

Monitoring wildlife with camera traps at a global scale: challenges and opportunities

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Smithsonian



Tropical Ecology Assessment and Monitoring (TEAM) Network







Ban Pot

Ban Phakpuak

Ban Nongleng

Ban Phade

Ban Naxon

TEAM Sites:

BCI

Bukit Barisan

Bwindi

Caxiuanã

Central Suriname

Cocha Cashu

Korup

Manaus

Nam Kading

Nouabalé-Ndoki

Pasoh

Ranomafana

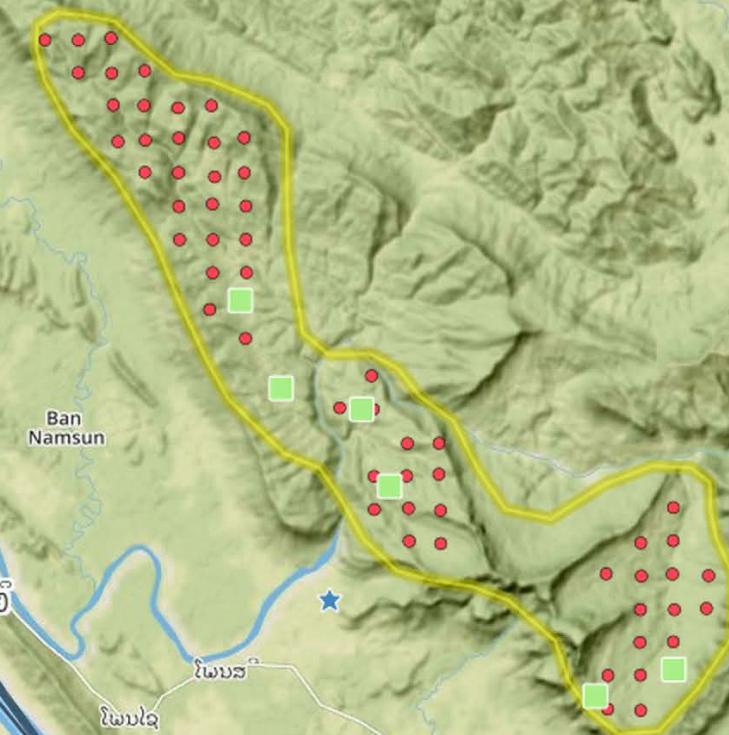
Udzungwa

Volcán Barva

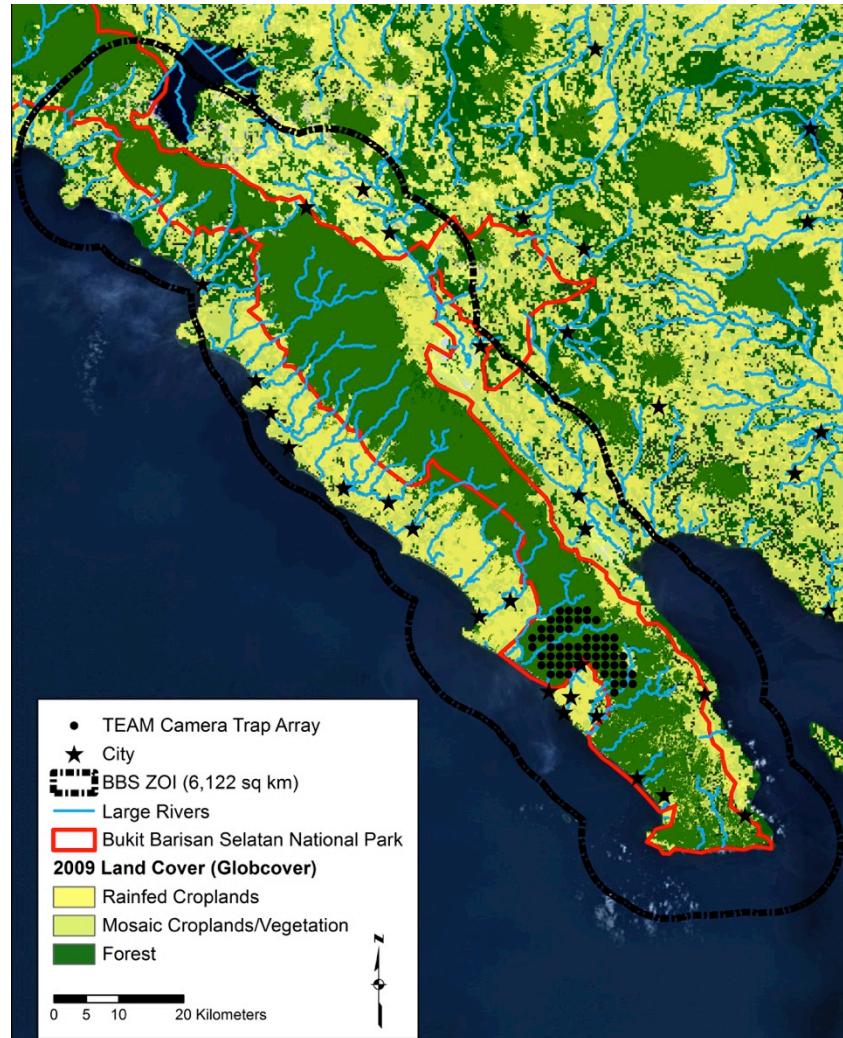
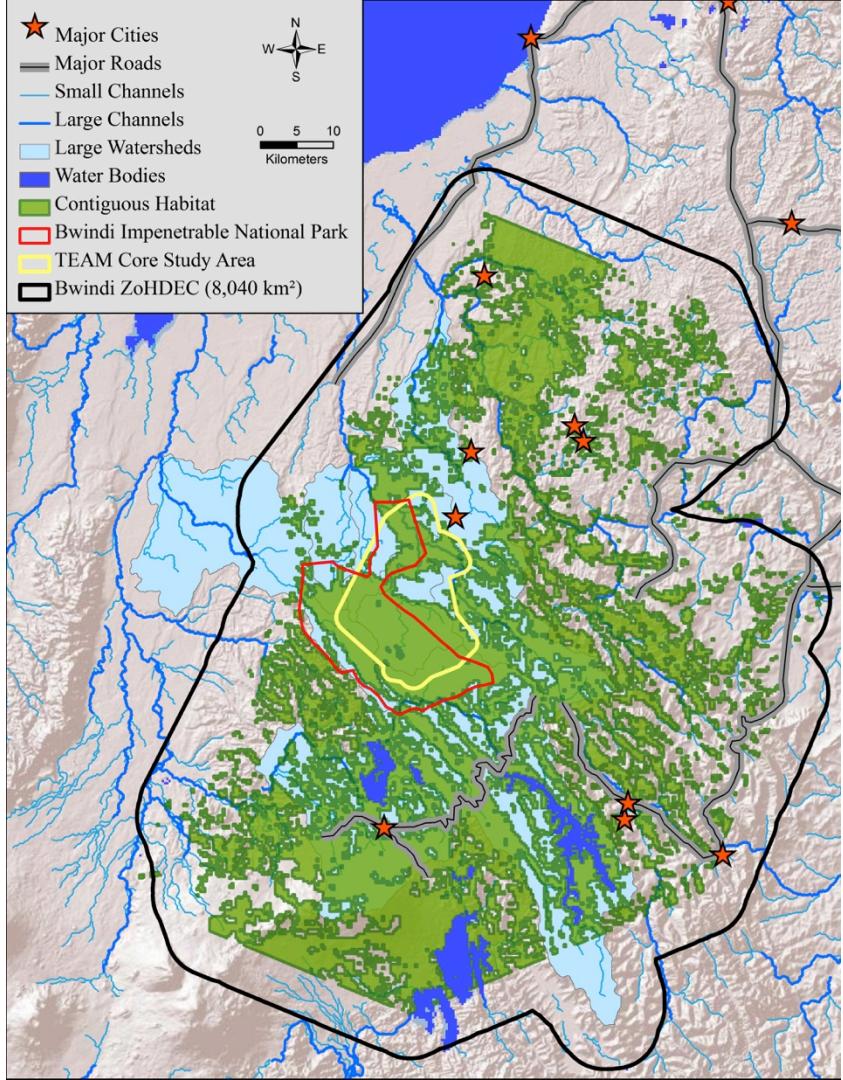
Yanachaga

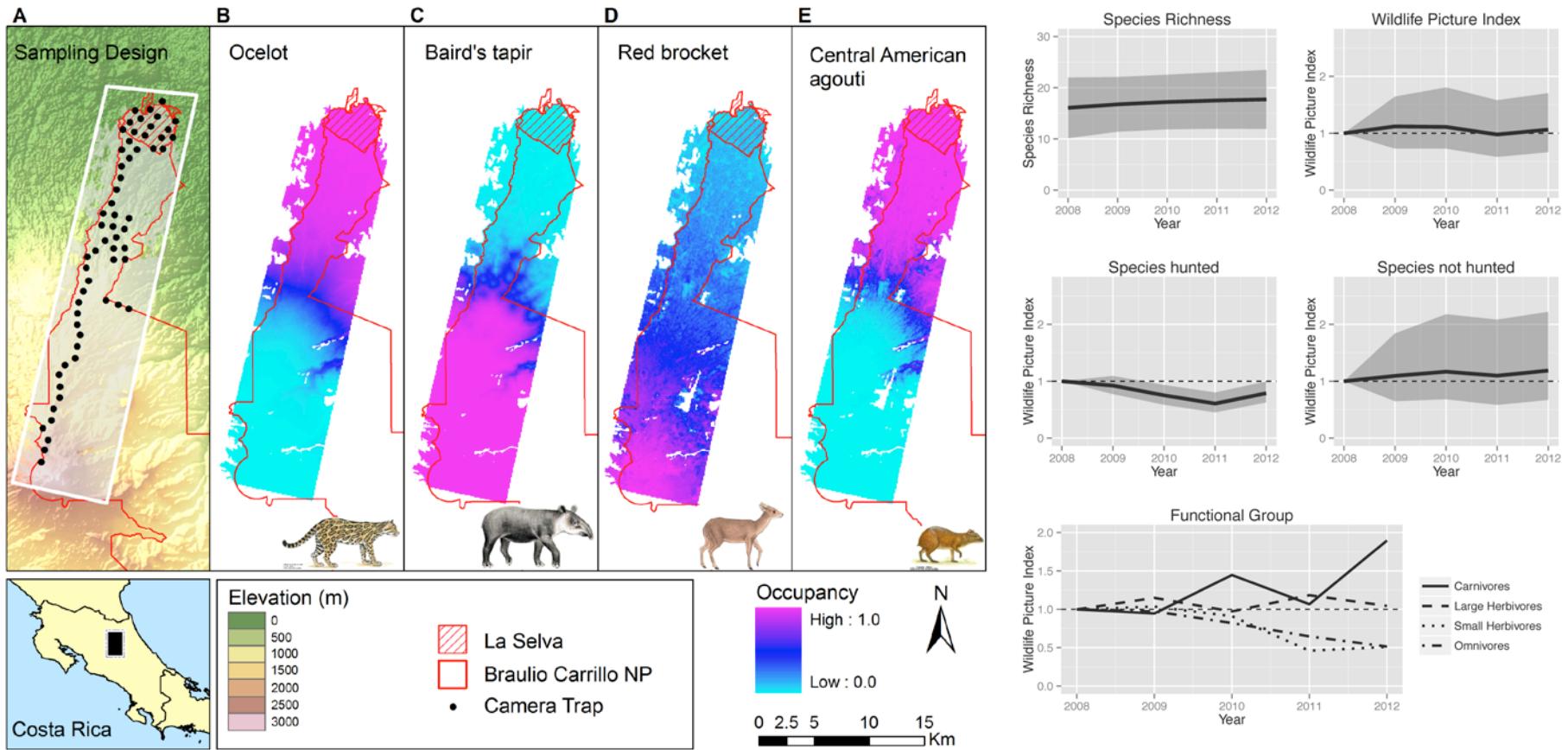
Yasuni

All TEAM Sites

**TEAM Sites Data:**● Camera Traps★ Climate Station■ Vegetation Plots■ Core Study Area (CSA)■ Zone of Influence (ZOI)**Links:**

- [Download GIS Data](#)
- [Learn More About TEAM!](#)





Quick stats

- Tropical forest network – 17 sites in 16 countries
- More than 2.5 M images, 4-8 years of data/site
- Half million images added every year
- Ground-dwelling mammals birds, ~300 species
- Software to quickly process field images
(OpenDesk TEAM)

Challenges

- Data management: camera trap data accumulates quickly

Challenges

- Turning camera trap data into useful indicators for policy makers

Challenges

- Sustainable funding: everybody needs data but nobody wants to fund 'just monitoring'

Opportunities

- Standardized, cost-effective and verifiable
 - \$30-40K per year/PA
 - Camera traps are getting cheaper
 - Images allow for easy verification

Opportunities

- Available indicator (Wildlife Picture Index) can be calculated through a specialized analytics system (WPI AS). WPI can be easily aggregated/disaggregated starting at the species level

Opportunities

- Methods and analyses are scalable to the level of national protected area networks or other relevant national and regional networks

Opportunities

- Represent some key Essential Biodiversity Variables
 - species distribution
 - population abundance
 - taxonomic diversity trends.

Opportunities

- Many countries (in particular tropical) need monitoring systems for wildlife and not sure where to start

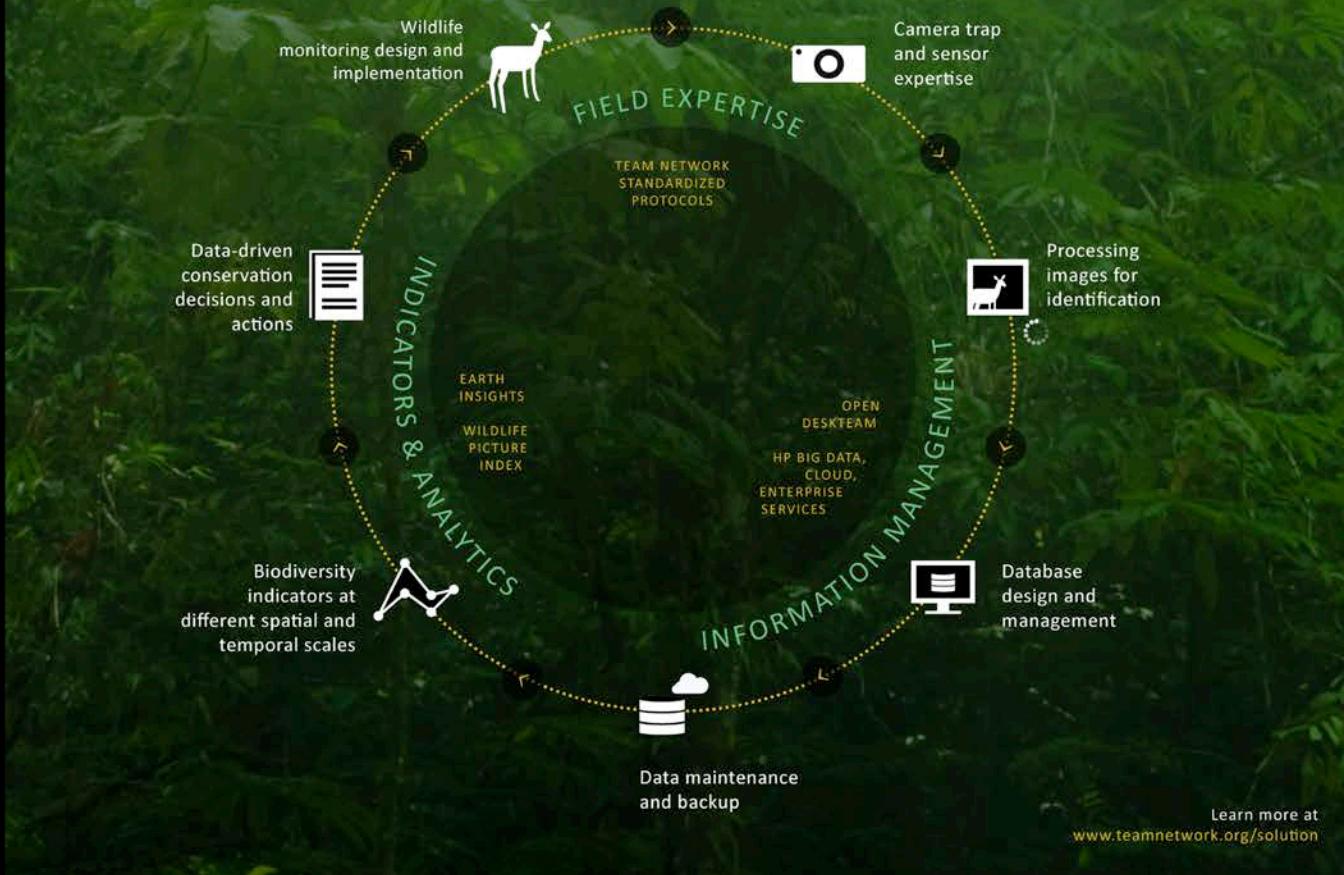
Opportunities

- Images of animals are a key asset for communication and education at local, regional and national levels

Opportunities

- Protected area effectiveness indicators (e.g. METT scores) need more quantitative ways to assess biodiversity outcomes

A comprehensive biodiversity monitoring solution to improve protected area effectiveness



Wildlife Picture Index Analytics System

Explore WPI

Year Range Selection

2007-2014

Site Selection

1 Selected

Save selection

Reset selection

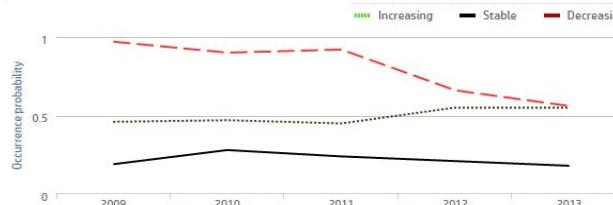
Species Group Selection

1 Selected

Global WPI > Species Trend

Click on navigation menu above to go back to WPI

Species Trend for Bukit Barisan

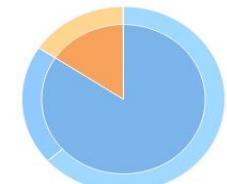


Hystrix Brachyura	Tapirus Indicus	Sus Scrofa	Lutra Lutra	Paradoxurus Hermaproditus
Tupaia Tana	Prionailurus Bengalensis	Muntiacus Muntjak	Muntiacus Montanus	
Prionodon Linsang	Lariscus Isabellinus	Macaca Fasciularis	Cuon Alpinus	Arctictis Binturong
Panthera Tigris	Argusianus Argus	Rusa Unicolor	Elephas Maximus	Pardofelis Marmorata
Rollulus Rouloul	Tragulus Javanicus	Cynogale Bennettii	Tragulus Kanchil	
Pardofelis Temminckii	Chalcomitrus Indica	Paguma Larvata	Macaca Nemestrina	
Hemipagus Derbianus	Manis Javanica	Tragulus Napu	Echinosorex Gymnurus	
Harpestes Brachyurus	Gallus Gallus	Gallus Gallus	Helarctos Malayanus	Neofelis Nebulosa
Trichys Fasciatus				

Impact Analysis

Macaca Nemestrina

Summary of Impacts



Impact Analysis approach
Colonization/rainfall
Human Presence
Colonization/people
Forest Edge
Edge/basecline



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Camera Trap Data Network

The Camera Trap Data Network is an archive for camera trap images and metadata for use by researchers and conservationists trying to discover and save wildlife communities around the world. Camera trappers can use this network to ensure their data properly archived, protected from loss, and available for global studies (at a range of access levels). Biodiversity data analysts can use the network to ask new scientific questions and track population trends. Animal lovers can enjoy millions of unique pictures.



“Data driven Wildlife Monitoring and Management”

How Wildlife Monitoring Works ?



Upload Camera Trap Data

Share your data with collaborators around the world by synchronizing with the network's data standard...



Compute Analysis

Camera Trap Images and survey data are analyzed and computed for various analytics on new data arrival from the parks and ...



View Camera Trap Data

View, analyze and download globally shared camera trap data by individuals and organizations

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