

Social Costs of Vulture Decline

Why in news?

Recent study reveals that there is a strong link between Vulture decline in India and its impact on human health crisis.

What is the status and role of vultures in India?

- **Distribution** - It is *now extinct in South East Asia* with current populations existing ***mostly in central and peninsular India***, south of the Gangetic plains.
- It is also found in southwest Pakistan, Bangladesh and Nepal.
- **Types** - There are ***nine species*** of vultures, *five belong to the genus Gyps* and the rest *four are monotypic*.
 - [Oriental White-backed Vulture](#) - G.bengalensis
 - The Long-billed Vulture - G.indicus
 - Slender-billed Vulture - G.tenuirostris
 - The Himalayan Vulture - G.himalayensis
 - The Eurasian Griffon - G.fulvus
 - Egyptian Vulture - Neophron percnopterus
 - Red-headed Vulture - Sarcogyps calvus
 - Cinereous Vulture - Aegypius monachus
 - Bearded Vulture (Lammergeier) - Gypaetus barbatus
- **Role in Ecosystem** - They feed on carrion, the remains of dead animals, and act as the 'rubbish collectors' of the natural world.
- It help eliminating potentially harmful bacteria from the environment, potentially limiting the spread of diseases such as anthrax and rabies.
- **Role in culture** - The [Dakhma](#) or '[Towers of Silence](#)' is a unique and environmentally conscientious method of laying the dead to rest practised by the Parsi community.
- The vultures performs the pivotal role of stripping away the flesh from the bones through their scavenging process.

Why vulture population is declining in India?

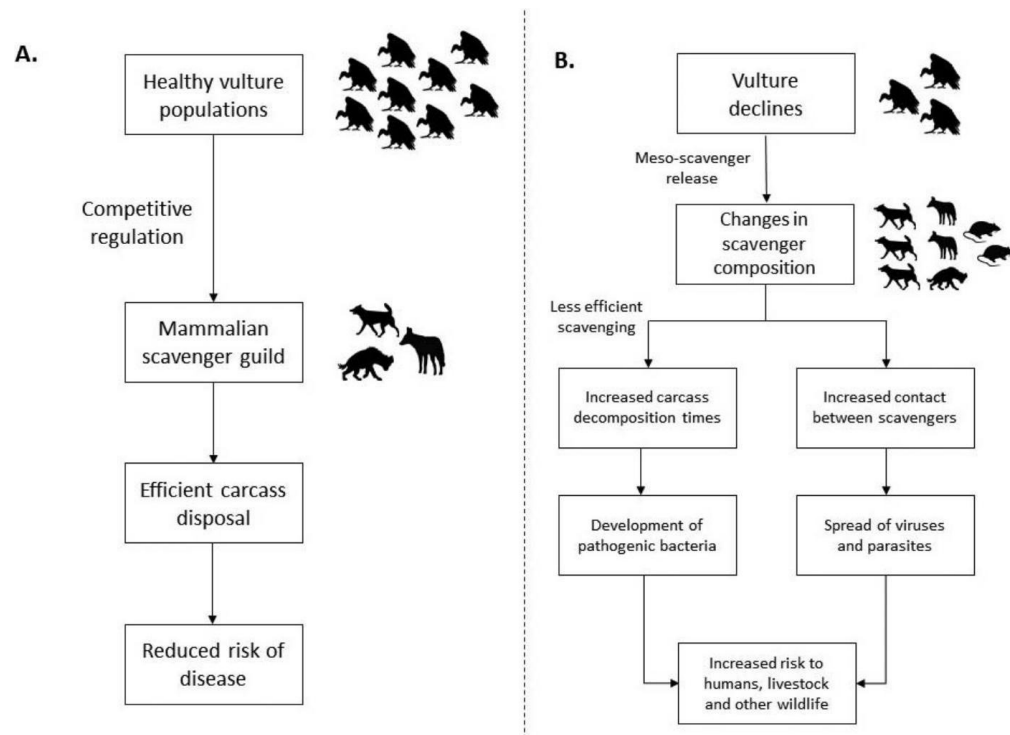
- **Decline** - In the mid-1990s, India's vulture population reached near extinction
 - White-rumped Vulture, Indian Vulture, and Red-headed Vulture declined by 98%, 95%, and 91% respectively.
- India's remaining vulture populations are largely confined to protected areas and feed primarily on wildlife.
- **Veterinary drugs** - It is primarily due to the widespread use of diclofenac in livestock.
- Vultures consuming the carcasses of treated livestock suffered fatal kidney failure.

Diclofenac, a non-steroidal anti-inflammatory drug (NSAID) used to treat sick cattle.

- Alternatives to diclofenac such as aceclofenac, ketoprofen, and nimesulide also affected vultures.
- **Usage of NSAIDs** - Nonsteroidal anti-inflammatory drugs are the most prescribed medications for treating conditions such as arthritis.
- Diclofenac and aceclofenac, continue to be produced for human use.
- **Loss of Habitat** - It is due to urbanization, quarrying and mining.
- **Dwindling availability of food** - Carcasses increasingly being buried and burned and also due to competition from feral dogs continue to pose risks.
- **Poisoning** - Deliberate poisoning of carcasses, intended to kill dogs and other carnivores, also kills vultures.

What are social and economic impacts of decline in vulture population?

- Dramatic decline over vulture population over the past two decades has had unforeseen consequences for both wildlife and human health.
- **Sanitation crisis** - Rotting carcasses left unattended, potentially contaminates and pollutes soil, air and water sources.
- It allows for increased feeding and breeding of stray dogs.
- **Proliferation of harmful microbes** - The absence of vultures allowed bacteria and pathogens to proliferate.
- **Disease in humans** - Growth of harmful microbes led to a surge in human diseases and deaths.
 - Diseases such as rabies got exacerbated by the rise in stray dog populations.
- Treatment increases the health expenditure of individuals and the government.
- **Deaths in humans** - 4% increase in death rates in areas where vultures once thrived and now absent.
 - It caused approximately 100,000 additional human deaths annually between 2000 and 2005.
- **Economic Loss** - The economic impact of these additional deaths is estimated at over \$69 billion per year in mortality damages.



- **Impact on tanning industry** - India's tanning industry once relied on quick removal of carrion by vultures.
- In their absence, shifting to burying or burning cattle reduced the supply of cattle skin for leather manufacturing.
- **Cultural Impact** - It affects the tradition of Dhakma of the Parsi whereby the burial rituals require vultures to consume the body.

Conservation measures by India

- Asia's first vulture re-introduction program in 2016 by Jatayu Conservation Breeding Centre, Pinjore.
- Vulture Action Plan 2020-25 by Union Ministry of Environment, Forest and Climate change.
- SAVE (Saving Asia's Vultures from Extinction) program by Consortium of regional and international organizations.
- Diclofenac is banned in veterinary medicine since 2008 while Aceclofenac and ketoprofen were banned for animal use in 2023.

What lies ahead?

- Creating awareness among people about the importance of vulture.
- Adopting One Health approach for holistic coverage of human, animal and environmental health.
- Preventing misuse of veterinary & NSAIDs by ensuring their sale only on prescription.
- Scientific manner of disposal of livestock carcasses animals that died during treatment.
- Finding nontoxic alternatives for animal steroids.
- In- Situ conservation of vulture for the captive breeding.
- Continued action is necessary to ensure the survival and recovery of these vital scavengers.

References

1. [Indian Express | Vulture decline, a human health crisis](#)
2. [India Today | Declining vulture population](#)
3. [BFI.UChicago.EDU| Social Costs of Keystone Species Collapse](#)

