

Photographic evidence of dholes in Gunung Gede Pangrango National Park, Indonesia

ANTON ARIO^{1*}, AGUNG GUNAWAN², AYI RUSTIADI², TANGGUH TRIPRAJAWAN², IYAN SOPIAN², ROBI RIZKI ZATNIKA², DADAN MAULANA YUSUP², WORO HINDRAYANI², ALI MULYANTO², DADANG ISKANDAR²

¹Konservasi Indonesia, Gedung Graha Inti Fauzi, Lt.9 Jl. Warung Buncit No.22 Pejaten Barat Pasar Minggu, Jakarta Selatan 12510, Indonesia.

²Gunung Gede Pangrango National Park, Jl. Raya Cibodas, Cipanas, Cianjur, Jawa Barat 43253, Indonesia.

*Corresponding author: antonario1104@gmail.com

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ABSTRACT

For many years the dhole was believed to have been undetected in Gunung Gede Pangrango National Park (GGPNP). Nevertheless, in 2012 and 2013, we were able to photograph this elusive creature. We report the photographic evidence of the endangered dhole (*Cuon alpinus*) using camera trap in GGPNP.

ABSTRAK

Selama bertahun-tahun, Ajag diyakini tidak terdeteksi di Taman Nasional Gunung Gede Pangrango (TNGGP). Namun pada tahun 2012 dan 2013, kami berhasil memotret spesies yang sulit diketahui ini. Kami melaporkan bukti fotografi Ajag (*Cuon alpinus*) yang terancam punah dengan menggunakan penjebak di TNGGP.

Keywords: camera trap, *Cuon alpinus*, distribution update, Java, management

ARTICLE

The dhole or Asiatic wild dog (*Cuon alpinus*), listed as Endangered by the IUCN, distributed across most parts of South, East, and Southeast Asia (Zhang & Chen, 2011), including Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, and Thailand (Kamler et al., 2015).

In Indonesia, dholes are found in Sumatra and Java, although no population estimate is currently available for Indonesia (Kamler et al., 2015). However, a tiny population is assumed by Srivaths et al. (2020), with large protected areas in Sumatra as essential core areas for dholes in Indonesia (Havmøller et al., 2022).

The existence of dhole in Sumatra was known in Bukit Barisan Selatan National Park (Allen et al., 2020), within production forest and surrounding area in Jambi Province (Maddox et al., 2007), Bukit Betabuh Protected Forest, Bukit Bungkuk Nature Reserve, and Bukit Rimbang Bukit Baling Wildlife Reserve (Widodo et al., 2020), Kampar, Kerumutan Wildlife Reserve, Peranap, Bukit Rimbang Bukit Baling, and Tesso Nilo National Park (Sunarto et al., 2015), Ulu Masen Ecosystem (Radinal et al., 2019).

Whereas in Java was known in Alas Purwo, Meru Betiri, Baluran, and Bromo Tengger Semeru National Parks, Kawah Ijen Nature Tourism Park (Durbin et al., 2004; Iyengar et al., 2005; Pudyatmoko, 2018), Mount Slamet (Sulistyadi, 2012), Ujung Kulon National Park

(Rahman et al., 2018). Papandayan Nature Reserve, Gunung Sawal Wildlife Reserve, Gede Pangrango and Halimun Salak National Park (Qodri et al., 2020; Kao et al., 2020).

Java is one of the islands with the highest human population density in the world (Dsikowitzky et al., 2019). The island is home to 141 million people, equal to 1,115 people/km² (Badan Pusat Statistik, 2020). The high demand for natural resources for agricultural land has resulted in the widespread conversion of large areas of natural habitat (Sodhi et al., 2010) and the isolation of protected areas throughout Java (Kamler et al., 2015).

Dholes in Gunung Gede Pangrango National Park (GGPNP) have anecdotal evidence (Kao et al., 2020). Although Havmøller et al. (2022) stated, we failed to detect dholes in GGPNP during a camera trap study in 2018. These authors did not conduct the survey, but they cited the papers by Ario et al. (2018). Here, we report the first dhole recorded by a camera trap from 1 November 2012 to 28 February 2013 in GGPNP (Figure 1). Two photographs of dholes were captured on 11 November 2012 at 04.04 PM in the Sukabumi area of GGPNP (Figure 2) and 5 February 2013 at 01:25 PM in the Bogor area of GGPNP (Figure 3).

We believe that its evidence will be added to the distribution of dhole in an elusive and increasingly threatened carnivore. Studies on dhole presence and habitat utilization inside and outside protected areas are

highly needed for future conservation management in Java.

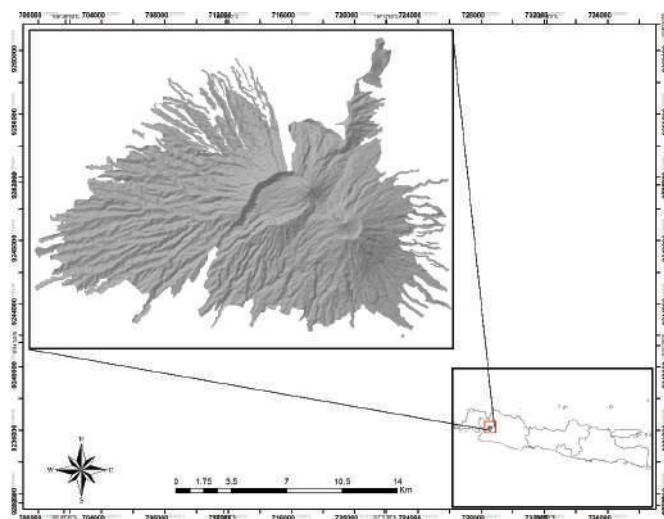


Figure 1. Map of Gunung Gede Pangrango National Park, Indonesia



Figure 2. Dhole captured in Sukabumi area

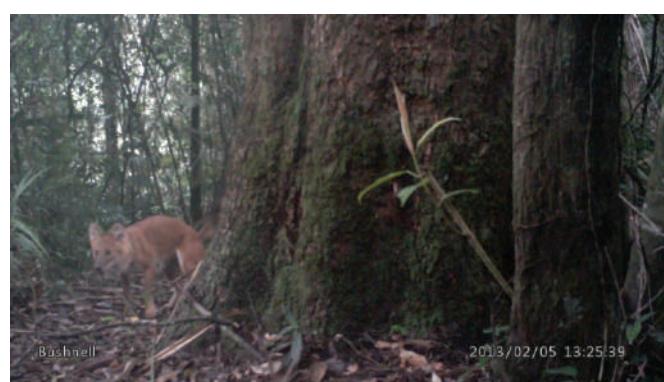


Figure 3. Dhole captured in Bogor area

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REFERENCES

- Allen, M.L., Sibarani, M.C., Utomo, L. and Krofel, M. (2020). Terrestrial mammal community richness and temporal overlap between tigers and other carnivores in Bukit Barisan Selatan National Park, Sumatra. *Animal Biodiversity and Conservation* 43: 97-107. doi: 10.32800/abc.2020.43.0097
- Durbin, L.S., Venkataraman, A., Hedges, S. and Duckworth, W. (2004). Dhole *Cuon alpinus*. In: Sillero-Zubiri, C., Hoffmann, M. and Macdonald, D.W. (eds.) *Canids: foxes, wolves, jackals and dogs. Status survey and conservation action plan*. IUCN-SSC Canid Specialist Group. Gland, Switzerland and Cambridge, UK. p. 210-219.
- Dsikowitzky, L., A. Damar, S.C.A. Ferse, H.E. Irianto, T.C. Jennerjahn, M.C. Lukas, I. Nordhaus, T. Pohlmann, J. Schwarzbauer, K. Sugama & B. Sumiono (2019). Chapter 21 - Java Island, Indonesia, pp. 459–490. In: Sheppard, C. (ed). *World Seas: An Environmental Evaluation (Second Edition)*, Volume II: the Indian Ocean to the Pacific. United Kingdom, 912 pp
- Badan Pusat Statistik (2020). *Statistik Indonesia 2020*. Badan Pusat Statistik Indonesia, Jakarta, 748 pp.
- Havmøller, L.W., Havmøller, R.W., Worsøe, R., Nawangsari, V.A., Pratiwi, A., Möller, P.R. and Traeholt, C. (2022). Status and conservation of dholes in Indonesia. *Canid Biology and Conservation* 24(2):4-12.
- Iyengar, A., Babu, V., Hedges, S., Venkataraman, A., Maclean, N. and Morin, P.A. (2005). Phylogeography, genetic structure, and diversity in the dhole (*Cuon alpinus*). *Molecular Ecology* 14: 2281-2297.
doi: 10.1111/j.1365-294X.2005.02582.x
- Kamler, J.F., Songsasen, N., Jenks, K., Srivaths, A., Sheng, L. and Kunkel, K. (2015). *Cuon alpinus*. The IUCN Red List of Threatened Species 2015 e.T5953A72477893.
- Kao, J., Songsasen, N., Ferraz, K. and Taylor-Holzer, K. (eds.) (2020). Range-wide population and habitat viability assessment for the dhole, *Cuon alpinus*. IUCN SSC Conservation Planning Specialist Group, Apple Valley, MN, USA.
- Maddox, T., Priatna, D., Gemita, E. and Salampessy, A. (2007). The conservation of tigers and other wildlife in oil palm plantations, Jambi Province, Sumatra, Indonesia. *ZSL Conservation Report No. 7*. London: The Zoological Society of London. 62 pp.

- Pudyatmoko, S. (2018). Spatiotemporal inter-predator and predator-prey interactions of mammalian species in a tropical savanna and deciduous forest in Indonesia. *Mammal Research* 64: 191-202. doi: 10.1007/s13364-018-0391-z
- Qodri, A., Utama, I.V., Ferdinand, P.R., Dwijayanti, E., Rusdianto, R., Yohanna, Y., Mulyadi, M., Supriatna, N., Hernawati, R.T., Shidiq, F., Encilia, E., Animatesto, G., Sushadi, P.S., Budi, A.S., Rizal, S., Nurhaman, U., Herlambang, A.E.N. and Nurinsiyah, A.S. (2020). Checklist on fauna diversity Gunung Halimun Salak National Park: Cikaniki-Citalahab. *Zoo Indonesia* 29: 103-150. doi: 10.52508/zi.v29i2.4037
- Radinal, Kiswayadi, D., Akbar, M., Boyhaqi, T. and Gumay, D. (2019). Monitoring species diversity using camera traps in Ulu Masen ecosystem, Aceh Province, Indonesia. *IOP Conference Series: Earth and Environmental Science* 365: 012064. doi: 10.1088/1755-1315/365/1/012064
- Rahman, D.A., Rianti, P., Muhiban, M., Muhtarom, A., Rahmat, U.M., Santosa, Y. and Aulagnier, S. (2018). Density and spatial partitioning of endangered sympatric Javan leopard (Felidae) and dholes (Canidae) in a tropical forest landscape. *Folia Zoologica* 67: 207-219. doi: 10.25225/fozo.v67.i3- 4.a8.2018
- Srivaths, A., Sharma, S. and Oli, M.K. (2020). Every dog has its prey: range-wide assessment of links between diet patterns, livestock depredation and human interactions for an endangered carnivore. *Science of the Total Environment* 714: 136798. doi: 10.1016/j.scitotenv.2020.136798
- Sodhi, N.S., Koh, L.P., Clements, R., Wanger, T.C., Hill, J.K., Hamer, K.C., Clough, Y., Tscharntke, T., Posa, M.R.C. and Lee, T.M. (2010). Conserving Southeast Asian forest biodiversity in human-modified landscapes. *Biological Conservation* 143: 2375-2384. doi: 10.1016/j.biocon.2009.12.0
- Sulistyadi, E. (2012). Komunitas Mamalia Besar Gunung Slamet. In: Maryanto, I., Noerdjito, M. and Partomihardjo, T. (eds.) *Ekologi Gunung Slamet*. LIPI Press, anggota Ikapi, Jakarta. P. 121-134.
- Sunarto, S., Kelly, M., Parakkasi, K. and Hutajulu, M. (2015). Cat coexistence in central Sumatra: ecological characteristics, spatial and temporal overlap, and implications for management. *Journal of Zoology* 296: 104-115. doi: 10.1111/jzo.12218
- Widodo, F.A., Sunarto, D.H., Gunawan, N.F., Sukmantoro, W., Zulfahmi, E.S. and Adzan, G. (2020). Preliminary assessment of abundance and distribution of Dholes *Cuon alpinus* in Rimbang Baling and Tesso Nilo landscapes, Sumatra. *Raffles Bulletin of Zoology* 68: 387-395.
- Zhang, H. and Chen, L. (2011). The complete mitochondrial genome of dhole *Cuon alpinus*: phylogenetic analysis and dating evolutionary divergence within Canidae. *Molecular Biology Reports* 38: 1651-1660. doi: 10.1007/s11033-010-0276-y