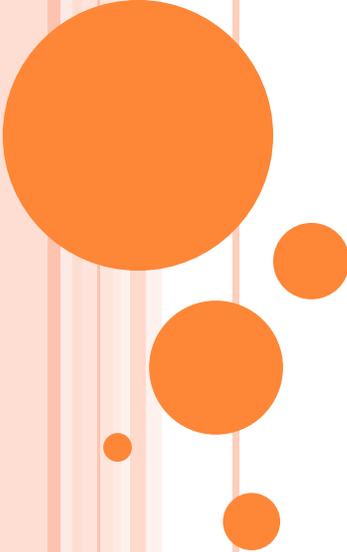


**MITIGATING THE RISK OF ELECTROCUTION  
MORTALITY TO THREATENED VULTURES IN  
THE TERAJ REGION OF UTTARAKHAND:  
SOME PRELIMINARY RESULTS**



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# BACKGROUND

- **Vultures, the birds of prey,**
- The Natural Scavenger: Natural Sanitation servant,
- Known for unique ecosystem services,
- Religious significance (Hinduism, Buddhism, Parsee, etc),
- **New World vultures**: the **Californian** and **Andean condors** (North & South America),
- **Old World vultures**: that are seen scavenging dead animal carcasses in Europe, Africa, and Asia,
- Australia and Antarctica (Non-vulture range continents),
- The Indian sub-continent holds population of nine species of vultures,





White-rumped vulture  
(CR)



Red-headed vulture  
(CR)



Slender-billed vulture  
(CR)



Long-billed vulture  
(CR)

**VULTURE SPECIES  
IN INDIA**



Egyptian vulture  
(EN)



Himalayan vulture  
(NT)



Eurasian vulture  
(LC)



Cinereous vulture  
(NT)



Bearded vulture  
(NT)



# VULTURES CRISIS AND CAUSE

- During 1980s more than 30-40 million pairs of vultures in India and Nepal (Prakash et al., 2012)
- Severely declined during 1990s to 2000s,
- Three species were most affected,
- Population of the White-rumped vulture fell 99.7% (1993-2002) and 91% during 2000-2011 in Nepal (Prakash et al., 2012)
- Indian vulture and the Slender-billed vulture fell 97.4%.
- Other remaining vultures populations have also affected,
- Vulture populations still decline at a rate of between 20%-40% each year since 2007 (Prakash et al., 2012),

# CAUSES OF VULTURE DECLINATION

- In 2003, diclofenac was found the destroyer,
- A common Non-steroidal Anti-inflammatory Drug, given to treat the symptoms inflammation, fever, pain associated with disease or wounds,



Oaks et al.(2004) Nature Swam et al (2006) Biology Letters

Diclofenac causes renal failure  
0.1 % residue is sufficient to continue ongoing decline



- Other NSAIDs (12 are common in Indian markets) are also toxic (Taggart 2009),
- Including human use NSAIDs,
- Accidental poisoning and other existing threats,



Diclofenac



Within 72 hours



Carcass having diclofenac



Death



Scavenging by vultures

Source: BNHS

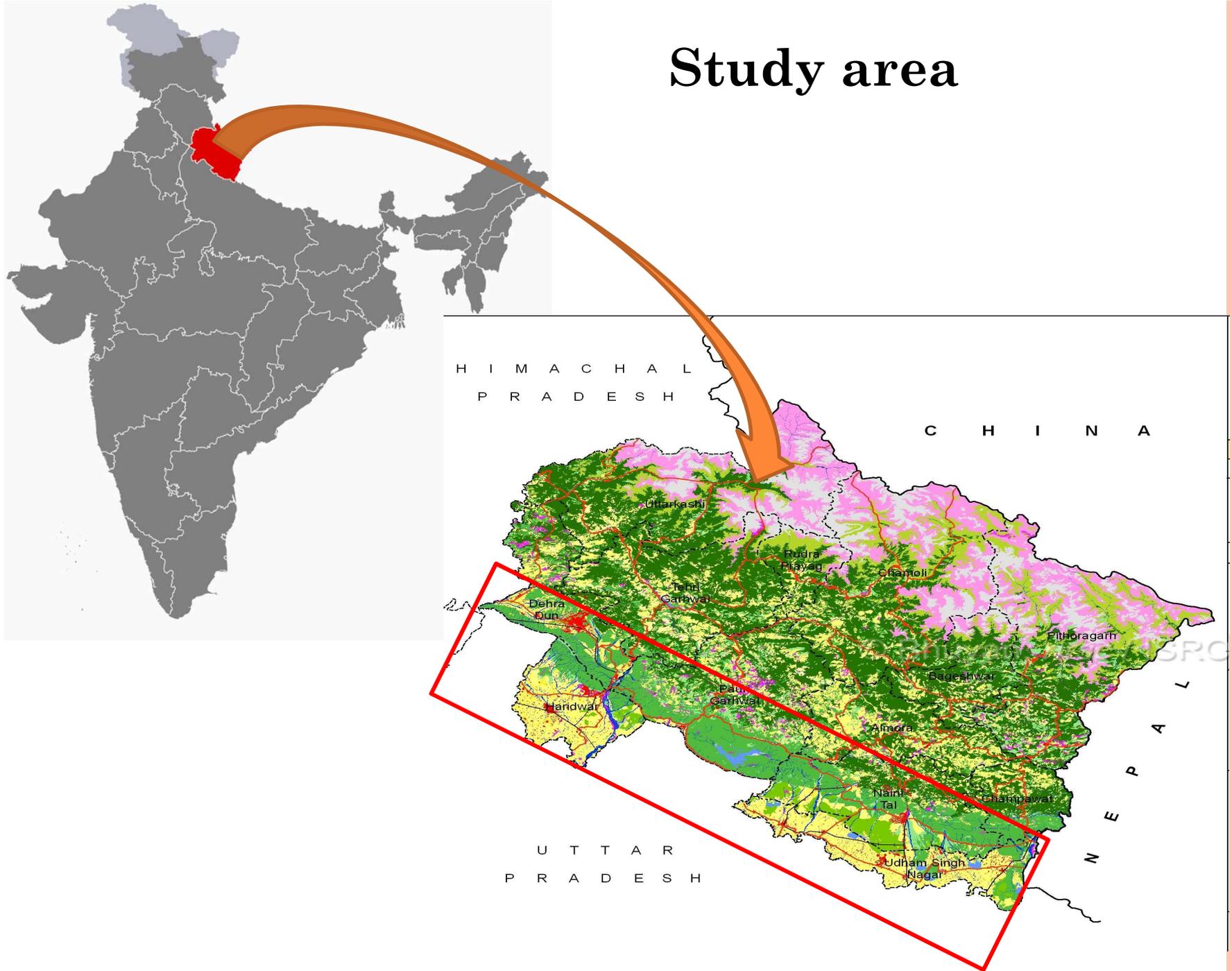


# UTTARAKHAND AND ITS IMPORTANCE IN VULTURE CONSERVATION??

- Unique ecological setting and supports 9 species of vultures,
- Unique wintering habitat in Terai region for the migratory vultures,
- Many of the areas are in the vicinity of 70-100 km from Morni Hills where Conservation Breeding Programme is ongoing,
- Possible release of Captive vultures in 2019,
- Limited data on population status and threat to existing population,
- Witnessed the modern developmental process and hence, change in dead animal disposal system,
- A provisional Vulture Safe Zone (pVSZ) and overlapping with VSZs of Nepal and UP,

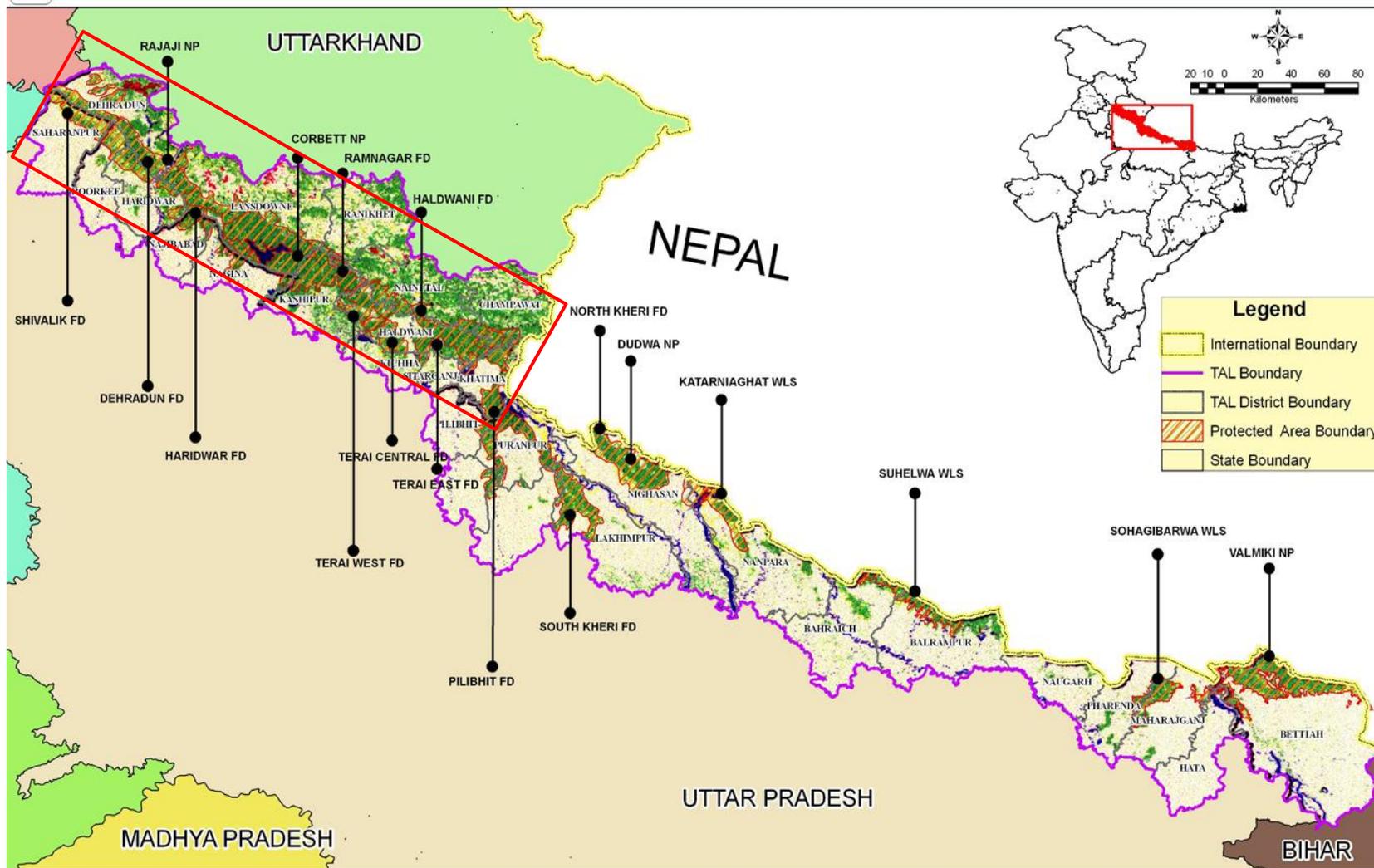


# Study area



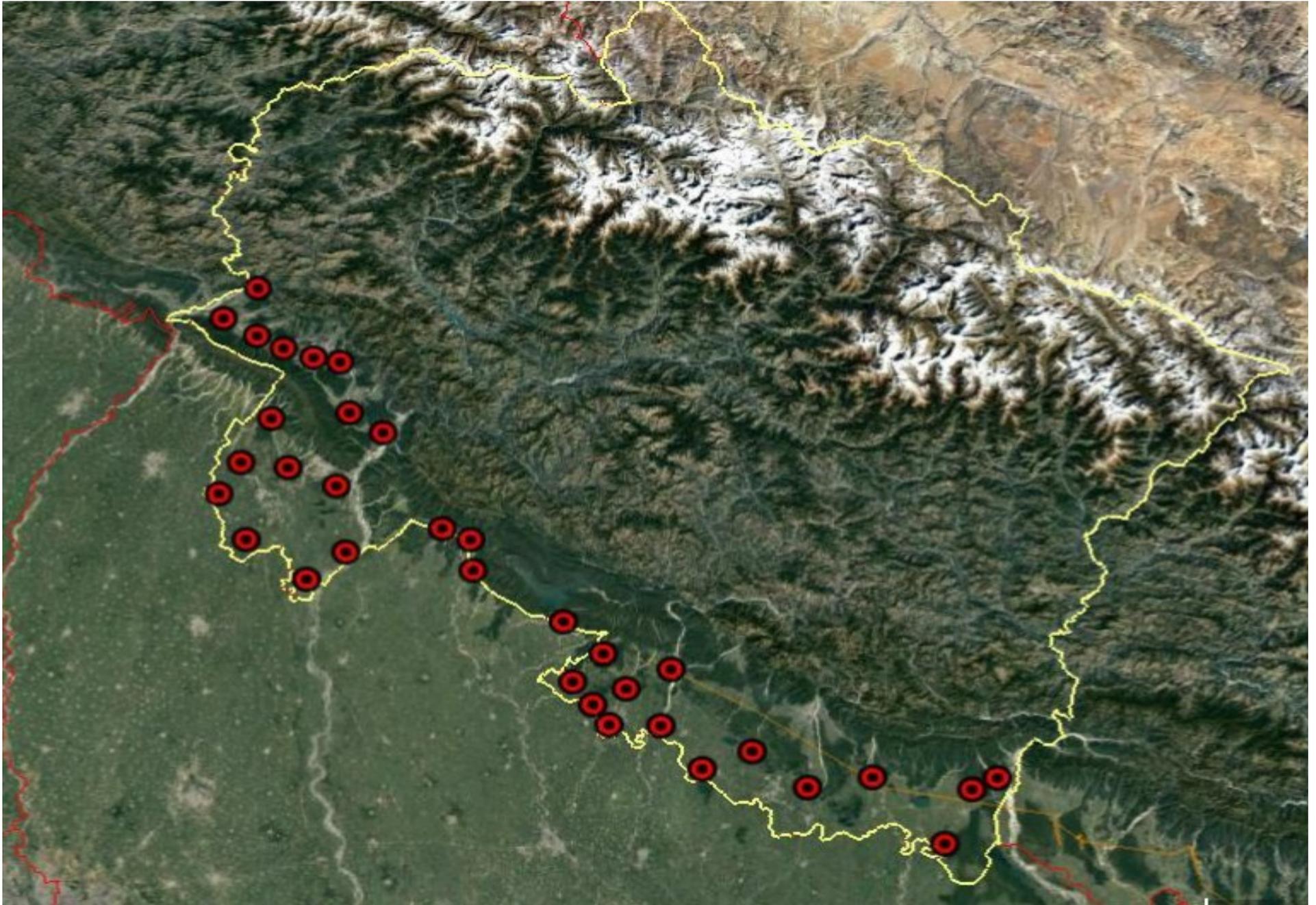


# TERAI ARC LANDSCAPE



Source: WWF-India





Livestock carcass dumping sites monitored in Terai region of Uttarakhand



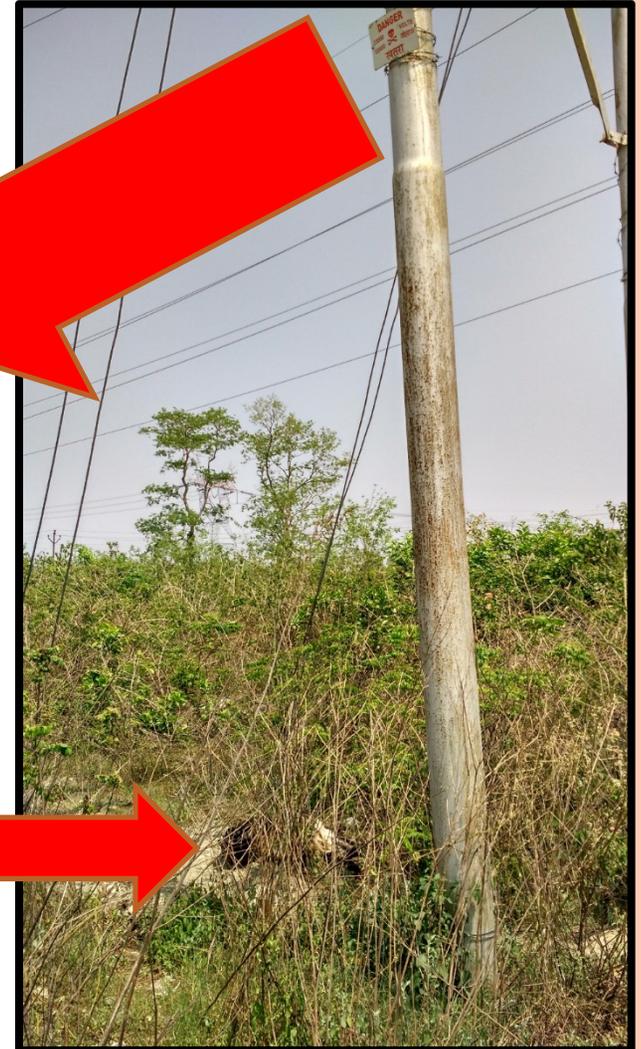
- Electrocution as a major threat.



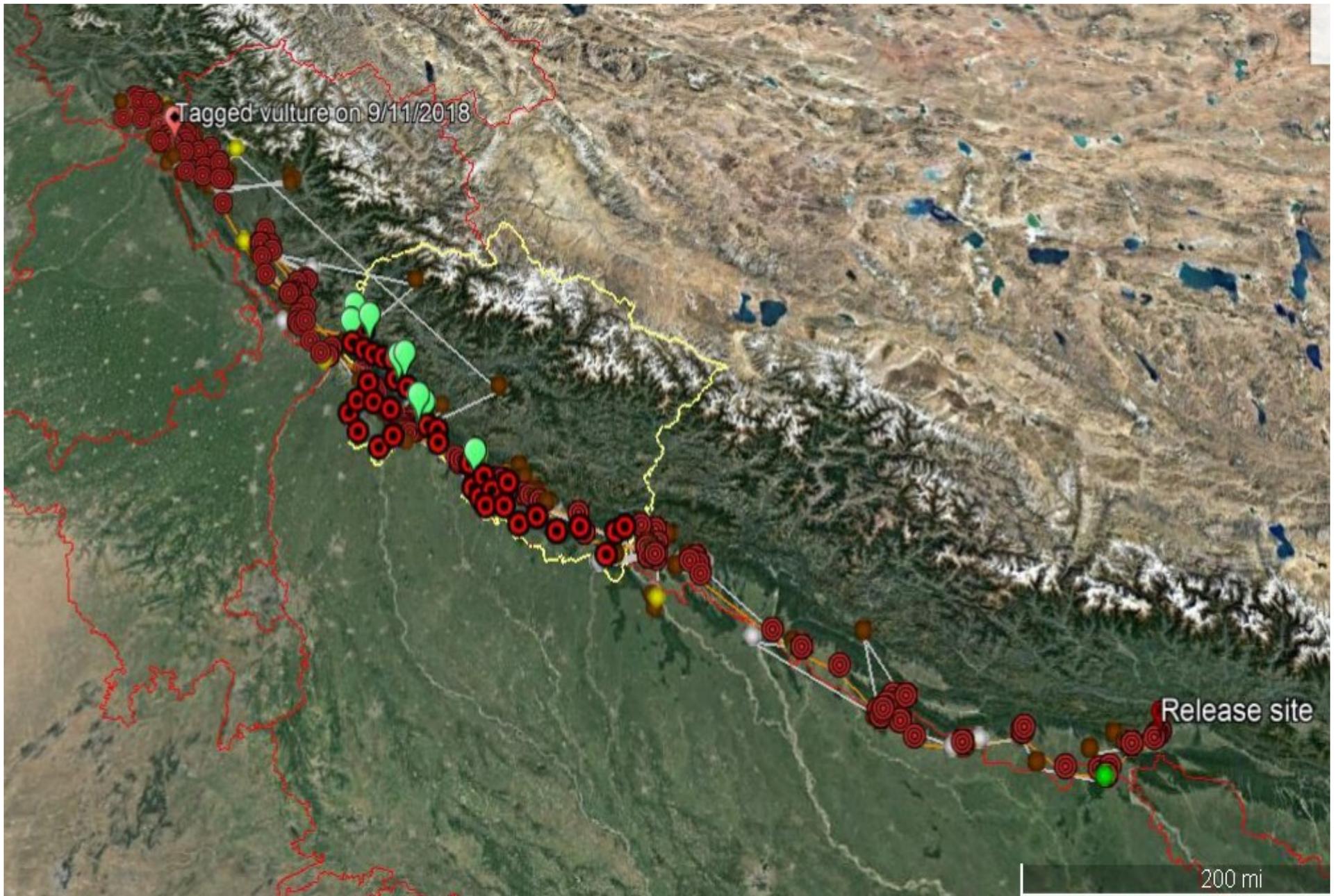
Examining Dead Himalayan Vulture at Majri Grant.



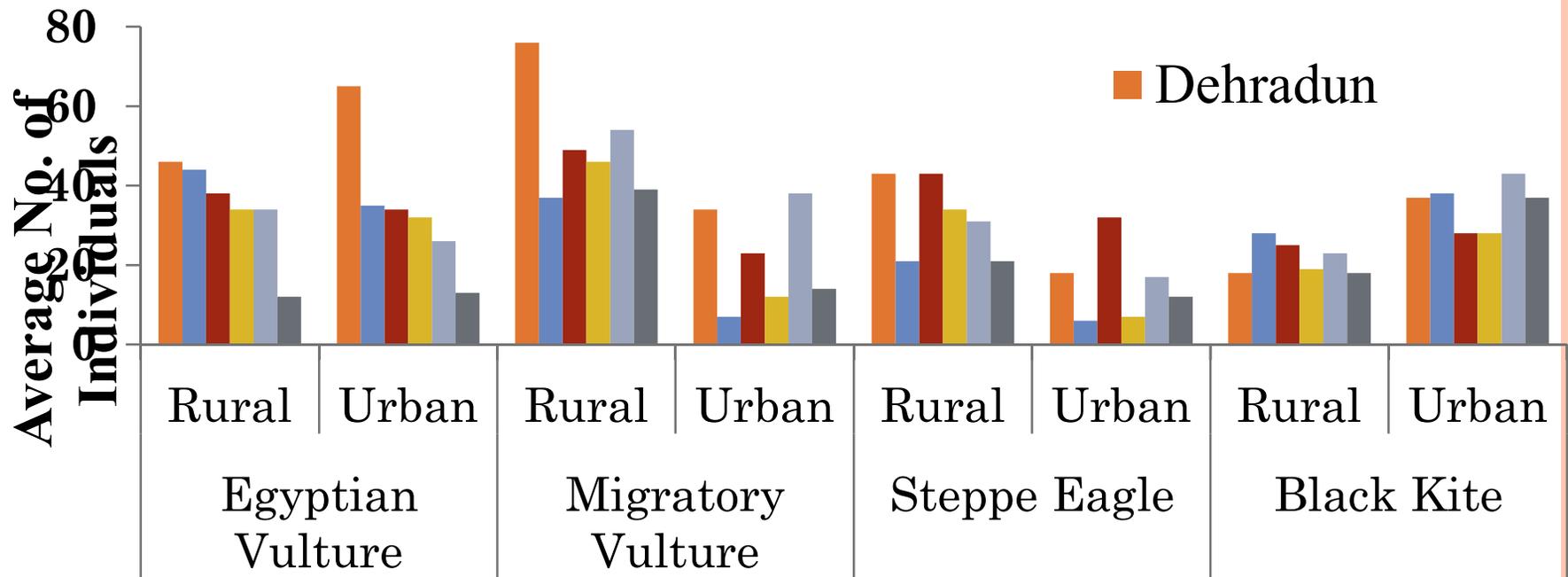
A Dead Himalayan Vulture at Majri Grant.



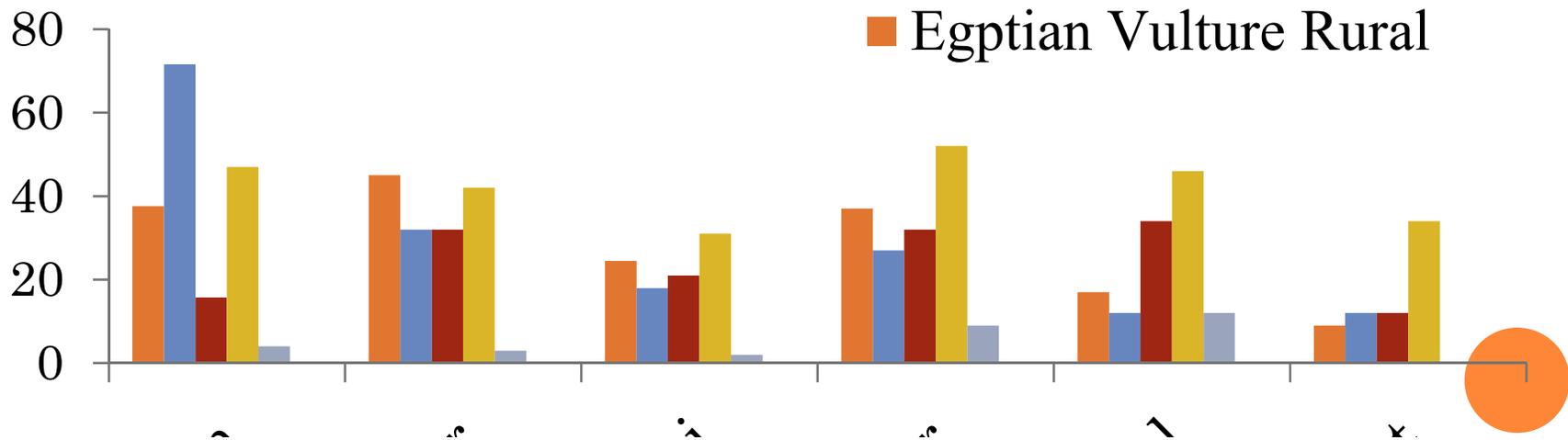




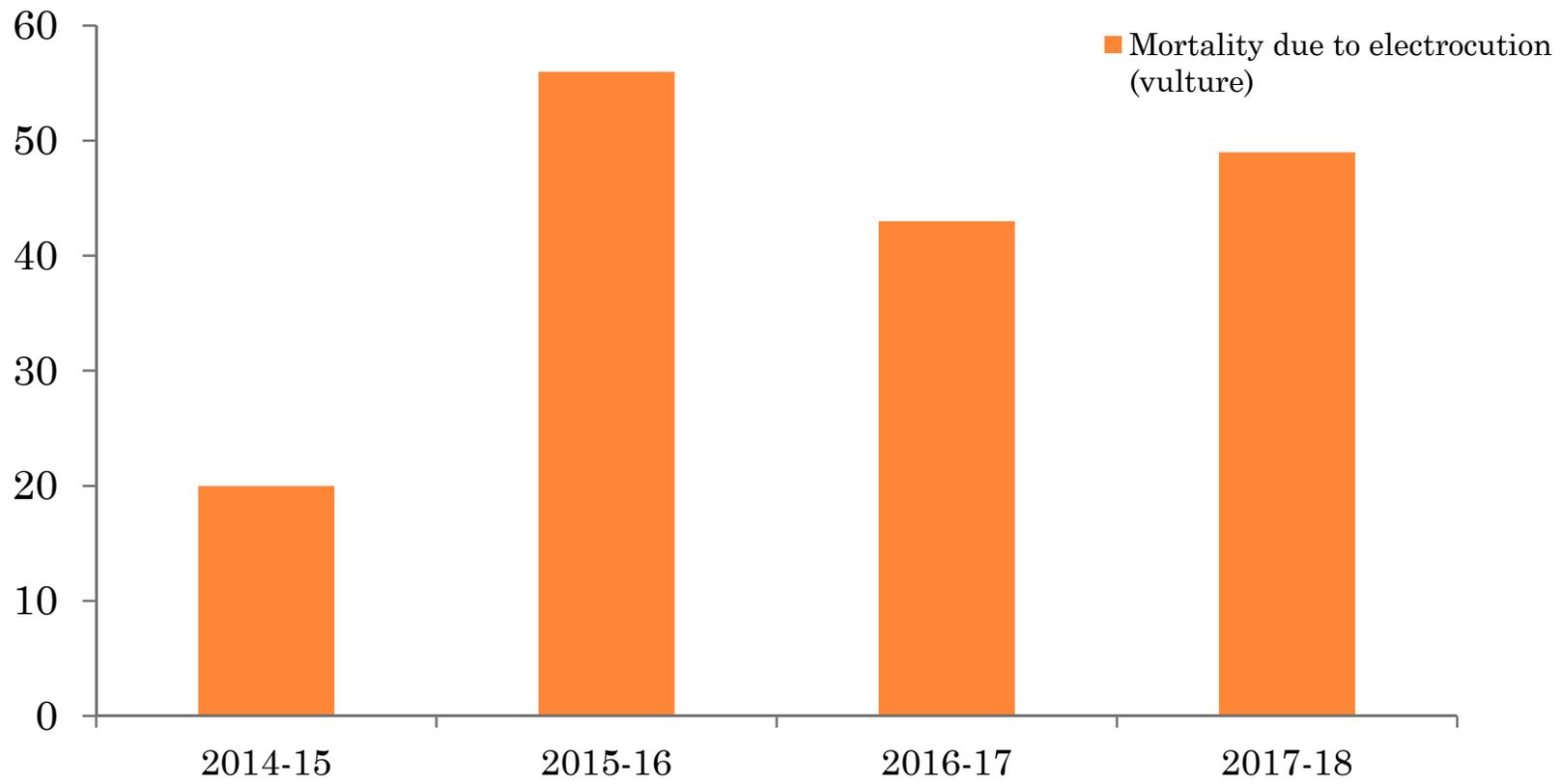
Telemetry tagged vulture movement in Terai region of Nepal and Uttarakhand  
Source: Bird Conservation Nepal



**Fig 6: Average populations of raptors in carcass dumping sites (December to April)**



**Fig : Average populations of raptors in carcass dumping sites (May to November)**



**Mortality of vulture due to electrocution**



## OBJECTIVES

- To identify suitable sites for livestock carcass dumping in Dehradun and Haridwar district,
- To mobilize the skinner community for shifting the unsafe dumping sites to safer locations,
- To understand the use of new and safer carcass dumping sites by the skinner community,
- To understand the safe and unsafe dumping sites use pattern by different vulture species,



## METHODOLOGY

- Consultation with stakeholders,
- Identification of potential areas suitable for safe dumping livestock carcass,
- Shifting of livestock carcasses in new identified sites,
- Monitoring of vultures in both the older unsafe and newer safe sites,





Consultation with skinner community in Dehradun district



Consultation with skinner community in Dehradun district



Consultation meeting with Zilla Panchayat Administration in Dehradun



Consultation meeting with Zilla Panchayat Administration in Haridwar





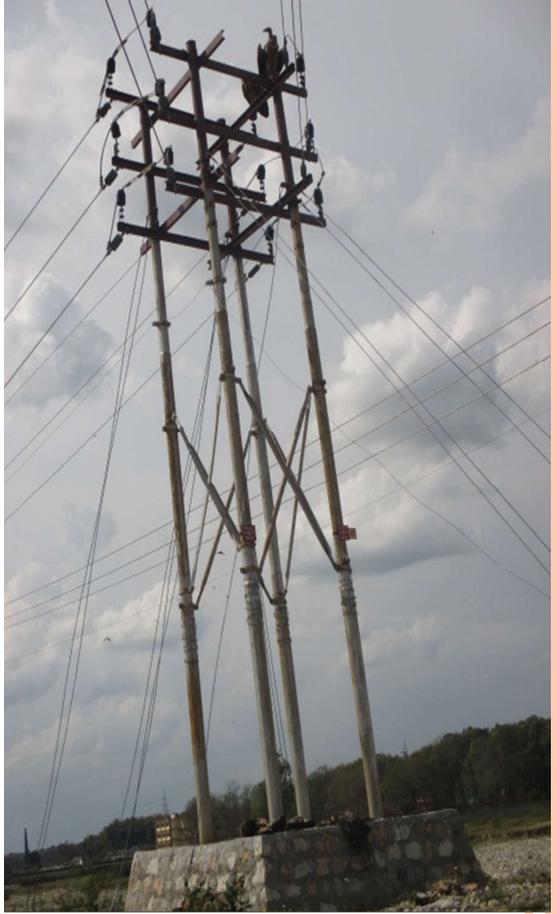
## CONSERVATION ACTION TAKEN INCLUDING AWARENESS AND OUTREACH ACTIVITIES

- Shifting of unsafe site to safer location (5 site in Dehradun and 2 in Haridwar)
- Consultation meeting with stakeholder department (17 including Forest department, Animal husbandry, Skinners associations, Zilla Panchayat)
- 43 awareness events were organized,
- 100 youth volunteers are recognized as Vulture Mitra
- Letters to 13 Zila Panchayats of Uttarakhand,
- Letter to 500 Panchayats of Uttarakhand







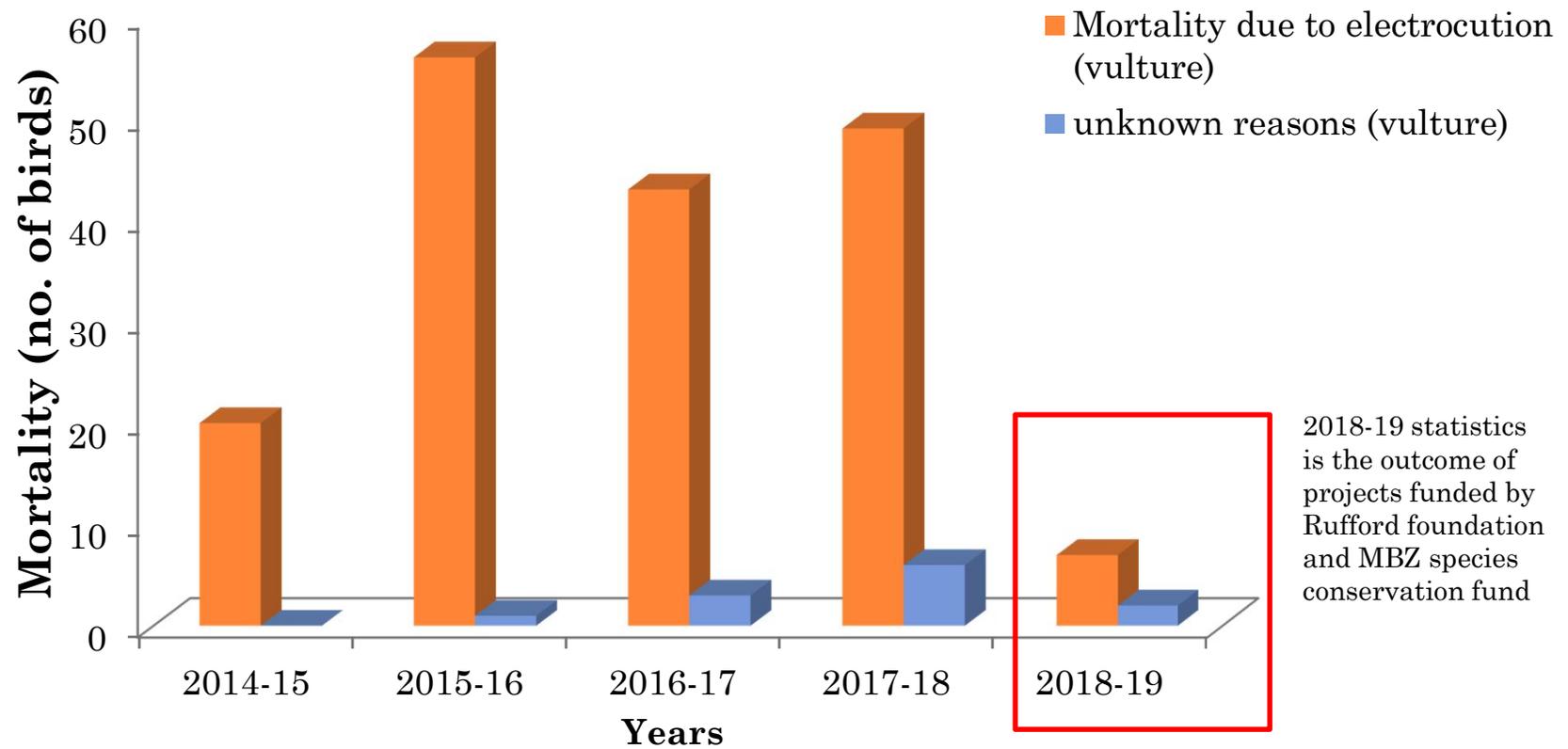








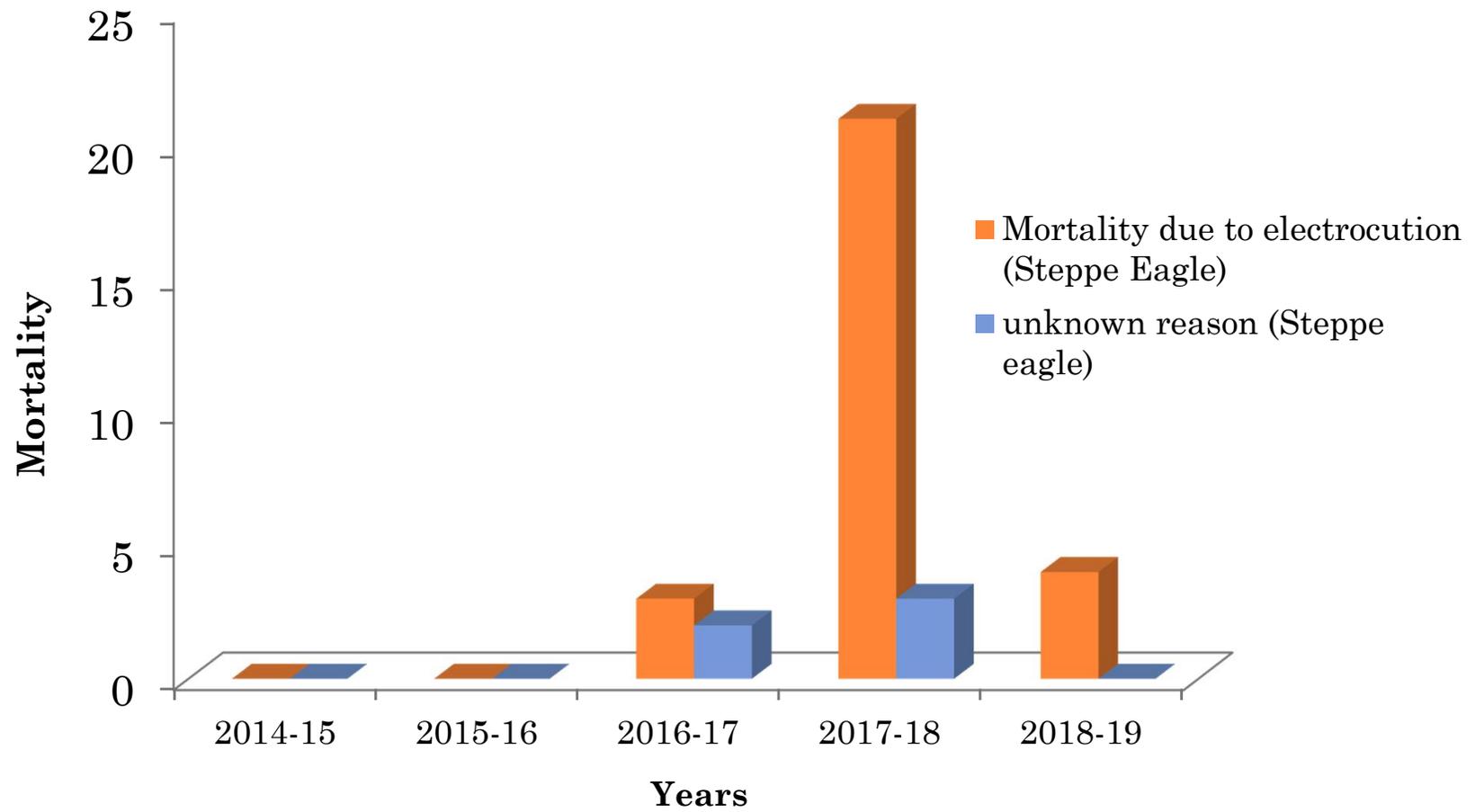




2018-19 statistics is the outcome of projects funded by Rufford foundation and MBZ species conservation fund

Mortality of vulture in surveyed sites of Uttarakhand





Mortality of Steppe Eagle in surveyed sites



## OVERALL OUTCOME

- The mortality of vultures and other threatened raptor was reduced,
- The shifted new sites are preferred by all vulture species,
- Stray dogs population was found lower than unsafe sites
- Record of Three Critically Endangered vultures in newly shifted safe sites,



# MAJOR FINDINGS



# AWARENESS AND OUTREACH ACTIVITIES

## दुर्लभ गिद्धों के संरक्षण हेतु हमारा दायित्व Saving Vanishing Vultures is Our Responsibility

### गिद्धों के संरक्षण हेतु क्या करें ✓

### गिद्धों के संरक्षण हेतु क्या ना करें ✗

SUPPORTED BY

गिद्ध बचाव: जीवन बचाव | आइये हम सब मिलकर गिद्धों के संरक्षण में अपना योगदान दें।

## पशु चिकित्सा में डायक्लोफीनॉक का प्रयोग न करें।

नैलोकसीकॉम हमारे लिए सुरक्षित है, इस दवा का प्रयोग करें।

डायक्लोफीनॉक के प्रयोग से हमारी जाति विलुप्ति की कगार पर पहुँच गयी है।

**STOP DICLOFENAC : SAVE VULTURES**

SUPPORTED BY

गिद्ध बचाव: जीवन बचाव | आइये हम सब मिलकर गिद्धों के संरक्षण में अपना योगदान दें।

## VULTURES OF INDIA भारत में पाये जाने वाले गिद्ध

Lammergeier/ हडफोड गिद्ध

Egyptian Vulture/स्कन्द गिद्ध

White-rumped Vulture/ बगाल का गिद्ध

Long-billed Vulture/ भारतीय गिद्ध

Slender-billed Vulture/ लम्बी घोंघ का गिद्ध

Himalayan Vulture/ हिमालयी गिद्ध

Eurasian Vulture/ यूरेशियाई गिद्ध

Cinereous Vulture/ काला गिद्ध

Red-headed Vulture/ लाल सिर वाला गिद्ध

A= Adult (वयस्क); SA= Sub adult (बालक)

Let's come together to conserve vultures of India | आइये हम सब मिलकर गिद्धों के संरक्षण में अपना योगदान दें।

## उत्तराखण्ड में पाये जाने वाले गिद्ध Vultures of Uttarakhand

White-rumped Vulture/ बगाल का गिद्ध

Slender-billed Vulture/ लम्बी घोंघ का गिद्ध

Red-headed Vulture/ लाल सिर वाला गिद्ध

Egyptian Vulture/स्कन्द गिद्ध

Lammergeier/ हडफोड गिद्ध

Himalayan Vulture/ हिमालयी गिद्ध

Cinereous Vulture/ काला गिद्ध

Eurasian Vulture/ यूरेशियाई गिद्ध

A= Adult (वयस्क); SA= Sub adult (बालक)

Let's come together to conserve vultures in Uttarakhand | आइये हम सब मिलकर गिद्धों के संरक्षण में अपना योगदान दें।

# VULTURES OF INDIA भारत में पाये जाने वाले गिद्ध



Lammergeier/ हडफोड़ गिद्ध



Egyptian Vulture/सफेद गिद्ध



White-rumped Vulture/ बंगाल का गिद्ध



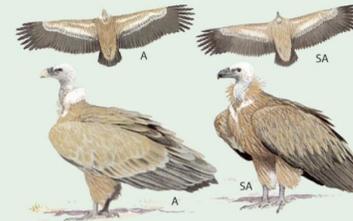
Long-billed Vulture/ भारतीय गिद्ध



Slender-billed Vulture/ लम्बी चोंच का गिद्ध



Himalayan Vulture/ हिमालयी गिद्ध



Eurasian Vulture/ यूरोशियाई गिद्ध



Cinereous Vulture/ काला गिद्ध

A= Adult (बयस्क), SA = Sub adult (बच्चा)



Red-headed Vulture/ लाल सिर वाला गिद्ध



Let's come together to conserve vultures of India आइये हम सब मिलकर गिद्धों के संरक्षण में अपना योगदान दें।





# POLICY RECOMMENDATIONS AND CONCLUSION

- Existing vulture population is vulnerable due to a range of threats especially to Critically Endangered birds,
- Support expansion and conduct of the study to the remaining seven district of Uttarakhand
- Allocation of livestock carcass dumping sites away from high tension powerlines but closer to available forested landscape
- Consider a mechanism to phase out Non-steroidal Anti-inflammatory Drugs (NSAIDs), which are harmful to vultures that are contributing to the decline
- Conduct of regular vulture population assessment at two year intervals to document their population trends.
- Support a study to identify and implement a Vulture Safe Zone (VSZ)
- Eco-tourism possibilities based on vultures can be explored to integrate recreation, livelihood and conservation.



## ACKNOWLEDGEMENT

- Conservation Leadership Programme
- (Birdlife International, Flora & Fauna International, Wildlife Conservation Society)
- Rufford Foundation
- MBZ Species Conservation Fund
- Royal Society for the Protection of Birds (RSPB)
- Oriental Bird Club
- Wildlife Trust of India
- Uttarakhand Forest Department
- Skinners, villagers and “Vulture Mitra”





Thanks

