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# RANGZHIN



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## MESSAGE FROM THE EXECUTIVE DIRECTOR



The Royal Society for Protection of Nature would like to extend our humble greetings and solidarity to you, your family, friends, and to the people across the globe.

The whole world is going through a rough time fighting against the spread of the COVID-19. Bhutan is also affected but not as much as many countries are going through because of the selfless sacrifice of our King and the measures taken by the Royal Government of Bhutan.

We have been updating from all the international news channels and every day, we only hear the rough times and the suffering that the entire world is currently facing.

On behalf of the people of Bhutan and the RSPN, offer our profound prayers and well wishes to you and for the well-being of the people across the globe. May the virus get contained sooner and humanity flourish in peace and harmony with nature at the earliest.

With profound respects,

Kinley Tenzin (Ph.D)

## Celebrating Her Majesty's 30th Birth Anniversary

The Chairperson, board of directors, and staff of the Royal Society for Protection of Nature joined the nation in celebrating the joyous occasion of Her Majesty's 30th Birth Anniversary. To commemorate the auspicious occasion, RSPN has launched two children's books; "Sonam, the White-bellied Heron" and "Where to go, la?".

The book, 'Where to go, la?' is an illustrative fiction about the Black-necked Crane (BNC) and its journey from their summer habitat to wintering habitats in Bhutan. 'Sonam, the White-bellied Heron' is also a fictional tale which is presented as a conversation between a juvenile White-bellied Heron, Sonam, and a River Lapwing, Tshewang.

With simple sketches and narratives, these books aim to educate children and inspire young minds in conservation. Furthermore, these books represent our continued commitment to the conservation of these two flagship species.





# CONSERVATION AND LIVELIHOODS

## Climate Smart Agriculture Program

Through our sustainable livelihood division, we have been implementing REDD+ Readiness community capacity building projects in Zhemgang since 2017. The project is funded through the Forest Carbon Partnership Facility (FCPF), World Bank. Currently we are implementing phase IV REDD+ readiness capacity building projects. The project “Empower small scale Bhutanese farmers to increase crop yields and sustainable livelihoods through climate smart agriculture approaches” supports four women’s group in Zhemgang District, viz Kikhar, Tali and Dakpay under Nangkhore Gewog and Berti & Takabi under Trong Gewog.

Our field office in Zhemgang in collaboration with the Gewog Agriculture Extension and Dzongkhag Agriculture Sector conducted training and awareness programs in four villages on REDD+ readiness program and to build capacity on climate smart agro-ecological farming through training program.

Participants were trained on organic agriculture approach, seed production and nursery raising, soil fertility and pest management and natural resource management. The program benefitted 96 (15 M, 81 F) participants in four villages. Additionally, the project also supported poly house, green nets, mulching plastics,

seeds and agriculture tools to all the beneficiaries.

The global pandemic has hit Bhutan’s economy. Government of the day is emphasizing food self-sufficiency through vigorous agriculture programs across the country. The district government has urged people to take advantage of the situation through domestic crop production as import from neighbouring India has sharply reduced and likely to be extended due to increasing COVID-19 cases in India. Therefore, the current training and support program highly benefited the district and more importantly the beneficiaries.



*Bed preparation techniques*



*Biochar preparation*



*Tomato farming technique*



*Use of mulching plastics*



## Demonstration Garden

As part of the project on 'Empower Small Scale Bhutanese Farmers to Increase Crop Yields and Sustainable Livelihoods through Climate Smart Agriculture Approaches' in Chhukha and Zhemgang Dzongkhags, funded by FCPF/World Bank, RSPN has supported a set of Green-houses, water sprinkles, and ten varieties of vegetable seeds to the Bayul-kuenza Organic Farmers Group of Bongo Gewog in Chhukha Dzongkhag. The objective of the support was to develop a climate smart demonstration garden for production of organic and climate resilient vegetables. The agriculture equipment and

vegetable seeds were handed over to the chairperson of the farmers group and village Tshogpa on June 6, 2020. A by-law for management of Green-house was also developed and handed over to the group. The installation of Green-house and water sprinkling was led by four skilled farmers within a duration of five days including the site development in a common land belonging to the group. To produce organic and climate resilient vegetables throughout the year, the group has planned to start planting vegetables inside the Green-house by the end of June 2020.

Consisting of 13 members, the Bayul-Kuenza Organic Farmers Group was instituted in 2019 with support from RSPN and Chhukha Dzongkhag Administration. The group is also registered as one of the cooperatives of the Department of Marketing Cooperatives, Ministry of Agriculture and Forests. Primarily, the group will promote and support organic and climate resilient vegetable productions to all the households of Bayul-kuenza and Gidaphu villages. The group will also coordinate the marketing of the farm products.





## Marking powerlines for Black-necked Cranes

To ensure safe environment, both above and on land for the Black-necked Cranes in Bhutan, we have been working with local communities and other stakeholders to consider innovative approaches to conservation and management. Changing land use pattern and developmental activities in and around crane habitats have been the major issue faced by the cranes in Bhutan.

In recent years, we have been receiving reports of crane casualties due to collisions with overhead powerlines in the central winter habitat, Bumthang. All the strikes happened in proximity to their roosting areas. Because cranes leave and return to roosts under dim light or in near darkness, marking powerlines with devices that are visible in the dark are observed to be most effective (Li et al., 2011).

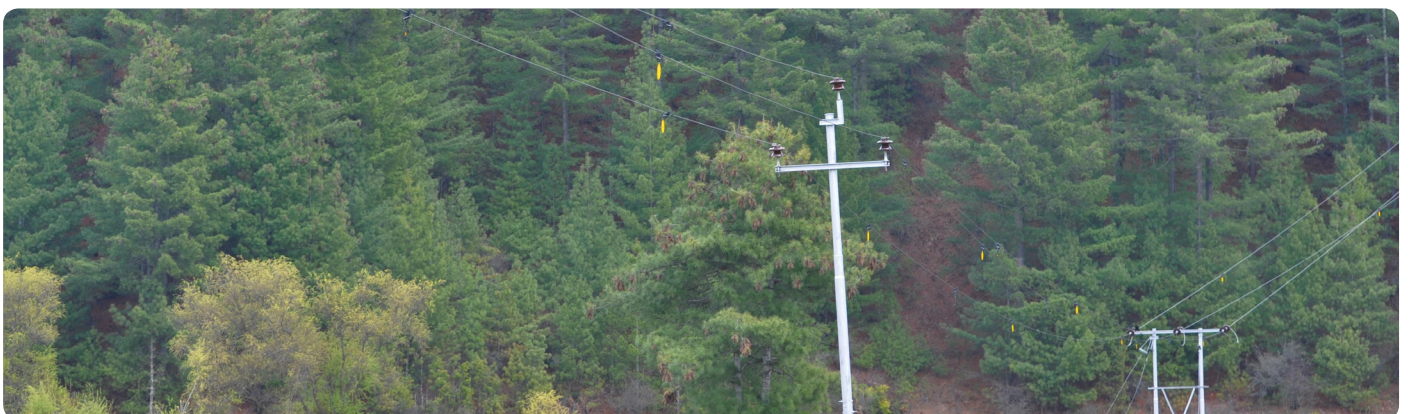
Learning through the shared experiences from around globe and as recommended by experts from South Africa working with

cranes, we installed Eberhardt Martin Bird Flappers along the two transmission lines in Tang and Gaytsa, 11 KV 33 KV respectively. The power lines are in close proximity to Black-necked Crane roosting sites. We installed 47 diverters in total, with two alternating colors (Yellow and Black with glowing yellow stickers in the center) at 2.5 m apart. A hot stick (40 ft) was used to install the diverters with help from Bumthang Forest Division and Bhutan Power Corporation. For lines higher than 35 feet, the hot stick was not rigid enough to hang the diverters in the right position. For the higher tensioned power lines, a bucket lift would be needed for installation, though the cost for operation would increase. This is the first time such an endeavor has been attempted in Bhutan, and the initial pilot phase looks very promising.

The burying of power lines in Phobjikha, which hosts the largest wintering population of Black-necked Cranes in the country (approximately 490 in the winter

of 2019-2020), has proved beneficial for cranes as well as the local communities. However, in other wintering habitats, overland power line systems are already laid out.

These efforts represent the pilot phase of a long-term project to safeguard Bhutan's wintering crane populations by mitigating the impact of energy development and distribution in-country. Our team intends to keep a close eye on these sites in the fall to assess the efficacy of these early efforts. RSPN and BPC are presently discussing plans to scale up these initial efforts in additional habitats. We are also considering the use of this technology in the riverine territories of the critically endangered White-bellied Heron, a species that is arguably more vulnerable to power line collisions and the impacts of energy development."





## Four chicks and three nests in 2020

In 2020, three active nests were located with 10 eggs and with the last chick fledging on 1 July 2020, a total of four chicks were added to the existing population of 27 wild birds in the country. The nest at Rilangthang (27.1263, 90.07164) was built on a broadleaved species, a few meters above the previous year's nest. It was first spotted on 19 February 2020 and by 27 February, the nest had three eggs. The first egg hatched on 31 March and by 16 June, all three chicks fledged from the nest.

We conducted a detailed nest survey at Balwani (26.9139, 90.0407) from 27 – 29 March and found five herons in the area but no nest. An individual was also found flying with twigs to build a nest, but we could not exactly locate the nest. However, on March 30, the local observer called us to inform us that he has found the nest with three eggs. It is the first nest located from Balwani at an altitude of 265 masl, much lower than the previously known sites. The nest was built on a tall tree and getting an inside view of the nest was difficult. Only one chick fledged from the nest on 1 July 2020.

On 22 January, our local observer saw the pair rebuilding the same old nest at

Tsaidang (27.0968, 90.7576) and by 15 February, the pair was incubating the clutch of three eggs. On 15 March, the 32nd day of incubation, the first chick hatched, but unfortunately the parents discarded the chick and continued incubating the remaining two eggs.

### *An attempt to rescue the discarded chick*

As soon as the first chick hatched, Mr. Phurba, a local supporter and Mr. Thinley Phuntsho, intern at RSPN began monitoring the nest, as the nest had failed in 2019 and some unusual parental behaviour has been observed in the nest for the past few days.

On early morning of 19 March, as expected, the team observed that the 3 days old chick was pushed towards the edge of the nest and the parent was ignorant of its presence. A few hours later, the incubating parent lifted the chick with its beak and threw further to the edge of the nest. A few minutes later, the chick further fell off the nest while trying to climb up and got entangled on a twig. Although the tiny chick was still trying to climb back, the parent was ignorant instead the parent started incubating remaining eggs. In a while, the chick fell

off and disappeared in the bush below the nest tree.

Hoping to rescue the chick, a team of foresters from Gomphu range, Royal Manas National Park, LCSG, local people and RSPN immediately rushed to the site. The nest is on other side of the river and has to cross both Mangdechhu and Bulichhu to reach the nest. It is around two hours for the team to reach the site. The team searched for the chick for hours, around the nest tree but unfortunately could not be located. There was a thick bush of climbers and branches below the nest where the chick might have gotten stuck. The team did not climb up as it would threaten the incubating parent and abandon the nest. The team collected eggs shells and dropping samples for genetic analysis and returned. There were also fresh dropping of civets and monkeys, which might have probably predated the chick.

The incubation continued through 2 May, but both the eggs were sterile and hatching never happened. On the morning of 3 May, the nest was abandoned, and both the eggs were missing. The pair has been breeding in the same nest since 2018. Three chicks fledged in 2018, but the nest failed both in 2019 and 2020.

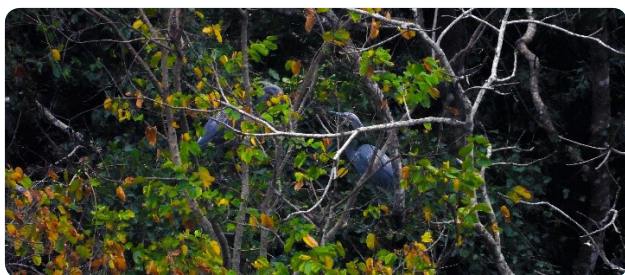


Figure 1: WBH breeding pair in the process of nest building at Rilangthang



Figure 2: Incubating parent discarding the hatched chick at Tshaidang nest



Figure 3: The team attempting to rescue the discarded chicks from the nest



## FACTSHEET

### White-bellied Heron, *Ardea insignis*

#### CLASSIFICATION

**CLASS:** Aves  
**ORDER:** Pelecaniformes  
**FAMILY:** Ardeidae  
**GENUS:** Ardea  
**SPECIES:** *insignis*  
**SCIENTIFIC NAME:** *Ardea insignis*  
**AUTHORITY:** Hume 1878  
**COMMON NAMES:** White-bellied Heron (Eng) Chubja Phowkarp (Dz), Saray Haas (Lho), Woongrila (Kheng)

#### VOCALIZATION

Generally silent, make loud croaking calls only during courtship or alerted.

**COURTSHIP:** Deep loud croaking courtship call; auk auk urrrrrr.

**ALERT:** Short and loud croaking call; auk urr...

**AGGRESSION:** Repeated short and loud croaking calls; auk urr... auk urr auk urr...

#### IDENTIFICATION

**ADULT** Large size, long legged, long necked, dark greyish body with contrasting white belly and vent. White-streaked scapulars, fore neck and upper breast with prominent crest. Long, sharply pointed black bill with slightly serrated lower mandible at the tip. Chin and lower mandible are whitish on underside with black upper mandible. Blackish legs with scale-like texture on tarsus.

**IN FLIGHT:** A uniform dark grey upper wing and white underwing-coverts contrasting with dark grey flight feathers.

**JUVENILE:** Juvenile are darker than adults, have more streaked neck, browner-tinged vent and smaller plumes with shorter and greyish bill.

**SEXES:** Sexually monomorphic.

#### MORPHOLOGY

**HEIGHT:** 120 -130 cm tall  
**WEIGHT:** 3 Kg - 5 Kgs  
**WINGSPAN:** 180 - 200 cm  
**HEIGHT (SHOULDER):** 60 - 65 cm  
**BODY & TAIL LENGTH:** 50 - 60 cm  
**SCIENTIFIC NAME:** *Ardea insignis*  
**TIBIOTARSUS:** 25 - 30 cm (Dia. 12x19mm)  
**TARSOMETATARSUS:** 20 - 23 cm  
**NECK LENGTH:** 30 - 65 cm  
**BILL LENGTH:** 18 - 20 cm

#### CONSERVATION STATUS

**IUCN:** Critically Endangered (IUCN).

**BHUTAN:** Schedule -I (FNCRR, 2017).

#### BREEDING

**BREEDING POPULATION:** 3-5 active breeding pairs in Bhutan, Global breeding population still unknown.

**BREEDING SEASON:** Generally January-June. Sometimes prolongs through July or August.

**BREEDING PLUMAGE:** Plumage turns light grey with whitish neck and crest.

**NEST:** Simple platform nest, 15-20 cm thick (depending on age), 90-120 cm in diameter, made from dried twigs and small branches without foliage. Same nests are reused up to 5 times.

**PARENTAL CARE:** Pairs are mostly monogamous during breeding season and provide biparental care

**CLUTCH SIZE:** Three to four eggs.

**INCUBATION PERIOD:** 30-33 days.

**BROOD SIZE:** 1-3 broods

**NESTLING PERIOD:** Nestlings fledge after 70-75 days of hatching.

**INDEPENDENCE:** Juveniles reach independence and leave parents after 2-4 months of fledging.



## POPULATION & DISTRIBUTION

**DISTRIBUTION RANGE:** Bhutan, Northeast India, Myanmar and China (include map)

**GLOBAL POPULATION:** Fewer than 60 confirmed adults (*WBH international Workshop, 2015*). IUCN estimates 50–249 adults

**POPULATION IN BHUTAN:** 25–30 adults (including 3–5 active breeding pairs)

**MOVEMENT & MIGRATION:** Resident, but moves up to 200 km from one feeding site to another for foraging.

**POPULATION TREND:** Declining, due to habitat loss, degradation, widespread disturbances, declining food resources and low population recruitment.

## HABIT & HABITAT

**HABITAT:** Freshwater rivers, streams, lakes and wetlands upto 2000 m of altitude.

**FORAGING SITES:** Open areas, shallow water with low to medium riffle, up to 60cm deep along the freshwater rivers, streams, lakes and wetlands.

**BREEDING SITES:** Nests on tall trees, both conifer and broadleaved species, with open canopy at 10–30m height, within 10–100m from the nearest waterbodies, preferably on slopes with good exposure to sun, below 1500 m of altitude.

**MOVEMENT & MIGRATION:** Resident, but moves up to 200 km from one feeding site to another for foraging.

**DIET:** Piscivore (primarily dependent on fish).



## SOCIAL FEATURES

Generally solitary, groups of 2–4 seen during mating and breeding seasons. Groups of up to 6 are seen when juveniles are still with parents before becoming independent. Unlike many other heron species, they breed in solitude.

## THREATS & CONSTRAINTS

**CONSTRAINTS:** Climate change, Natural calamities, Conservation vs Development, WBH biology.

**INDIRECT THREATS:** Lack of awareness, Lack of knowledge, Negligence

**DIRECT THREATS:** Population pressure, Habitat loss

**POPULATION PRESSURE:** Fishing, Water pollution, tourism, Human disturbances, infrastructure development.

**HABITAT LOSS:** Infrastructure development (Roads, Dams, Powerlines), Extractive industry (Mining, Deforestation, Quarrying, Water extraction, Expansion of Agriculture), Forest fires (Natural and human-induced forest fires)

## CONSERVATION MEASURES

**IN-SITU:** Habitat inventories, mapping, population surveys, monitoring, habitat protection and restoration, research and information development, community engagement, education and advocacy, livelihoods and community support.

**EX-SITU:** Conservation breeding and release program

# A MEMBER SPEAKS

## Coming to Bhutan

Studying a green subject means that sooner or later Bhutan will come up because of its approach towards nature conservation. While I was completing my degree in International Forest Ecosystem Management in Germany, Bhutan was mentioned several times. We spoke about the fact that its constitution demands 60 % of the country to be under forest cover at all time and how in reality forest cover is even higher. In Germany due to its long industrial history and population density we can only dream of such high numbers. Furthermore we talked about how much of Bhutan is under protection and how these protected areas are connected through wildlife corridors; again something that other countries might never achieve, due to high population density and extensive agriculture that cuts through habitats and isolates protected areas. And of course we spoke about GNH. All of this made me curious and thanks to RSPN I got the chance to work in Bhutan for six months as part of RSPN.

Bhutan has a treasure that many countries have already lost: Vast untouched areas with thriving ecosystems as well as an already established network of protected areas. It is also at a crucial point in its history: Development is rapidly increasing and while it is important to thrive in order

to make peoples' lives better and easier through development it is also important to not make the same mistakes countless other countries have made by achieving this development at the expense of the natural world.

Here lies the challenge and the responsibility of organisations such as RSPN: to guide the country during the process, help it to adapt to the challenge climate change poses and constantly lobby for nature so that it will not be destroyed.

During my time in Bhutan I got to see great initiatives towards environmental protection led by RSPN and others; especially concerning the Black-necked Crane (*Grus nigricollis*) and the White-bellied Heron (*Ardea insignis*). While creating protected areas incorporating the most important habitats of these two species one important factor has never been neglected: Protecting the environment can only work if the local people are included in the process, if they are acknowledged as important stakeholders, who are at the frontline of protection efforts. It is vital that local communities feel that they benefit from protecting the nature around them, that their voices are heard and that they share

parts of the responsibility. Only then can projects succeed.

RSPN has repeatedly proven that it acknowledges this vital role communities play by inviting leaders to stakeholder meetings, organising environmental education workshops and setting up sustainable tourism programs that are meant to benefit locals financially. These are great steps and I firmly believe that grassroot initiatives like these will be crucial in the future, not only in Bhutan but worldwide, by giving people the opportunity to protect and care for their environment and to make decisions that lead towards a sustainable future.

I feel grateful that I got the chance to work with RSPN, to learn more about Bhutan and bolt approaches towards environmental protection and I wish RSPN the very best for its future endeavours and challenges.



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