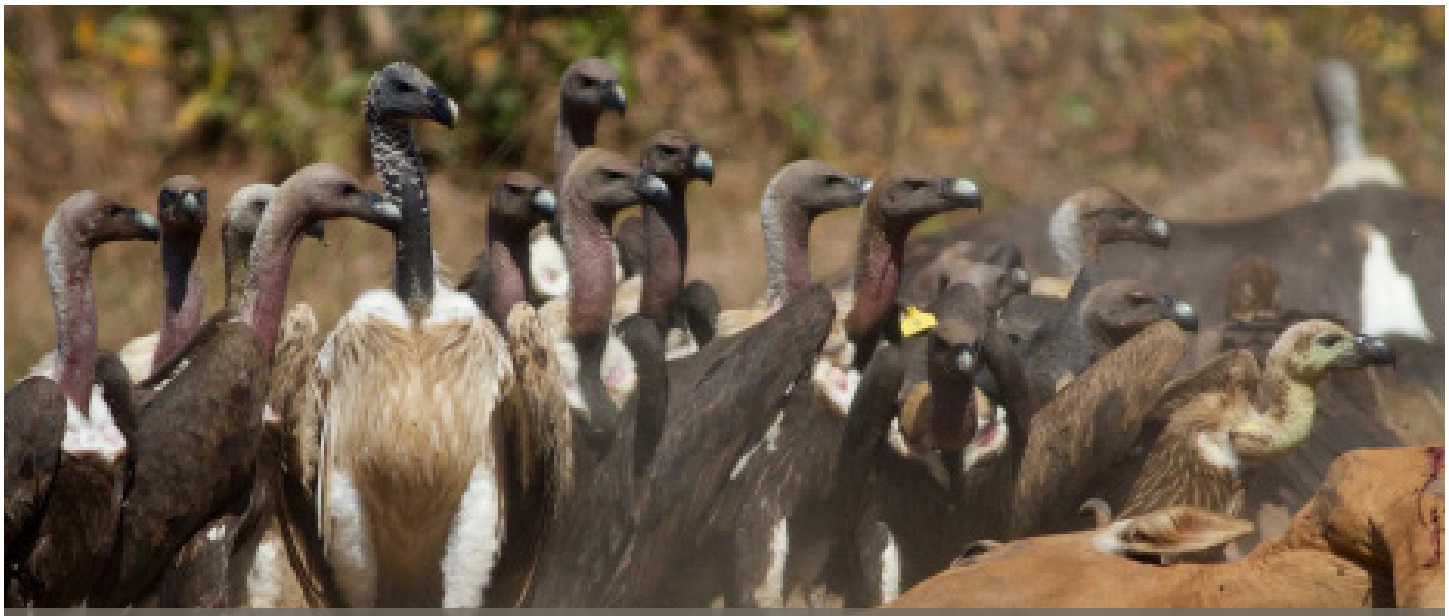
UN environment programme
CMS
Convention on the Conservation of Migratory Species of Wild Animals
Fact Sheet
RAPTORS MOU



THE THREAT OF VETERINARY DRUGS TO RAPTORS

White-rumped & slender-billed vultures are among the most seriously affected vultures by NSAIDs. Photo: © Phaerun Sum

BACKGROUND SUMMARY

A group of common non-steroidal anti-inflammatory drugs (NSAIDs) used to treat livestock are known to be toxic to various scavenging raptor species, causing catastrophic declines in vulture populations of Asia.

These NSAIDs are toxic to all eight species of vulture of the genus *Gyps*, to several other vulture species, and to eagles of the genus *Aquila*.

Most licensed NSAIDs are currently untested for impacts on raptors.

All 15 migratory African-Eurasian vulture species are listed in CMS Appendix I and/or II, and most are globally threatened.

Safe alternative drugs are available for livestock treatment and urgent action is needed to withdraw toxic NSAIDs from veterinary use and mitigate risks to raptors.

What are Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)?

NSAIDs are commonly used in human and veterinary medicine, to relieve pain and to reduce inflammation or fever. There are at least 24 NSAIDs, of which the most well-known are **diclofenac, aspirin,** and **paracetamol**. When used in veterinary practice, some of these NSAIDs pose a serious threat to vultures and other raptor species.

Facts and Figures

- The introduction of **diclofenac** for veterinary use in India, Pakistan, Nepal and Bangladesh in the 1990s has resulted in the collapse of most of their vulture populations in less than 15 years (e.g., the White-rumped Vulture (*Gyps bengalensis*) declined by 99.9%).
- Based on pre-decline population estimates, the veterinary use of NSAIDs in these countries caused millions of vulture deaths in less than two decades, before regulatory changes in veterinary use of NSAIDs beared results.
- Several NSAIDs are now scientifically proven to be toxic to the eight species of vultures of the genus *Gyps*. **Diclofenac** has been proven lethal for the Cinereous Vulture (*Aegypius monachus*) and suspected as toxic to eagles of the genus *Aquila*, the Egyptian Vulture (*Neophron percnopterus*) and Red-headed Vulture (*Sarcogyps calvus*).
- Many veterinary NSAIDs currently in use and being licensed for use have not been safety tested on scavenging raptor species.
- Appendix I and/or II of the CMS lists 15 African-Eurasian migratory vulture species, the majority of which are globally threatened; the CMS Vulture Multi-species Action Plan, which aims to conserve all 15 African-Eurasian migratory vulture species, includes specific actions on NSAIDs.
- The CMS Guidelines to Prevent the Risk of Poisoning to Migratory Birds provide clear legislative and non-legislative recommendations to prevent risk from veterinary use of NSAIDs.

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How does NSAID toxicity affect raptors?

The treatment of ailing cattle with painkillers is the principal pathway by which vultures are exposed to NSAIDs.

Vultures that feed on the carcasses of cattle treated with NSAIDs a few days prior to their death, will most likely die due to visceral gout, a form of kidney damage that leads to the accumulation of uric acid crystals in the bird's blood and organs.

It can take up to three days for a vulture to die after ingesting NSAID contaminated flesh, by which time they will have moved some distance from the ingestion site, which can lead to uncertainty over the cause of death.

Treated cattle metabolize NSAIDs within 3-4 days of treatment and therefore do not pose a threat to vultures if they die after such a period has lapsed.

Mathematical models show that even the smallest percentage of contaminated carcasses will cause considerable decline in vulture populations.

ACTIONS UNDER CMS

CMS Resolution 11.15 (Rev.COP13) urges Parties and invites Non-Parties to:

- Ensure safety testing of existing veterinary NSAIDs;
- Withdraw licensing of vulture-toxic NSAIDs (including diclofenac) for veterinary use; or,
- Implement adequate risk assessment for known threats to vultures and other scavenging raptors;
- Ensure safety testing of new veterinary NSAIDs as part of the standard protocol of research and development departments of, or financed by the pharmaceutical industry, making licensing conditional on the results of these tests; and
- Contribute to the identification and promotion of safe alternative drugs.

NSAIDs currently known to be vulture-toxic include diclofenac, aceclofenac, nimesulide and ketoprofen, but further safety testing of other NSAIDs is likely to add to this list.

The use of readily available safe alternatives in all vulture Range States is recommended.

For more information and the most relevant scientific references:

www.cms.int/raptors/en/page/non-steroidal-anti-inflammatory-drugs-nsaids

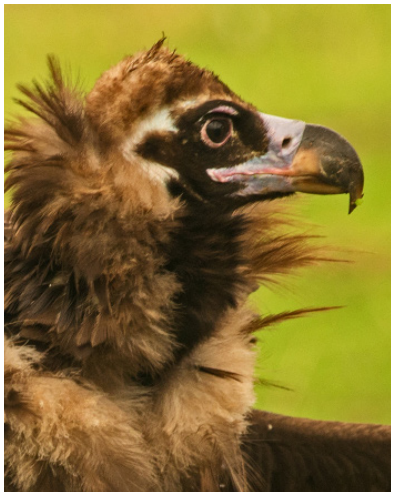
Veterinary use of NSAIDs around the world

Diclofenac was the first NSAID shown to be toxic to scavenging birds and has been banned for veterinary use in much of Asia vultures' range. Currently, there are fully gazetted bans on the manufacture, sale and use of veterinary diclofenac in Bangladesh, Cambodia, India, Iran, Nepal, Oman and Pakistan, and other countries are considering a similar ban. However, it is currently authorized for use in several EU countries. In 2020, the first death by diclofenac poisoning of a wild vulture outside Asia was confirmed in Spain.

Bangladesh is the only Range State to ban the veterinary use of ketoprofen to date. Scientific evidence indicates that **ketoprofen, nimesulide, aceclofenac**, and probably **flunixin** are similarly toxic to vultures, but none of these NSAIDs have been banned on a national scale. Some Indian states have prohibited government supply of selected toxic NSAIDs to their veterinary services.

A government-sponsored programme on NSAID vulture safety-testing is underway in India, and complementary work is underway in South Africa. However, further NSAID safety-testing on raptors is required as all licensed NSAIDs not mentioned above are currently untested.

Safety testing experiments have established that **meloxicam** and **tolfenamic acid are safe alternatives** to diclofenac.



Cinereous Vulture Photo: © Andre Botha

About the Raptors MOU

The CMS Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia (Raptors MOU) aims to promote internationally coordinated actions to achieve and maintain the favourable conservation status of migratory raptors throughout their range in the African-Eurasian region, and to reverse their decline. The Raptors MOU is one of several instruments operating under the Convention on the Conservation of Migratory Species of Wild Animals (CMS).

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