Project Update: May 2021

Different anthropogenic activities (human disturbances near nesting sites, chopping down trees, building infrastructure near the nesting area, conversion of nesting) as well as natural calamities (winds, hailstorms) often results in the breeding failure of birds of prey (Zuberogiotia et al 2008, Baral 2018, pers. comm. Sandesh Gurung). Completely banning human activities in a huge area is almost impossible. Similarly, natural calamities are also impossible to prevent. However, the impact of above can be minimised and it is only possible to carry out bird population management in such areas by using local term ecological process (Illichev 1984). One of the widely applied techniques in different parts of the world is to attract raptors by building artificial nests.

The destruction of natural nests of rare species of birds of prey is 40% (Ivanovski 1983). One of the monitored nests of Indian spotted eagle in our study area was also destroyed by a storm in 2019. On the other hand, artificial nests last longer. Installation of nest platforms/ artificial nests in the breeding territory of several raptors, such as osprey (Rhodes 1972, Mureal et al 2006), bald eagle (Marion et al 1992), ferruginous hawk (Howard and Hilliard 1980), and Madagascar fish eagle (Simon Thomsett, pers. comm.) have been recorded with a highly significant increase in the breeding success rate. Breeding success at artificial nest has also been shown to be higher compared to natural built nests - 0.7-1.0 fledglings per pair in natural nests against 1.2-2.3 fledglings per pair in artificial nests of osprey recorded at North America (Eckstein et al 1979). Thus, we planned to build some artificial nests at the breeding territory of Indian spotted eagle.

We started building the nests from the first week of March to the first week of April 2021 before the Indian spotted eagle (ISE) had built their nest in their respective breeding areas (Koshi, Dhanusa and Lumbini). Most of the nests were recorded in *Dalbergia sissau* and *Bombax ceiba,* thus we selected these trees especially as they have a big main trunk and almost no branches up to 10m above ground. It is because ISE usually prefer to nest in old trees and later one preventing enthusiastic human from climbing the trees. We built the nest frame with the help of some leftover 8-12 cm thick sticks found in the furniture and branches of trees found in the forests. For other nesting materials, we used locally available materials: small branches (35-45 cm in length and 0.5- 1cm in diameter) with a green leaves of *Dalbergia sissau*, dried small twigs (length 40-50 cm, diameter 0.5- 1cm), medium sized twigs (length 40-50 cm, diameter 1-1.5 cm), large sized twigs (length 40-50 cm, diameter 3 -4.5 cm) and dried leaves. We placed the nest frame in the bifurcate/trifurcate branches of main trunk or side branches of the trees (quite enough to hold the big nests) that has an open space at one direction while somewhat sealed by small branches at other direction so that it gets hidden from its predator. We fixed the platform with the help of galvanised wire and nails in the branches where we planned to make artificial platform (Photo 3). We used a jumar technique to climb the tree and after reaching at the branches we used a sling in the harness to attach ourselves in the tree (Photo 1, 4). Usually a single person climbed the trees while another researcher belayed from the ground using an ATC guide. Rappelling down was done with the help of gri-gri. One of the researchers stayed under the tree and passed necessary materials upwards.

In total, we managed to build 13 artificial nests in the three breeding areas of Indian spotted eagle (Koshi – four, Dhanusa – four and Lumbini – five, Photos 2, 6,7). Chitwan's pair has already built nest when monitored at breeding sites meanwhile we did not find the breeding pairs of Bardia at their previous breeding location. The nests were built in the thin forests of *Dalbergia sissau* and *Bombax ceiba* at least disturbed areas and 200-300 m farther from the water sources. It took about 4.5 hours to build a single artificial nest (collection of necessary materials, climbing trees, building nests, rapelling down). We believe that there is possibility of utilisation of those artificial nests by other raptors (black kite, white-eyed buzzard) as well as non-raptors (ibis, stork). Monitoring of these artificial nests is yet to be done. Rises of Covid-19 cases in Nepal has halted our field work since most of the provincial government has declared lockdown at their several places which has stopped us moving to our field work. As soon as the lockdown gets lifted we will go to check those artificial nests. Please take a note that tree climbing is not a stunt they were done by experienced climber using a proper technique, instruments and knowledge.

Photo 1: Researcher climbing tree using a jumar technique

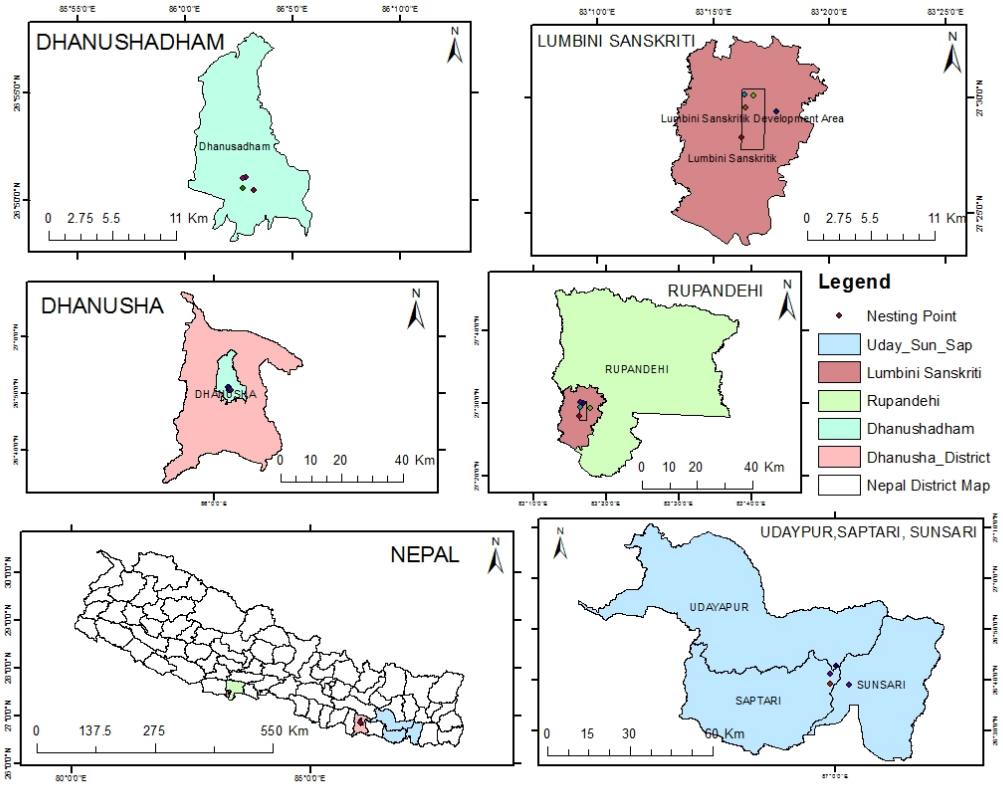

Photo 2: Map of the location of the areas where artificial nest were built

Photo 3: Installing platform in the nesting preferred tree (*Dalbergia sissau*) for the artificial nest

Photo 4: Researchers tied in a tree with a sling as a safety measures and above is a built artificial nest

Photo 5: Incomplete version of artificial nest (photo taken at the middle of the work) built in old *Bombax ceiba* tree

Photo 6: Complete version of artificial nest built in *Bombax ceiba*

Photo 7: Artificial nest built at Lumbini near the breeding territory of Indian Spotted Eagle

Covid-19 cases in Nepal have significantly increased recently thus different provincial governments have issued lock down notice at their state. This has restricted us moving from one place to another, thus some of the proposed work has been halted. We will soon start our work as soon as the conditions become favorable.

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