers to a strong storm system across the Mediterranean Sea
- Medicanes is a combination of the two words "Mediterranean" and "hurricane."
- Although it is not official terminology, the name separates the regional differences that these storms have, compared to tropical storms, cyclones or hurricanes.
- A medicanes is more of a tropical stormlike cyclone.
- They form when a non-tropical storm feeds off the warm waters of the Mediterranean.
- The storm can then begin to strengthen and develop tropical storm characteristics.

Which areas experience medicanes?

- The area that typically experiences a medicanes is central Mediterranean countries like Greece, Italy or Turkey, for example.

## Sandalwood Spike Disease



- Sandalwood trees in India, particularly in Karnataka and Kerala are facing a serious threat with the recent return of the destructive Sandalwood Spike Disease (SSD).
- According to a study by scientists Institute of Wood Science & Technology, Bengaluru, the natural population of sandalwood in Marayoor of Kerala and various reserve forests in Karnataka, including Malai Mahadeshwara Hills, are heavily infected with SSD according to IWST, the present rapid spread of the infection is largely due to restrictions on green felling in forests, which has allowed vectors to spread the disease to healthy trees

- Spike disease caused by phytoplasma is the major disease of sandalwood.
- Spike disease is characterized by extreme reduction in leaf size accompanied by stiffening and reduction of internode length.
- In the advanced stage, the entire shoot gives the appearance of a spike of inflorescence.
- Spiked trees die within 1–2 years after the appearance of visible symptoms

## Leuser Ecosystem



- Recently, an investigation by global watchdog Rainforest Action Network (RAN) has shown that food and cosmetic companies as well as financial institutions have links with companies implicated in the destruction of the Leuser Ecosystem, a forest area on the island of Sumatra, Indonesia.
- RAN's investigation claimed the following companies for procured oil from and financed the Royal Golden Eagle (RGE) group, which has established the destructive oil palm and pulp plantations in the area through subsidiary companies.
- RGE, for example, procures palm oil from a mill supplied by PT Tualang Raya, a palm oil producer in the Leuser Ecosystem, the investigation claimed.
- PT Tualang Raya is also known to have cleared at least 60 hectares of lowland rainforest in the Leuser Ecosystem over the past six months. This is three times the rate of clearance in the last six months.
- RAN investigation pointed out that many of these companies and banks had pledged to conserve the environment.
- The Leuser Ecosystem is an area of forest located in the provinces of Aceh and North Sumatra on the island of Sumatra in Indonesia
- Covering more than 2.6 million hectares it is one of the richest expanses of tropical rain forest in Southeast Asia and is the last place on earth where the Sumatran elephant, rhino, tiger and orangutan are found within one are
- It has one of the world's richest yet least-known forest systems, and its vegetation is an important source of Earth's oxygen.
- Biodiversity: Home to over 105 mammal species, 382 bird species, and 95 reptile and amphibian species, the Leuser Ecosystem is one of the last remaining habitats where so much wildlife can still thrive.
- Unique feature: This rainforest is said to be the only place left on Earth where tigers, orangutans, elephants and rhinos still coexist in the wild.
- Threat: Palm oil, Pulp and Paper industries and mining continue to threaten its ecosystem therefore deforestation is bringing the Leuser Ecosystem's wildlife to the very brink of extinction

- Around 70-75% of Aceh's people live on the coastal plains of Sumatra, where many communities have established wet rice cultivation. They heavily depend upon the food and water supplied by this ecosystem

## Scrub Typhus

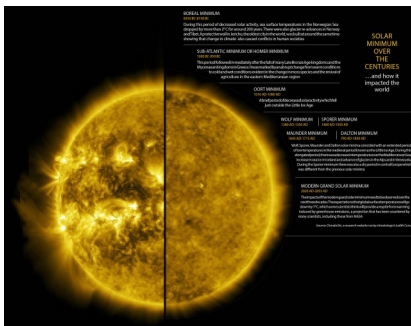


- An outbreak of Scrub Typhus (also known as Bush Typhus), a bacterial disease, has caused 5 deaths and 600 infections in Nagaland's Noklak district bordering Myanmar.
- Scrub typhus, also known as bush typhus, is a disease caused by a bacteria called *Orientia tsutsugamushi*. Scrub typhus is spread to people through bites of infected larval mites.
- The mites are found in grasslands, forests, bush areas, wood piles, gardens, and beaches.
- Scrub Typhus can also be transmitted through unscreened blood transfusions and unhygienic needles. It does not spread from person to person.
- The most common symptoms of scrub typhus include fever, headache, body aches, and sometimes rash.
- It is a disease caused by a bacteria called *Orientia tsutsugamushi*.

Symptoms of scrub typhus usually begin within 10 days of being bitten. Signs and symptoms may include:

- I. Fever and chills
- II. Headache
- III. Body aches and muscle pain
- IV. A dark, scab-like region at the site of the chigger bite
- V. Mental changes, ranging from confusion to coma
- VI. Enlarged lymph nodes
- VII. Rash

## Modern Grand Solar Minimum



- The magnitude of the Sun's solar activity is decreasing. This period of decreased solar activity is known as the Modern Grand Solar Minimum that will last from 2020 to 2053.

Studies By

- United States National Oceanic and Atmospheric Administration's (NOAA) Space Environment Centre.

- Measurement of Solar Activity
- This is done by observing the number of Sunspots at any given time. The number of sunspots is directly proportional to solar activity. More Sunspots mean more solar activity.
- Sunspots (some as large as 50,000 km in diameter) are areas that appear dark on the surface of the Sun (photosphere). They appear dark because they are cooler than other parts of the Sun's surface.
- Sunspots are relatively cool because they form at areas where magnetic fields are particularly strong. These magnetic fields are so strong that they keep some of the heat within the Sun from reaching the surface.
- Decrease in Sun Spots
- According to the United States National Oceanic and Atmospheric Administration's (NOAA), 71% of the Sun had no Sun spots in 2020 through September 21, 2020 as compared to 77% in 2019.

#### Possible Reason

- 2020 marks the beginning of the 11th solar cycle. The beginning of a solar cycle is a solar minimum, or when the Sun has the sunspots and thus, least activity.
- Solar Cycle is the periodic flipping of the magnetic field of the Sun that occurs every 11 years or so. The north and south poles of the Sun change positions.
- The middle of the solar cycle is the solar maximum, or when the Sun has the most sunspots
- Maunder Minimum
- The last time such an event occurred was during the Maunder Minimum, from 1645 CE to 1710 CE.
- That period is a part of the Little Ice Age (from 1300 to around 1850), when Earth went through a series of elongated cold periods.
- During the Maunder Minimum, the solar irradiance went down by 0.22 % in 1710 CE when the period ended.
- This brought down the temperatures in the Northern Hemisphere, especially in Europe, by 1-1.5°C and led to frozen rivers, long cold winters and cold summers.
- Impact
- The surface temperatures on Earth may go down during the Modern Grand Solar Minimum due to a 70% reduction in solar magnetic activity.
- Variations in solar irradiance will lead to heating of the upper layer of the Earth's atmosphere and influences the transport of solar energy towards the planet's surface.
- Decreased solar activity has complex impacts on the abundance of ozone in the Earth's atmosphere
- It also affects the climatic cycles of Earth such as the North Atlantic Oscillation