HORNBILL NEST ADOPTION PROGRAM

Annual Report 2020

Introduction

The Hornbill Nest Adoption Program (HNAP) is a community-based conservation initiative that was started to protect hornbills and hornbill nest trees/habitat in the Papum Reserved Forest which is contiguous with Pakke Tiger Reserve in Arunachal Pradesh. Since 2012, we have adopted the concept of "shared parenting" that forms the basis of how HNAP works, with local people employed as nest protectors and citizens who adopt hornbill nests lending external support to the biological hornbill parents to ensure breeding success and chick fledging.

In 2017, we ventured into three new sites which were identified as important hornbill habitats. The teams at these new sites started preliminary research to understand hornbill abundance and distribution, habitat structure and identified opportunities and challenges for hornbill conservation at these sites.

In 2020, our work across these sites faced many challenges due to the global medical emergency caused by the Covid-19 pandemic. Our long-term monitoring work on hornbill nest monitoring, phenology monitoring of over 700 trees inside Pakke Tiger Reserve, restoration of degraded sites and monitoring of restored sites in and around Pakke were all affected due to the lockdown.

However, the HNAP nest protectors, unflinchingly monitored most of the nests in the Papum RF, whenever local restrictions were eased. Similarly, nest monitoring was also possible in Assam and West Bengal, after the lockdown eased a little.

Sadly, on 2nd November 2020, we were informed that one Oriental Pied hornbill nest tree (OPHA/M5) which was found in 2014 and used for nesting since then, was cut down. This was noted by our nest protector team and was informed to the Forest Department authorities and our partners. This nest tree had been active this year during the breeding season with successful chick fledging on 5 July. This is the only nest tree to have been cut down in the last 8 years since 2012.

This 2020 annual report brings you more about details about the hornbill breeding season in Papum RF and Pakke TR including other updates from our work in the Eastern Himalaya.

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Nesting overview

Hornbills are secondary cavity nesters, which makes the availability of suitable cavities an important factor for hornbill populations. Hornbill parents invest a lot of time and effort during the breeding season. The female hornbill that seals herself for 3-4 months is extremely vulnerable during this period. This makes it important to monitor and protect hornbill nests during the breeding period.

Currently, we have four sites across three Indian states where active hornbill nest monitoring is undertaken – Papum Reserved Forest, Pakke Tiger Reserve, Dihing-Patkai Wildlife Sanctuaryand Buxa Tiger Reserve.

Cover photo: A male Wreathed hornbill delivering food at a nest in Darlong
©Aparajita Datta

Papum Reserved Forest

To ensure protection of hornbills in the Papum RF which is contiguous with Pakke TR, NCF along with the local *Nyishi* community, a local NGO -the Ghora-Aabhe Society and the Forest Department initiated the Hornbill Nest Adoption Program (HNAP) in 2011. In 2017, the Pakke Paga Hornbill Festival Committee was also included as a fourth partner.

Eleven *Nyishi* nest protectors are currently employed under the HNAP, which is run through donations by citizens - "hornbill parents" and several zoos. The nest protectors locate hornbill nests and monitor them through the breeding period. They also monitor hornbill roost sites and during the non-breeding season, they walk transects in the Reserved Forest to count hornbills and other wildlife

Nest monitoring

This year, the nest protectors monitored 28 hornbill nests. Out of them, there were only 22 active nests this season. A nest is "active" only if a hornbill pair has attempted to nest in it with the female entering and sealing the cavity opening.

Of the 22 active nests, the team confirmed nesting success in 19 nests, which means there was 86.4% nesting success this year. Due to heavy rains during the chick exit period, only 14 chicks were observed directly either exiting the cavity or perched around the nest tree.

Nesting was unsuccessful in two Great hornbill nests and one Oriental Pied hornbill nest. For one of the GH nest that is located at Goloso, the nest has been abandoned mid-season for several consecutive years, for unknown reasons. The detailed summary of all the active nests are presented in Table 1.

Long-term monitoring of hornbill roost sites

The nest protectors also monitored 22 hornbill roosting sites near villages along the Pakke river on the southern boundary of the Pakke Tiger Reserve. All these roost sites are located in the Reserved Forest. Most sites are monitored for a few days every month, throughout the year. The roost site monitoring continued through the breeding and non-breeding season of 2019 - 2020.

In 2019-2020, there were 20 roost sites being monitored by the nest protectors. In 2019, some of the roost sites were inactive possibly due to some construction work that had started close to a few roost sites which may have led to hornbills abandoning the sites.

The Wreathed hornbill tends to gather in larger flocks – and most often these roost sites are near open riverine habitat or on cliff faces near streams. Out of a total of 1191 observation days at 4 sites, Wreathed hornbills were seen on 75% of observation days (896 days) across 5 years (2015-2019). Two of these roost sites were monitored almost throughout the year. At these roost sites, numbers ranged from 1 to 101. In the non-breeding season, numbers were higher. There were 10 other sites (hilltops, near smaller streams) which were used less frequently by the Wreathed hornbill and in smaller numbers. Out of 1001 days at these sites, Wreathed hornbills were seen on 157 days (15.68% of days). Numbers here ranged from 1 to 26 birds. Overall, the Wreathed hornbill population in the area used 20 roost sites.

The nest protectors meet once a week to share and discuss their observations

Great hornbills were not recorded to use the open riverine roost sites much. Out of a total of 655 observation days at several roost sites (2015-2019), Great hornbills were seen at these open roost sites, only on 71 days –10.84% of observation days (ranging from <1% to 25% of days). Numbers ranged from 1 (single male) to maximum 15 birds, but mostly 2 to 3 birds. There seems to have been a decline in the use of these roost sites from earlier years and even from 2015 to 2019. This decline in use by the Great hornbill is possibly related to human disturbances increasing at these roost sites since the late nineties. The Great hornbills are more targeted for hunting and may be more sensitive to disturbances. Another possibility is that the lower numbers of the Great hornbill at roost sites may reflect a real decline in the population of the Great hornbill itself.

Wreathed hornbills at roost site
© Aparajita Datta

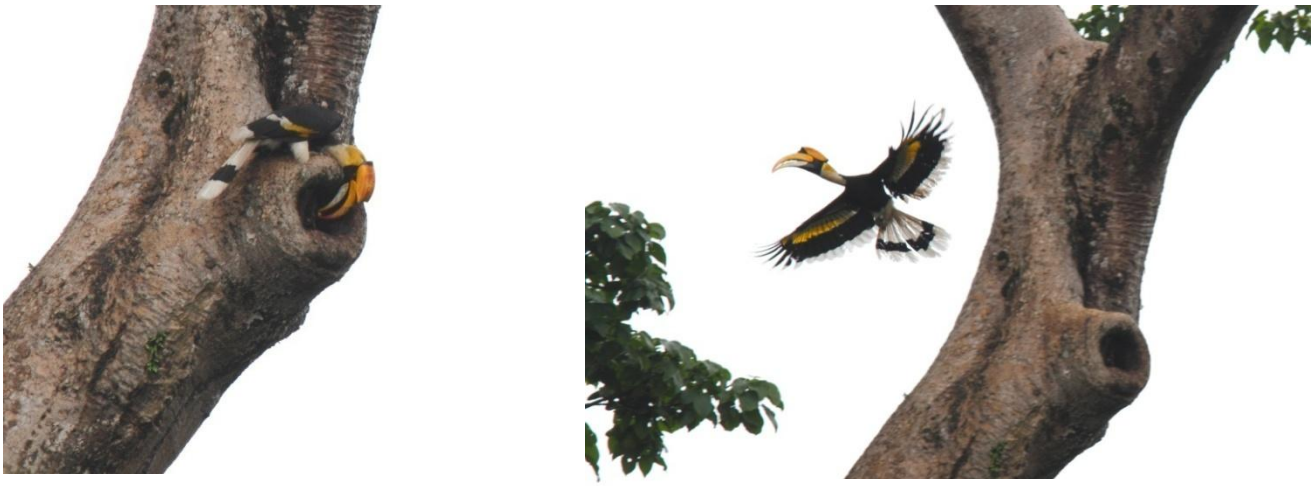
Table 1. Summary of the active nests in the Papum Reserved Forest, Arunachal Pradesh. Length of nesting cycle refers to the number of days from female entry into the cavity until the time the chick fledges from the nest.

	Nest ID	Location	Length of nesting cycle (Mar / Apr / May / June / Jul / Aug / Sept)	Success	Nest protectors
GREAT HORNBILLS					
1	GHL1	Lanka top	18 Mar — 124 days — 20 -Jul	Yes	Sako Waru
2	GHA/M1	Pakke Jungle camp	Entry date not known	Yes	Vijay Tachang, Nikje Tayem
3	GHG1	Goloso	12-Mar — 9 -May	No	Vijay Tachang, Nikje Tayem
4	GHJ3	Birap	Entry date not known	No	Kaja Keyang
5	GHJ4	Lanka 7 km	Entry date not known	Yes	Naga Kino, Tajek Wage
6	GHM1	Yartepobe	Entry and exit dates not known	Yes	Tajik Tachang
7	WH/GHB1	Bali nala	24 -Mar — 125 days — 27-Jul	Yes	Taring Tachang
WREATHED HORNBILLS					
1	OPH/WHJ8	Tamoso nala	Entry date not known	Yes	Kaja Keyang
2	WHA/M9	Taraso	21-Mar — 130 days — 29-Jul	Yes	Prem Tok
3	WHD3	VKV Darlong	13-Mar — 126 days — 17 Jul	Yes	Budhiram Tai
4	GH/WHD1	Monai	Entry date not known	Yes	Budhiram Tai
ORIENTAL PIED HORNBILLS					
1	OPHJ6	Jolly-palling	Entry date not known	Yes	Naga Kino, Tajek Wage
2	OPHUS1	Suka naala - Upper Seijiusa	Entry date not known	Yes	Rikum Gyadi
3	OPHUS2	Suka naala - Upper Seijiusa	15-Apr — 82 days — 6-Jul	Yes	Rikum Gyadi
4	OPHA/M3	A3	Entry date not known	Yes	Vijay Tachang, Nikje Tayem
5	OPHA/M8	Tanki Nala	Entry date not known	Yes	Vijay Tachang, Nikje Tayem
6	OPHA/M5	Taraso	3-Apr — 93 days — 5 -Jul	Yes	Prem Tok
7	OPHA/M6	Taraso	8-Apr — 80 days — 27-Jun	Yes	Prem Tok
8	OPHA/M7	Para Hapa/Doimukh	15-Apr — 9-Jun	No	Prem Tok
9	OPH M6	Didarso	Entry and exit dates not known	Yes	Tajik Tachang
10	OPH Ma1	Margasso	Entry and exit dates not known	Yes	Tajik Tachang
11	OPH M7	Didarso	Entry and exit dates not known	Yes	Tajik Tachang

Some good news this season

Amid the gloom that this year has brought, we had some exciting news from the field. One of our oldest and active nest protectors, Mr. Budhiram Tai, called to inform that a nest which was known since 2011 and one that was then used by the Great hornbill was occupied by a Wreathed hornbill pair this year. What's interesting about this nest was that it had remained inactive since 2012, after a fire broke out near the nest tree and some surrounding vegetation had been cut. In 2016, our team had planted some native species to try to restore some of the cleared patch around the nest tree. While we cannot say, what brought a hornbill pair back to use this tree again after a gap of 8 years, we were only too glad with this news. We were soon also informed of the successful chick fledging from this nest that took place on September 7th.

Before: Great hornbill using the nest in 2011



© Samyak Kaninde, HNAP supporter

After: Wreathed hornbill using the same nest in 2020

© Arjun Rai, NCF field research assistant

Hornbill Nest Adoption Program

Pakke Tiger Reserve

Following a four-year (1997-2000) study in Pakke on the three sympatric hornbills – Great hornbill, Oriental Pied hornbill and Wreathed hornbill – in 2003, we started a long-term monitoring program. The overall objectives were to ensure protection of hornbills and crucial nesting and roosting habitat, continue scientific monitoring of hornbill populations, and assess nest site availability.

This year too, the field team initiated hornbill nest monitoring inside the Tiger Reserve from February onwards, visiting all known nests to identify signs of hornbills' visits, cleaning and nesting activities. However, from March onwards, due to the lockdown imposed because of the Covid-19 pandemic, monitoring of hornbill nests inside Pakke TR was irregular and eventually came to a complete halt.

The field team confirmed nesting in 21 nests, but, activity in many other nests could not be confirmed this year. Nesting success and chick fledging also could not be determined from the park nests this year. This is the first time that we do not have any data on hornbill nesting from Pakke Tiger Reserve since we started hornbill nest monitoring in Pakke, some of which have been monitored since 1997.

A Wreathed hornbill chick from previous year's monitoring
© Khem Thapa

Table 2. Nesting details of hornbill nests in 2020 inside Pakke Tiger Reserve, Arunachal Pradesh

Hornbill species	Total nests	Active nests	Inactive nests	Not sure
Great hornbill	18	12	0	6
Oriental Pied hornbill	10	3	2	5
Wreathed hornbill	14	6	3	5
Total	**42**	**21**	**5**	**16**

Table 3. Length of nesting cycle of the hornbill species (2012-2019) in Pakke Tiger Reserve
Note: We monitor several more nests every year per species, but we can only estimate nesting cycle length for a few for which we have both the entry and exit dates.

Year	Great hornbill	Wreathed hornbill	Oriental Pied hornbill
2012	106.5	127.25	86
2013	121	131	90
2014	105.5	124	96
2015	135	129	100
2016	120.67	126	94
2017	125.4	129	86
2018	122.67	137	86.67
2019	131.5	132.5	100.25
Overall mean ± SD (up to 2018)	**121.38 ± 10.48 (n=21)**	**127.89 ± 6.49 (n=27)**	**92.2 ± 7.69 (n=19)**

Work updates from other sites

Shergaon Forest Division, Arunachal Pradesh

To secure hornbill conservation at a local scale using a model like the HNAP, we started looking for potential sites for the endangered Rufous-necked hornbill (RNH). We conducted surveys in Upper Siang district in central Arunachal Pradesh in 2018-2019. Surveys across three field sessions, revealed the low occurrence of hornbills in that area.

In November 2019, we surveyed another landscape in Shergaon Forest Division, western Arunachal Pradesh and initiated surveys to determine the abundance and breeding status of RNH. The sampling included trails for hornbill surveys and Point Centered Quarter (PCA) for vegetation sampling within unclassed state forest areas.

Until March, the team completed 122.71 km of trails. The three hornbill species recorded here were RNH, Wreathed Hornbill (WH) and Great Hornbill (GH). There were four detections of RNH and five detections of GH, whereas WH was not observed during the transect surveys. The highest detections were reported from mid-elevation areas. No hornbills were sighted in the high-elevation areas.

A Rufous-necked hornbill sighted at Demachang, Shergaon FD
©Leki Sange

To create awareness on hornbills, meetings with the village councils, Biodiversity Management Committee (BMC) and local NGOs were conducted. Training regarding hornbill species identification and monitoring were also provided. Some nature education materials were distributed to the village councils and schools.

Unfortunately, we had to suspend the fieldwork just before the start of the breeding season in March due to the lockdown imposed following the pandemic.

During the lockdown period, the Amphan cyclone hit the eastern coast of India. The impact of the cyclone lasted for 20 days in western Arunachal with heavy rain and disrupted electricity. Since schools were closed during the lockdown, we also conducted a few coaching sessions for the school kids from Class 3 to Class 10in the village where the NCF researcher was residing in. Stationery (including books and notebooks) for these sessions was also provided. However, at the end of May, the researcher returned to Bangalore due to logistical and health/safety concerns.

Hornbill posters put up during the festival of *Losar* at Kalaktang, Shergaon Forest Division

© Monali Mhaskar

Buxa Tiger Reserve, West Bengal

Hornbill research and conservation at Buxa Tiger Reserve began in November, 2017, in collaboration with a Kolkata based NGO, Nature Mates-Nature Club. Buxa has four species of hornbills – Great hornbill, Wreathed hornbill, Oriental Pied hornbill and the Rufous-necked hornbill.

From September 2019 until March 2020, the field team conducted grid-based occupancy survey for hornbills. The total effort covered was 106.2 km of transect walk. The number of detections varied greatly among the four species – 9 detections of Great hornbill, 6 of Wreathed hornbill, 1 of Rufous-necked hornbill and 92 detections of Oriental Pied hornbill. The team also documented around 127 tree species during the vegetation study and estimated the average tree density as 101.22 trees/ha.

Landscape of Buxa Tiger Reserve

©Dollar Ganguly

Hornbill roost sites were monitored from November 2019 to March 2020. The highest count recorded on one day was **224** Wreathed hornbills and 14 Great hornbills. We were thrilled to see such large numbers of Wreathed hornbill at the site. These data from roosts provide added information on the abundance of these species in the landscape.

During the hornbill breeding season this year, 11 nests were active out of the 20 nests known in Buxa. Among the 11 nests, breeding success was confirmed in 7 nests, while 2 nests were unsuccessful and we were unable to determine the outcome at2 other nests. The fledging success this year was 77.8% which is the highest in the three years of study in Buxa, with 70% in 2018 and only 50% in 2019. The nesting summary for 2017-2020 is mentioned in table 4.

A male Wreathed hornbill delivers food to the female and chick, at the same nest where a female Wreathed hornbill was found dead at the cavity towards the end of the breeding season in 2019.

©Kezajacho Dukpa

Dihing-Patkai Wildlife Sanctuary

Out of the 27 forest fragments in Upper Assam we surveyed 16 Reserved Forests and 1 Wildlife Sanctuary from November 2019-March 2020. Our survey was focused to detect the presence of hornbills. We had10 sightings (direct: 5, calls: 5) of hornbills during transect walks (82.45 km); of which only2 sightings and 1 call were of the Brown hornbill.

We observed that apart from the Dihing-Patkai WLS and Joypur-Dirok RF, the rest of the forest fragments were highly degraded and in need of urgent conservation actions. We also encountered many signs of illegal logging and hunting which were informed to the local forest department.

Degraded landscapes of forest fragments in Eastern Assam

As part of our activities in partnership with the Digboi College approximately 2310 people attended in various awareness programmes conducted in 11 forest fringe villages of Upper Assam in 2019. Some of the awareness programmes were conducted independently by college students in their respective villages.

This year, we found a new Brown Hornbill nest in the Dihing-Patkai Wildlife Sanctuary. In this year's hornbill breeding season, eight nests were active out of the 10 brown hornbill nests known to us in the Dihing-Patkai landscape. We confirmed successful fledging of 10 chicks from 8 brown hornbill nests. The nest monitoring summary for 2017 -2020 is mentioned in table 5. Amidst lock-down restrictions of COVID-19, we strictly adhered to the safety-protocols to manage our nest-monitoring schedule.

In February 2020, with information from local people we found a Great hornbill nest in the highly degraded Burhi-dihing RF, adjacent to the highway. We monitored the GH-nest, in which the female and chick exit took place either on 1st or 2nd of July, 2020.

Upon information from local villagers we also confirmed two new nests of Oriental Pied hornbill - 1 in Goriabam village of Joypur and 1 in Naharkatia. While both the nests were successful, the nest located at Goriabam received additional protection from people of the village, who supplied bananas as food supplement to the hornbill inmates.

A Brown hornbill delivering food at the nest

© Bhaskar Bora

Nesting summary for Buxa Tiger Reserve

Table 4. Nesting details of hornbill nests from 2018-2020 in Buxa Tiger Reserve, West Bengal

Year	Hornbill species	Active nests	Successful nests	Unsuccessful nests	Not sure
2018	Great hornbill	5	4	1	0
2018	Oriental Pied hornbill	2	0	2	0
2018	Wreathed hornbill	1	1	0	0
2018	Rufous-necked hornbill	2	2	0	0
Total (2018)		**10**	**7**	**3**	**0**
2019	Great hornbill	5	3	0	2
2019	Oriental Pied hornbill	2	0	2	0
2019	Wreathed hornbill	2	0	1	1
2019	Rufous-necked hornbill	3	1	1	1
Total (2019)		**12**	**4**	**4**	**4**
2020	Great hornbill	4	4	0	0
2020	Oriental Pied hornbill	3	1	1	1
2020	Wreathed hornbill	2	1	0	1
2020	Rufous-necked hornbill	2	1	1	0
Total (2020)		**11**	**7**	**2**	**2**

Nesting summary for Dihing-Patkai Wildlife Sanctuary

Table 5. Nesting details of active hornbill nests in Dihing-Patkai Wildlife Sanctuary, Assam (2017-2020)

Year	Hornbill species	Active nests	Successful nests	Unsuccessful nests	Not sure
2017	Brown hornbill	3	1	0	2
2018	Brown hornbill	6	3	1	2
2019	Brown hornbill	7	7	0	0
2020	Brown hornbill	8	8	0	0
2020	Great hornbill	1	1	0	0
2020	Oriental Pied hornbill	4	3	1	0
Total (2020)		**13**	**12**	**1**	**0**

Restoration project

In 2014, the restoration project was initiated with an aim to revive degraded habitats in and around Pakke Tiger Reserve. Planting efforts have been carried out in this region and some parts of Assam since 2016. We have grown around 28,000 saplings of 72 species at our nursery and have covered an area of 11 ha of degraded areas so far. The planting activities are followed by regular maintenance and monitoring activities to improve survival and growth of the planted saplings.

© Noopur Borawake

Germinating seedlings of *Canarium resiniferum* at NCF's rainforest nursery

©Noopur Borawake

In 2020, we raised 4615 seedlings and saplings of 56 species. In the month of March, we had surveyed some degraded sites for carrying out planting this year. After the lockdown came into effect, we could not initiate planting activities at any of these sites. While we could continue with the nursery maintenance work, many other activities had to be suspended. We were unable to carry out the regular maintenance and monitoring activities at our restoration sites from previous years. However, we provided a total of 1575 saplings to local villagers (46 households) for planting in their home gardens, and to Government and other local bodies and the Forest Department for various tree planting campaigns that were held when the lockdown was eased.

We continue to maintain the existing saplings at the nursery for the next planting season and we hope to be able to resume other restoration activities soon.

Sapling from NCF's nursery being planted by the Additional Deputy Commissioner of Seijosa on “World Earth Day” celebrated on 2nd April

Community engagement

As a part of our community engagement work and as partners for the Pakke Paga Hornbill Festival (PPHF), we carried out the following activities during the festival this year.

Homestay training workshop

In January 2020, with the support of the PPHF committee, NCF invited Mr. Punyo Chada and Mr. Tatu Hibu from Ngunu Ziro, Ziro Arunachal Pradesh to conduct a three-day home-stay training program for the local home-stay owners. The training was conducted at West Bank, Pakke Tiger Reserve.

Homestay training by Ngunu Ziro team at West Bank, Pakke Tiger Reserve

© Suresh Pait

Nyolo Tuki video release

A video of a song shot in January 2019 was released by the Honorable MLA, Mr. Biyuram Wahge on 18th January 2020, during the first day of Pakke Paga Hornbill Festival 2020.

We hope that this will help in preserving and passing on Nyishi oral heritage and will also encourage the younger generation to learn and enjoy this song.

Video Link: https://www.youtube.com/watch?v=JSVpnTKvIG8

‘Nyolo Tuki’ film

Shot by: Guilain Roussel and Millo Tako
Singer: Mema Tok, A2 Village, Seijosa, Arunachal Pradesh
Supported by PPHFC-2019 and Green Hub.

Nyolo Tuki film release during the first day of Pakke Paga Hornbill Festival 2020 by Honorable MLA, Sri Biyuram Wahge

Nature Art workshop

We also conducted a Nature-Art workshop with 23 children from Govt. Secondary School, Darlong (Class 5, 6 and 7) on the second day of the festival. During this workshop the kids were briefed about the plant diversity of Pakke and its importance and then we made greeting cards using dried leaves from the forest.

Nature Art workshop by Nature Conservation Foundation during PPHF-2020.

Nature Education Program (NEP)

A short film on the Nature Education Program in Pakke

We made a short film on our Nature Education Program showcasing the highlights of the nature camps that are conducted annually for school children inside Pakke Tiger Reserve.

Link: https://www.youtube.com/watch?v=UyTx8DXweQY&feature=emb_title

Students learning about food chain during the annual nature camps at Pakke Tiger Reserve, Arunachal Pradesh

© Karishma Pradhan

Upcoming

A photographic field guide to the lowland trees of western Arunachal Pradesh

Northeast India is one of the rich biodiverse areas in India, but floristically, it is still less explored and documented.

We are currently in the process of developing a pictorial guide book of trees. In this book, we are covering around 230 species of trees and shrubs which are present mainly in the lower elevations of western Arunachal Pradesh. This book will have information about taxonomy, ecology and distribution of the tree species. Being a pictorial guide, the book will also have photographs of the trees and some shrubs and their different parts, with leaf and floral keys providing a complete picture of the tree species for an accurate identification.

Through this book, we hope that nature and plant enthusiasts and visitors can learn, identify and engage with the trees around Pakke Tiger Reserve and in the low elevation forests of Arunachal Pradesh. Many tree species in the book also occur in other parts of North-east India, while some also occur in other parts of mainland India.

Fruits of *Horsfieldia kingii*, a hornbill food plant, which also features in the book

Covid-19 relief work

Community welfare fund, HNAP

Due to lack of preparedness and proper medical facilities in small towns and villages, the anxiety following the pandemic was high. NCF through the community welfare fund of HNAP donated Rs. 30,000 to the office of the Additional Deputy Commissioner (ADC), Sejiosa and Rs. 30,000 to the Community Health Centre (CHC) of Sejiosa in April 2020.

The funds were used to procure essentials (masks and other supplies) to ensure safety of healthcare staff, local volunteers and community members.

Relief distribution with support from Serenity Trust

Serenity Trust provided funds to purchase and distribute two months' basic food and other essential supplies to families in need of support in the sites where we work at. Our field team, with help from well-wishers and the Forest Department carried out the distribution systematically in August and September.

In the Seijosa circle, essential relief rations were provided to 49 households across 10 villages in September. All the households chosen were headed by widows who had minimum income or had lost their income source due to the pandemic.

Relief distributed at Seijosa, Arunachal Pradesh

© Arjun Rai

In September, rations were also provided to 99 family members of 42 Forest Department frontline staff of the Tippi range, Pakke Tiger Reserve, who were facing challenges in running their households after some family members ran out of jobs/income due to the Covid impact.

In Buxa Tiger Reserve, West Bengal, 20 households from Jainti, a village within Buxa, were provided with monthly essentials in August and in September, we provided rations to 24 families, with four additional families from an adjoining village.

Similarly, in Joypur-Dihing Patkai landscape of Assam, relief rations were provided to 9 temporary patrolling staff of the Forest Department and 14 households in Konworbam village adjacent to the Joypur RF in August. In September, relief rations were distributed to 30 families from the same village.

Relief for frontline staff of Tippi range, Pakke Tiger Reserve

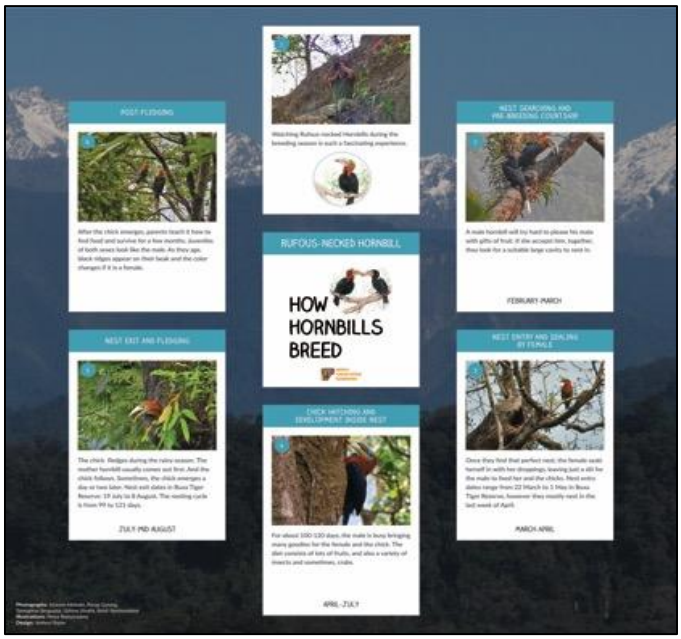
© Kime Rambia, RFO

Posters on hornbills

An overall poster on four species of hornbills found in the forests of Arunachal Pradesh and north Bengal was prepared in November, 2019. The poster was also translated in Bengali.

A set of posters on the breeding biology of five hornbill species was prepared by May, 2020. The five species include the Great hornbill, Rufous-necked hornbill, Wreathed hornbill, Oriental Pied hornbill and the Brown hornbill.

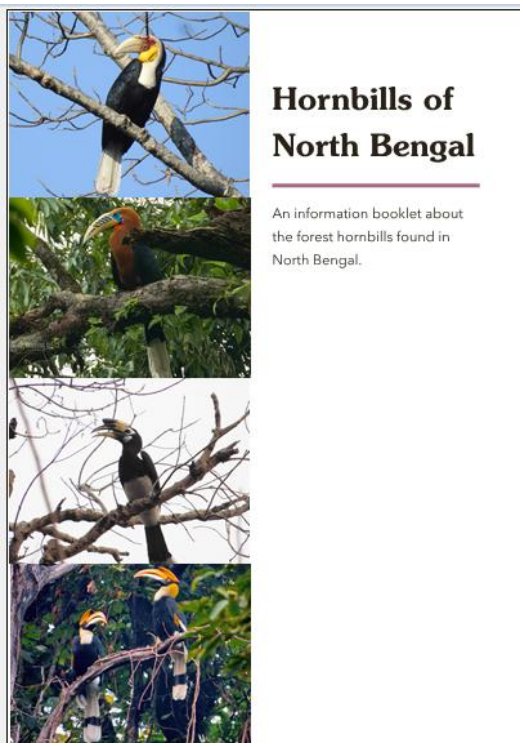
These posters provide the flow of events observed in the breeding cycle of each species. The period and estimated duration of each phase is also mentioned for all the species.



Information booklet on hornbills

An information booklet on hornbills of North Bengal was produced based on the request of the West Bengal Forest Department. The description includes the morphological characteristics as well as details of the breeding biology of four hornbill species from our studies in Arunachal Pradesh and Buxa.

The booklet also has a list of hornbill nest trees and food trees that have been recorded from our studies in Arunachal and north Bengal.



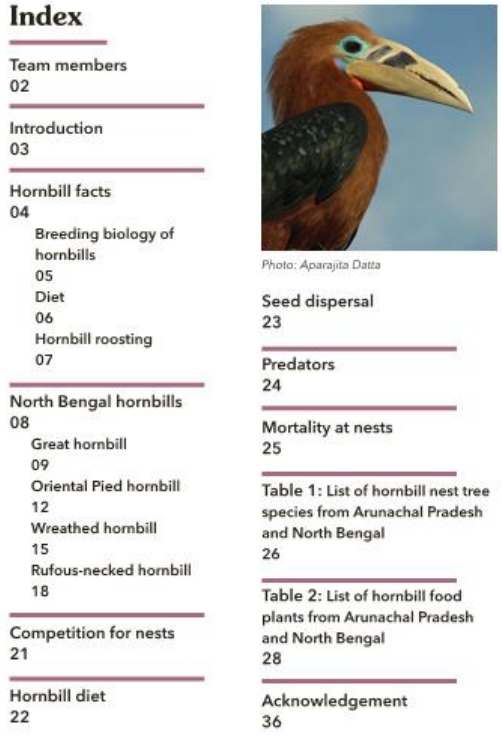


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Photo: *Aparajita Datta*

Hornbill posters are available for free download at

https://www.instamojo.com/NCF/hornbill-posters-eastern-himalayas/?ref=store

Hornbill Nest Adoption Program

Some moments from the 2020 breeding season

A male Great hornbill delivering food at the nest, Papum Reserve Forest, Arunachal Pradesh

©Vijay Tachang

A breeding male brown hornbill with a sub-adult / juvenile, Dihing-Patkai, Assam

©Bhaskar Bora

An adult Oriental Pied hornbill with chick, Buxa Tiger Reserve

©Sitaram Mahato

A male Rufous-necked hornbill feeding the female and chick inside the nest, Buxa Tiger Reserve

©Sitaram Mahato

Hornbill Nest Adoption Program

Some hornbill food plants

Polyalthia simiarum
© Navendu Page

Hornbill-regurgitated seeds below a nest tree
© Karishma Pradhan

Litsea panamanja
© Navendu Page

Aphanamixis polystachya
© Sitaram Mahato

Expenditure

The HNAP model has been designed on the lines of "shared parenting" where three sets of parents protect hornbill nests in the wild. The first set of parents are the biological hornbill parents themselves, the local nest protectors who visit the nests throughout the breeding season and monitor them are the second set of parents and the donors from across the world who adopt these nests are the third set of hornbill parents. The donations and support received from our hornbill parents have helped sustain this program successfully since its inception. Since 2013-14, we have also been receiving donations from zoos abroad.

The funds that we raise go towards paying salaries of the nest protectors, local field coordinator, and project coordinator, purchase of field equipment, medical emergencies and running costs such as fuel. A proportion of the fund is used annually for the welfare of the local community. The table below lists our expenses from October 2019 to September 2020.

Expenses from October 2019 to September 2020	
Opening Balance	14,01,909
Donations Received	12,56,854
Total Receipts	**26,58,763**
Expenses	
Salaries (Nest Protectors)	12,37,400
Project coordinator's salary	2,70,000
Programme Implementation Services	82,500
Consultancy Charges	15,500
Vehicle Maintenance	15,318
Travel - Fuel Expenses	10,792
Medical Expenses	7,346
IT & Computer Services	6,608
Bank Charges	6,054
Consumables - Field Supplies	4,976
Travel - Food and Accommodation	4,975
Printing & Stationery	3,700
Travel - Local Field Transport (taxi hire, bus)	1,243
Postage, Courier & Freight	696
Total Expenses	**16,67,108**
Balance as on September 2020	**9,91,655**

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Hornbill parents

Listed below are all donors who have adopted hornbill nests from **October 2019 - September 2020**. We thank you for your support towards protecting hornbills. If you wish to adopt a hornbill nest again, you can do so online using this link http://ncf-india.org/pages/donate. Donations by Indian donors are eligible for tax exemption **under Sec. 80(G) (50% exemption) or Sec. 35 (150% exemption)** of the Income Tax Act. Foreign nationals can donate using the **FCRA sub link** on this page.

Please do send us an email at **veenarai@ncf-india.org** to let us know after you have donated so that we can contact you and keep you updated on our work.

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4. Ashwani Sharma
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6. Balakrishnan Chandra Shekar
7. CR Naveen and Rajalakshmi
8. Eleena Gao
9. Gopakumar Menon
10. Hage Yaku
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28. Tadar Mangku
29. Takhe Diming
30. Tamchi Tassung
31. Tame Papu
32. Tayum Tok
33. Uday Kumar
34. Vaibhav Ranjangaonkar
35. Vivek Chandy

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The team of nest protectors

Budhiram Tai

Kaja Keyang

Naga Kino

Nikje Tayem

Prem Tok

Rikum Gyadi

Sako Waru

Tajik Tachang

Tajek Wage

Taring Tachang

Vijay Tachang

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