

Artificial Canopy Bridges installed in Assam's Hollongapar Gibbon Sanctuary

-Rohit R.S. Jha, Nandha Kumar & Govindan Veeraswami Gopi

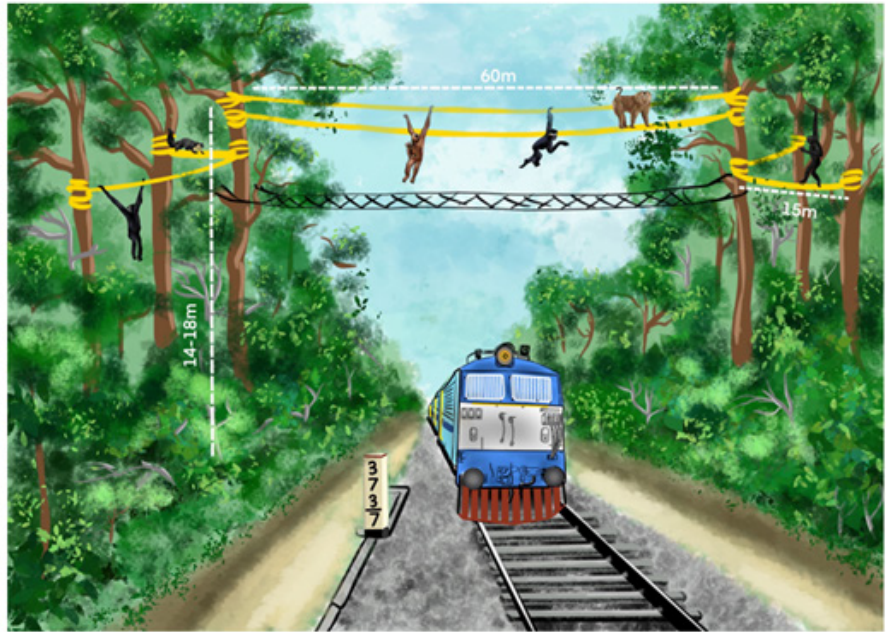
The Hollongapar Gibbon Sanctuary (HGS) is a tiny 20.98 sq.km Protected Area in Assam's Jorhat district. HGS is situated near the Naga hills and Mariani town at an elevation of 100-120 m above mean sea level in the Northeast biogeographic zone of India. Named after India's only ape, the sanctuary is a home to endangered western hoolock gibbon (*Hoolock hoolock*). Gibbons are apes in the mammalian family Hylobatidae (the 'smaller apes') with four extant genera and 20 species that all reside in the canopies of dense forests in South and Southeast Asia. Predominantly at ease in occupying middle to upper forest canopies, Gibbons move gracefully yet acrobatically from one branch to the other, primarily using their long forelimbs — this mode of locomotion is called *brachiation*.

In this small biodiverse Sanctuary, a population of 125 gibbons living in 26 family groups — as per a Departmental census conducted in 2019 — have been compartmentalised into two unequal habitat fragments by the single track Lumding-Dibrugarh railway line. While this linear infrastructure exists since 1887, the Sanctuary has become a *forest island* due to deforestation for establishment of tea plantations and villages on all sides during 1880-1920, facilitated by the then colonial government. The railway track-imposed canopy gap (>30 m) and the Sanctuary's isolation particularly threaten the gibbon's long-term survival in HGS due to its exclusively canopy-dwelling lifestyle.

In this scenario, and after concerns were raised due to impending track electrification plans by Indian Railways, the Divisional Forest Officer of Jorhat (Territorial) Division (second author), wrote to the Wildlife Institute of India (WII) requesting assistance in designing canopy bridges as a mitigation measure. This photo-story essentially provides a brief glimpse of WII's involvement in this exercise, right from inception, in late 2022, to the field installation of artificial canopy bridges, in early 2025.



November-December 2022: (left) As a first step, an all-stakeholder meeting was organised by the DFO Jorhat in the HGS premises, which was attended by railway officials, primatologist Dr. Dilip Chetry (Aaranyak), team of WII ; (right) thereafter seven suitable sites along the railway track for artificial canopy bridges (ACBs) installation were identified and trees marked (images: Rohit R.S. Jha).



May 2023: (left) WII submitted a comprehensive [Report](#) to the Assam Forest Department describing the suggested double-rope (Type A, 12 mm diameter, low-static, mountaineering grade, rappelling ropes complying to [EN1891 standard](#)) ACB design, (right) additionally incorporating a safety net below the double-rope bridge as a fail-safe to prevent any accidental animal death (*illustration of ACB design: Vabesh Tripura/WII*).



(left) The 1.65 km railway track (part of Lumding-Dibrugarh rail section) within the HGS remained un-electrified for a long time; however, its electrification proposal in 2021-22 and (right) subsequent [laying](#) of overhead transmission lines in 2024-25 by Indian Railways hastened the implementation of ACBs for gibbons/arboreal animals at HGS as a mitigation measure (*images: Rohit R.S. Jha*).



February 21, 2025: Facilitation of the installation of ACBs in the field with the expertise of the team from [Assam Mountaineering Association \(AMA\)](#); (left) AMA's Jeet Gogoi demonstrated and oriented the local field team to essential climbing, rope-mounting and safety techniques; (right) DFO Jorhat briefed on the need for installing ACBs for gibbons at HGS (images: Rohit R.S. Jha).



February 21, 2025: (left) ACB installation work at site no. 6 began in all earnest through and in the dense rainforest cover, where the stupendous climbing skills of the local field team — led by Pappu, Indra, Shibu and others, under the watchful eyes of the AMA expert and ecologically-relevant inputs by the first author; (right) the DFO secured 'railway blocks' of specific durations to help haul the ropes across the overhead wires/railway track once they were secured on one side (images: Rohit R.S. Jha)



February 21, 2025: (left) After a final and sufficient tightening of the rope from the ground, the (right) double-rope artificial canopy bridge at site no. 6 became officially the first one to be fully installed at 1.40 pm, bringing joy to all our faces; shortly thereafter the Assam-Avadh Express became the first train to pass under the ACB. Two other ACBs were put up similarly (at site nos. 4 & 7) along with a few secondary lateral single-rope connections within the fragments to help gibbons get acclimatised to the bridges' material and texture. (images: Rohit R.S. Jha)



February 22-23, 2025: (left) With the help of harness and other safety gear, the first author climbed (rather was pulled up) several trees at >50 feet height to help install (and train Pappu in installing) pairs of motion-triggered, infrared and 4G-enabled camera traps to capture animal crossing events; (right) a test image captured and transmitted through internet (accessible by a mobile app on ground) by one of the cameras during installation overlooking the double-rope ACB (images: Rohit R.S. Jha & Assam Forest Department).



March 2025: After a few days' break, work resumed on installing ACBs at two other identified sites (for a total of five) and safety nets beneath ACBs at all five sites; (*left*) hauling up the relatively heavier 2.5 m-width safety nets (polypropylene material, varying thickness) was a tough task, while (*right*) the local field team climbed up (Indra is seen in this image) and placed bamboo sticks as 'tighteners' that ensured the shape and width of the safety net to the required extent. Work carried on until April 04 until secondary single-rope connections on either side at all ACB locations was given and camera traps installed/checked (*images: Rohit R.S. Jha*).



March 2025: Field installation of ACBs at the HGS was successful only due to it being a collaborative exercise led by forest officials and staff, local climbing team (led by Pappu, Indra and Shibu) with support from AMA's expert mountaineers and ecologists from WII (*image: Rohit R.S. Jha*).



Hearteningly, and right after the first set of ACBs were installed, gibbons (*left and centre top*) and other arboreal animals such as hoary-bellied squirrel (*centre bottom*) and capped langur (*right*) have begun venturing very close to the ACBs, however no actual crossing event has yet been observed. These animal approaches are being regularly and meticulously monitored by the Sanctuary's field staff while the Conservation Advisory & Policy Cell at WII continues providing all possible technical support and knowledge inputs; we hope that gibbons start using the bridges very soon (*images: left, centre bottom and right by Stanzin Zangmo; centre top courtesy: Nandha Kumar*).

Authors:

Rohit R.S. Jha is a Senior Researcher at WII, and is currently working as Principal Project Associate in the Institute's Conservation Advisory & Policy Cell. His core interests span the interface of conservation science, politics and policy, and how that shapes the contours of an evidence-based environmental decision-making framework in India.

For correspondence contact: jha.rs.rohit@gmail.com / rohitjha@wii.gov.in

Nandha Kumar is an Indian Forest Officer of the 2017 batch (Assam Cadre), currently serving as the Divisional Forest Officer of Jorhat (Territorial) Division in the Department of Environment and Forest, Government of Assam. Email: dfo.t.jorhat@gmail.com

Prof. (Dr.) Govindan Veeraswami Gopi is a Senior Scientist at WII and the Nodal Officer of the Institute's Conservation Advisory & Policy Cell.