

# VULTURE CONSERVATION: A SUCCESS STORY IN NEPAL



**Dr. Bikalpa Karki**  
**Veterinary Doctor**  
**NTNC-BCC**

# Introduction (Importance)



Jatayu in 'Ramayana'

Sky-burials in trans-Himalaya

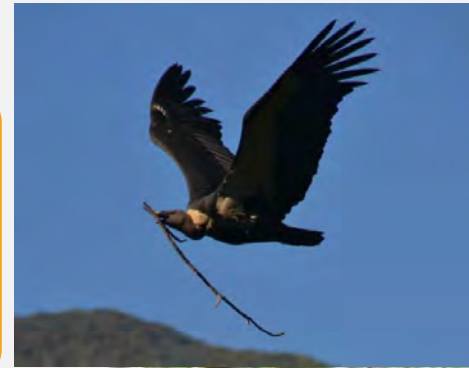
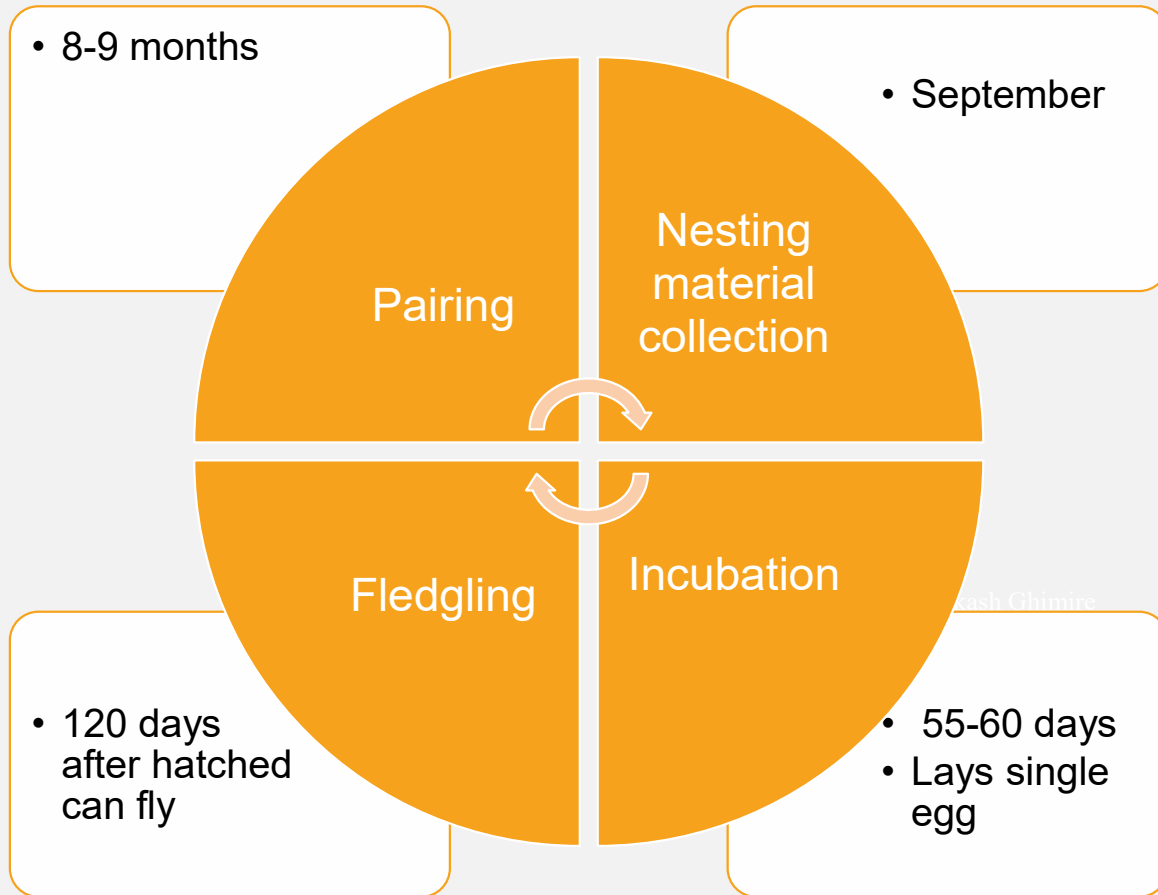


Ecosystem Balance/Services



1 Vulture is worth  
over \$11000-cleaning

# Introduction (Vultures Biology)



# Vultures of Nepal

## नेपालमा पाइने गिद्धहरू



White-rumped Vulture, CR  
डहगर गिद्ध



Slender-billed Vulture, CR  
सानो खैरो गिद्ध



Egyptian Vulture, EN  
सेतो गिद्ध



Himalayan Griffon, NT  
हिमाली गिद्ध



Red-headed Vulture, CR  
सुन गिद्ध



Bearded Vulture, NT  
हाडफोर गिद्ध



Long-billed Vulture, CR  
लामाठुडे गिद्ध



Eurasian Griffon, LC  
खैरो गिद्ध



Cinereous Vulture, NT  
राज गिद्ध



# नेपालमा पाइने विश्वका दुर्लभ चराहरू

## Globally Threatened Birds of Nepal

CONSERVE  
THREATENED  
SPECIES



### नेपालबाट लोप भैसकेका



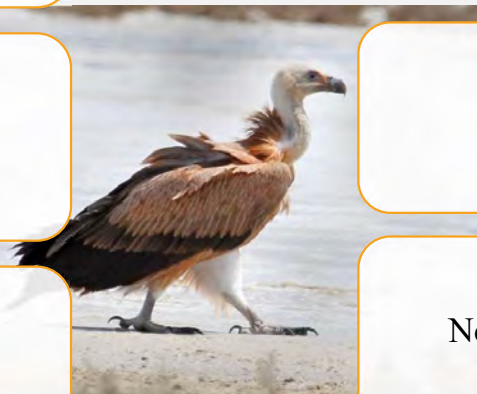
# Introduction (Vultures of Nepal and their Conservation status)

Resident: 6; White-rumped Vulture (WRV), Slender-billed vulture (SBV), Himalayan Griffon (HG), Red-headed Vulture (RHV), Egyptian Vulture (EV) & Bearded Vulture (BV)

Winter Visitor: 1: Cinereous Vulture (CV)

Passage Migrant: 1: Griffon Vulture (GV)

Vagrant: 1: Indian Vulture (IV)



© Bikash Ghimire

Critically Endangered: 4: WRV, SBV, IV and RHV

Endangered: 1: EV

Near Threatened: 3: BV, CV and HG

*Least Concern: 1: GV*

**Vultures of Nepal**

**IUCN Status (Global)**

**Source: DNPWC 2015**

## Introduction (History)

Before 1990AD/2047BS...



- In Nepal 10-16 Lakh
- 2001-2011 AD decline with 91%



Delhi : 1984

Photo : Gautam Narayan

- In India 16 crore
- Population decline with 97%



© Deu Bahadur Rana/ BCN

In Nepal from  
2001 to 2011

**White-rumped  
Vulture 91%**

**Slender-billed  
Vulture 96%**



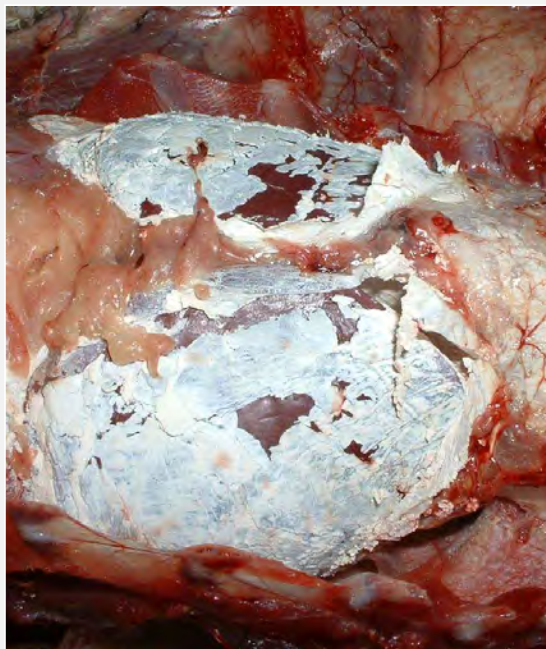
> Nature. 2004 Feb 12;427(6975):630-3. doi: 10.1038/nature02317. Epub 2004 Jan 28.

## Diclofenac residues as the cause of vulture population decline in Pakistan

J Lindsay Oaks<sup>1</sup>, Martin Gilbert, Munir Z Virani, Richard T Watson, Carol U Meteyer, Bruce A Rideout, H L Shivaprasad, Shakeel Ahmed, Muhammad Jamshed Iqbal Chaudhry, Muhammad Arshad, Shahid Mahmood, Ahmad Ali, Aleem Ahmed Khan

Affiliations + expand

PMID: 14745453 DOI: 10.1038/nature02317



> PLoS One. 2007 Aug 1;2(8):e686. doi: 10.1371/journal.pone.0000686.

## Rate of decline of the Oriental white-backed vulture population in India estimated from a survey of diclofenac residues in carcasses of ungulates

Rhys E Green<sup>1</sup>, Mark A Taggart, Kalu Ram Senacha, Bindu Raghavan, Deborah J Pain, Yadvendradev Jhala, Richard Cuthbert

### Abstract

The non-steroidal anti-inflammatory drug diclofenac is a major cause of the rapid declines in the Indian subcontinent of three species of vultures endemic to South Asia. The drug causes kidney failure and death in vultures. Exposure probably arises through vultures feeding on carcasses of domesticated ungulates treated with the drug. However, before the study reported here, it had not been established from field surveys of ungulate carcasses that a sufficient proportion was contaminated to cause the observed declines. We surveyed diclofenac concentrations in samples of liver from carcasses of domesticated ungulates in India in 2004-2005. We estimated the concentration of diclofenac in tissues available to vultures, relative to that in liver, and the proportion of vultures killed after feeding on a carcass with a known level of contamination. We assessed the impact of this mortality on vulture population trend with a population model. We expected levels of diclofenac found in ungulate carcasses in 2004-2005 to cause oriental white-backed vulture population declines of 80-99% per year, depending upon the assumptions used in the model. This compares with an observed rate of decline, from road transect counts, of 48% per year in 2000-2003. The precision of the estimate based upon carcass surveys is low and the two types of estimate were not significantly different. Our analyses indicate that the level of diclofenac contamination found in carcasses of domesticated ungulates in 2004-2005 was sufficient to account for the observed rapid decline of the oriental white-backed vulture in India. The methods we describe could be used again to assess changes in the effect on vulture population trend of diclofenac and similar drugs. In this way, the effectiveness of the recent ban in India on the manufacture and importation of diclofenac for veterinary use could be monitored.

## Introduction (Vultures Conservation efforts)

### In-situ conservation

- Banned production and use of veterinary diclofenac in 2006
- Promotion of Veterinary Meloxicam
- Vulture Safe Feeding Site (Vulture restaurant) was established in 2006 in CNP (Total 7)
- Pharmacy surveys and NSAIDS monitoring
- Declaration of Diclofenac Free District (76) and Vulture Safe Zones
- Awareness Campaign

### Ex-situ conservation

- Establishment of Vulture Conservation and Breeding Center (VCBC) in 2008

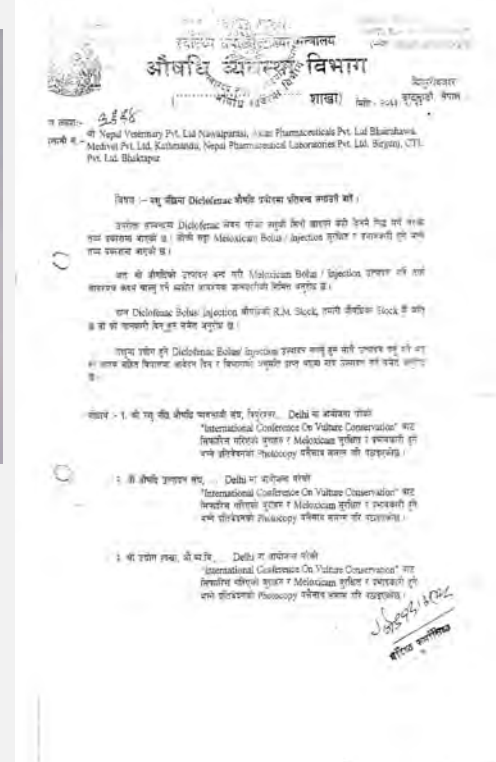
#### CONSERVATION PARTNERS

Nepal Government

NTNC, BCN, RSPB,  
ZSL etc

Community

# Legal Action



- 3 years prison or NRs 25,000 fine
- Or Both penalty

# Vulture Restaurant- Safe Food Supply



# Jatayu Restaurant

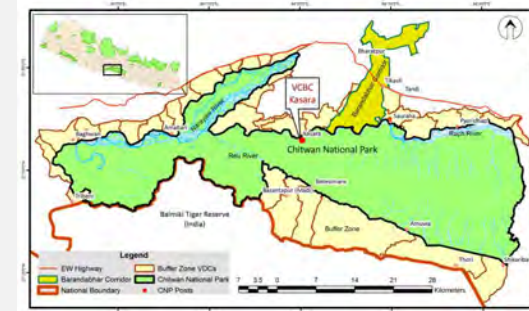
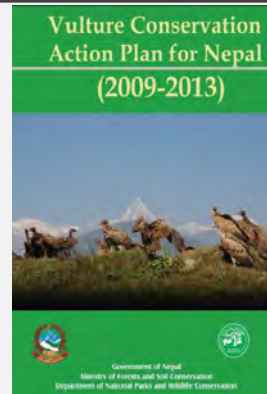


# Jatayu Restaurant



# VULTURE CONSERVATION AND BREEDING CENTER (VCBC)

- Established on 2008
- Located at Kasara, CNP
- Captive breeding of White-rumped vultures
- 69 released into the wild



# WORKING







 **BioOne** COMPLETE

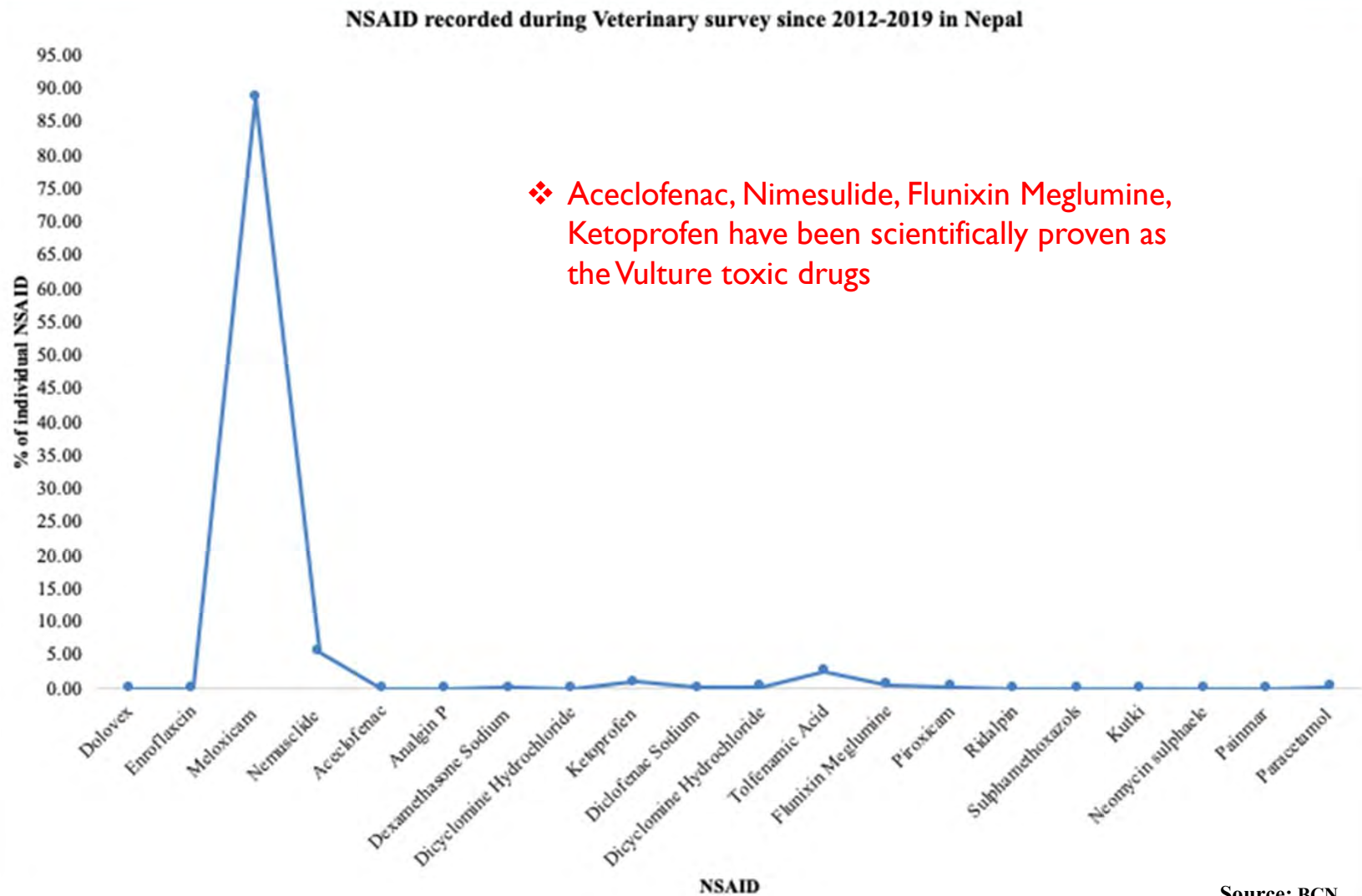
**Hematological Study of Captive White-Rumped Vultures (*Gyps bengalensis*) to Assess Their Health Status**

Authors: Karki, Bikalpa, Lamichhane, Babu Ram, Sadaula, Amir, Khadka, Bed Bahadur, and Bhusal, Krishna Prasad

Source: Journal of Avian Medicine and Surgery, 34(4) : 343-347

Published By: Association of Avian Veterinarians

## NSAID Surveys and Monitoring



Source: BCN

## Vulture Transfer



# Satellite Tagging



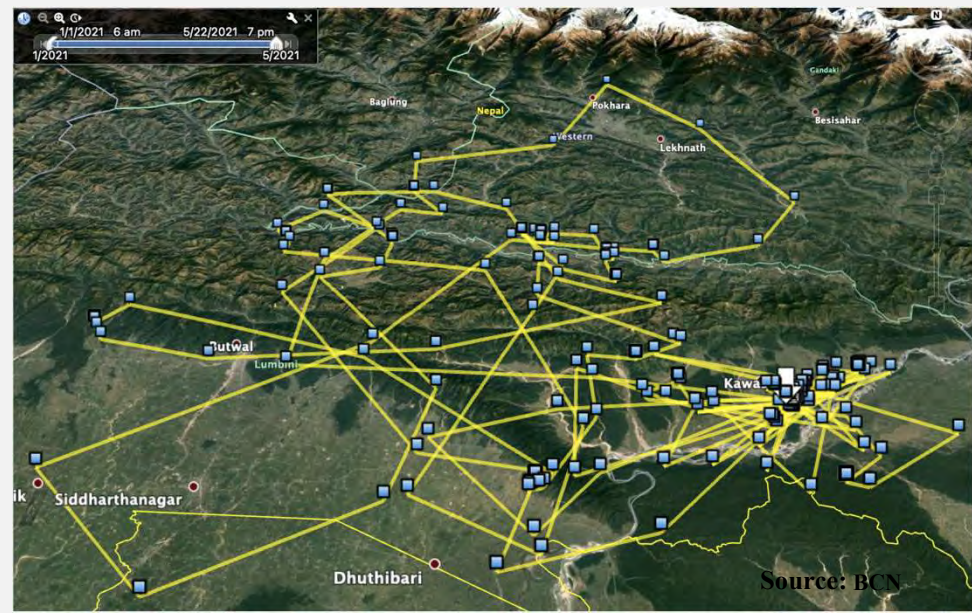
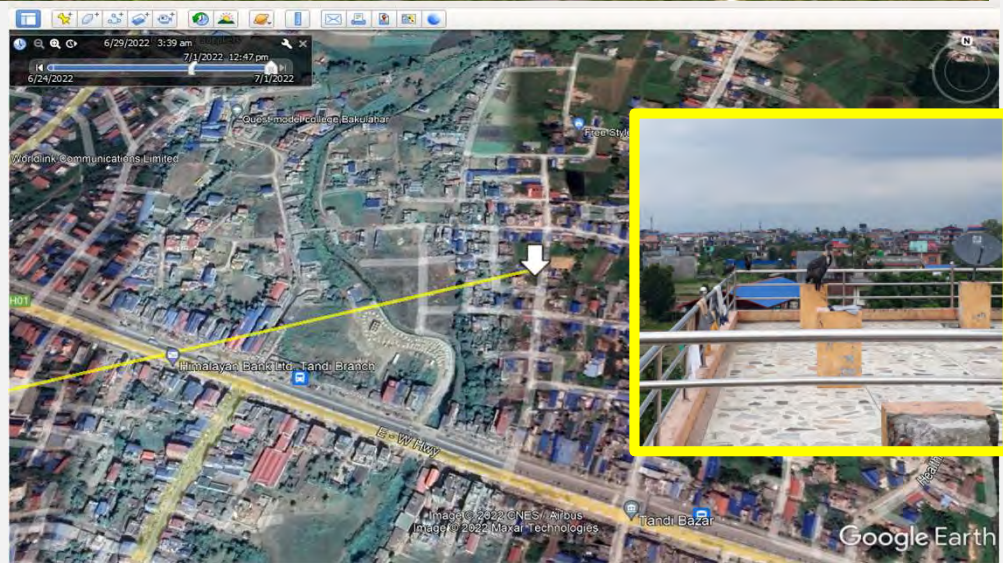
## RELEASE OF WRV REARED AND RAISED FROM VCBC

	Date of shifting from VCBC to Release site	Total Released	Adults	Sub-adults	Release date
<b>First Release</b>	15 <sup>th</sup> Apr, 2017	<b>6</b>	6F	-	9 <sup>th</sup> Nov 2017
<b>Second Release</b>	April 2018 (2 shifts)	<b>12</b>	5 (3F & 2 M)	8 (sex unknown)	17 <sup>th</sup> Sept 2018
<b>Third Release</b>	Dec 2018	<b>13</b>	7 (4F & 3M)	6 (sex unknown)	19 <sup>th</sup> Oct 2019
<b>Fourth Release</b>	4 <sup>th</sup> March 2020	<b>8</b>	6(2F & 4M)	2 (sex unknown)	8 <sup>th</sup> Nov 2021
<b>Fifth Release</b>	29 <sup>th</sup> Nov 2021	<b>10</b>	10(4F & 6M)	0	25 <sup>th</sup> Mar 2022
<b>Sixth Release</b>	31 <sup>st</sup> Mar 2022	<b>10</b>	5M & 5F	0	1 <sup>st</sup> Nov 2022
<b>Seventh Release</b>	6 <sup>th</sup> Nov 2022	<b>10</b>	5M & 5 F	0	March 2023
<b>Total</b>		<b>69</b>	<b>54 (29F &amp; 25M)</b>	<b>16</b>	

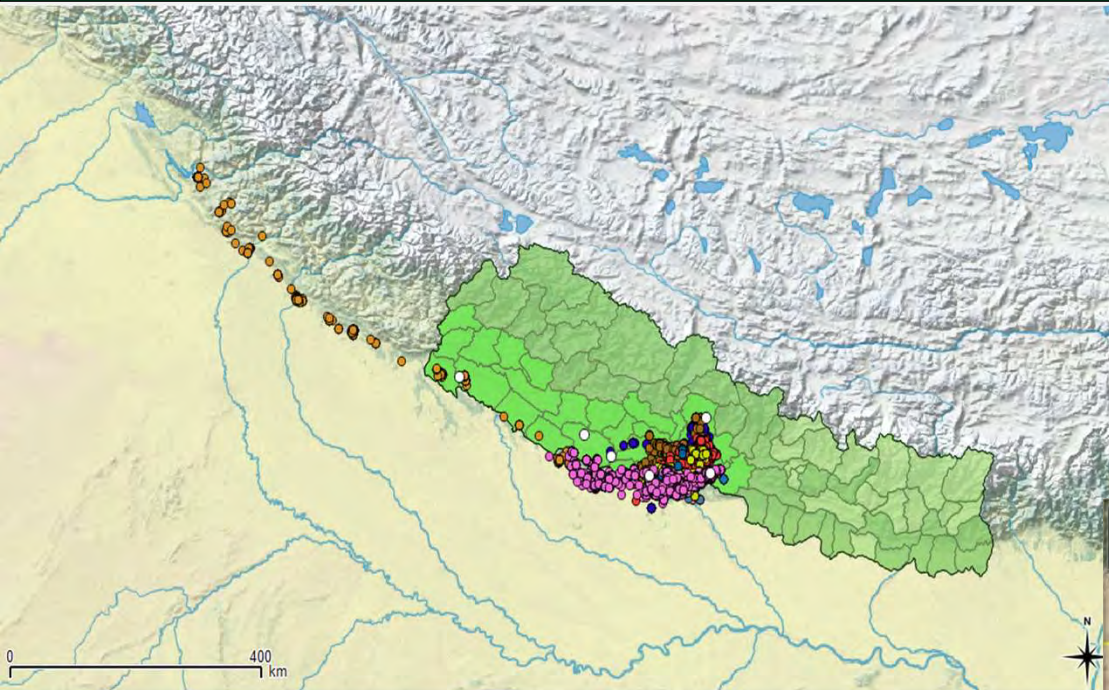
Source: NTNC-BCC reports



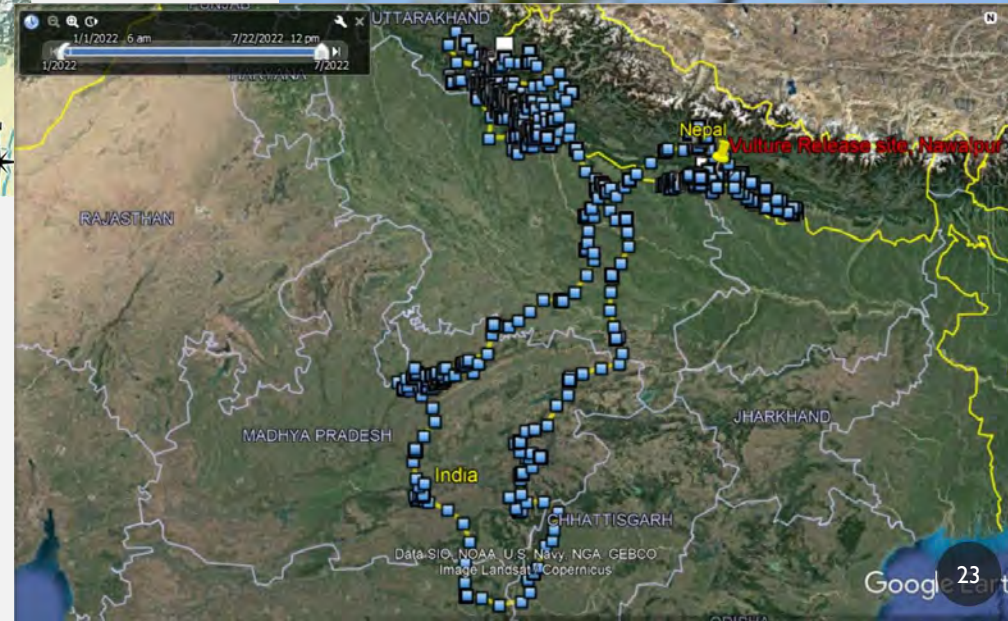
# POST-RELEASE MONITORING



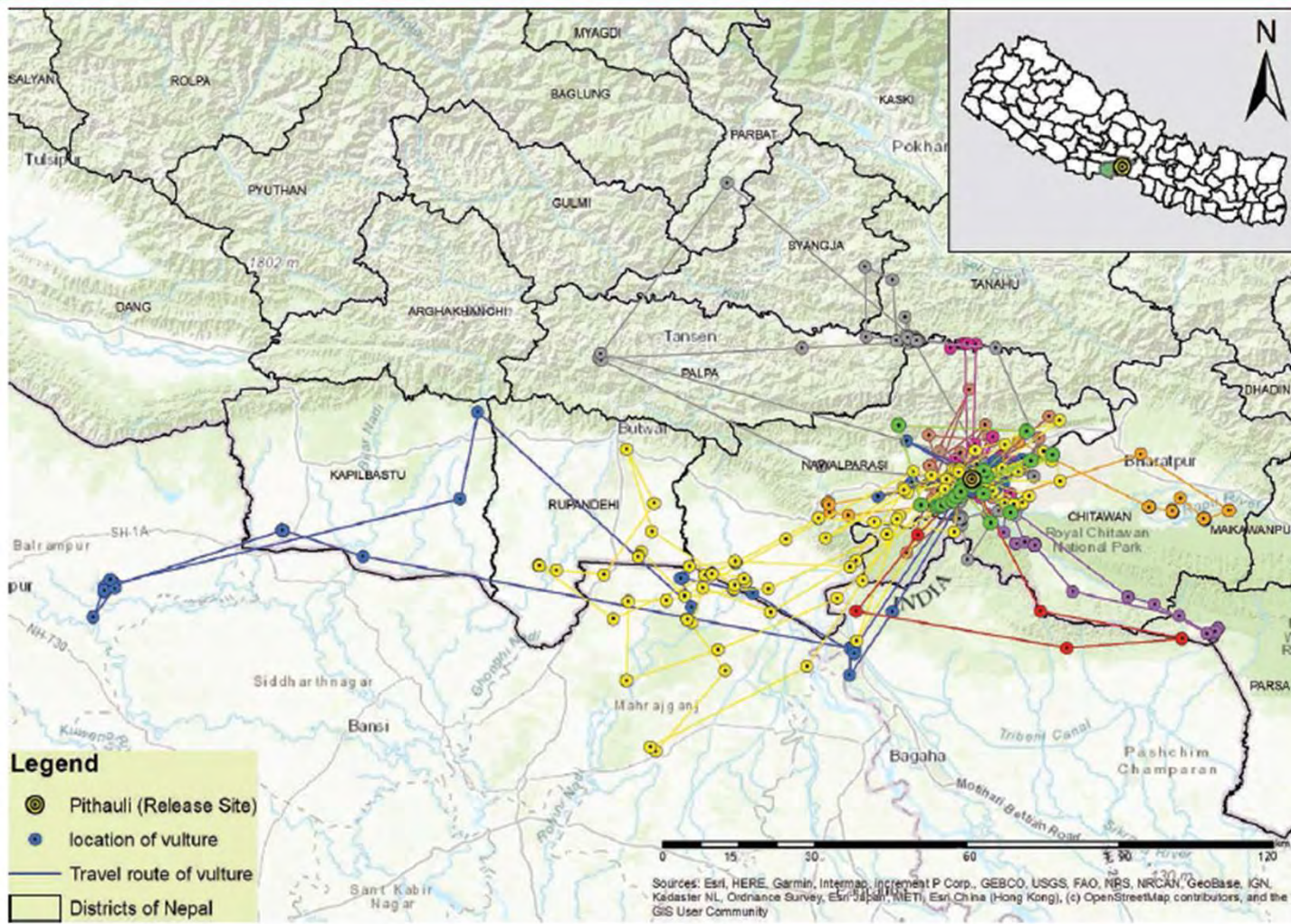
# Satellite Tagging and Vulture Movement



Source: BCN



## Satellite Tagging

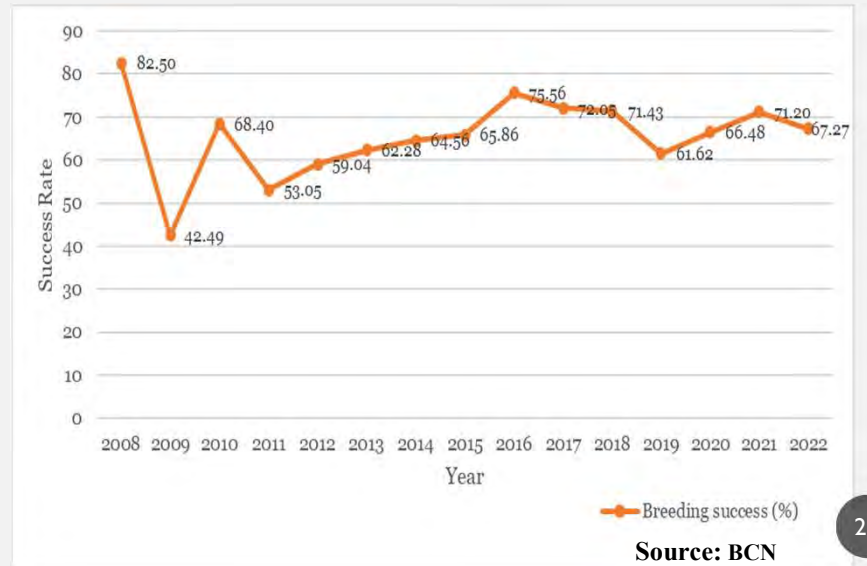
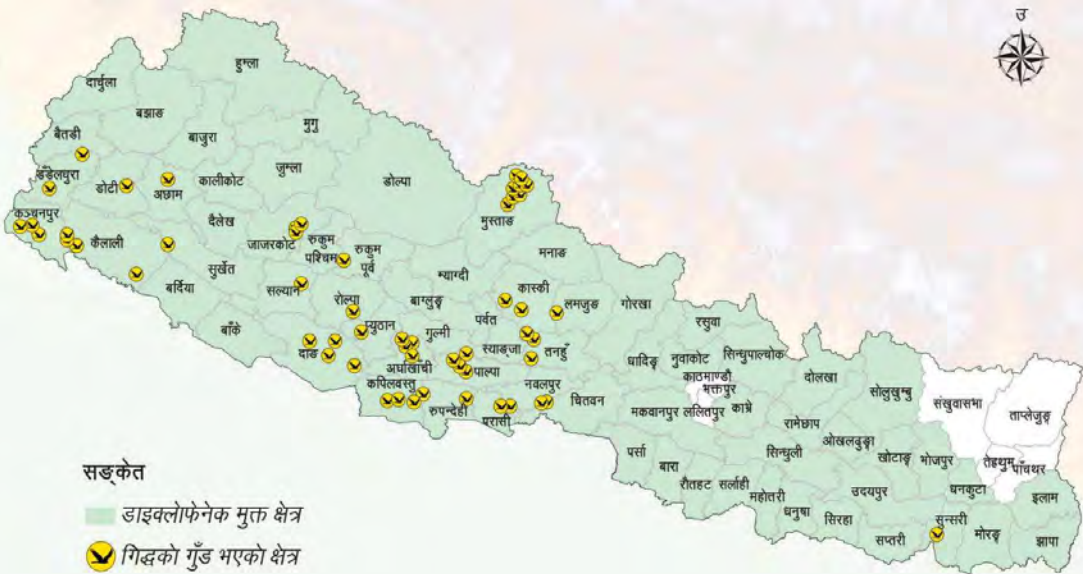


Source: BCN

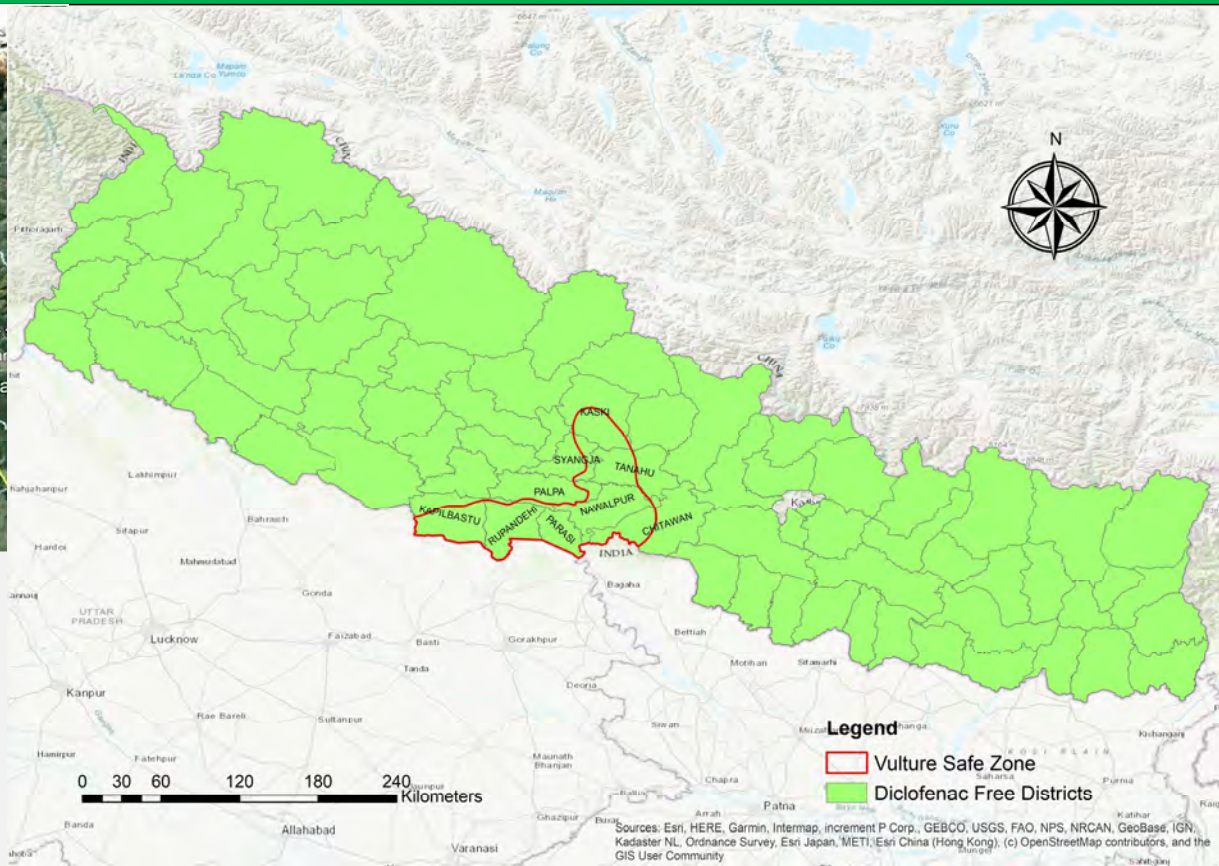
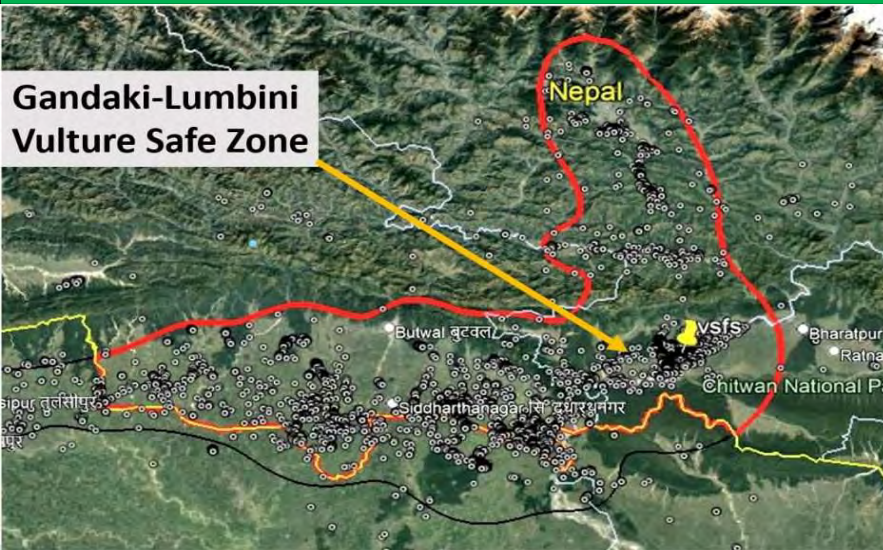


# Nest Monitoring

अनुगमन गरिएका गिद्धका वासस्थान क्षेत्रहरू



# Diclofenac Free District (DFD) and Vulture Safe Zone (VSZ)





**Certification of Vulture Safe Zone**

This is to certify that the Gandaki-Lumbini Vulture Safe Zone (VSZ) in Nepal has been formally approved by the Technical Advisory Committee of SAVE following strong scientific evaluation of VSZ criteria. We therefore recommend approval of the defined areas of this VSZ being the first fully safe areas for vultures in Asia.

We congratulate Government of Nepal, Conservation Partners and Local Communities on their commendable efforts in reaching this status.

Awarded to: Department of National Parks and Wildlife Conservation (DNPWC)  
National Trust for Nature Conservation (NTNC)  
Bird Conservation Nepal (BCN)

2 December 2021

Signed:  .....

Rhys Green, SAVE Chair

Signed:  .....

Jenima Pary-Jones, Co-chair of SAVE TAC

Signed:  .....

Chris Bowden, SAVE Programme Manager

Signed:  .....

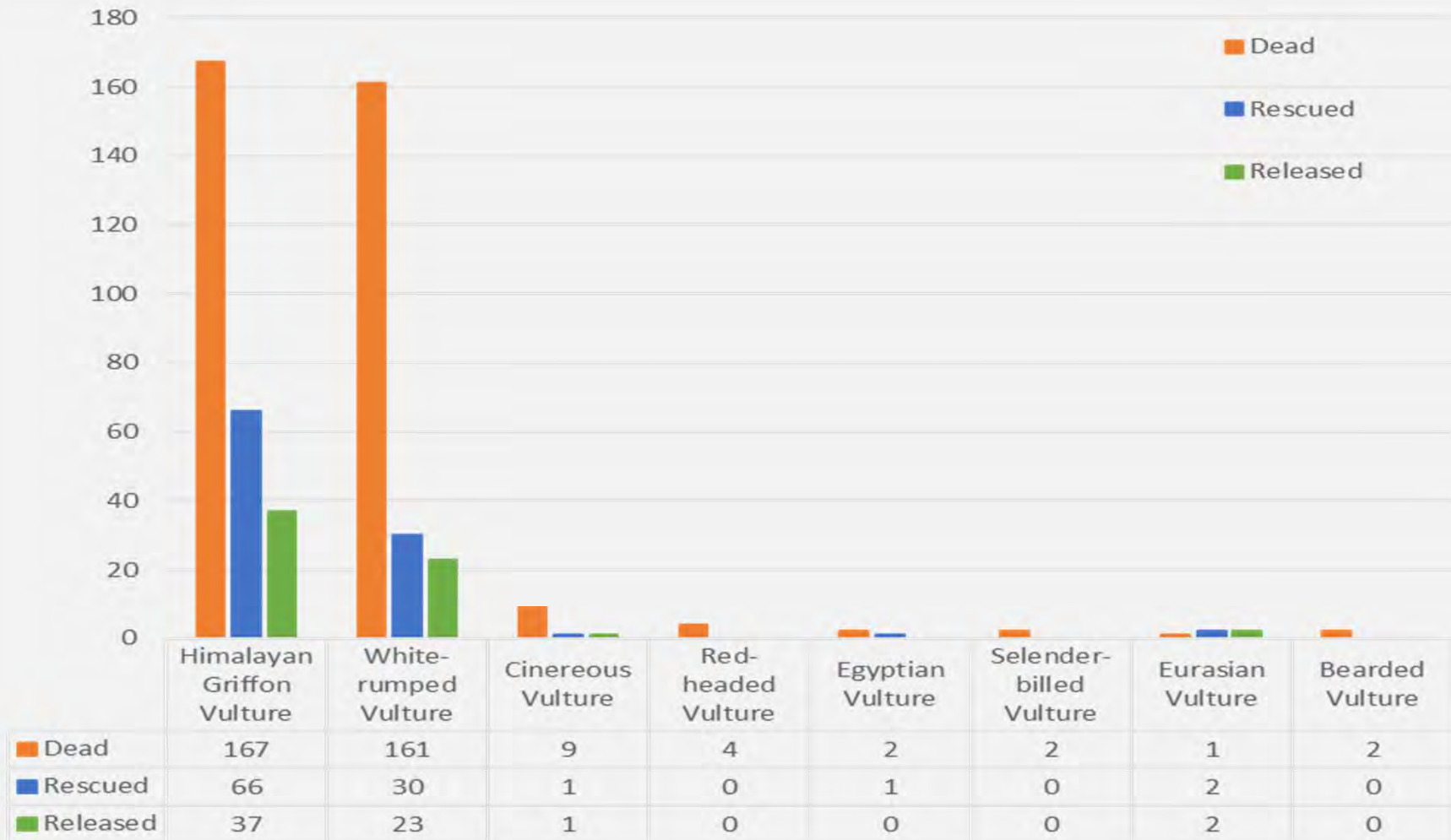
Vishu Prakash, Co-Chair of SAVE TAC

Source: BCN

## Status of Vulture

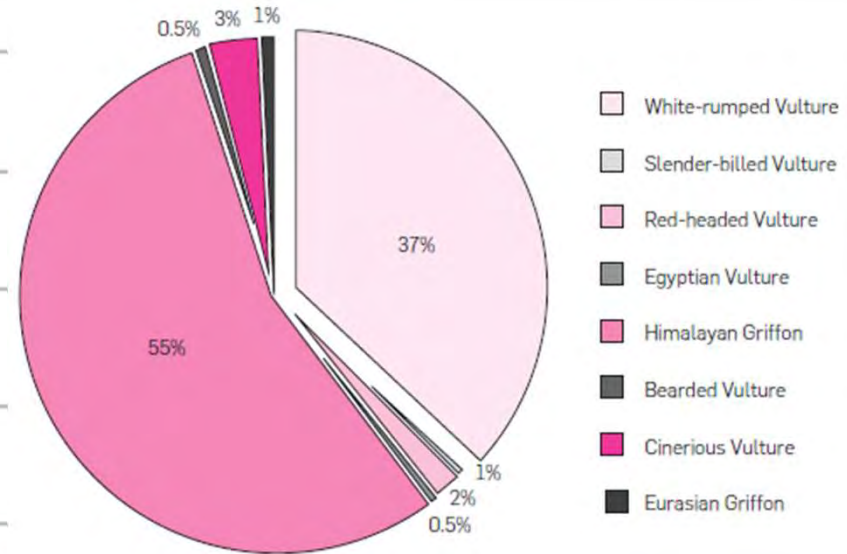
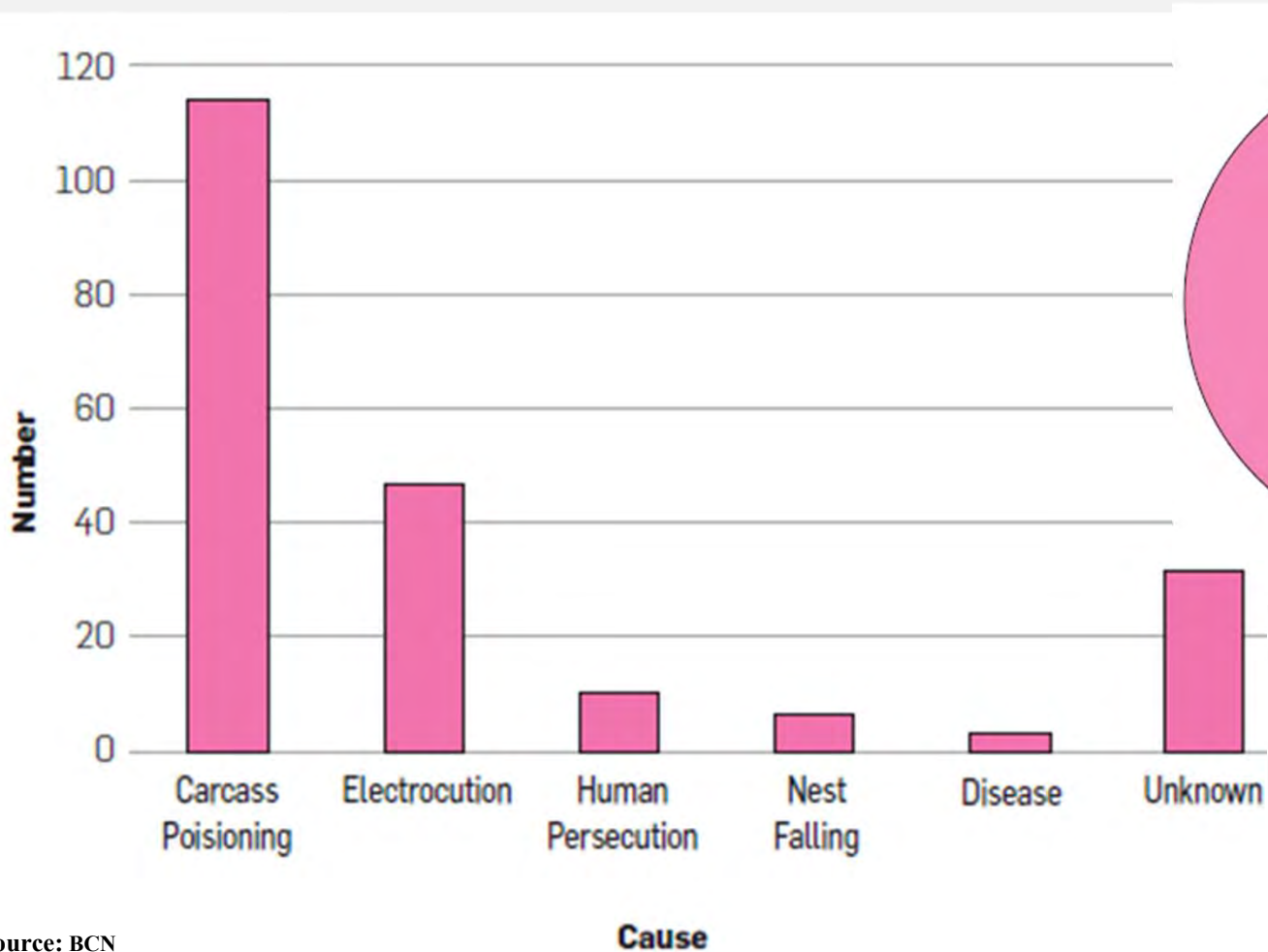
<b>Vulture Species</b>	<b>Conservation Status (National) (DNPWC 2015)</b>	<b>Estimated Population (National) (Inskipp et al. 2016)</b>	<b>Present Population (National) (Rana et al. 2020)</b>
White-rumped Vulture (WRV)	Critically Endangered	<2000	1497
Slender-billed Vulture (SBV)	Critically Endangered	50-75	83
Red-headed Vulture (RHV)	Critically Endangered	<500	167
Cinereous Vulture (CV)	Endangered	-	49
Egyptian Vulture (EV)	Vulnerable	<1000	621
Himalayan Griffon (HG)	Vulnerable	<10000	2271
Bearded Vulture (BV)	Vulnerable	<500	162
Griffon Vulture (GV)	Data Deficient	-	25
Indian Vulture (IV)	Critically Endangered	-	4

## Dead, rescued and released Vulture



Source: BCN

## Cause of Vulture death



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www.odzu.edu.np/njz

Volume 7 | Issue 1 | June 2023

<https://doi.org/10.3126/njz.v7i1.56306>

[Research article](#)

### Poisoned baits pose a threat to vultures in Nepal

Krishna Prasad Bhusal<sup>1,2,3\*</sup> | Ishwari Prasad Chaudhary<sup>1,2</sup> | Deu Bahadur Rana<sup>1,2</sup> | Deelip Chand Thakuri<sup>1,2</sup> | Ankit Bilash Joshi<sup>1,2</sup> | Bikalpa Karki<sup>4</sup> | John W. Mallord<sup>2,5</sup>

<sup>1</sup> Bird Conservation Nepal (BCN), Lazimpat, Kathmandu, Nepal

<sup>2</sup> Saving Asia's Vultures from Extinction (SAVE), RSPB, The Lodge, Sandy, Bedfordshire, SG19 2DL, UK

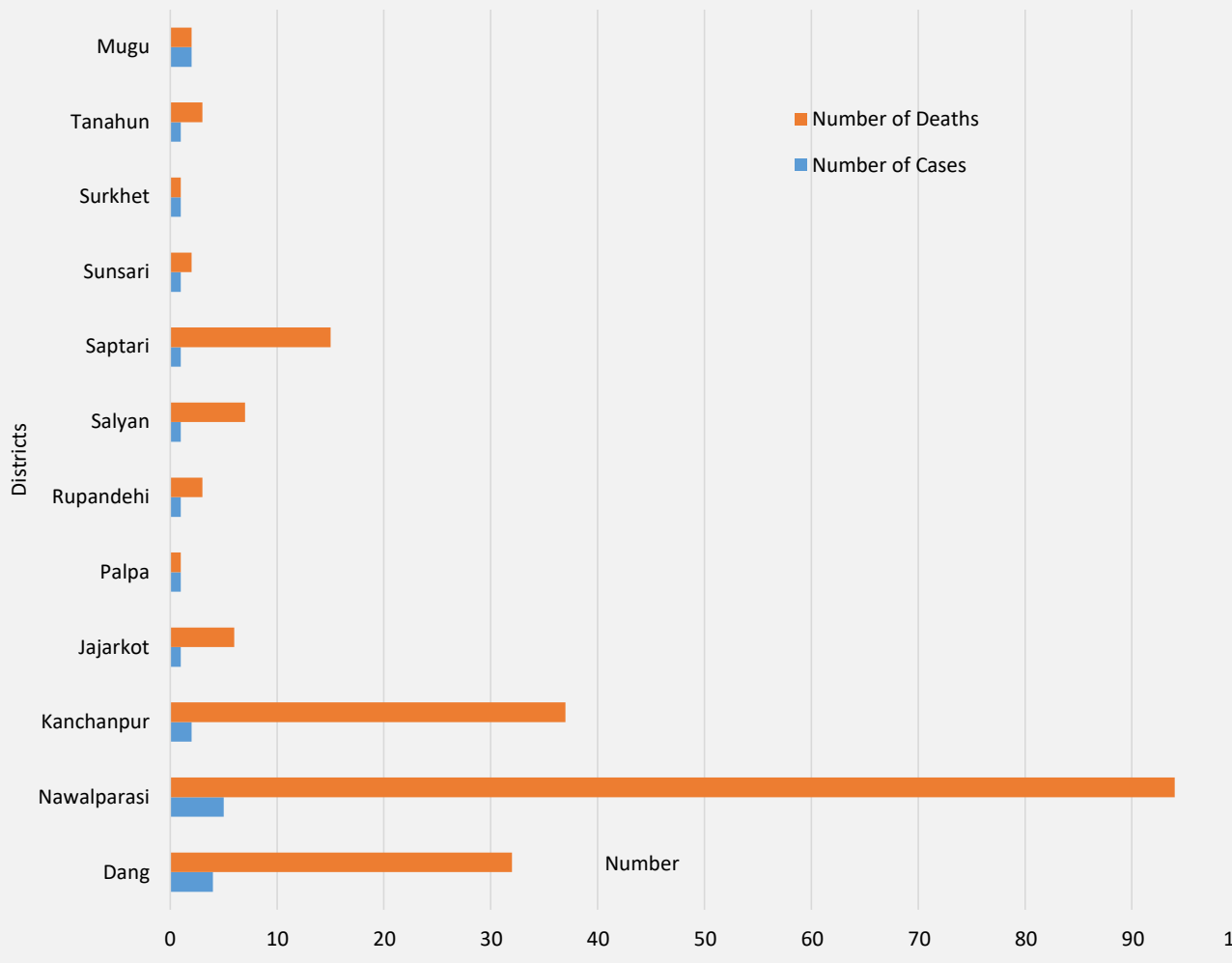
<sup>3</sup> International Union for Conservation of Nature, Species Survival Commission, Vulture Specialist Group (IUCN-SSC VSG), Rue Mauverney 1196 Gland, Switzerland

<sup>4</sup> National Trust for Nature Conservation, Biodiversity Conservation Center, (NTNC-BCC), Sauraha, Chitwan, Nepal

<sup>5</sup> Royal Society for the Protection of Birds (RSPB), Centre for Conservation Science, the Lodge, Sandy, Bedfordshire, SG19 2DL, UK

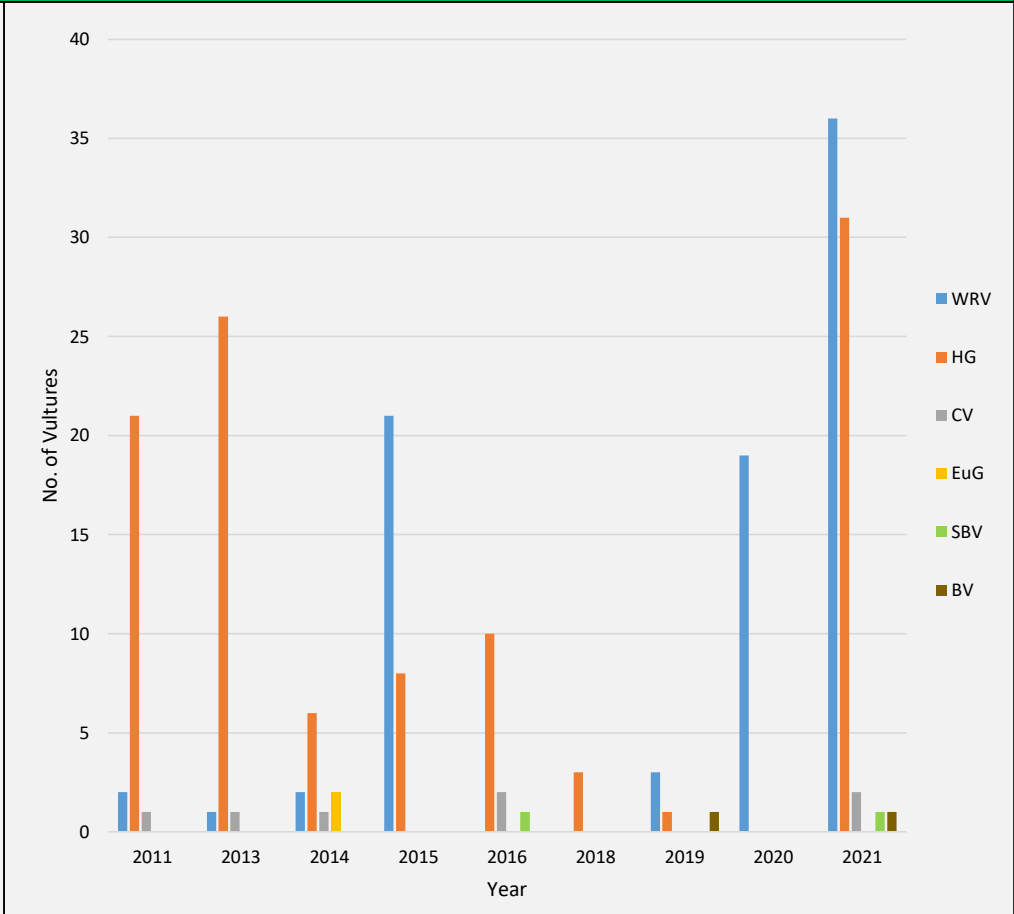
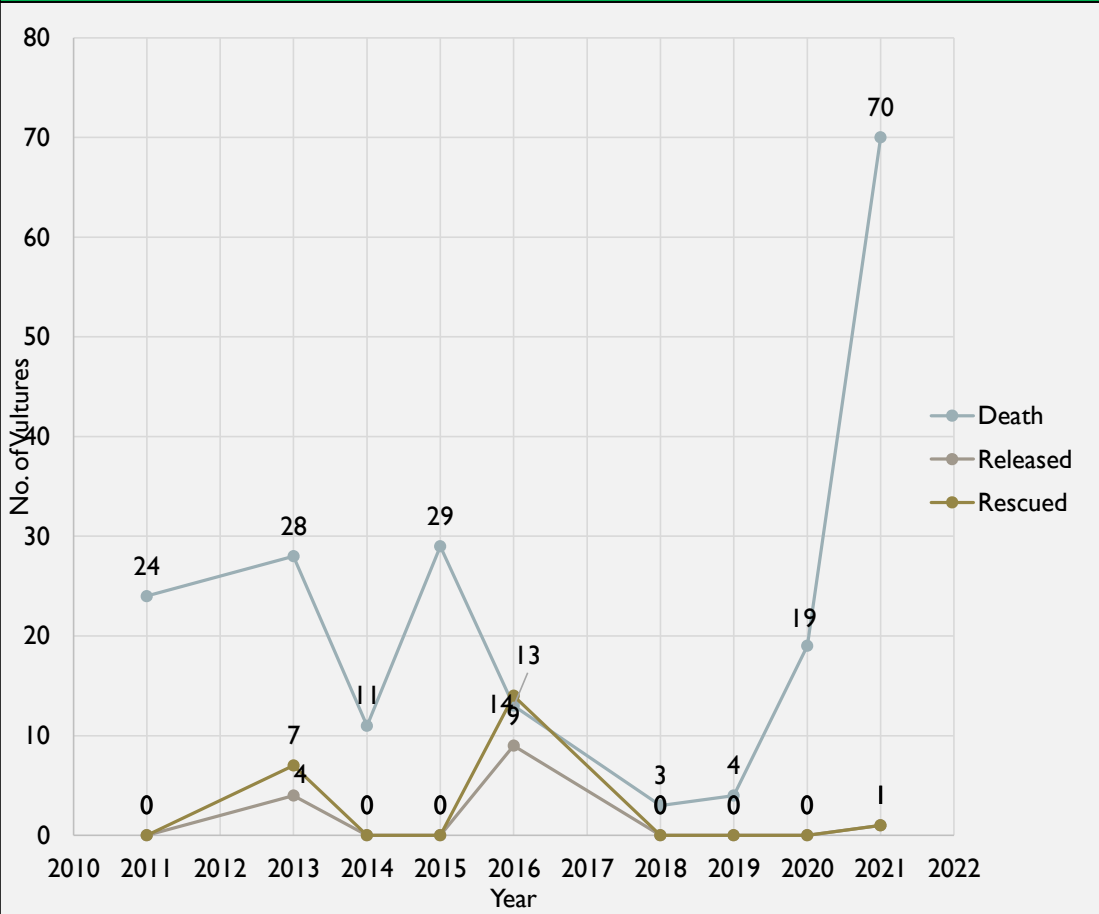
\* Correspondence: krishna.biologist@gmail.com

# Carcass Poisoning



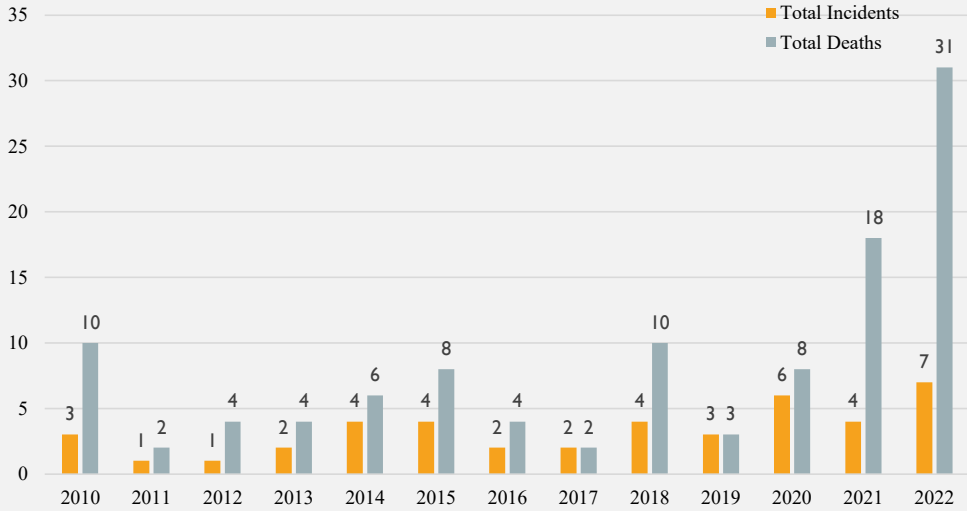
Source: BCN

## Carcass Poisoning



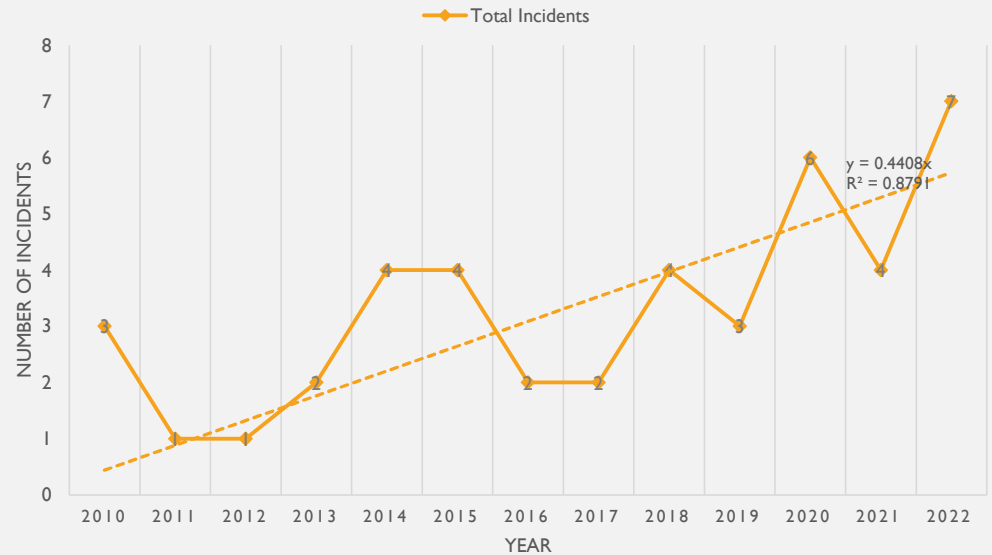
Source: BCN

# Electrocution



Feb 2010- May 2022

- 43 incidents of electrocution
- 110 individual vulture death
- Seven Species of Vultures
- 17 districts





## WAY FORWARD

- Continuation of monitoring of the released vultures
- Continuation of safe feed supply and NSAIDs monitoring
- Public awareness in poisoning and electrocution incident areas

THANK YOU

