

Flores Hawk Eagle *Nisaetus floris*: understanding the space needs of the flores hawk-eagle from a year of tracking

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Maria Donggomasa-Kaowa, West Nusa Tenggara, in an often overlooked site in the Lambitu sub-district about 30 km from Bima City, and was designed an Protected Forest areas by Maria Donggomasa Forest Management Unit (KPH) in 2009. My interest in the site arose early in 2024 when started to study a pair of the rare Flores Hawk Eagles *Nisaetus floris* in the area in order to study of ecological behavior and determine whether they bred every year at this site and whether they were successful. The species is currently considered to be Critically Endangered and decreasing (IUCN 2009).

In May 2024, we marked a significant milestone in conservation efforts by tagging a **Flores Hawk-eagle** for the very first time. A year has passed since that momentous occasion, and we are now able to share the first insights into just how much space this remarkable species requires throughout the year.

Plate 1. Adult female Flores Hawk Eagle *Nisaetus floris* and chick in Nest, Sumbawa Island, 2024.



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Recently, the **Flores Hawk-eagle** was downgraded on the **IUCN Red List** from *Critically Endangered* to *Endangered*. While this may initially appear to be a positive step for the species, it doesn't necessarily reflect an improvement in their overall conservation status. The population estimate, previously believed to be fewer than 250 individuals, has been revised upward to a range between 320 and 1,500 individuals (IUCN 2024). This revision simply brings the species' population above the threshold for *Critically Endangered* status (which is 250 individuals), but the truth is, the species' situation on the ground hasn't improved. The true challenge lies in understanding the **Flores Hawk-eagle's** habitat needs and ensuring that the areas it relies on remain protected and intact.

Plate 2. Adult female Flores Hawk Eagle *Nisaetus* using GPS Transmitter in Sumbawa Island, 2024.



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Until now, our understanding of the space needs of Flores Hawk-eagles has come from observational studies. By recording sightings of eagles around two known nest sites, researchers Kuspriyanga et al. (2025) estimated that the eagle's home range spans between **1.6 – 8.4 km²**. However, these estimates are likely to underestimate the eagle's actual space requirements due to limitations on collecting sightings data in areas further away from the nest. The same team also looked at the distance between two known nesting sites, and assuming circular, non-overlapping home ranges, came up with a larger home range estimate of around **23.1 km²**. However, this circular area is unlikely to represent actual space use around the nest.

After one year of tracking our tagged Flores Hawk-eagle, we now have a more detailed understanding of the species' home range. From tracking data of one individual we can derive accurate monthly estimates of the eagle's movements, showing significant variation depending on the time of year. **While incubating**, the eagle's home range was estimated at **4.2 km²**. **During non-breeding months**, the home range expanded to as much as **29.1 km²**. While overall, during the first year of tracking, the tracked eagles **annual home range** was estimated at **21.8 km²**.

These new data provide crucial insights into the habitat needs of the Flores Hawk-eagle. The significant increase in home range size during non-breeding periods indicates that the species requires large, undisturbed tracts of forest to meet its needs throughout the year.

The annual range size of **21.8 km²** is much larger than the estimates based solely on sightings, highlighting the importance of accurate data for developing effective conservation strategies. If we aim to protect this species, we need to ensure that sufficient space is preserved, particularly in areas with critical resources such as nesting sites and feeding grounds.

As we continue to track and study the Flores Hawk-eagle, we will gain even more insight into how they use their environment throughout the seasons, and between different areas or individuals. This will be essential for refining conservation strategies to protect one of the most iconic species of Indonesia's Flores Island

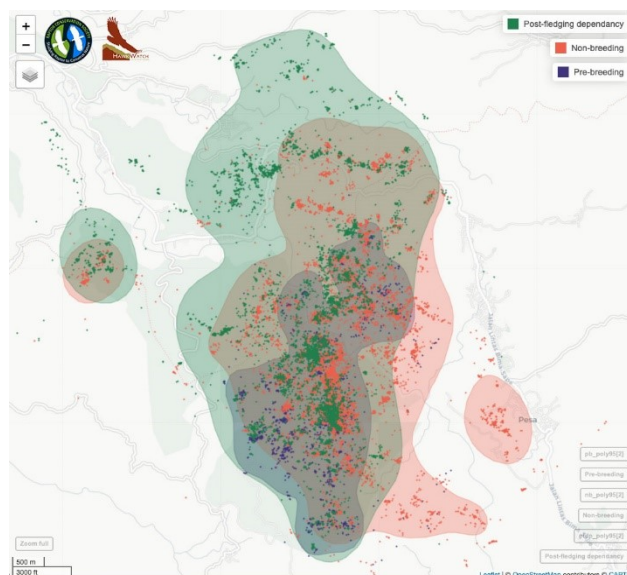


Plate 3. Home-range of the adult female calculated using GPS Transmitter in Maria Donggomasa Protected Forest, West Nusa Tenggara, Sumbawa Islands.

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Conclusion

Study using GPS Tracking is effective and it can describe the Flores Hawk-eagle home range. The home range in clan of the Maria Donggomasa Protected Forest clearly depicts the home-range based on forest cover. The extent and area coverage by the Flores hawk-eagle covering almost half of the Maria Donggomasa Protected Forest area. If compared to condition of forest area especially land cover in the forest area that has been changed by rapid conversion and land occupation.

References

- Kuspriyanga, A., Mulyani, Y. A., Syartinilia, & Hidayat, O. (2025). Home range and habitat use of the endangered Flores Hawk-eagle (*Nisaetus floris*) in Ende, Flores, East Nusa Tenggara. *Journal of Tropical Forest Management*, 31(May), 133–144. <https://doi.org/10.7226/jtfm.31.2.133>

<https://hawkwatch.org/putting-out-the-first-transmitter-on-a-flores-hawk-eagle/>

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