

## Project Update: November 2016

### Ecological monitoring:

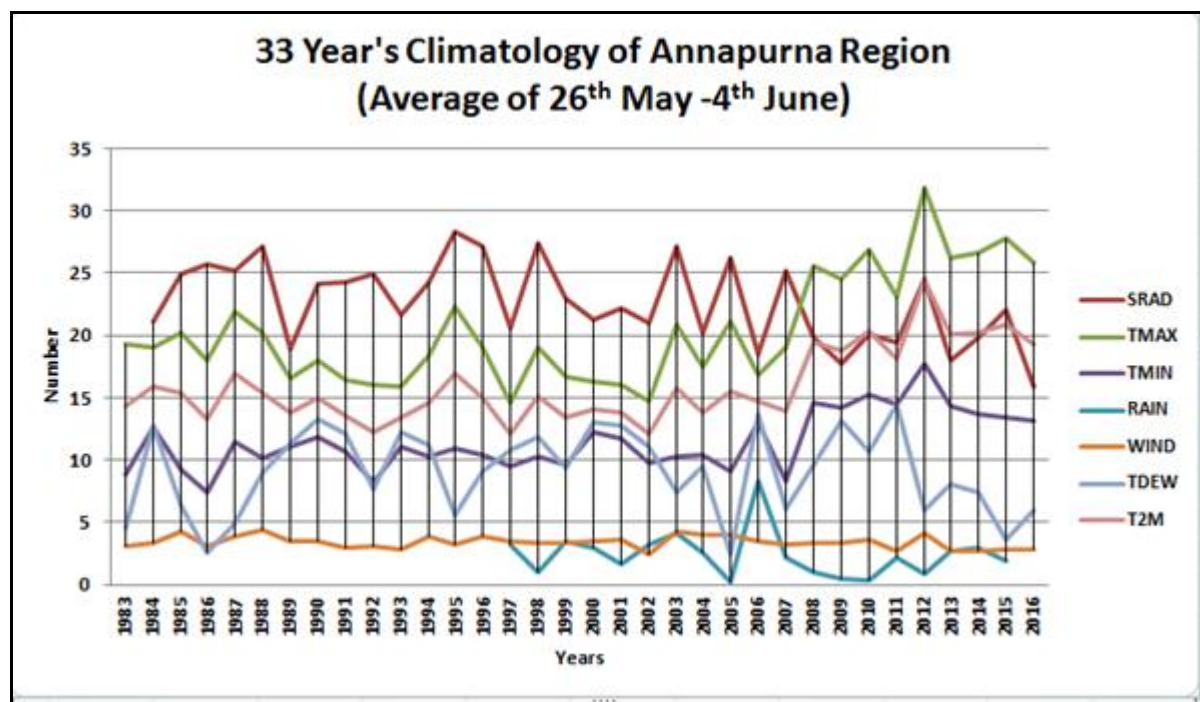
#### a. Agro-climatology

We used a EL-USB-2-LCD climatic data logger (Figure 1) to monitor ecological data during the survey periods (26th May to 4th June 2016) and compiled agro-climatological, satellite modeled, solar and meteorological data for same date from 1983 to till date through near real-time from National Aeronautics and Space Administration (NASA) for the analysis of changing climate in the Himalayas.



We compiled following satellite modeled climatological data from nasa.gov:

- SRAD: Daily insolation incident on a horizontal surface (MJ/m<sup>2</sup>/day).
- TMAX: Maximum air temperature at 2 m above the surface of the earth (degrees C).
- TMIN: Minimum air temperature at 2 m above the surface of the earth (degrees C).
- RAIN: Average precipitation (mm/day).
- WIND: Wind speed at 10 m above the surface of the earth (m/s).
- TDEW: Dew/frost point temperature at 2 m (degrees C).
- T2M: Average air temperature at 2 m above the surface of the earth (degrees C).
- RH2M: Relative humidity at 2 m (%).



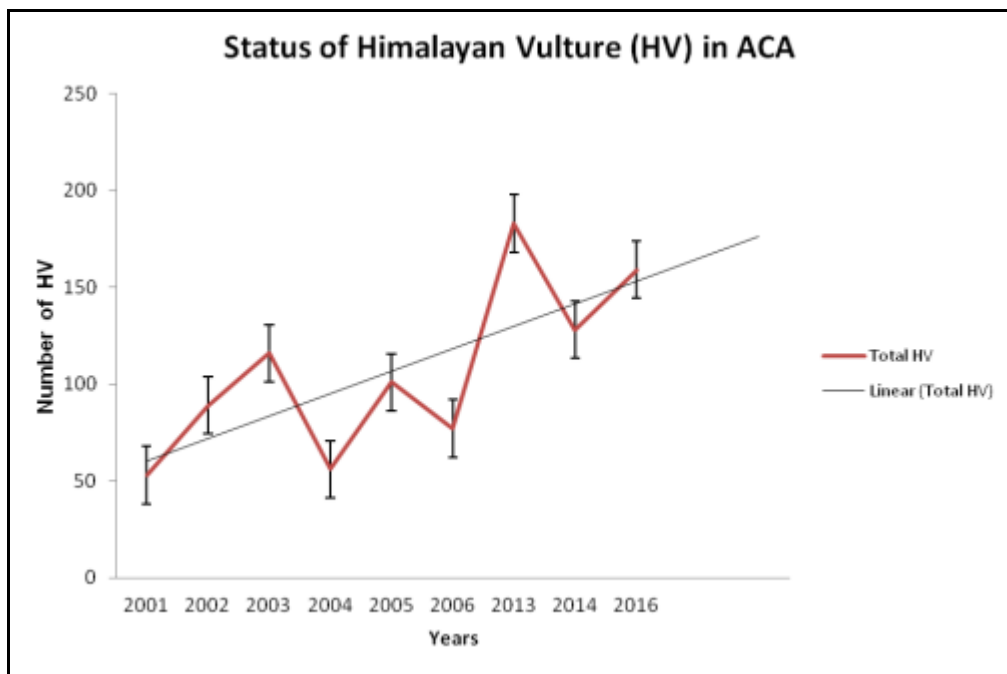
Climatology of Annapurna region (Average of 26<sup>th</sup> May – 4<sup>th</sup> June). Data source: nasa.gov

The maximum and average temperature of the Annapurna region have been rising since 2002 while minimum temperature has been rising since 2007. Average daily solar radiation, total dew point temperature and rainfall have been falling, leaving the wind speed still in steady state condition (Figure 2).

**b. Ornithodology**

During the survey period we have recorded 144 species of birds including 15 species of raptors and five species of vultures from Muktinath to Ghandruk of the Annapurna region. Using G-bird mobile apps we recorded altogether 890 sightings for 3390 individual birds. Maximum sightings were of Himalayan vulture (87) followed by large-billed crow (46). Eurasian tree sparrow were counted maximum of 726 individuals followed by Himalayan swiftlet 405 individuals and large-billed crow 334 individuals. The elevation of the survey areas ranges from 4851 to 799 m asl. Comparing with our previous study HV are in healthy population (Figure 3).

<b>26<sup>th</sup> May - 4<sup>th</sup> June, 2016 Survey period</b>
144 species of birds
15 raptors
5 species of vulture
890 sightings
3390 individual birds
Max sightings: Himalayan Vulture- 87, Large -billed Crow -46
Max count: Eurasian Tree Sparrow -726 individuals, Himalayan Swiftlet -405 individuals, Large-billed Crow -334 individuals



Status of Himalayan Vulture with standard error bars

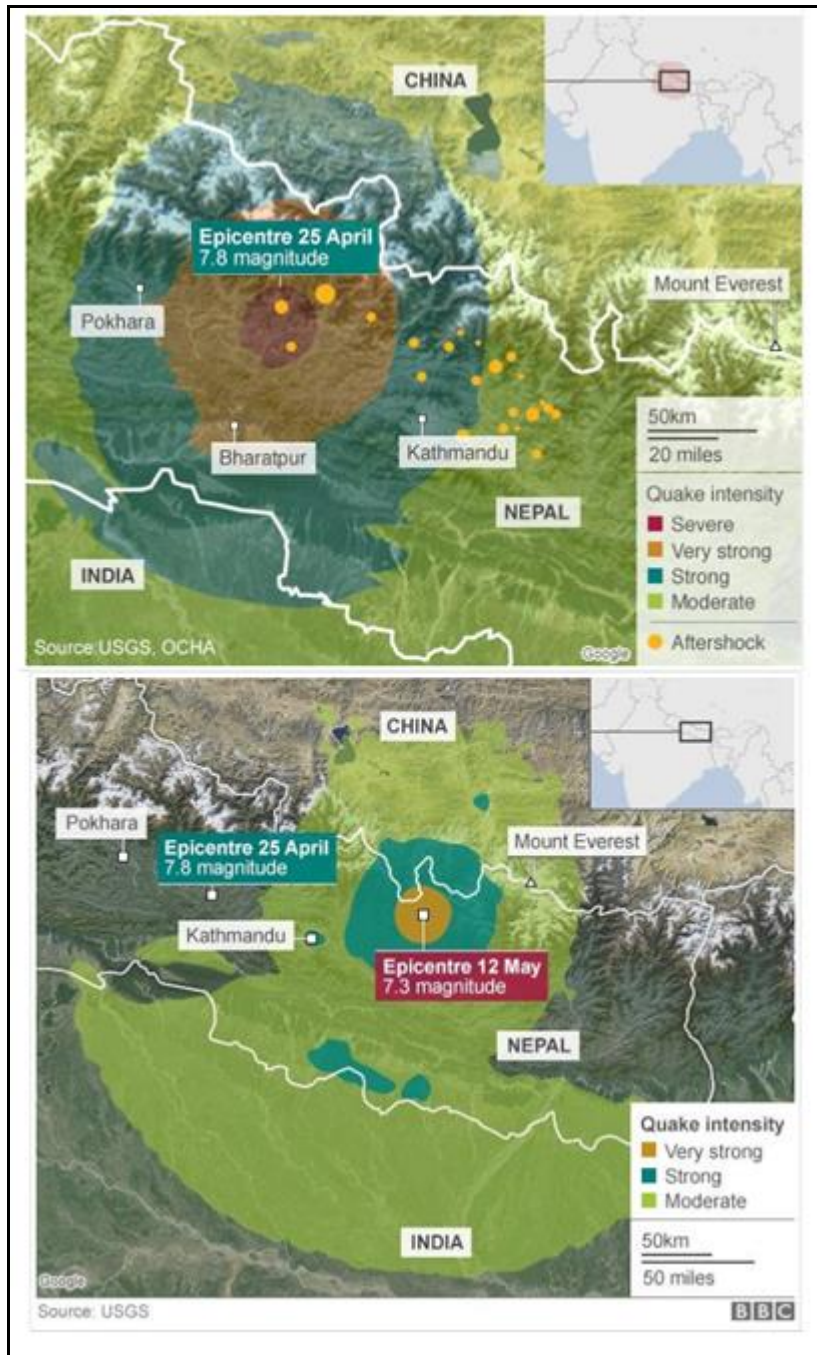
**c. Effect of climate change**

Intensive study concerning consequence of climate change on the habitat of Himalayan vulture is on the way. Comparing with our previous data and metrological data, it shows rise in temperature and fall of average daily solar radiation, total dew point temperature and rainfall in the Himalayas but the existing vultures are adapting themselves in changing climate. To adapt themselves with the changing climate, these vultures reside on the low

land plains during extreme winter and on the higher Himalayas during extreme summer comparatively for the longer duration.

#### d. Effects of mega earthquake 2015

We saw only fallen down of fragile steep sandy cliffs, old houses and cracks on the rocky cliffs of the study area. Most of the faults are on the rocky cliffs having the nests of Himalayan vulture, bearded vulture and Egyptian vulture but those are still using by them.



## Eyes in the sky

The surveys were made from the top of the mountains to site wider views of both the sides of mountains and to detect the birds in distant range. We used 2K HD DJI camera of conservation drone to take high resolution pictures of nesting sites and the stations of the survey areas without flying the aircraft. Flying drones was open before the 2015 mega-earthquake in Nepal, but Nepal government cracked down on use of drones post-earthquake. Prior to the April 2015 earthquake drones were not regulated and many rescue and relief agencies brought their own craft for reconnaissance and to document the destruction. And it was the uncontrolled influx of Unmanned Air Vesicles (UAVs) through international media and humanitarian teams that the government was forced to take action and restricted their use. The government was letting the permission on free of cost but now setting for the paid permission keeping all the requests on the queues.



HV at Yak Kharka. Photo: Tashi R.



Nesting sites of HV. Photo: Dikpal Karmacharya via DJI

## Knowledge sharing on application of modern technology in Wildlife research, monitoring and conservation

We have demonstrated the application of modern technologies, mobile apps, data loggers and conservation drone in wildlife research, monitoring and conservation at Central Department of Zoology, Tribhuvan University and Basu College. Twenty-five university students and 40 high school students showed their immense interest in modern technologies. They also learnt to operate these gadgets during the knowledge sharing programme.



## School outreach

A 1-day school education programme on 'Save the Vulture, Save Wildlife, and Save Nature for Human welfare' was organised at Janahit Higher Secondary School, Jomsom, Mustang, locating on the lap of Himalaya. During the programme we discussed on status of vultures in Nepal Himalaya, their threats and potential mitigation measures to be adopted in local level for the better life of these scavenging birds. Altogether 80 local students, staffs, club members, conservation practitioners and media persons actively participated in the event.



## Save The Vulture from Extinction Key rings released



Our project produced key rings containing vulture conservation messages, which were distributed to local students and farmers for the long term flow of conservation messages.

## Support to Natural History Museum, Tribhuvan University

We have financially and technically supported to PROLINOVA, Natural History Museum, Tribhuvan University (TU) to organise a 3-day training workshop on "Grant Writing Development for Youth" from 3rd-5th August 2016. The programme was also supported by USAID-Funded Asia Farmer to Farmer (F2F) programme, Winrock International, Institute of Science and Technology, TU, The programme aimed to enhance capacity of youth students and teachers from universities. In the programme, Professor Anil Shrestha, trained on proposal writing and paper writing for grant making and scientific publications. Altogether 28 youth students and teachers from Central Department of Zoology, Central Department of Botany, Department of Environmental Science, Bhaktapur Multiple Campus, Khwopa College, Patan Multiple Campus, and Tri-Chandra Multiple Campus actively participated and enhanced their capacity on grant and paper writing. After the training the participants were divided into five groups and each group prepared proposals, presented and evaluated by experts.



## International Vulture Awareness Day- 2016

We celebrated the 'International Vulture Awareness Day on 4th September 2016 at Basu Higher Secondary School and College. More than 115 students from different districts of Nepal studying at this school actively participated in the event. In the programme we presented our work on vulture conservation in the Nepal Himalayas, introducing vulture, their types, identification techniques, current status, importance, threats and potential mitigation measures. We made exhibition of conservation related booklets published by diverse conservation organisations and donated all of them for conservation library. On this occasion, vulture conservation documentary prepared by SAVE consortium was shown. On the same day, quiz competition and prize distribution were made. Finally, participants interacted and enjoyed with sharing '10 interesting facts about vultures'.

<http://www.vultureday.org/2016/Organisation.php?code=2084>

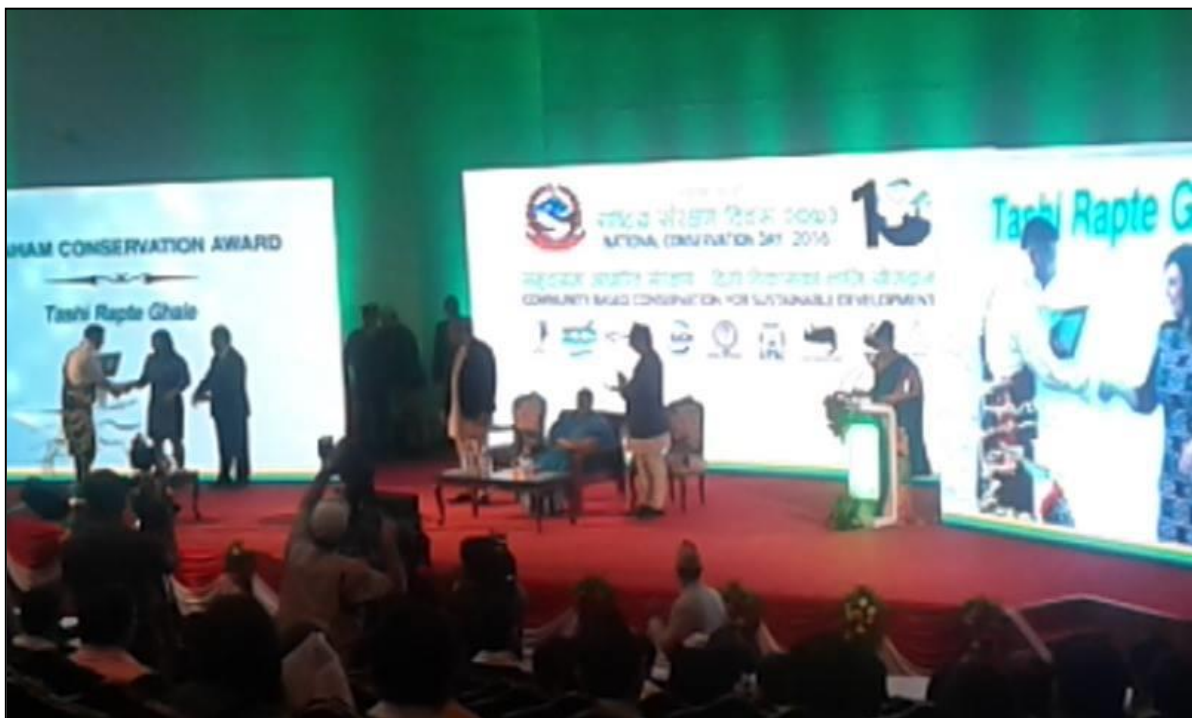
<http://www.vultureday.org/2016/Organisation.php?code=2148>



Students with Save Vulture slogan. Photo by Dikpal Karmacharya via DJI

### **Award on National Conservation Day, 23rd September 2016**

Our field biologist Tashi Rapte Ghale received the prestigious Abraham Conservation Awards from WWF for his exemplary contribution to biodiversity conservation on the occasion of National Conservation Day 2016. Ghale is a citizen scientist and a local resident of Manang, one of the remote districts within Annapurna Conservation Area.





## Mentorship

### a. GIS and Remote Sensing training

Our mentees Genuine Prajapati and Rojeena Basi have successfully completed the 10-day training on Geographic Information System (GIS) and Remote Sensing (RS), organised by Resources Himalayan Foundation/ Environmental Graduates in Himalaya from 10th-19th August 2016. Mr Bishnu Maharjan, Msc in GIS from Salzburg University, Austria instructed 24 individuals from different sectors according to the course structure prepared.



### b. Internship opportunity

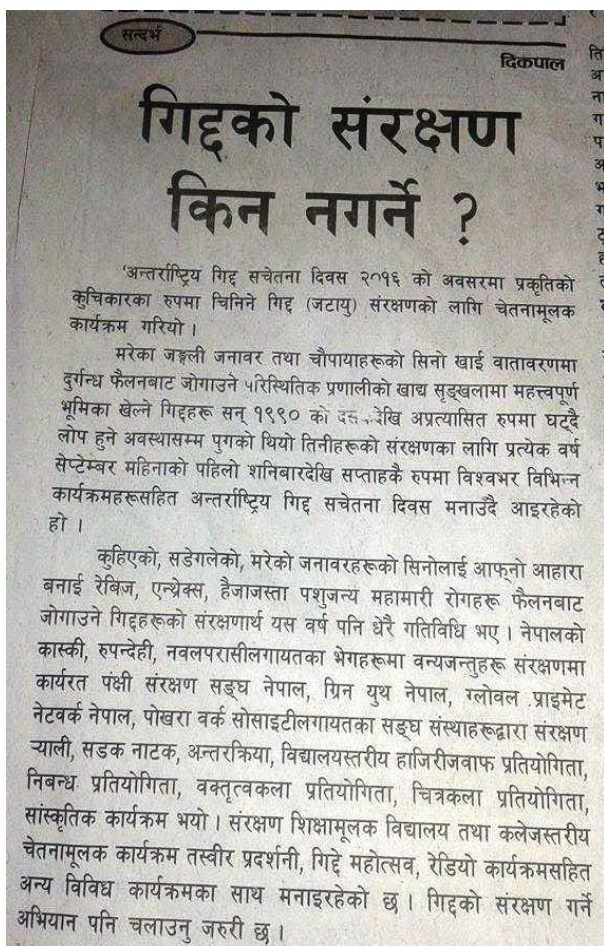
Rojeena Basi has got the 3-month internship opportunity at Natural History Museum, Institute of Science and Technology, TU for 5 months to enlist and arrange the specimens present in the museum which were affected by devastating earthquake 2015.

### c. Visit to Central Library, Tribhuvan University, Kirtipur on 28th August

Our 28 mentees enhanced their knowledge on book keeping, searching textbooks, references, UN publications, Nepal collections, national and international journals, articles and dissertations from the visit to Central Library, Tribhuvan University, Kirtipur. They also refreshed their practical knowledge from the visit to the laboratories of Central Department of Botany, Central Department of Physics, Central Department of Chemistry, Central Department of Environmental Science, Central Department of Geology and Central Department



of Zoology of Tribhuvan University.



6th Sept 2016\_Majdoor, Workers Daily, pp3



7th Sept 2016\_Majdoor, Workers Daily, pp2