

Findings on the Effectiveness of Thermal Scope for Wildlife Detection in Borneo



1StopBorneo Wildlife



Western Tarsier

INTRODUCTION

Thermal imaging technology has become a vital tool across numerous professional fields, including search and rescue operations, industrial inspections, and security surveillance. Among recent advancements, the Xinfrared T2S Plus, the world's smallest smartphone-attachable thermal camera and the HT-06 Thermal Scope represent two distinct approaches to thermal detection, each designed for specific operational requirements. While both devices enhance visibility in low-light and no-light conditions, their differing form factors and technological capabilities make them suited for particular use cases.

This report evaluates the effectiveness of the Xinfrared T2S Plus and HT-06 Thermal Scope by examining their technical specifications, real-world performance, and practical applications. The comparison focuses on identifying which device is more effective for scenarios such as emergency response, infrastructure monitoring, and surveillance operations.

Understanding the Technologies

Xinfrared T2S Plus

The Xinfrared T2S Plus is a compact, smartphone-compatible thermal camera designed for portable thermal imaging. It transforms your mobile device into a thermal vision tool, making it ideal for inspections, outdoor exploration, and DIY thermal analysis.

Key Features:

- 8 mm adjustable-focus lens for macro inspection down to 0.25 mm targets
- 256 × 192 px uncooled microbolometer, 12 μm pixel pitch
- ≤ 40 mK NETD sensitivity @25 °C, 25 Hz video
- Temperature range -20 °C to +450 °C; accuracy ±2 °C or ±2 %
- Weight < 18 g; power < 350 mW via USB

HT-06 Thermal Imaging Scope

The HT-06 Thermal Imaging Scope is a professional-grade thermal optic designed for precision detection in low-visibility conditions. Its compact yet rugged construction houses advanced thermal imaging capabilities suitable for security, industrial, and emergency applications.

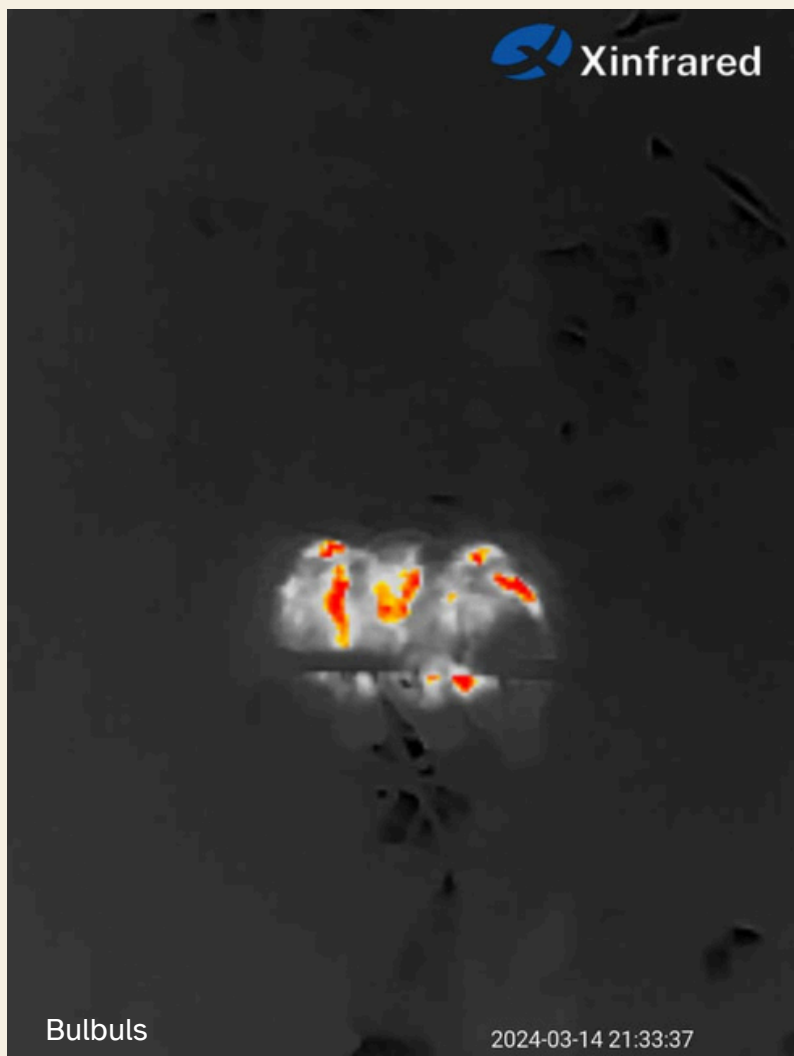
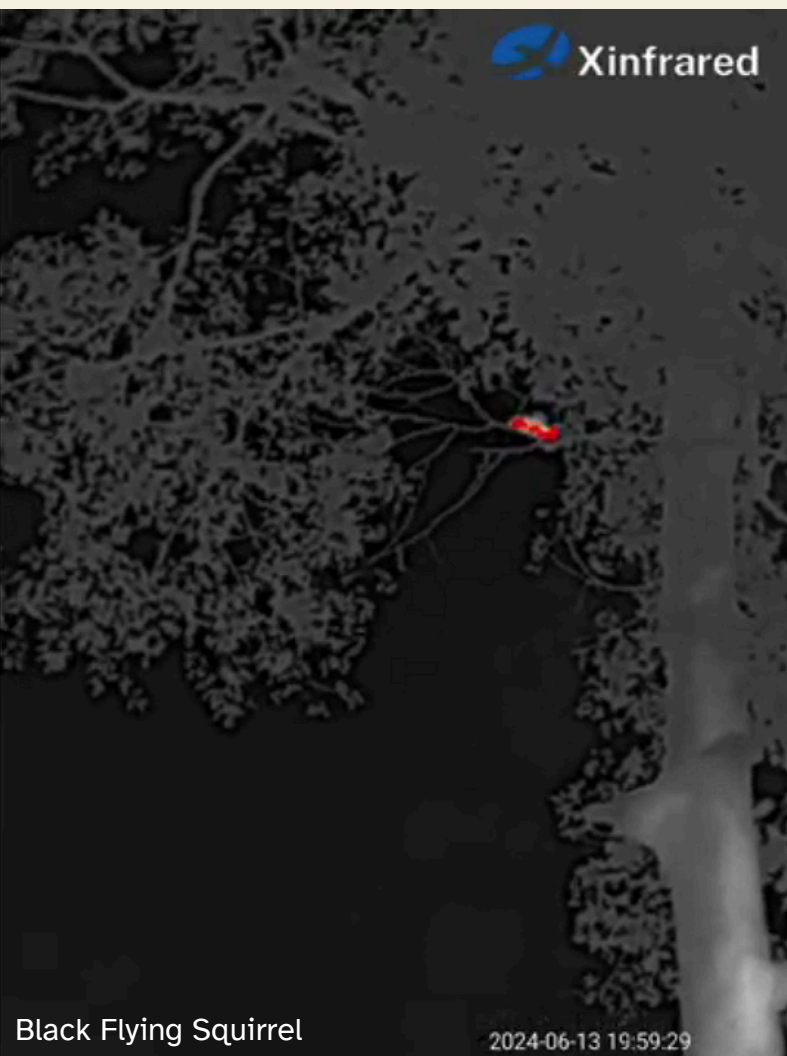
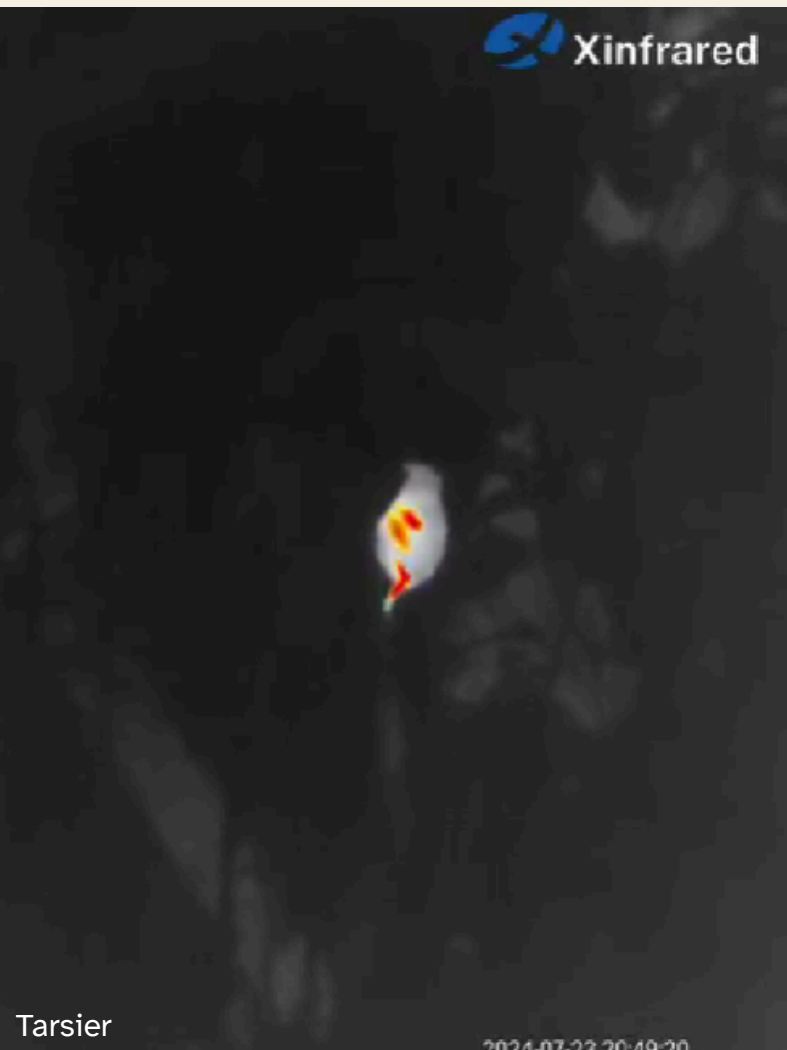
Key Features:

- 3.2 mm fixed-focus lens, 35 ° × 27 ° field of view
- 256 × 192 px VOx FPA sensor, 12 μm; NETD < 50 mK
- ≤ 25 Hz imaging; -20 °C to +550 °C range; ±2 °C accuracy
- 2.8" (240×320) display; Wi-Fi streaming; 4 GB onboard storage
- Removable 18650 battery, 2-3 h runtime; micro-USB power interface

Photos Taken Using Xinfrared



Photos Taken Using Xinfrared



Report on Thermal Scope Experiment

HT-06 Thermal Imager with WiFi

The thermal scope was effective in detecting hot-blooded animals, such as mammals and birds, by spotting their heat signatures even in low-light conditions.

The purpose of this experiment was to evaluate the effectiveness of the Thermal Scope HT-06 in detecting wildlife, especially hot-blooded animals. The experiment was conducted by WeiLi and Abritus.

Pros:

- **Zero Light Requirement:** One of the most notable advantages of the thermal scope is that it does not require any light to detect animals. This makes it ideal for night-time observation or in dark environments.
- **Long-Range Detection:** The thermal scope allows for detection over long distances, offering greater flexibility and coverage in tracking wildlife.
- **Ability to See Through Obstructions:** The thermal scope is capable of seeing through smoke, fog, and light camouflage, making it a versatile tool in challenging environmental conditions.

Cons:

- **Blob-Like Images:** The thermal scope produces images in the form of blobs, which can sometimes make it difficult to immediately identify what is being observed. Identifying the shape or species requires further confirmation using a torch or additional tools.
- **Inability to Detect Cold-Blooded Animals:** One limitation of the thermal scope is that it cannot detect cold-blooded animals such as frogs and snakes, as they do not emit significant heat signatures to be captured by the device.



Summary

The Thermal Scope HT-06 is an effective and valuable tool for detecting hot-blooded animals, especially in conditions with little or no light. Its ability to see through smoke, fog, and camouflage makes it highly versatile. However, the limitations, such as the blob-like images and inability to detect cold-blooded animals, should be taken into consideration when planning wildlife observation and detection activities.





TIPS

for Using Thermal Imaging Camera (HT-06)



For Better Detection

1

Go to the settings and turn on the "spot" mode. This will enhance detection by highlighting areas with higher body temperatures, making it easier to spot and ensure it's wildlife. Avoid bright lights while scanning, as they affect screen visibility; use just enough light to see your path.



Spot Yellow or White Dot

2

Look for yellow or white dot on the screen, which indicate potential wildlife or heat sources, either on trees or the ground. (Tip: Only when the heat signature shows a clear dot with a defined outline or shape can you confidently assume it's wildlife. A soft or diffused glow might be sun-warmed rocks, decaying leaves, or other non-animal heat sources.)

To Locate Precise Position of the Wildlife

4

Reduce the brightness of the thermal image to get a clearer view. Then, use a torch to pinpoint the exact location of the wildlife. (Tip: Red light is preferable as animals are less likely to be disturbed compared to white light, which could make them fly or run away.)



Capture Evidence

3

If you spot a yellow dot, press the button to capture a photo as evidence.



Take Photos

5

Once you've located the wildlife, use your camera to capture as many clear photos as possible.



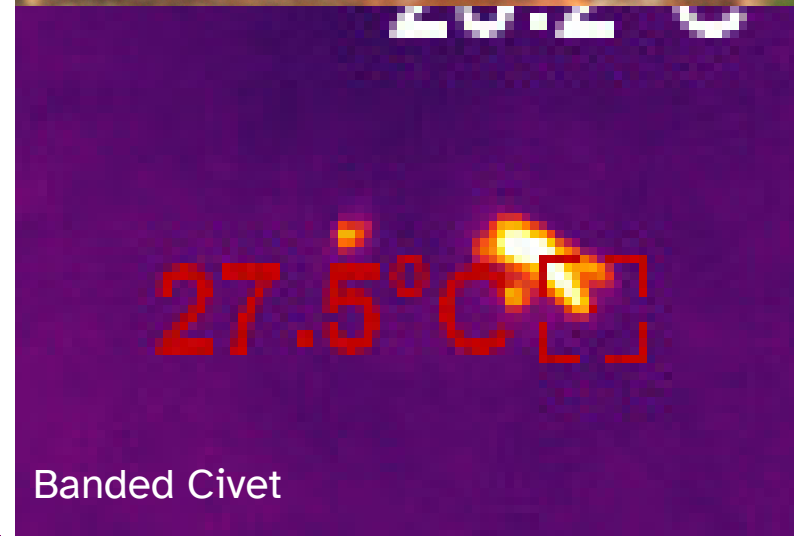
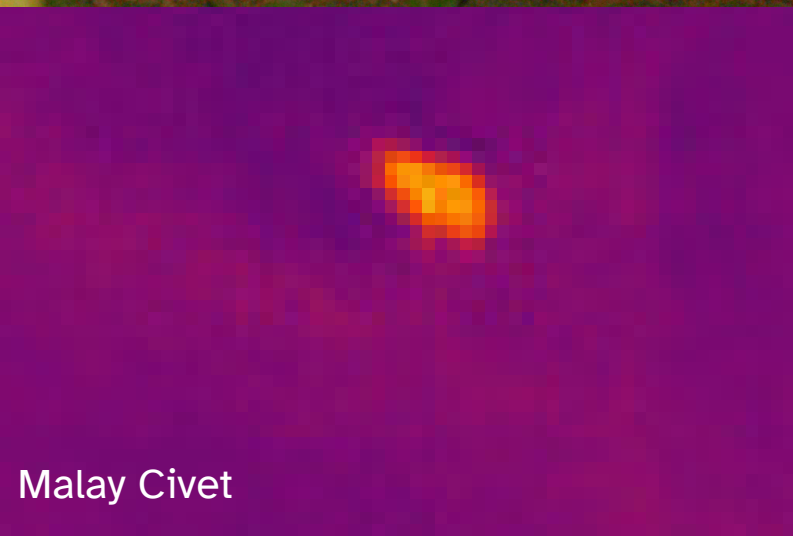
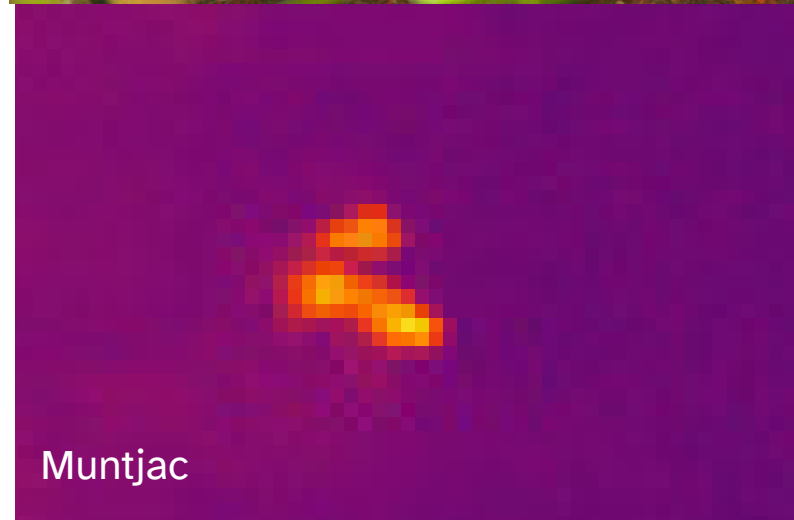
Respect Wildlife

6

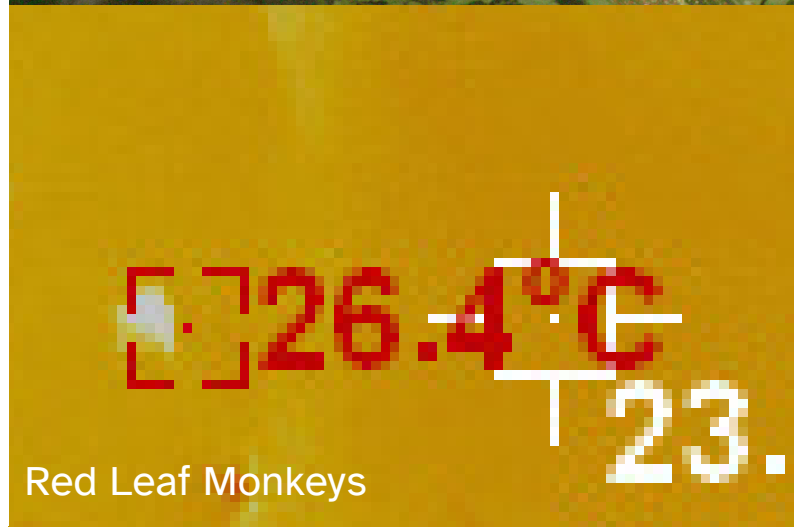
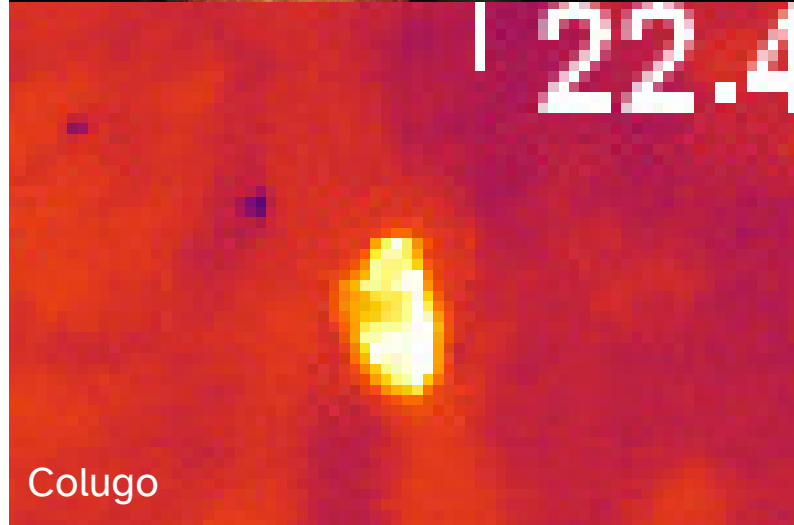
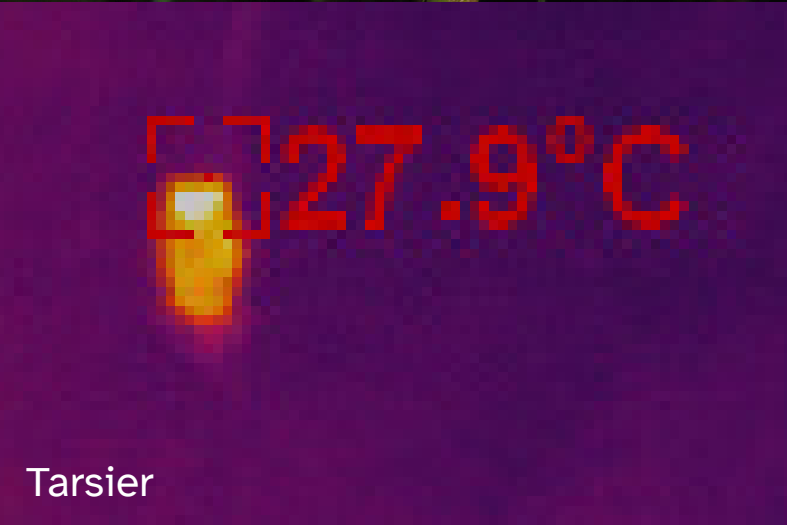
Always ensure not to touch or disturb the animals while observing them.



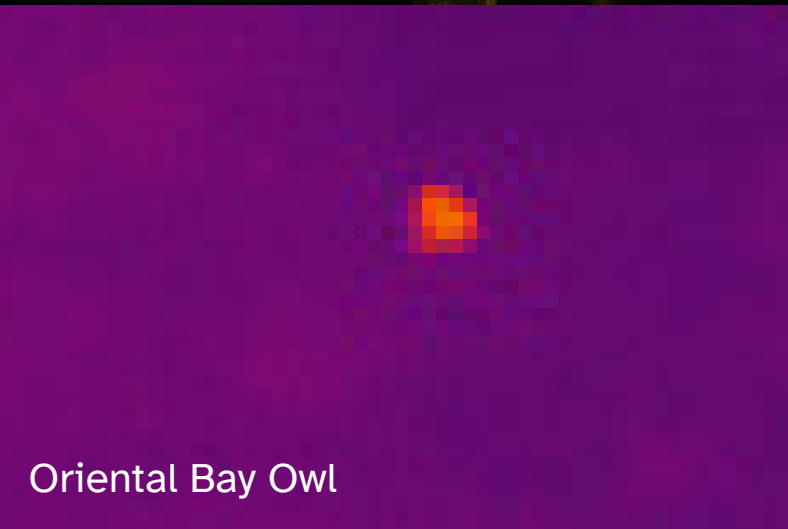
Photos Taken Using Thermal Scope



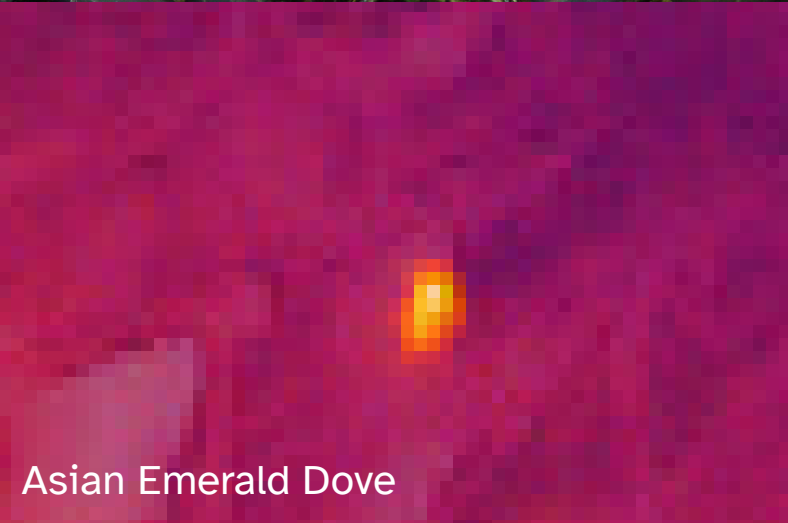
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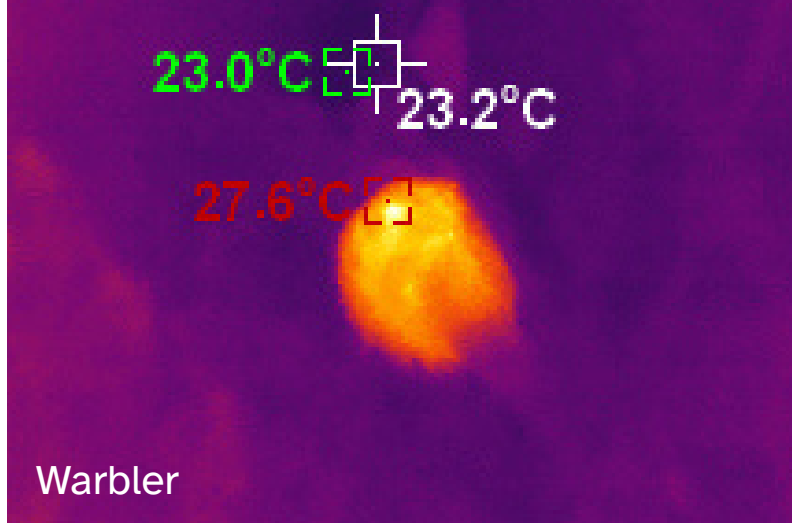
Photos Taken Using Thermal Scope



Photos Taken Using Thermal Scope



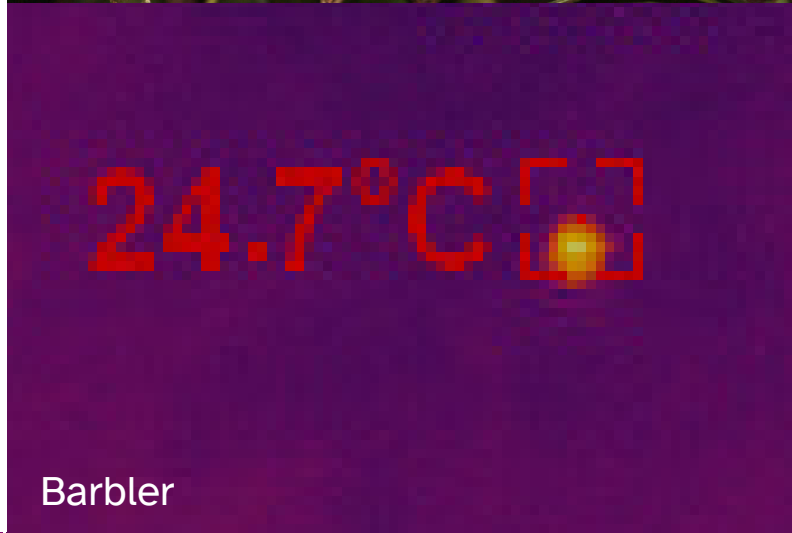
Asian Emerald Dove



Warbler



Trogon



Barbler

MAMMAL WATCHING BORNEO ON A BUDGET AND OFF-THE- BEATEN-TRACK DESTINATIONS



Discover the Beauty of the Borneo with Us!



Binturong



Red Leaf Monkey

PACKAGES INCLUDE:

- Guided walks/ 4WD safaris / boat cruises
- Trip leader with local ecologist and ranger guides
- Main meals - basic local Malaysian style
- Basic accommodation with private rooms in most places
- Transportation between destinations except flights
- Entrance & conservation fees
- Facility use with availability (kitchen, library, etc.)

Price
includes
everything
except
drinks and
flights.



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MAMMAL WATCHING BORNEO ON A BUDGET AND OFF-THE-BEATEN-TRACK DESTINATIONS

WITH 1STOPBORNEO WILDLIFE
(KPK/LN: 9399)



PACKAGE

Price starting from RM9,500 per person for 11 Days 10 Nights!
Tailor-made trips! Add an extra night to your favorite spot or include a visit to Kinabalu Park for endemic small mammal species.

DESTINATIONS

SABAH:
Beluran Safaris, Kinabatangan, Tawau Hills Park, Tawau Inikea Safaris

4D3N BELURAN SAFARIS

- Pick up from Sandakan Airport or Town or Telupid Town
- 1.5 - 2 hours drive from Sandakan.
- The most renowned place for hardcore mammal safari.
- Daily safari drives are done on the forest roads during the day and night.
- Target species: Clouded Leopard, Thomas Flying Squirrel, Slow Loris, Yellow-throated Marten, Orangutan.

3D2N KINABATANGAN

- 2.5 hours drive from Beluran Safaris
- The longest river in Sabah with rich riverine forest.
- Daily boat cruises along the river during the day and night.
- Target species: Proboscis Monkey, Silver Langur, Borneo Elephant, Flat-headed Cat, and many waterbirds.

4D3N TAWAU HILLS PARK

- 4.5 hours drive from Kinabatangan.
- Home to the tallest tropical trees enriched with volcanic soil.
- Walks are done during the day and night in the forest trails.
- Target species: Red Leaf Monkeys, Greater Mousedeer, Colugo, North Borneo Gibbons, Low's Ground Squirrel, and lots of giant insects.

3D2N TAWAU INIKEA WILDLIFE SAFARIS

- 3 hours drive from Tawau Hills.
- Remote reforestation site where wildlife successfully returned.
- Safari rides are done day and night on the old logging road.
- Target species: Clouded Leopard, Red Muntjac, Sambar Deer, Borneo Elephants, Red Giant Flying Squirrel, Banteng Buffalo, and various birds.