

Popular Article

Vulture and its conservation

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Abstract

Vultures are large bird who mostly resides in tropical countries and survive eating on carrion. In the 1980s, India was home to around 40 million vultures. Due to loss of habitat and use of diclofenac by 2017, that number had declined to 19,000. India has a National Vulture Conservation Action Plan 2020-25 that was launched in 2019 which looks at not only halting the decline but also actively increase the number of vultures in India by 2025. Conserving vultures will help in cleaning environment by eating rotten beings while controlling zoonotic diseases and maintaining one health in the ecosystem. It also controls the disease carrying animals like rats.

Introduction

A bald-headed, slouchy-looking bird that sits atop decaying trees. Vultures are enormous birds of prey with wing lengths of up to three metres. That's almost a dolphin's size! Their bald heads are adaptations for drastically changing temperatures as they drop from heights of up to 11,000 metres to the ground for feeding, as well as to keep their heads clean while stripping flesh from carcasses.

Taxonomy of vulture

- o KINGDOM: animalia
- o PHYLUM: Chordata
- o CLASS: Aves
- o ORDER- Accipitriformes
- o FAMILY- Cathartidae Lafresnaye
- o GENUS- Cathartes Illiger
- o SPECIES- Cathartes aura
- o MORPHOLOGY
- o A particular characteristic of many vultures is a bald head, devoid of normal feathers. Vultures have been observed to hunch their bodies and tuck in their heads in the cold and open their wings and stretch their necks in the heat.

Vulture in mythology

- Vultures are vahana of lord SANKAR. In some religion vultures are also considered deities
- The two sons of GARUDA, Jatayu and Sampatti help RAMA and LAXMANA in finding SITA.
- Garuda was the vahana of lord VISHNU

Feeding Behavior

Healthy animals are rarely attacked by vultures, but those who are injured or sick may be killed. When the hide on a cadaver is too thick for a scavenger's beak to open, it waits for a larger scavenger to devour first. When prey is plentiful, they feed themselves until their crops bulge, then sit or sleep to digest their food. Food is not carried to their young by these birds in their claws; instead, it is disgorged from their crops. Vulture stomach acid is extremely acidic, allowing them to safely consume rotting carcasses infected with botulin toxin, anthrax, and other diseases that would kill other scavengers. Although bone makes up the majority of a vulture's food, certain species prefer a more varied diet. Feasting on a variety of nuts, fish and other birds, both the palm nut vulture and the lappet-faced vulture do well to defy their haunting stereotypes.

How vultures keep themselves cool?

Urohydrosis is a condition in which an animal urinates on itself to cool off when the temperature rises to dangerous levels. Vultures, on the other hand, employ this approach to disinfect their legs after eating a decaying cadaver since their urine contains significant levels of acid.

Nature of Vulture

Vultures can fly at speed of 48km/hr. Ruppell's vulture being the world's highest flyer with a record of 37,000feet. They can fly without being tired as they glide on the thermal updrafts which gives them a free lift. They fly in a circular motion in order to gain height. They have a unique way of cooling themselves by urinating and also disinfect their legs which kills germ they picked up by walking through the carcasses.

How do vultures find carcass to feed on?

Despite popular belief, vultures do not have a sixth sense that allows them to identify or smell dying creatures. Circling vultures are actually looking for food, and they'll utilise their other senses to locate, smell, or hear other birds feasting on a carcass so they can fill their gaps before predators do.

Predators and escaping

Their main predators are hawks, snakes and wild cats. To get away from any danger the vulture will bring up what it has just eaten or vomit that will smell so awful for a few days if it touches which will distract the predators.

Reproduction

They breed in long trees nesting in loose colonies of between 2-13 birds. Vultures tend to have just one mate per year. Female vultures lay egg one at a time in a platform nest made from leaves and sticks built in cliffs. The same nest might be used for a no. Of years. Eggs are incubated for around 50 days. Young vultures are fed by both parents until they fledge at around 120-130 days. Vultures mature at around 5-7 years old. The life span of a vulture can be up-to 30 years in captivity and 15-20 years in wild.

Vultures found in India:

King Vulture-*Sarcogyps calvus*

- Cinereous Vulture-*Aegypius monachus*
- White-backed Vulture-*Gyps bengalensis*
- Long-billed Vulture-*G. indicus*
- Slender-billed Vulture-*G. tenuirostris*
- Eurasian Griffon Vulture-*G. fulvus*
- Himalayan Griffon-*G. himalayensis*
- Egyptian Vulture-*Neophron percnopterus*
- Bearded Vulture-*Gypaetus barbatus*

What causes this species to become endangered?

1. Habitat loss- A habitat is the ecosystem a species needs to live in. Trees used for nesting by the vultures used to supply plywood. Construction of buildings homes and roads made it difficult for their survival.
2. Pollution
3. Competition from other species
4. Visceral gout- major cause of mortality in vultures is deposition of uric acid on visceral organs due to renal failure. Diclofenac implicated in vulture decline perfect correlation between visceral gout and diclofenac residue in the vulture tissue (0.051-0.643ug/gm). Experimentally visceral gout was reproduced in vultures by direct oral exposure of buffalo tissues treated with diclofenac. Diclofenac-the killer drug. Vultures are exposed to diclofenac when they feed on carcasses of livestock that have died within a few days of administration of the drug. Diclofenac is 30-60 times more toxic to vultures than cyanide is to rats. The LD50 (the median lethal dose) for a vulture is 0.5- 1.1 mg Acute toxicity: 24-48 hours to mortality, single dose required. Prevalence of diclofenac estimated that no more than 0.8% of ungulate carcasses available to

foraging vultures would need to contain a lethal dose of diclofenac to have caused the observed population declines.

5. Disease- It is a part of nature that animals get diseases. But there is some human introduce disease for e.g. DDT an insecticide that enter the food chain decrease lot many species in the whole world.

Conservation measures to serve vultures from extinction

Key Actions Identified in the Vulture Action Plan:

- Identify a safe alternative drug
- Campaign and advocacy to remove (ban) veterinary diclofenac
- Conservation breeding programme.

Ban on veterinary use of diclofenac:

In 2008, The Ban was notified in the Official Gazette. But it soon became clear that the problem had not been eradicated and vulture deaths were continuing. Human formulations were now being used.

Breeding Conservation Programme:

A population of 600 pairs of each of the three species will form a viable population. 25 pairs of each of the three species at one center will be able to produce a population of 100 pairs of each of the species in the fifteen years. Six centers need to be set up to produce 600 pairs.

Reintroduction Plans for vultures:

The vultures start breeding at 5-6 years old.

The first release will take place 8-9 years from beginning of the project. The releases are expected to start from 2016.

Birds will be released in flocks of not less than fifteen including at least a few adults and sub adults after making sure that diclofenac has been removed from the system.

Breeding Centres in India:

1. Rajabhatkhawa in west bengal
2. Rani in Assam
3. Pinjore in Haryana
4. Ranchi in Jharkhand
5. Bhopal in Madhya pradesh
6. Junagarh in Gujarat
7. Nandankanan in Orissa

8. Hyderabad in Telangana

Why vultures are important?

Vultures play a vital role in the clean-up of the environments in which they live. Often referred to as 'Nature's Clean-Up Crew', their scavenging ways help to prevent the spread of diseases, such as rabies and tuberculosis through clearing away carcasses.

Cleaning the environment of rotting carcasses. Reduce the possibility of carcass becoming a hazard to human health. Control the population of disease carrying scavengers such as feral dogs and rats. They are the only land-based vertebrates that can thrive solely on scavenging so they are crucial to ecosystem balance because they can quickly devour large amount of flesh and their stomach acids neutralize pathogens can limit spread of bacteria and virus like anthrax and rabies.

It helps the environment by removing diseases and poisons before they can spread to the environment, for example a deer that's died next to a waterhole with tuberculosis. This protects not only the health of wild animals, but also humans who may rely on this waterhole for water. Their stomachs have evolved to be extremely acidic, even more than any other animal in the world. Their gastric pH of 1 dissolve many harmful substances and diseases that are found in carrion. Once vultures disappeared, other animals that ate carrion, such as rats and feral dogs, began growing in numbers. These animals become carriers of disease like anthrax, rabies, or cholera, rather than killing off the pathogen, which perpetuates the cycle of diseases within both animal and human populations.

International Vulture Awareness Day

The first Saturday of September is known to be vulture awareness day.

Conclusion

Vultures have the potential to uplift the one health mission of the nation as they are known as 'Nature's Clean-up crew'. They can help in cutting the lines of zoonotic disease spread by rats, wild dogs, unattended carcasses etc. Creating awareness among people for saving vultures can uplift the motto conservation programmes initiated by government.

Reference

- Markandya, A., Taylor, T., Longo, A., Murty, M. N., Murty, S., & Dhavala, K. (2008). Counting the cost of vulture decline an appraisal of the human health and other benefits of vultures in India. *Ecological economics*, 67(2), 194-204.
- Avery, M. L., Humphrey, J. S., Daugherty, T. S., Fischer, J. W., Milleon, M. P., Tillman, E. A. & Walter, W. D. (2011). Vulture flight behavior and implications for aircraft safety. *The Journal of Wildlife Management*, 75(7), 1581-1587.