Beavers as Natural Fire Breaks & Drought Management

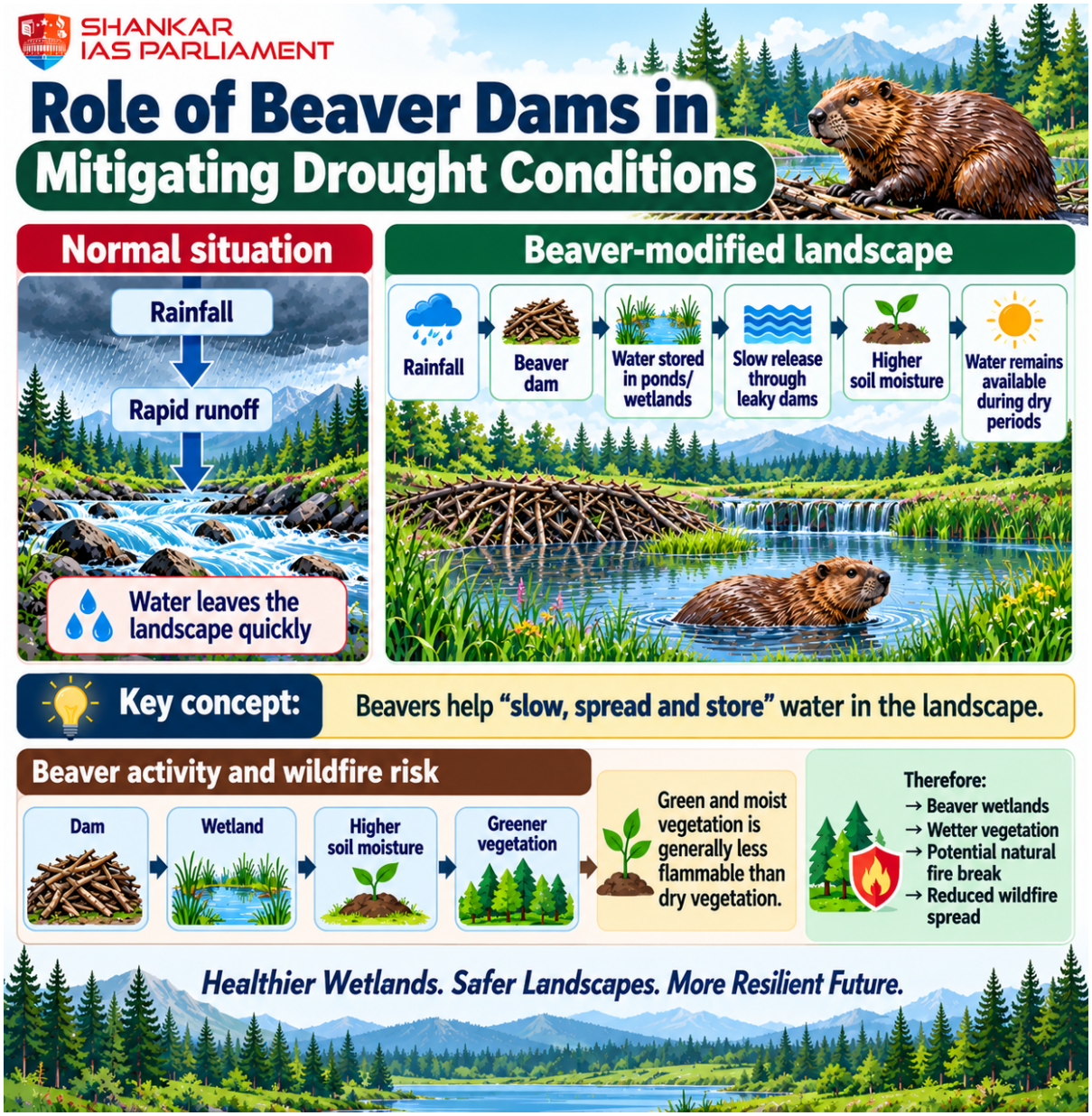
Prelims: *Current events of national and international importance | Species*

Why in News?

Recent research from Canada, US, and UK shows beaver-made wetlands retain water, keep vegetation green in droughts, and help curb wildfire spread.

- Beavers are large, stout, semiaquatic rodents.
- **Two species –** Eurasian and North American beavers.
- The North American beaver is native to the United States, Canada, and northern Mexico, and inhabits rivers and wetlands.
- **Known for –** Building dams, which makes them important ecosystem engineers and keystone species.

- **Historical Decline** – In the 19th century, beavers were extensively trapped for the European fur trade.
- Their population declined from tens of millions to approximately 100,000 by the early 1900s.
- **Conservation & Recovery –** Reintroduction, ecological recognition, and human-beaver coexistence efforts have enabled population recovery, making beavers no longer at risk of extinction.



- **Ecological Role**
- Beaver dams expand available habitat, store food, and provide protection from predators.
- By slowing water flow, beaver dams help prevent erosion and flooding, and create wetlands.
- Wetlands created by beavers accumulate nutrient-rich sediment, which supports plant growth, provides wildlife habitat, and improves water quality.
- Beaver activity sequesters **approximately 470,000 tons of carbon annually**, contributing to climate mitigation.

Research Findings

Canada – Elk Island National Park
• A 54-year aerial photo study conducted in 2008.
• Beaver lodges accounted for over 80% of the **variation** in open-water area.
• **During the 2002 drought, beaver wetlands contained nine times more open water than areas without beaver**s.
Britain – Devon
• Within a beaver enclosure, thirteen dams stored approximately one **million litres** of additional water.
• The dams slowed stormwater flows and gradually released water during dry periods.
• In wild territories, wetlands retained over twenty-four **million litres** of water.
Western United States
• A 2020 study examined five wildfires.
• Streamside vegetation in beaver-dammed areas was three times **less affected** than in areas without beavers.

Reference

Down to Earth | How Beavers Can Help Create Firebreaks