Prelim Bits 30-08-2022 | UPSC Daily Current Affairs

Puga Valley

The magistrate of Nyoma subdivision in Ladakh ordered Oil and Natural Gas Corporation (ONGC) to practise the highest standards of precaution at the geothermal energy plant in Puga Valley.

> *The Puga Valley Geothermal Project will be India's first geothermal energy project, and will be the world's highest geothermal energy project.*

- Puga Valley is situated in the Changthang Valley in the southeastern part of **Ladakh**, about 22 km away from the Salt Lake Valley.
- The region is known as a hub for generating geothermal energy, which is notably in the form of sulphur and borax deposits.
- It has shown an immense amount of mud pools and hot sulphur springs.
- These mud pools and springs are said to have medicinal properties, and can cure skin diseases and even rheumatism.
- One can also spot sheep, yak, bar-headed geese, brahminy ducks, black-necked cranes and more wildlife here.

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Pileus Cloud

Haikou city residents in China were astounded when they observed a rainbow in the sky that was shaped like a cloud. The phenomena was not a rainbow, but actually a cloud known as pileus cloud.

- The 'pileus cloud' is also known as a 'cap cloud' or 'scarf cloud'.
- Actually, the **rainbow-like** pileus cloud is not a cloud in itself.
- The pileus cloud is an **accessory cloud of small horizontal extent**, in the form of a cap or hood above the top or attached to the upper part of a cumuliform cloud that often penetrates it.
- Several pileus may fairly often be observed in superposition.
- **Formation** - A pileus is created when the quickly rising air in the cumulus cloud (or cumulonimbus) updraft pushes against the cooler air above it.

- This causes condensation of the moisture right along the top of the updraft, leading to the formation of the Pileus.
- When the sun is shining at a perfect angle, **diffraction of light** takes place between the droplets and ice crystals in the cloud, giving the Pileus its rainbow-like colors.
- But, these clouds typically only last a few hours, as they are "eaten up" by the cloud that is above them.
- Pileus cloud is **absorbed by the lower cloud by convection**.
- Pileus isn't very common, but it can be spotted on days when you could anticipate cumulus clouds developing into thunderstorms.

Pileus cloud should not be confused with the lenticular cloud. Lenticular clouds stand alone while pileus clouds are an accessory to cumuliform clouds.

Lenticular Clouds

- Lenticular clouds are stationary clouds that form mostly in the troposphere, typically in parallel alignment to the wind direction.
- These strange clouds sometimes form downwind of hills or mountains.
- Lenticular clouds are so named because they resemble lentils.
- They are easily distinguished from other cloud species by their distinctive UFO shape and smooth edges.

Reference

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3. https://cloudatlas.wmo.int/en/clouds-accessory-pileus.html
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Dunaliella tertiolecta

Researchers from the Indian Institute of Technology (IIT) Guwahati has developed an edible material, using marine microalga Dunaliella tertiolecta, that can be coated on vegetables and fruits to extend their shelf life.

- **Dunaliella tertiolecta** is a marine microalga or the phytoplankton known for its **antioxidant properties** and has various bioactive compounds such as **carotenoids** and **proteins**.
- Dunaliella is also used to **produce algal oil**, which is a non-animal source of omega-3 fatty acid, and is a good source of biofuel.
- After the oil is extracted, the residue is usually discarded.
- However, the researchers have now used these extracts from the residue in formulating their edible film, in combination with chitosan.
- **Edible Film** - It has anti-microbial and anti-fungal properties.

- This material displayed superior antioxidant activity, thermal stability, mechanical strength, total phenolic content and water vapour barrier property. It also had excellent UV-Vis light-blocking properties.
- **Coating Technique** - The material can be either directly coated on the vegetables and fruits or made into a vegetable storage pouch.
- In both cases, the shelf life of the vegetables can be extended.
- It is a simple dip coating technique with no significant cost added.
- **Benefits** - The new coatings can be mass-produced.
- They are very stable to light, heat, and temperature up to 40°C, and can be safely eaten as part of the product formulation.
- They retain texture, colour, appearance, flavour and nutritional value.
- **Safety** - To test the biosafety of these coatings, the coatings were tried on the BHK21 cell line, which is a laboratory standard for the study of various biological processes.
- The tests showed that the new coating materials were nontoxic and could be safely used as edible food packaging materials.

According to the Indian Council of Agricultural Research, between 4.6 and 15.9% of fruits and vegetables go waste post-harvest, partly due to poor storage conditions. The new material could reduce this post-harvest loss.

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UN High Seas Treaty

Negotiations involving 168 countries, including the European Union, to agree on a UN treaty for protecting oceans has failed.

- The UN High Seas Treaty is also referred to as the '**Paris Agreement for the Ocean**'.
- The treaty aims to deal with Biodiversity beyond National Jurisdiction.
- The proposed treaty concerns the ocean existing beyond the Exclusive Economic Zones that lie from the coast of a country to about 200 nautical miles into the sea, till where it has special rights for exploration.
- Waters beyond that are known as open seas or high seas.
- The treaty was to be negotiated under the United Nations Convention on Laws of the Sea (UNCLOS) of 1982, which governs the rights of countries regarding marine resources.
- As there is no treaty for conserving the health of vast swathes of the earth's oceans, a UN resolution (in 2017) had decided to rectify this while setting 2022 as the deadline.

- Later, a High Ambition Coalition, which now has more than 100 countries including India, the US and the UK, came about and put the focus on **'30×30' goals** - protecting 30% of the ocean by 2030.
- After the latest deadlock, talks will only resume next year, unless a special session is called.
- **Related Links** - United Nations Convention on Laws of the Sea

The International Union for Conservation of Nature has said binding agreements are needed for the UN High Seas Treaty to be effective.

Reference

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International Driving Permit

The Ministry of Road Transport and Highways (MoRTH) has issued a notification for standardising the process for issuance of International Driving Permit (IDP) across the country.

- **International Driving Permit** (IDP) or International Driving Licence (IDL) is accepted in over 150 countries.
- It is an official travel document that is authorised by the United Nations issued to tourists travelling to foreign countries.
- It is an official translation of your driver's license issued in your home country.
- The document essentially states that you possess a valid driver's license.
- It translates your license documents into many languages so authorities abroad are able to verify and understand your driving credentials.
- The document is issued from various zonal offices. The validity of this permit is for one year.
- The applicants are required to get the licence from the country visiting within one-year period.
- **India's Status** - India is a signatory to Convention on International Road Traffic of 1949 (Geneva Convention).
- So, India is required to issue International Driving Permit as provided under this Convention, for the acceptance of the same on reciprocal basis with other countries.
- **Issue** - Currently, the format, size, pattern, colour etc. of the IDP being issued was differing across States in India.
- Due to this, many citizens were facing difficulties with their respective IDP in foreign countries.
- Now, through this amendment, the process of issuing IDP has been standardized across India, and in adherence to the Geneva Convention.

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