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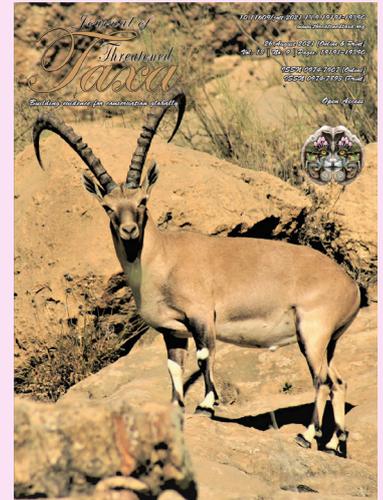
NOTE

WHITE-BELLIED HERON *ARDEA INSIGNIS* IN HKAKABO RAZI LANDSCAPE, NORTHERN MYANMAR

Myint Kyaw, Paul J.J. Bates, Marcela Suarez-Rubio, Bran Shaung, Han Nyi Zaw, Thein Aung, Sai Sein Lin Oo & Swen C. Renner

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White-bellied Heron *Ardea insignis* in Hkakabo Razi Landscape, northern Myanmar

Myint Kyaw¹ , Paul J.J. Bates² , Marcela Suarez-Rubio³ , Bran Shaung⁴ , Han Nyi Zaw⁵ ,
Thein Aung⁶ , Sai Sein Lin Oo⁷ & Swen C. Renner⁸

¹ Popa Mountain Park, Kyaukpadaung, Mandalay Region, Myanmar.

² Harrison Institute, Bowerwood House, 15, St Botolph's Road, Sevenoaks, Kent, TN13 3AQ, UK.

³ Institute of Zoology, University of Natural Resources and Life Science, Gregor-Mendel-Straße 33, 1180 Vienna, Austria.

⁴ Hponkan Razi Wildlife Sanctuary, Putao, Kachin, Myanmar.

⁵ Hkakabo Razi National Park Headquarters, Putao, Kachin, Myanmar.

⁶ Myanmar Bird and Nature Society, Hlaing Township, Yangon, Myanmar.

⁷ Department of Zoology, University of Mandalay, 05032 Maha Aung Myay Township, Mandalay, Myanmar.

⁸ Ornithology, Natural History Museum Vienna, Burgring 7, 1010 Vienna, Austria.

¹ myintkyawpopa@gmail.com, ² pjjbates2@hotmail.com, ³ marcela.suarezrubio@boku.ac.at, ⁴ branshaung.hknp@gmail.com,

⁵ hannyzaw1992@gmail.com, ⁶ theinaung58@gmail.com, ⁷ saiseinlinoo@mu.edu.mm,

⁸ swen.renner@nhm-wien.ac.at (corresponding author)

The White-bellied Heron *Ardea insignis* Hume, 1878 is a 'Critically Endangered' species with a highly fragmented distribution and a small population (BirdLife International 2018). Its range is considered small (56,300 km²) and extends from Bhutan through northeastern India to northern Myanmar, mostly with extremely low densities and few observations since 2010. It has a low reproduction rate, with a generation length estimated to be 10.5 years, and suffers comparatively high levels of mortality (BirdLife International 2018). In consequence, its population, which was never abundant, is in ongoing decline, although the causes of the recent decline are not fully understood. On the basis of habitat degradation and widespread disturbance, even in remote parts of the species' range

(Stanley-Price & Goodman 2015; Menzies et al. 2020), the White-bellied Heron population is likely at high risk of extinction with a global population estimated somewhere between 70–400 individuals (IUCN 2018). Historic records show that the species was widely distributed in Myanmar (Stanley-Price & Goodman 2015), but recent records are only from Kachin (Image 1).

Based on observation, the preferred habitat of the White-bellied Heron is small to large rivers, adjacent to relatively large forest tracts and with low human impact (BirdLife International 2018). These habitats are decreasing rapidly throughout the species' range, but suitable habitat is still abundant in northern Myanmar, where the Hkakabo Razi Landscape is predicted to be one of the last refuges for

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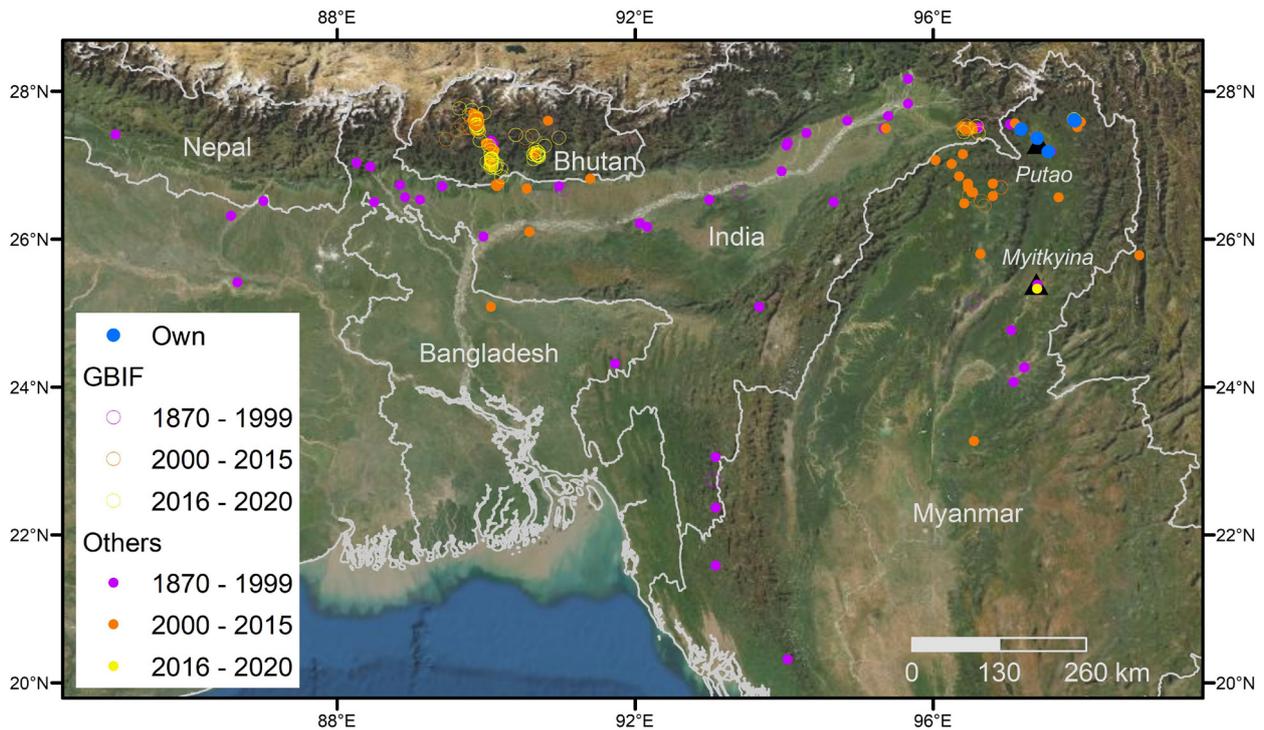


Image 1. Records of *Ardea insignis* White-bellied Heron (own records; GBIF 2021; King et al. 2001; Stanley-Price & Goodman 2015; Zöckler et al. 2020). In addition, there are three historic records (1870–1999) from southern Myanmar, which are external to this map and omitted for illustrative purposes. Note: GBIF (2021) records have not been screened for correct localities nor correct species status. Map prepared by M. Suarez-Rubio.

this species. The area has highly suitable habitats, which include streams and rivers, wetlands, and grasslands, all associated with almost untouched broadleaf forest in mountainous areas (Suarez-Rubio et al. 2020). However, even for northern Kachin, in 2016, the population is estimated at only between 26–28 birds and known localities are imprecise, such as “near Putao” or “observed in region” (Smythies 1986; BirdLife International 2001; King et al. 2001; Rappole et al. 2011). Since 2011, there have been no published records from the Hkakabo Razi Landscape (Stanley-Price & Goodman 2015; Renner & Bates 2020; GBIF 2021).

During a series of bird surveys (2001, 2004, 2005, 2006, 2014, 2016, 2017, 2018, 2020), our team observed the White-bellied Heron in Hkakabo Razi Landscape. Although our surveys targeted all water birds along the rivers, they show a consistent picture of the presence of the White-bellied Heron in the Hkakabo Razi Landscape, with all but one record documented with a photo:

(a) One foraging in the Shinsan stream about 2.5 km north of Gawlai on 10 and 11 March 2016 (three observations over several days in March 2016 of probably the same individual along a stretch of the Shinsan stream; Image 2); the species was also observed at this site on 26 February 2018;

(b) One on the Nam Ro Stream near Wasadam village

at a potential roosting site on a tree in 2017 and 21 January 2018;

(c) One in grassland close to Tan Jar stream at Lone Shanyan village (= Long Shan Yang = Lung Sha Yang; south-east of Putao on the way to Myitkyina) on 01 November 2020;

(d) One individual and a pair observed in the Tan Jar stream in December 2020;

(e) One foraging in Ma Jaw War stream close to Putao in November 2020.

Worldwide, since 2015, there seem to be only a few small, isolated localities with regular observations of White-bellied Herons (Image 1): Bhutan, Namdapha area in India, and the Hkakabo Razi Landscape. Following the record from the Myitkyina to Sinbo stretch of the Ayeyarwady, including onwards to Bhamo (Zöckler et al. 2020), there needs to be further surveys to determine the current status. The absence of recent records from Hukaung Valley Wildlife Sanctuary probably results from the inaccessibility of the area to researchers rather than reflecting a natural decline in the White-bellied Heron population. The relatively small number of surveys in northern Kachin compared to recent surveys in Bhutan (GBIF 2021) is likely a contributory factor biasing the number of observations. We hypothesize that repeated monitoring at the explicitly same localities in Kachin could yield indications for a stable



Image 2. *Ardea insignis* White-bellied Heron close to Gawlai (11 March 2016).

source population of the species.

Within Myanmar, the White-bellied Heron has the highest level of legal protection under Myanmar's 'Protection of Wildlife and Conservation of Natural Areas Law-1994'. Nevertheless, wildlife law enforcement is difficult in rural Kachin for a broad range of reasons, including inaccessibility because of terrain, and disagreement between locals and central government on natural resources management. The White-bellied Heron is thought to be threatened by a combination of illegal fishing methods; pollution; sand, gravel, and gold mining; and human disturbance (Stanley-Price & Goodman 2015; IUCN 2018). Dam development is an ongoing and postulated future threat, particularly for the Mali Hka/Nam Tamai river catchments (i.e., anything north of Myitkyina), whilst rapid illegal deforestation, often linked to illegal mining and illegal cross-border trade, is an ever-growing current threat, particularly in eastern Kachin. In addition, much of the range of the White-bellied Heron in Kachin coincides with areas occupied by diverse ethnic groups who have strong tendencies to hunt wildlife for subsistence.

The Hkakabo Razi Landscape is the meeting point of three biodiversity hotspots: Indo-Burma, Himalaya, and mountains of southwestern China. These hotspots overlap with the protected areas Hkakabo Razi National Park and Hponkan Razi Wildlife Sanctuary. The Hkakabo Razi Landscape possesses some of the least disturbed habitat of lowland wetlands, associated with forest, within mountainous areas. It is home to one of the largest remaining tracts of mainly intact forest in southeastern Asia (Suarez-Rubio et al. 2020) and therefore offers some of the most suitable habitat and reproductive conditions for the White-bellied Heron. In 2014, the Hkakabo Razi

Landscape was proposed as a World Heritage Site under criteria (ix) and (x) for its high integrity and outstanding ecological values (World Heritage Centre 2014; Renner & Bates 2020; Suarez-Rubio et al. 2020; Bates et al. 2021). Unfortunately, our most recent records of White-bellied Herons from the Hkakabo Razi Landscape are located just outside the two formally protected areas (namely the Hkakabo Razi National Park and the Hponkan Razi Wildlife Sanctuary). Therefore, we suggest nominating the Nam Tisang River (passing through Naung Mung) and Rat Nam Ti or Nam Hat River (passing through Gahtu/Gawlai) as Ramsar sites, and we support plans for the nomination of the entire Hkakabo Razi Landscape as a World Heritage site.

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