

Project Update: March 2022

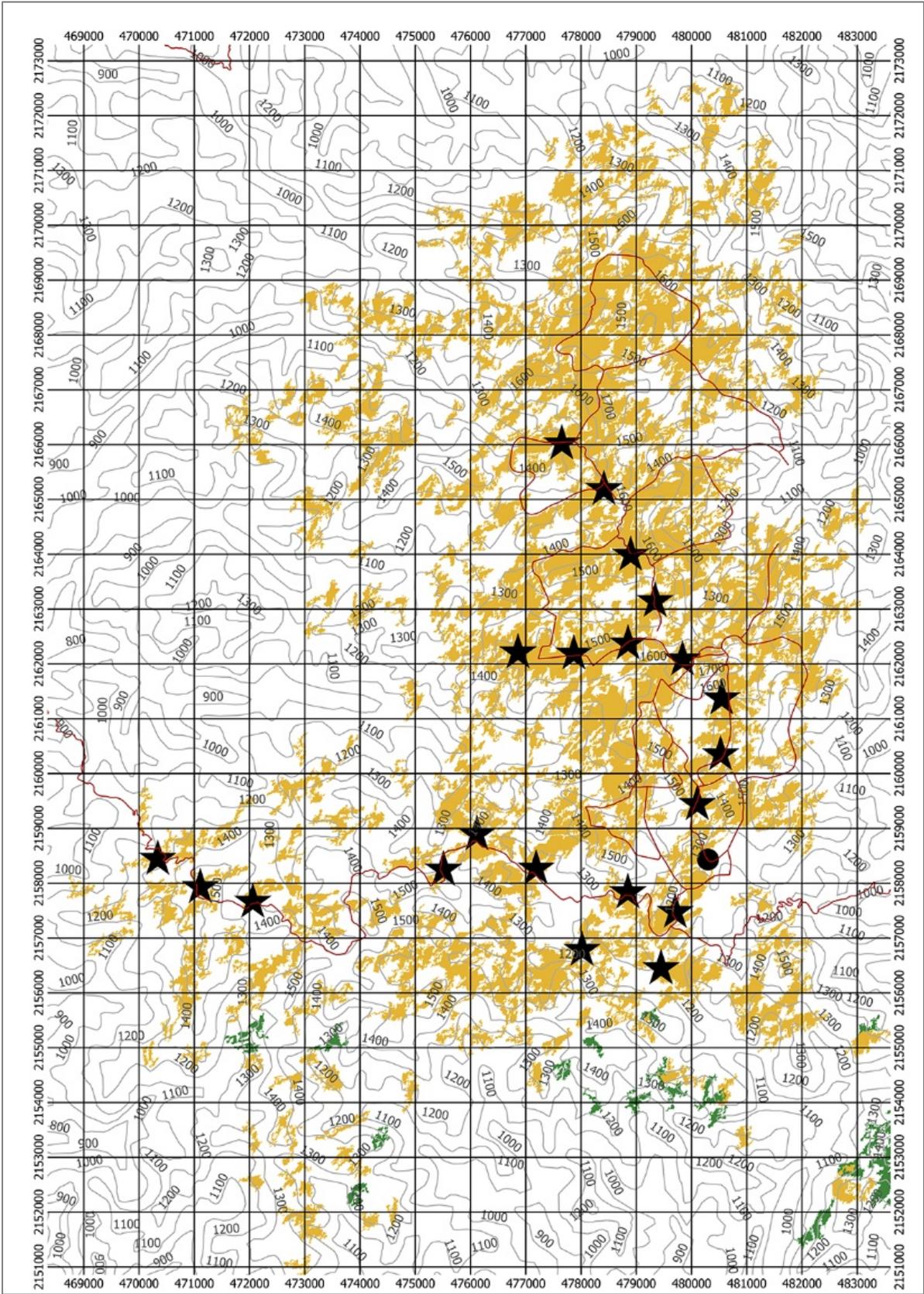
Project Summary

Introduction

Giant nuthatch (*Sitta magna*) is a globally Endangered species restricted to lower montane habitats of southwestern China, eastern Myanmar, and northern Thailand with a global population roughly estimated at ~1,500–3,800 individuals. It was up listed from Vulnerable to Endangered in 2012 (BirdLife International, 2020) due to concerns about the loss and degradation of presumed habitat. A key limitation of the current data of giant nuthatch is that there is no baseline quantitative information on nest-site habitat selection and which habitat features or levels of human disturbance have the largest impacts on reproductive success and adult survival. Therefore, the objectives of this project are: 1) identify the main characteristics of the breeding habitat of giant nuthatch, 2) assess the effects of habitat characteristics and other factors on nesting success of giant nuthatch, and 3) to discuss the adaptative significance of the relationships between pine plantation and giant nuthatch, as well as key factors essential for its conservation.

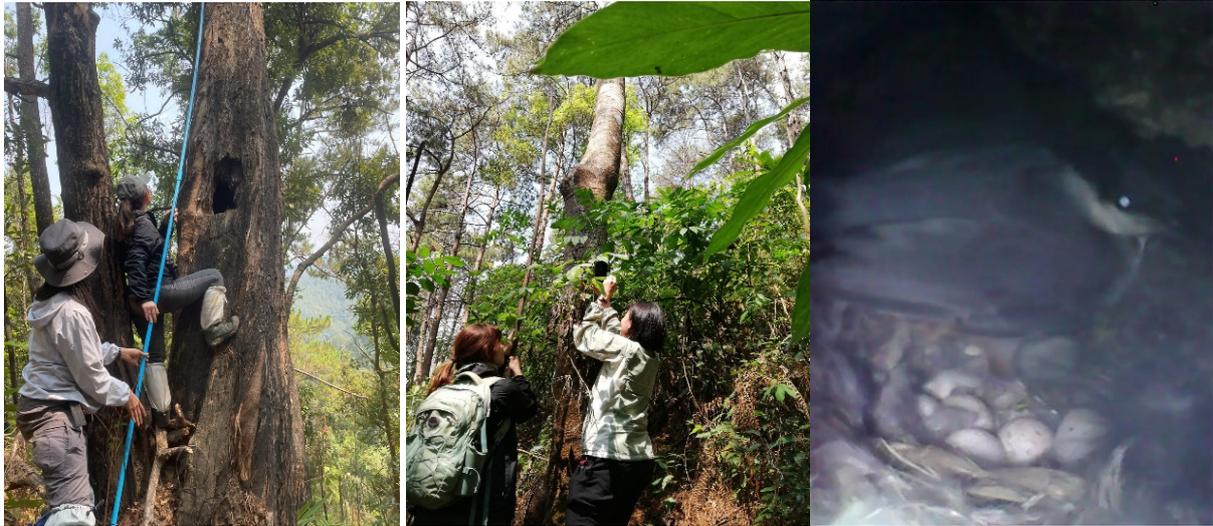
Nest searching and nest monitoring

Based on our recent work determining baseline population and general habitat availability estimates of giant nuthatch in Thailand (supported by our 1st Rufford Small Grant), the field work for this project will focus at Doi Kham Fah-Mueang Haeng Subdistrict within Pha Dang National Park, in Chiang Mai province, northern Thailand. The area is dominated by mature pine (*P. kesiya*) plantation (95%), and which potentially contains the largest suitable habitat of mature pine (*P. kesiya*) plantation (62 km²) and largest subpopulation (~85 individuals) of giant nuthatch in Thailand (Khamcha et al. 2021). During February – March 2022 we started searching for nest cavity of giant nuthatch by following the pairs started at our previous survey points where we detected the giant nuthatch (Picture 1). In mid-March 2022, we found five cavity nests of giant nuthatch, all of them are in the natural cavity. Nest number one is in the nestling stage, male and female came to feed nestlings very often and brought out the fecal sacs. Nest numbers two and three are in the incubation stage with at least four eggs for each nest. Nest number four we were not able to identify nesting stage, probably is in the incubation stage. Nest number five is in the building stage, both male and female building and cleaning inside the cavity. Because of the limitation of the length of the endoscope camera used for the checking nest, we were able to check the nest contents for only two cavities, nest numbers two and three (Picture 2).



Picture 1: Our previous survey points during 2019 (Khamcha et al. 2021) at DKF locality. Star signs represent location/points with detections of Giant nuthatch, closed circle represent location/point without detection of Giant nuthatch. Areas in yellow color

represent a suitable habitat, mostly is mature pine plantation forest, for Giant nuthatch.



Picture 2: Researchers using endoscope camera to check nest contents (left and middle). Female Giant nuthatch incubating inside the cavity (Right).

Nest-cavity and nest-site characteristics of Giant Nuthatch

All five nests are in the natural cavities, either in the natural hole or cracks in the trunk (Picture 3). Four out of five cavities are in broad leaved trees such as *Castanopsis* sp. (not yet identify to species) and one cavity is in pine tree, *P. kesiya* (Picture 3). The average nest height is around 5 m range from 2.5 – 10 m.



Picture 3: Natural cavities of Giant nuthatch in broad leaved trees (left) and pine tree, *Pinus kesiya* (right).

Future plan

We will keep following and searching for nest of giant nuthatch until end of breeding season which will be around end of May 2022. After nests either fail or fledge young, we will measure nest site characteristics (12.6 m radius) and landscape (300 m radius) components around nesting trees to identify the main characteristics of nesting sites and assess their effects and other key-factors on nesting success of giant nuthatch.