

Applying Geospatial Technologies for Conservation and Development

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Director of Conservation Science

Africa Programs



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50 Years in Africa...

1960- Dr. Jane Goodall
began her research at
Gombe, Tanzania

1977 – Founded the Jane
Goodall Institute



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JGI Priority Countries (11)



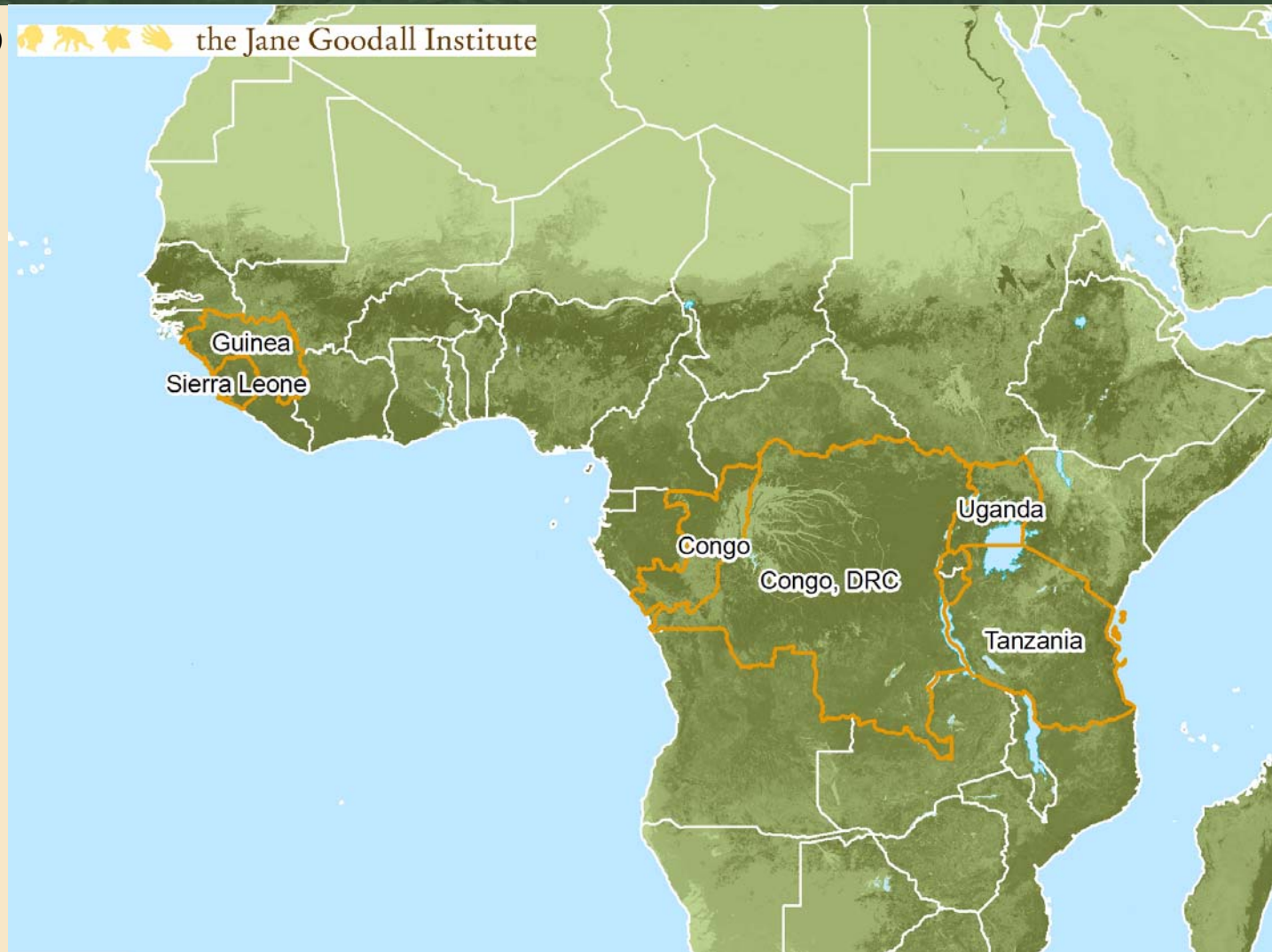
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Present

- Tanzania
- Uganda
- The Rep. of Congo
- The Democratic Republic of the Congo
- Guinea
- Sierra Leone

Potential

- Liberia
- Gabon
- Cameroon
- Rwanda
- Burundi



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Chimpanzees in Crisis



- Occur only in Africa
- Have suffered dramatic losses
 - Perhaps 2,000,000 in 1900
 - Currently fewer than 200,000
- Most live in countries such as DRC and Rep. of Congo that are plagued by war, and have difficulty protecting parks effectively
- Chimpanzees face numerous threats





Goal

- To Preserve Great Apes and their Habitats, with an Emphasis on Chimpanzees

Strategic Objectives

- The Integration of Community-Centered Conservation and Socio-Economic Development in Selected Great Ape Landscapes
- Advance the Global Understanding of Great Apes Through Research
- Enhance the Capacity of Sanctuaries to Achieve Excellence in Chimpanzee Care & Contribute to Conservation Education
- Increase Public Awareness & Education on the Plight of Great Apes



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**Working across Government,
NGO, Academia/Research, and
Private sectors bridging
geospatial information and tools
with the decision-makers**

- Project scale/local community focus
- Problem solving focus
- Mapping and monitoring of chimpanzee habitats and threats
- **Engaging local communities and governments to better manage natural resources**
- Engaging global communities to support chimpanzee conservation and human livelihood efforts in Africa

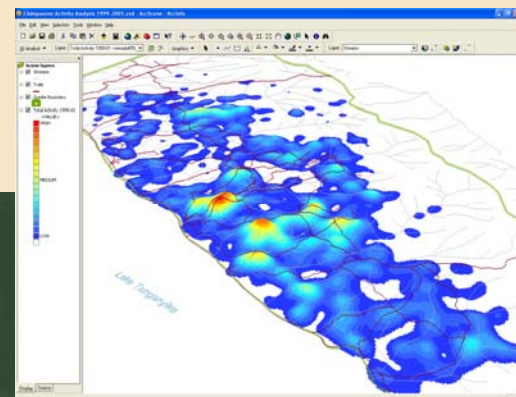
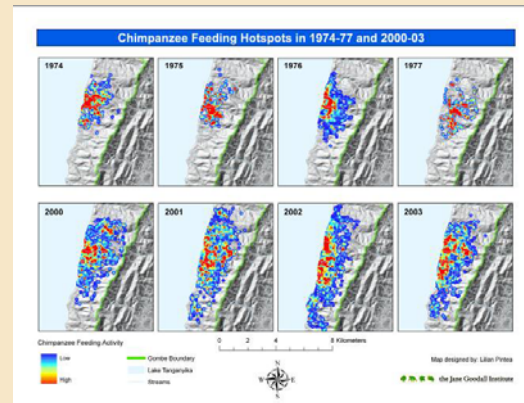
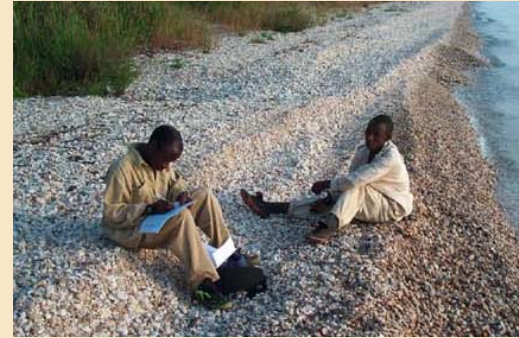


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*Mapping expert knowledge at the
Greater Mahale Conservation
Action Planning workshop in
Mpanda, Tanzania, May 2008*

Gombe Long-Term Study

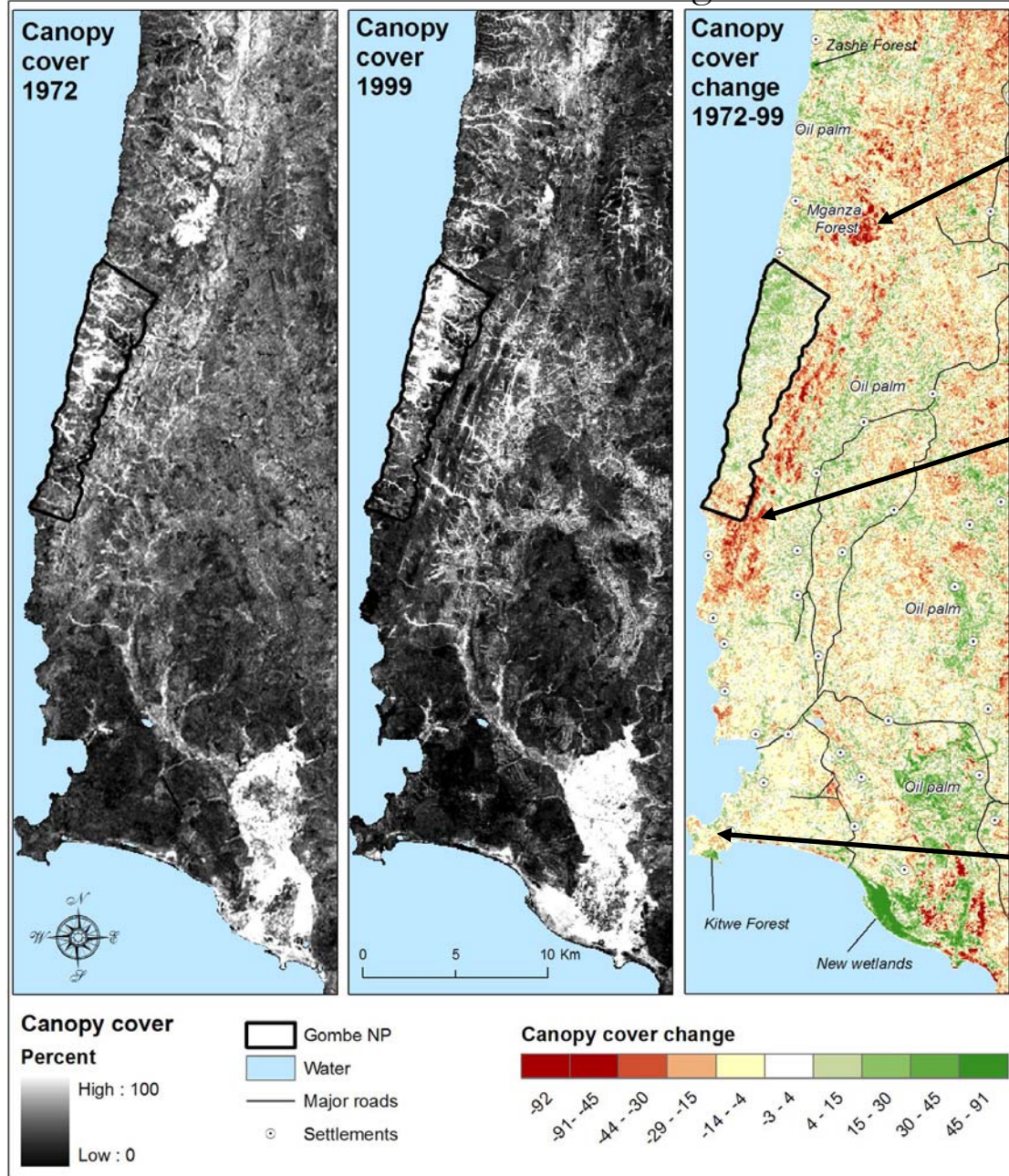
- One of the longest ongoing animal behavior study sites in the world
- 400,000 chimpanzee observations between 1974-2005 digitized into a GIS database
- Ongoing research on paternity, genetic relatedness, inbreeding, populations genetics, reproductive physiology, aging, stress, disease and disease transmission, long-term ecological change using GIS/remote sensing, effect of ecology on behavior, cultural behavior.
- 35 Ph.D. theses, over 400 papers, and more than 30 books.

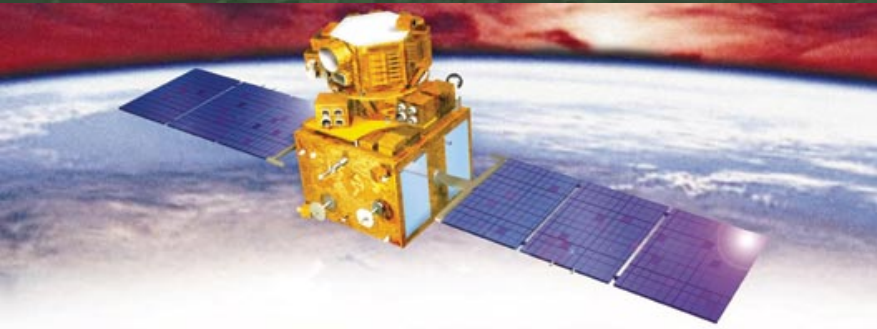


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Forest Monitoring

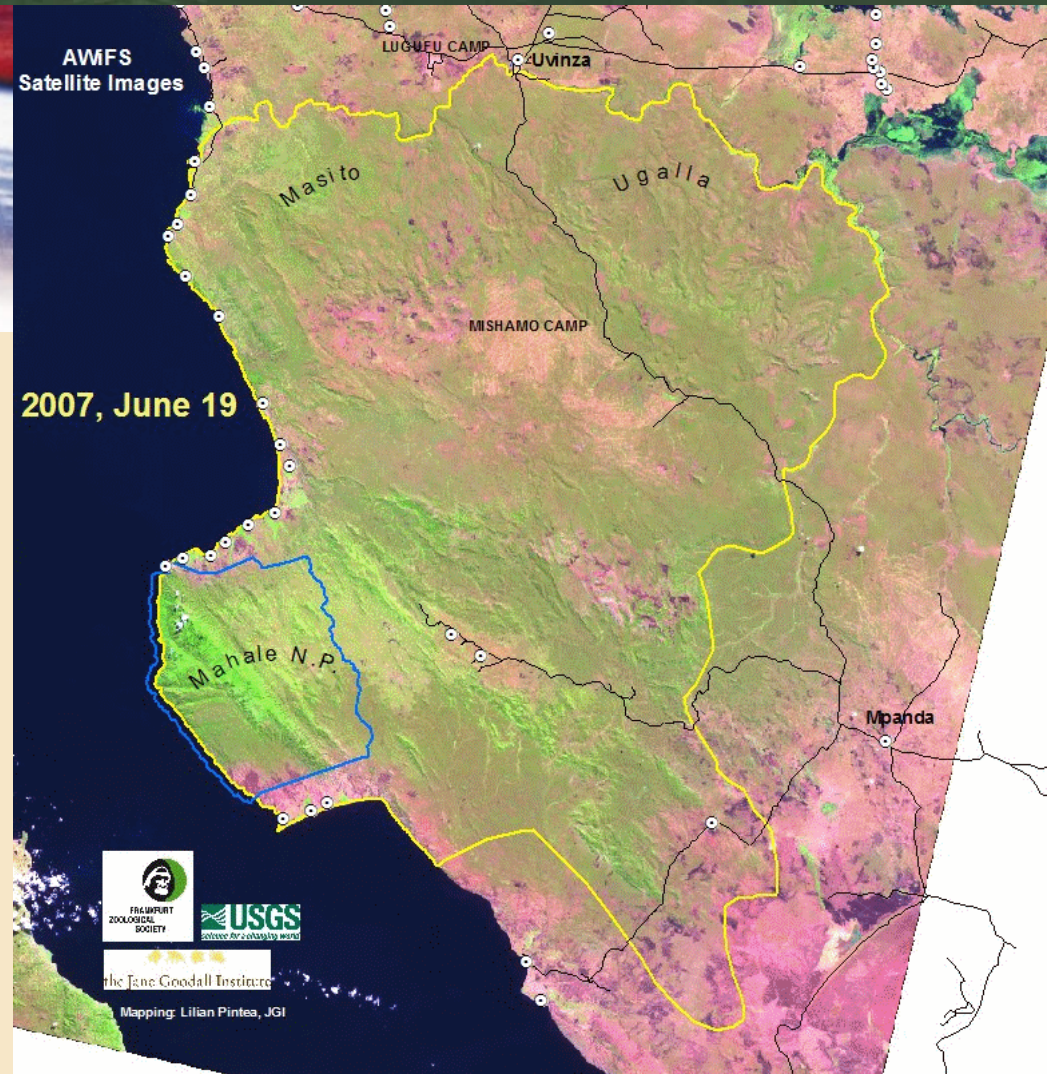
Landsat MSS & ETM+ NDVI differencing





Multi-sensor Approach

- The Advanced Wide Field Sensor (AWiFS)
- Swath: 740 km
- Temporal Resolution: 5 days
- Spatial Resolution: 56 meters



ABOVE-GROUND BIOMASS FOR MASITO-UGALLA ECOSYSTEM DERIVED FROM MODIS SATELLITE DATA



Biomass Mapping:
A. Baccini, N. Laporte,
S. J. Goetz, M. Sun,
H. Dong. (2008)
Woods Hole Research Center

Map developed:
Lilian Pintea
The Jane Goodall Institute

- Masito-Ugalla Ecosystem
- Roads
- Administrative Regions
- Lake
- Protected Areas (IUCN/WCMC)
- Forest reserves
- National Park

Biomass
mg/ha SD stretch

High : 341
Low : 0

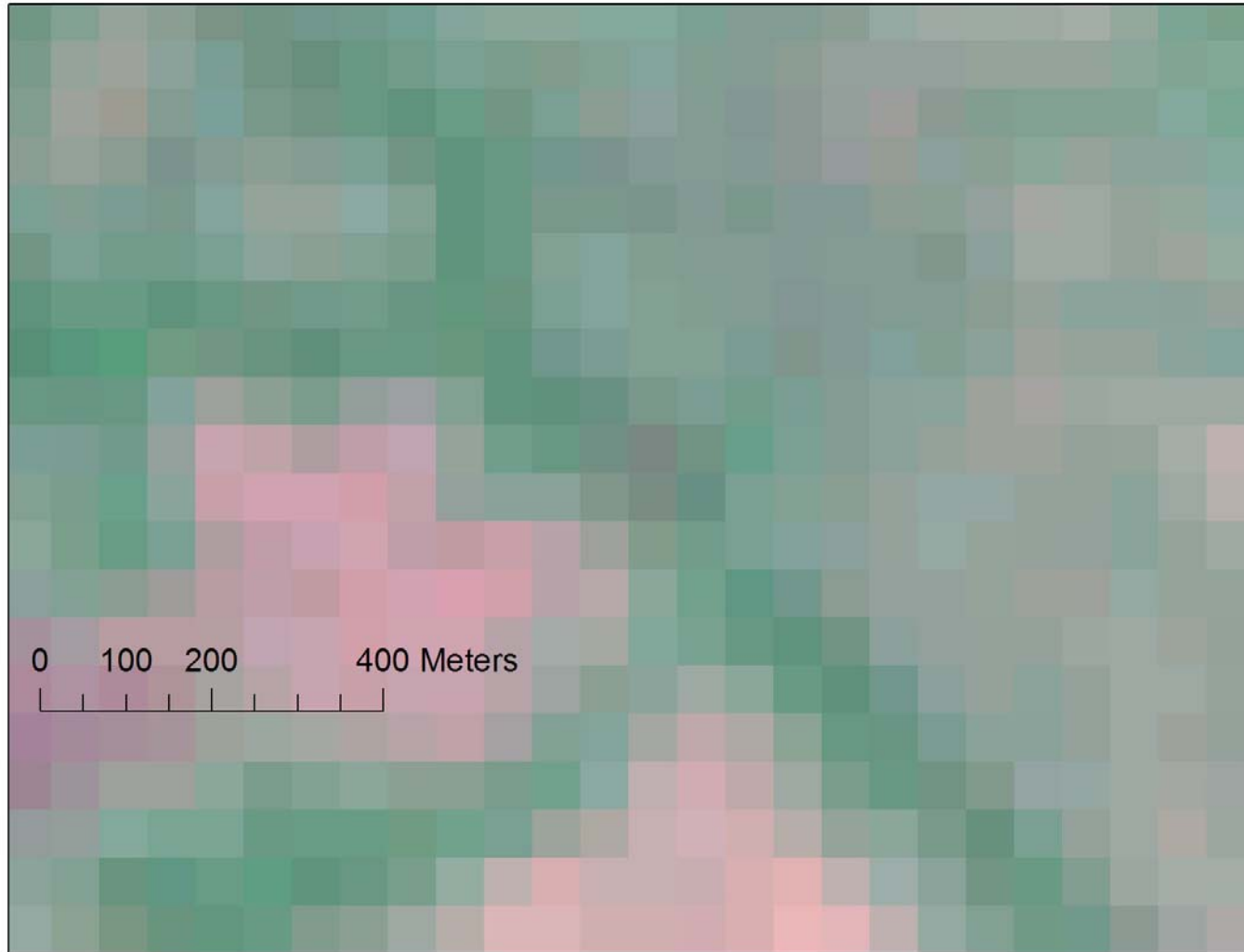
Settlements

- Urban
- Village


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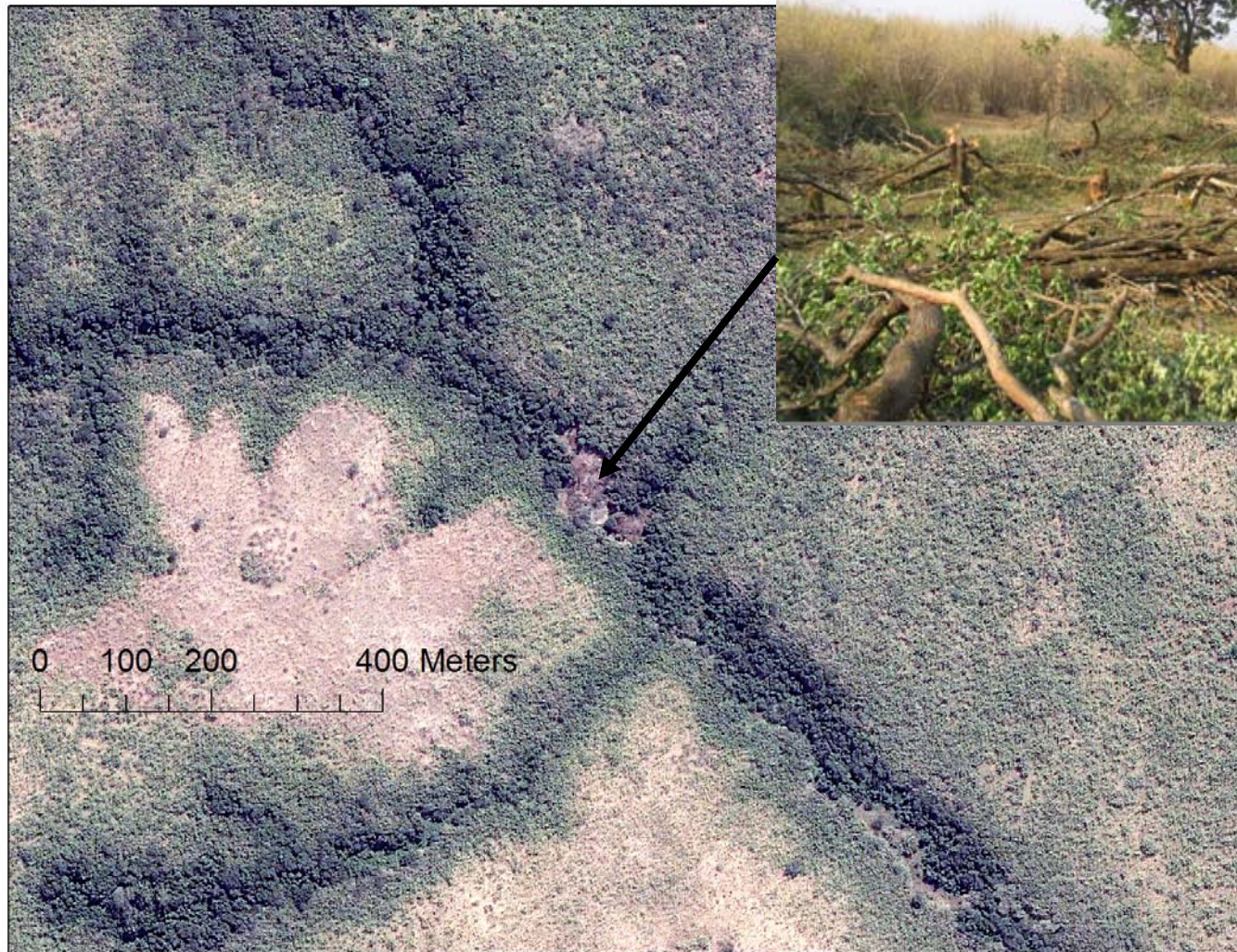
AWiFS
56-m



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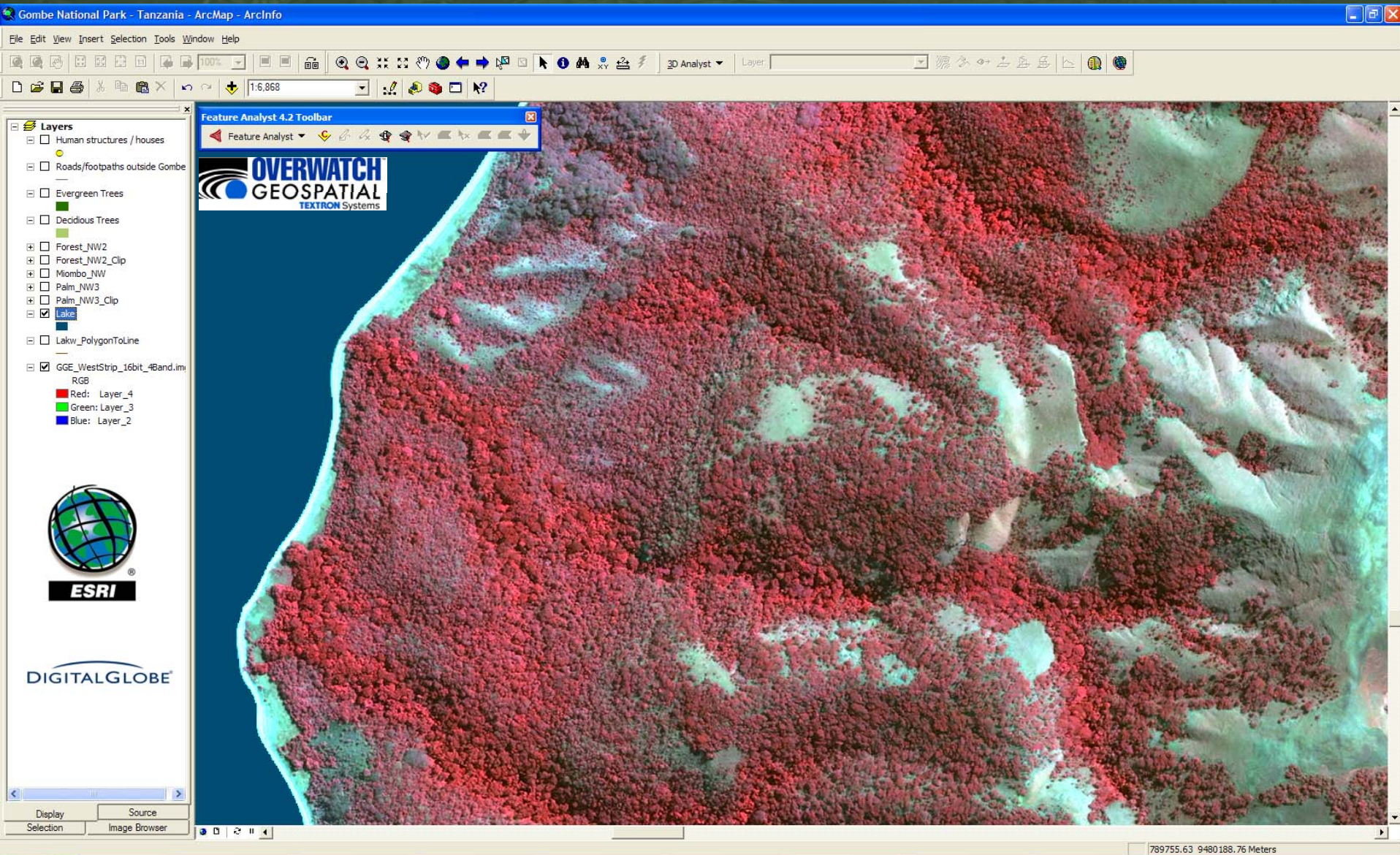
..high resolution imagery like QuickBird was need to assess the threat of conversion of riverine forests to agriculture

QuickBird
60-cm



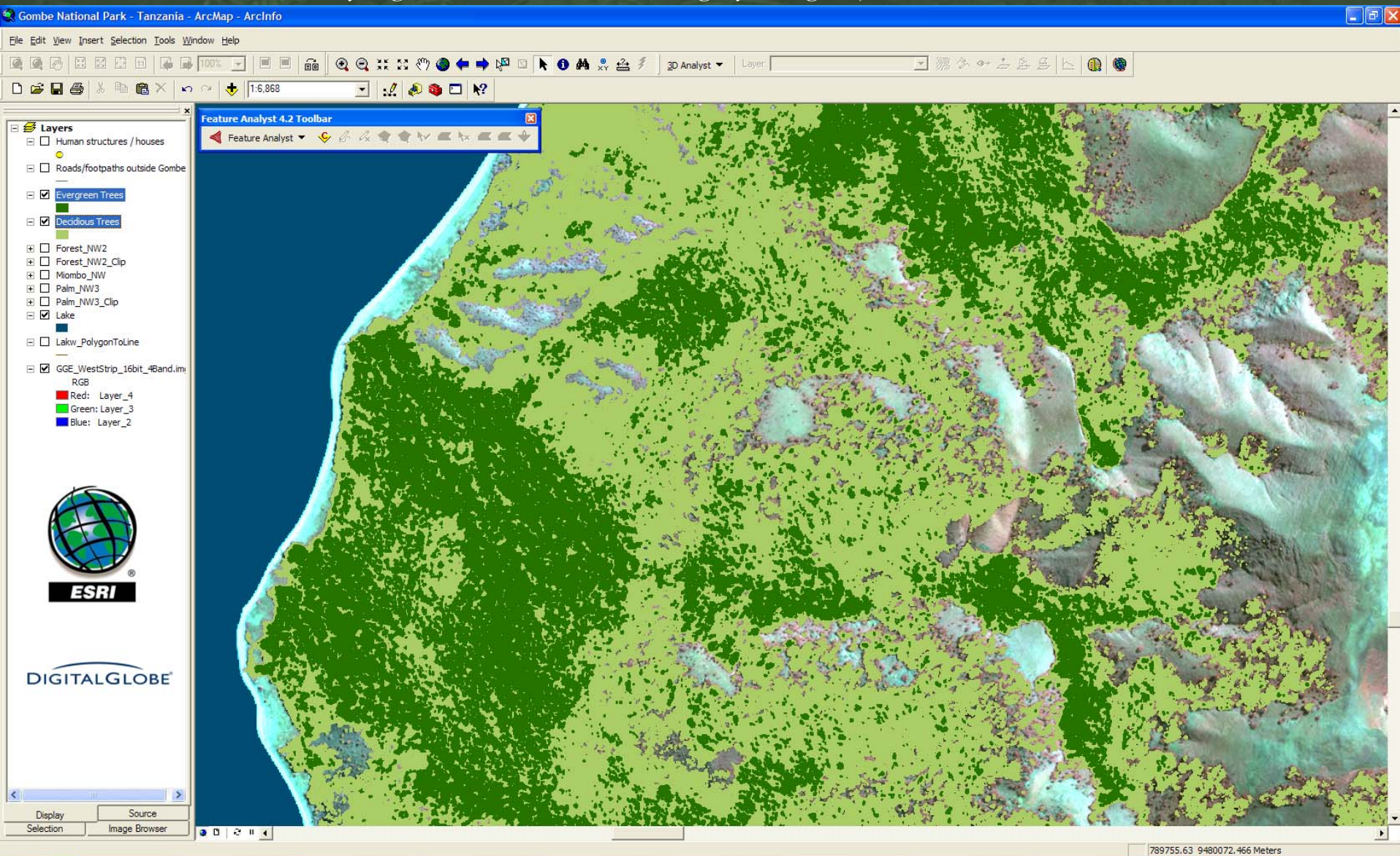
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Feature extraction from very high resolution satellite imagery using object based classification

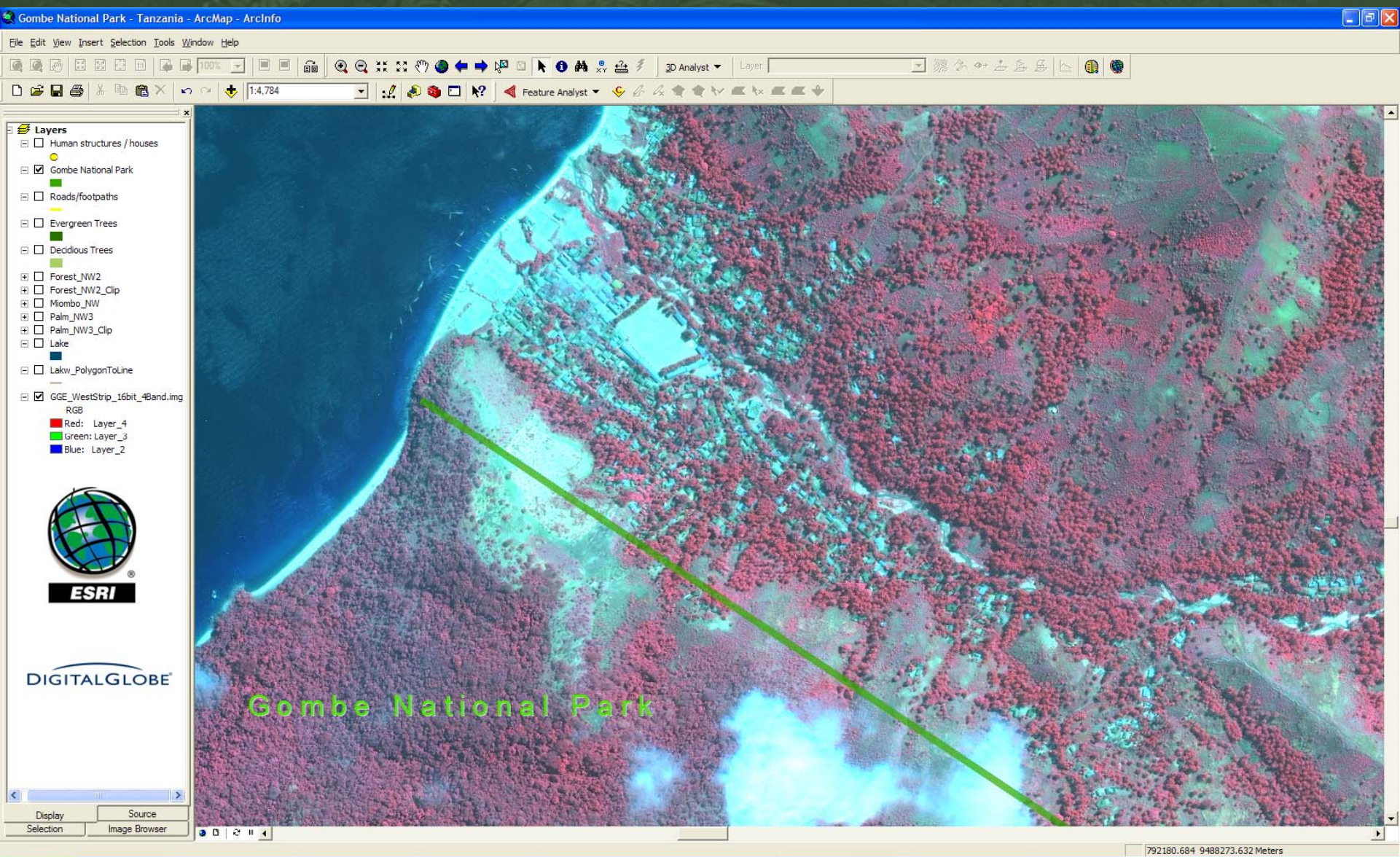


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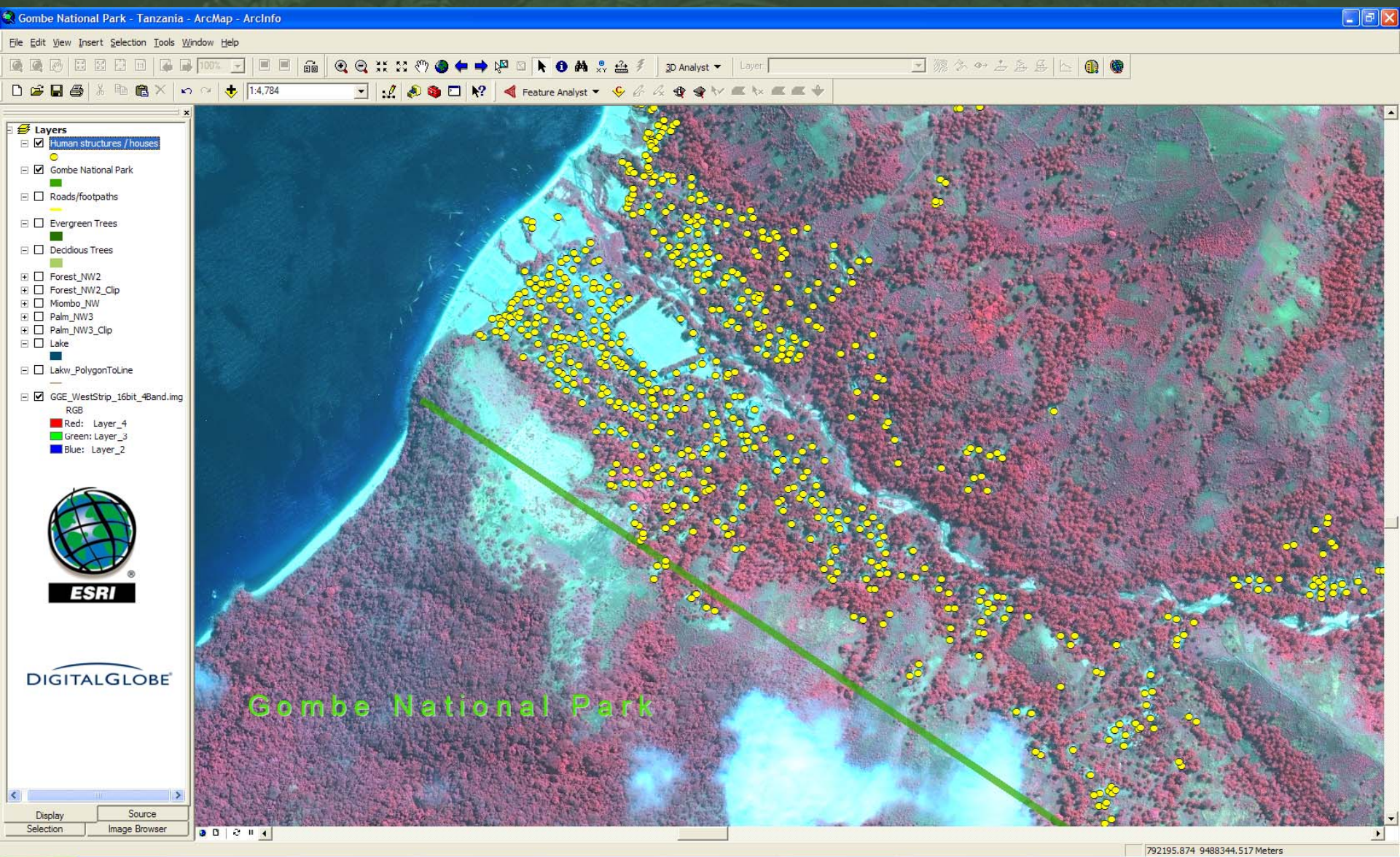
Feature extraction from very high resolution satellite imagery using object based classification



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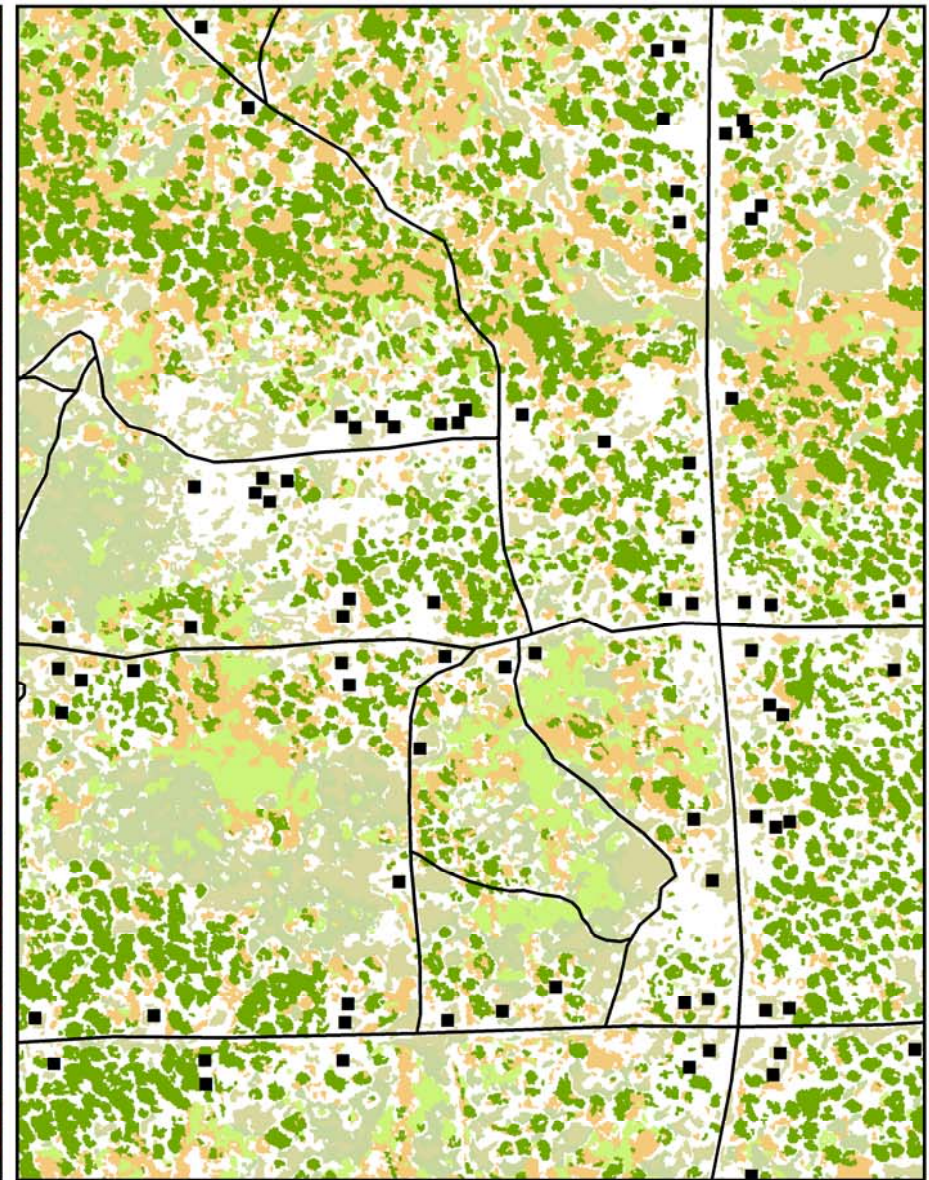


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Village Land Use Mapping in Greater Gombe Ecosystem, Tanzania from 61-cm QuickBird Satellite Imagery



Legend



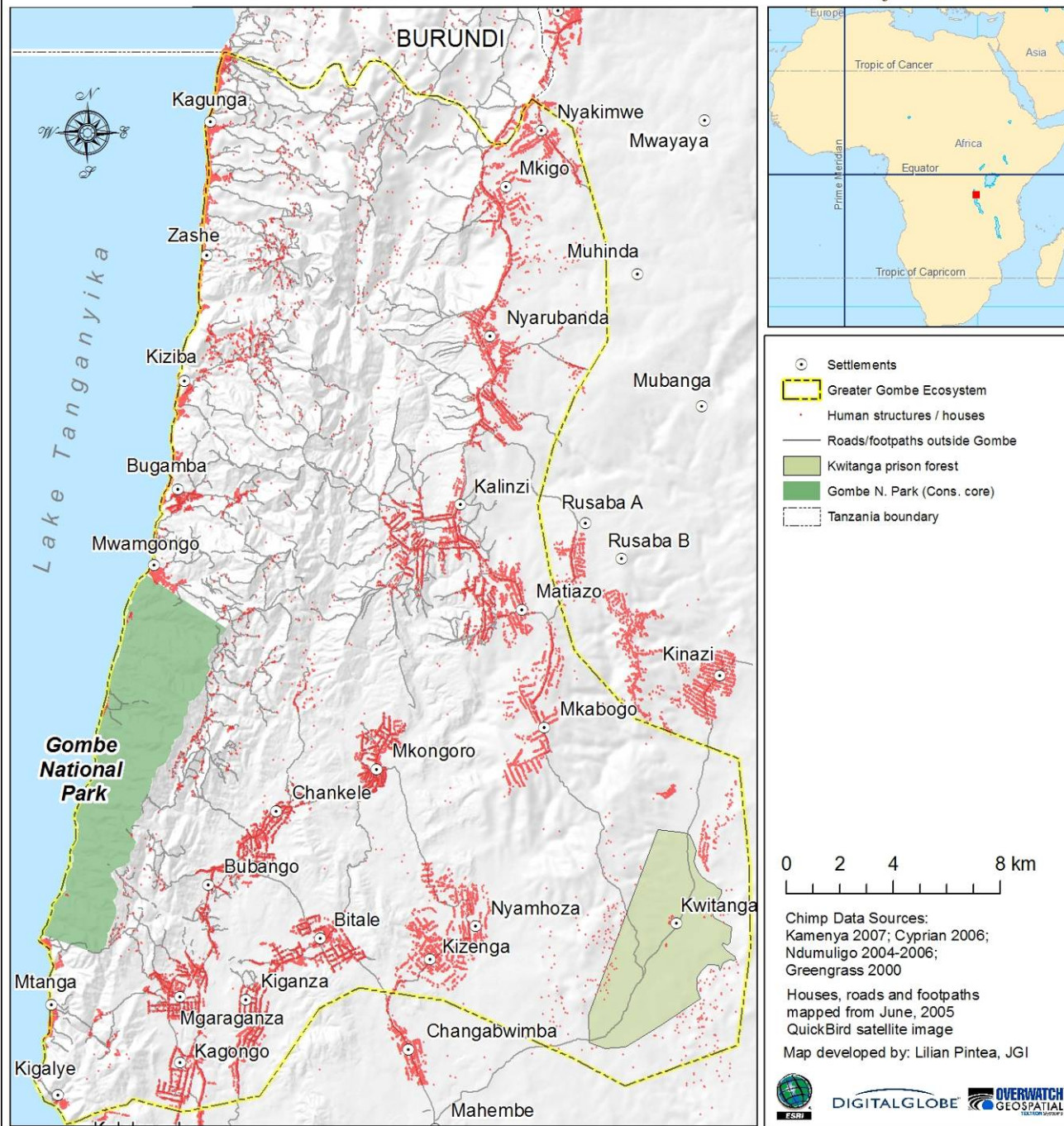
0 50 100 200 Meters

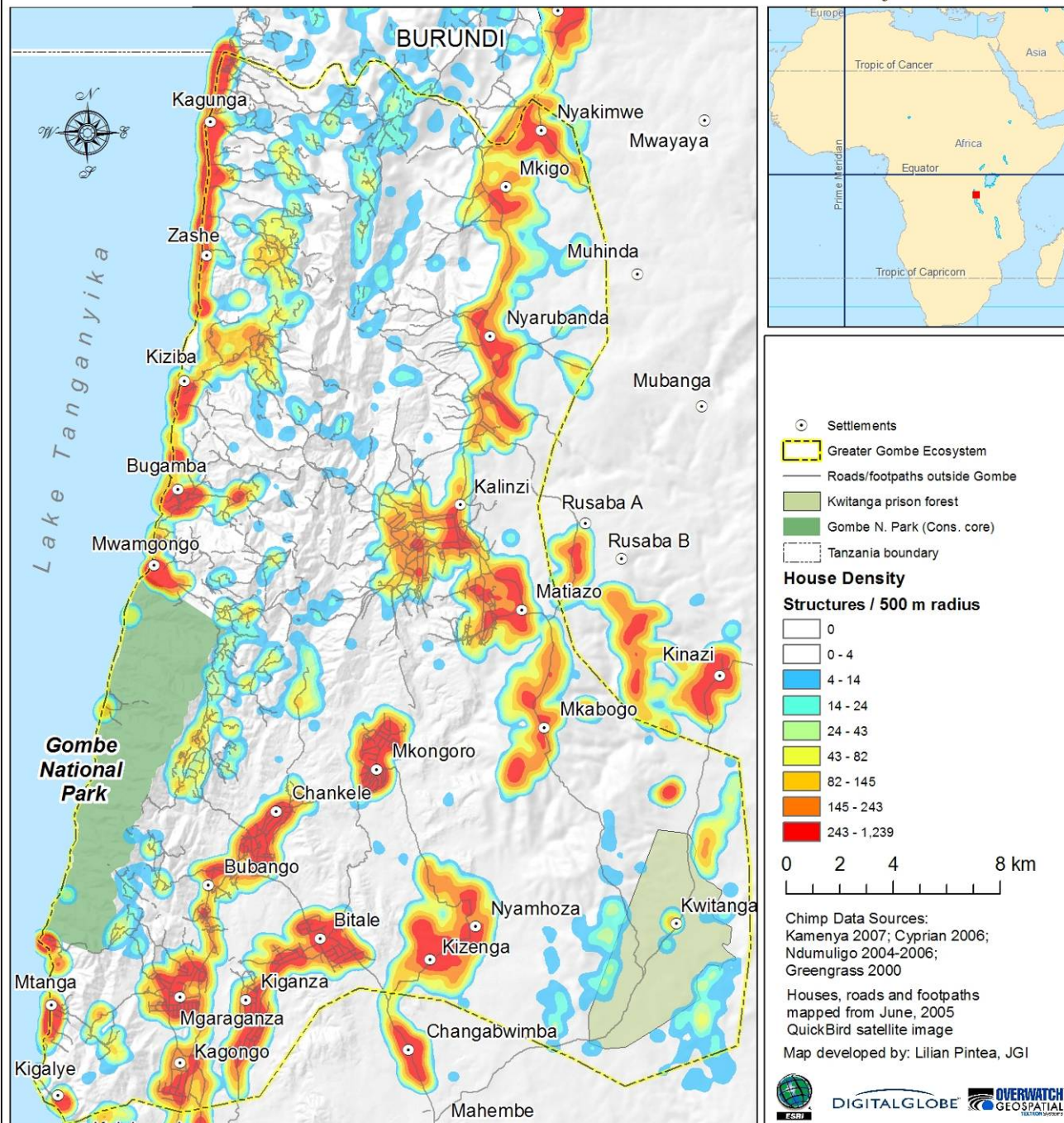


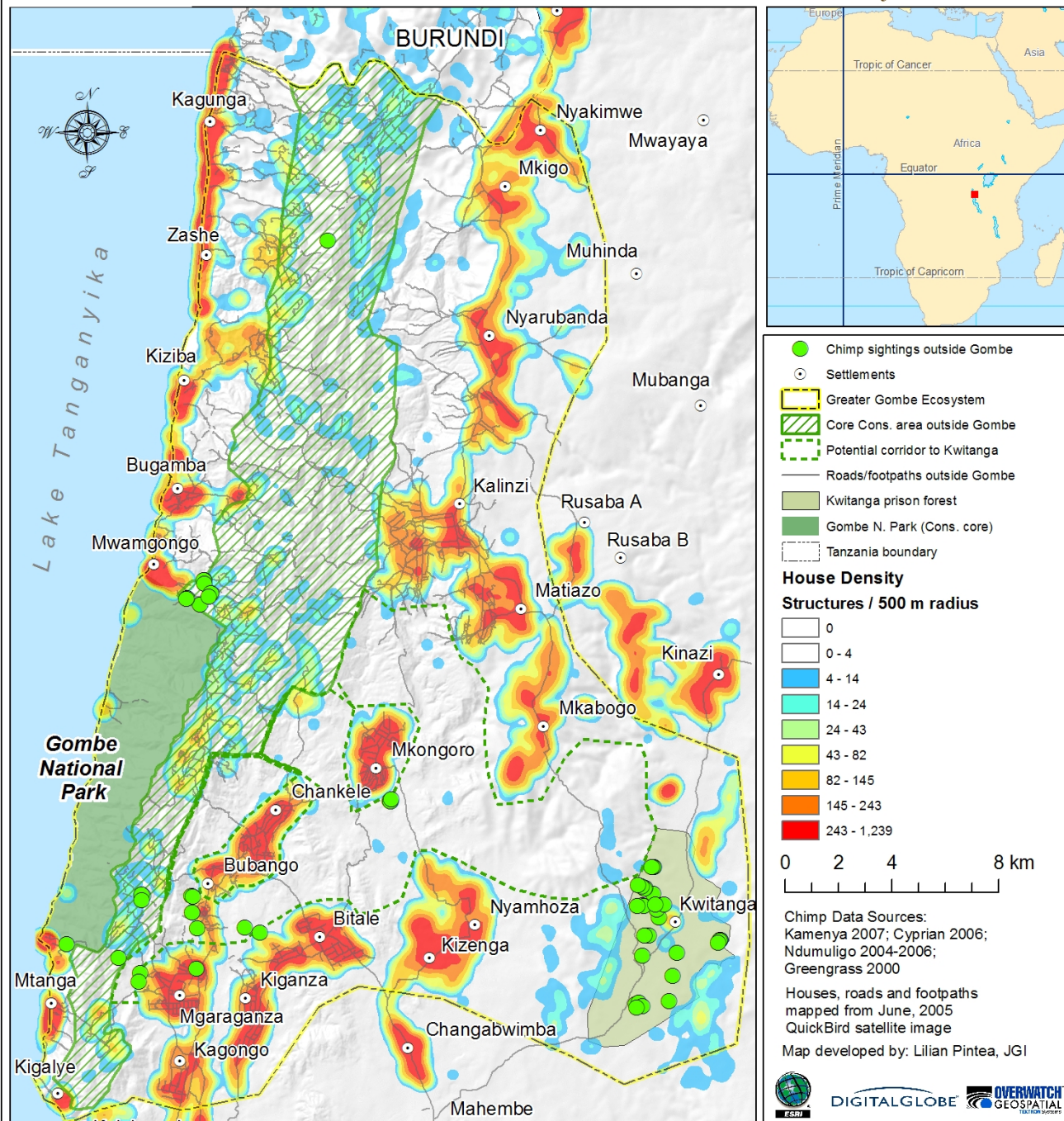
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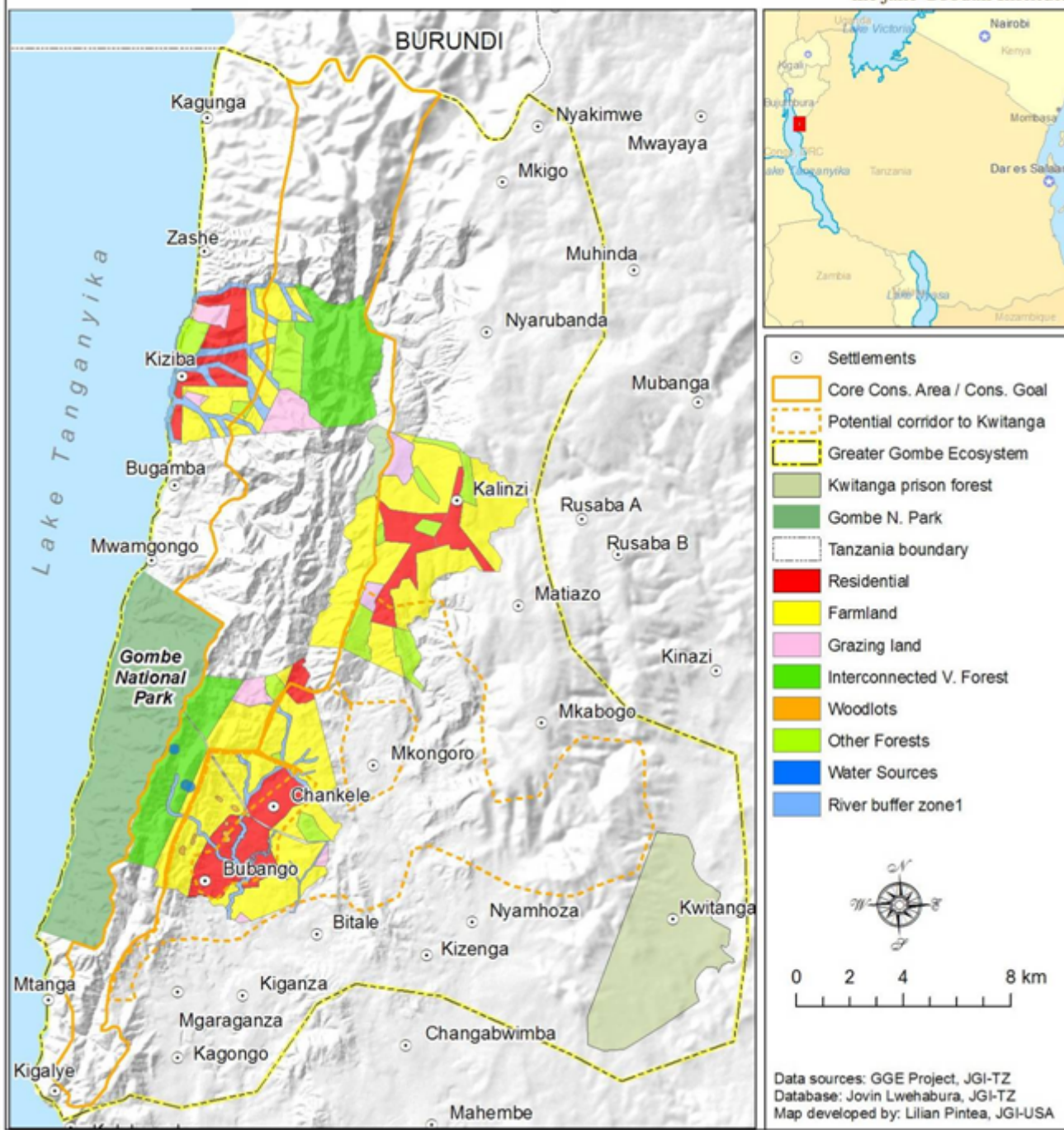


Native Communities Development Corporation









Participatory Mapping



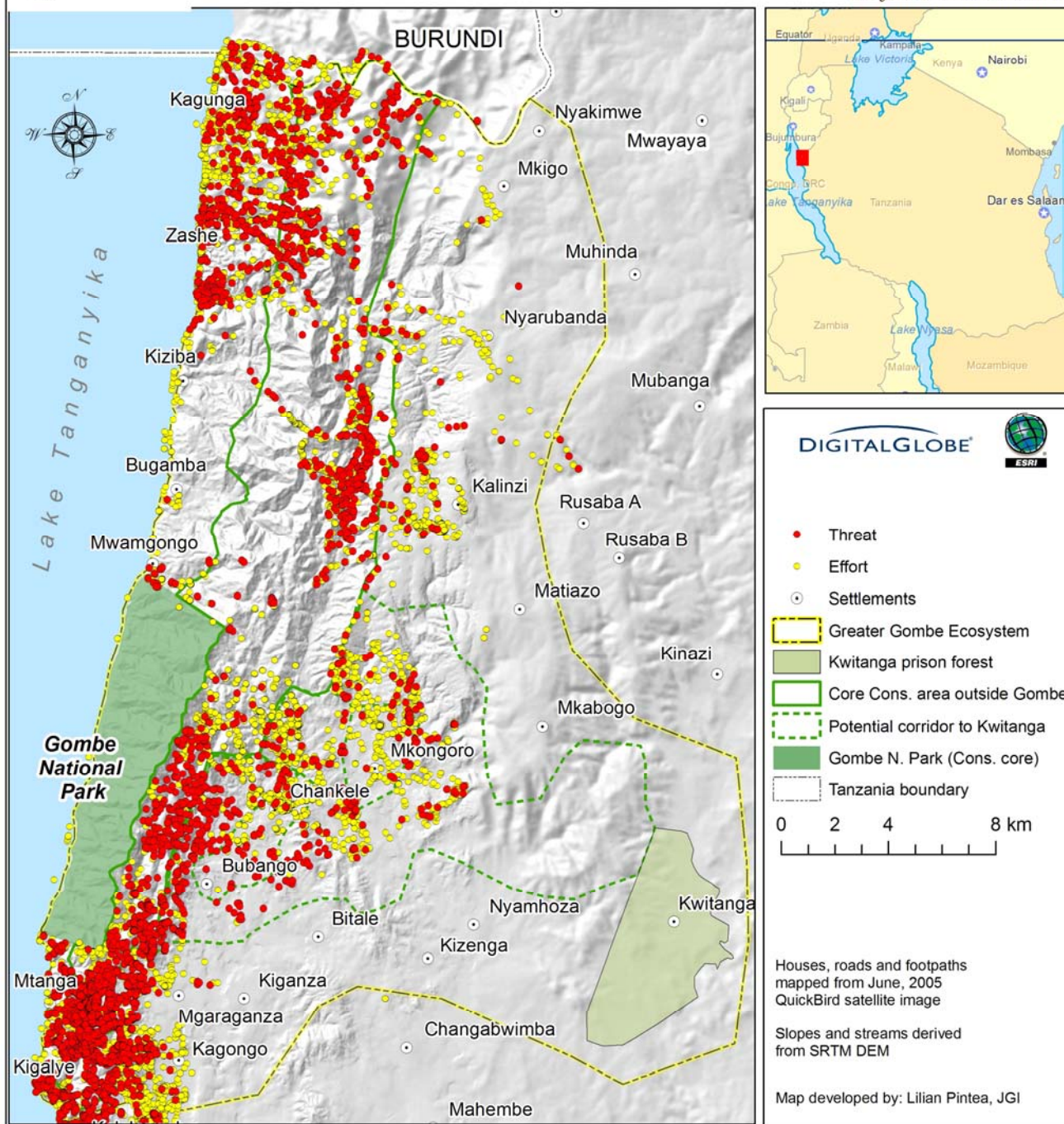
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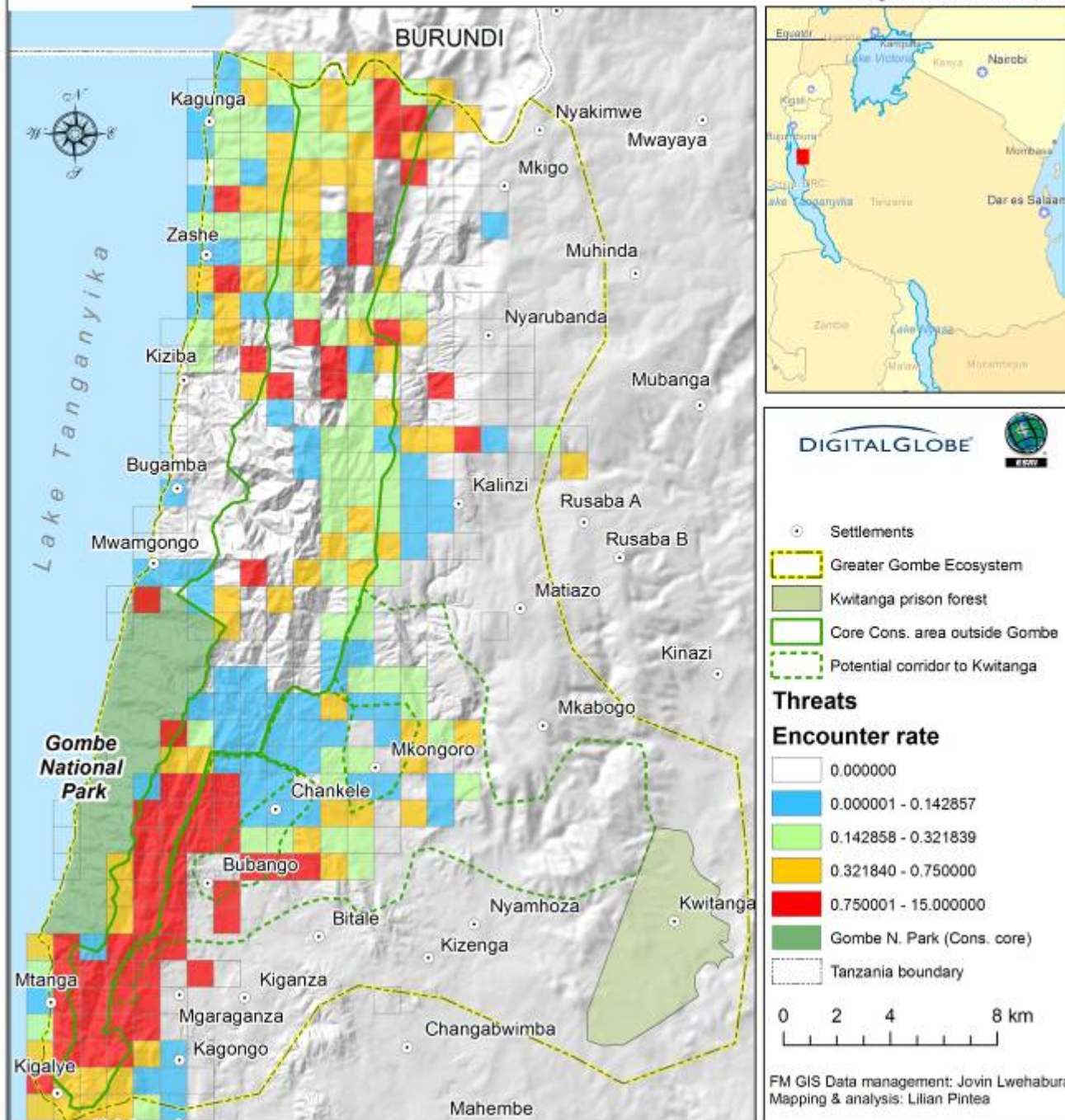


Village Forest Monitors



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2000

Gombe National Park



2005

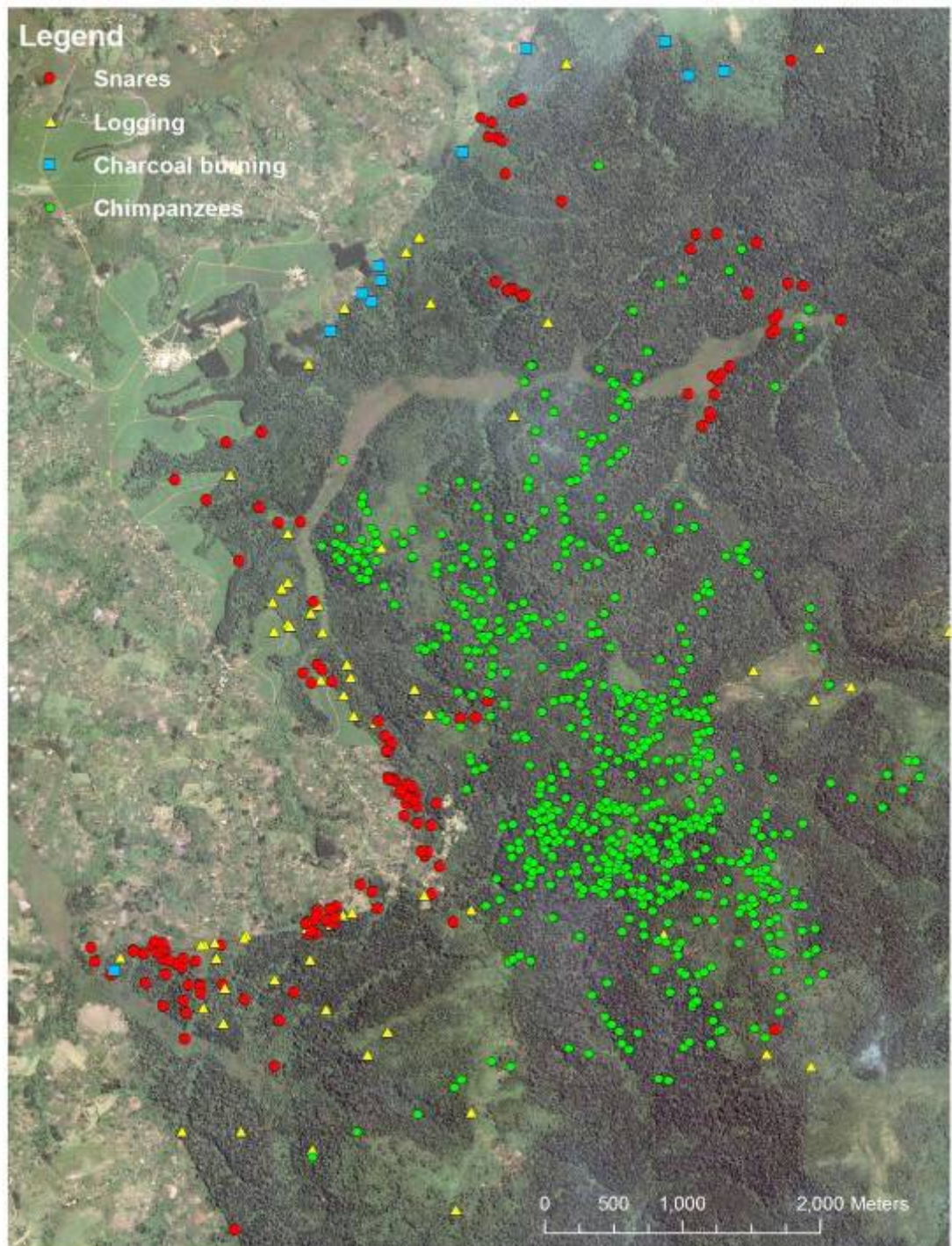
Gombe National Park



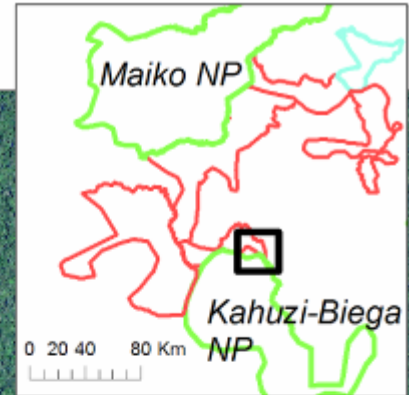
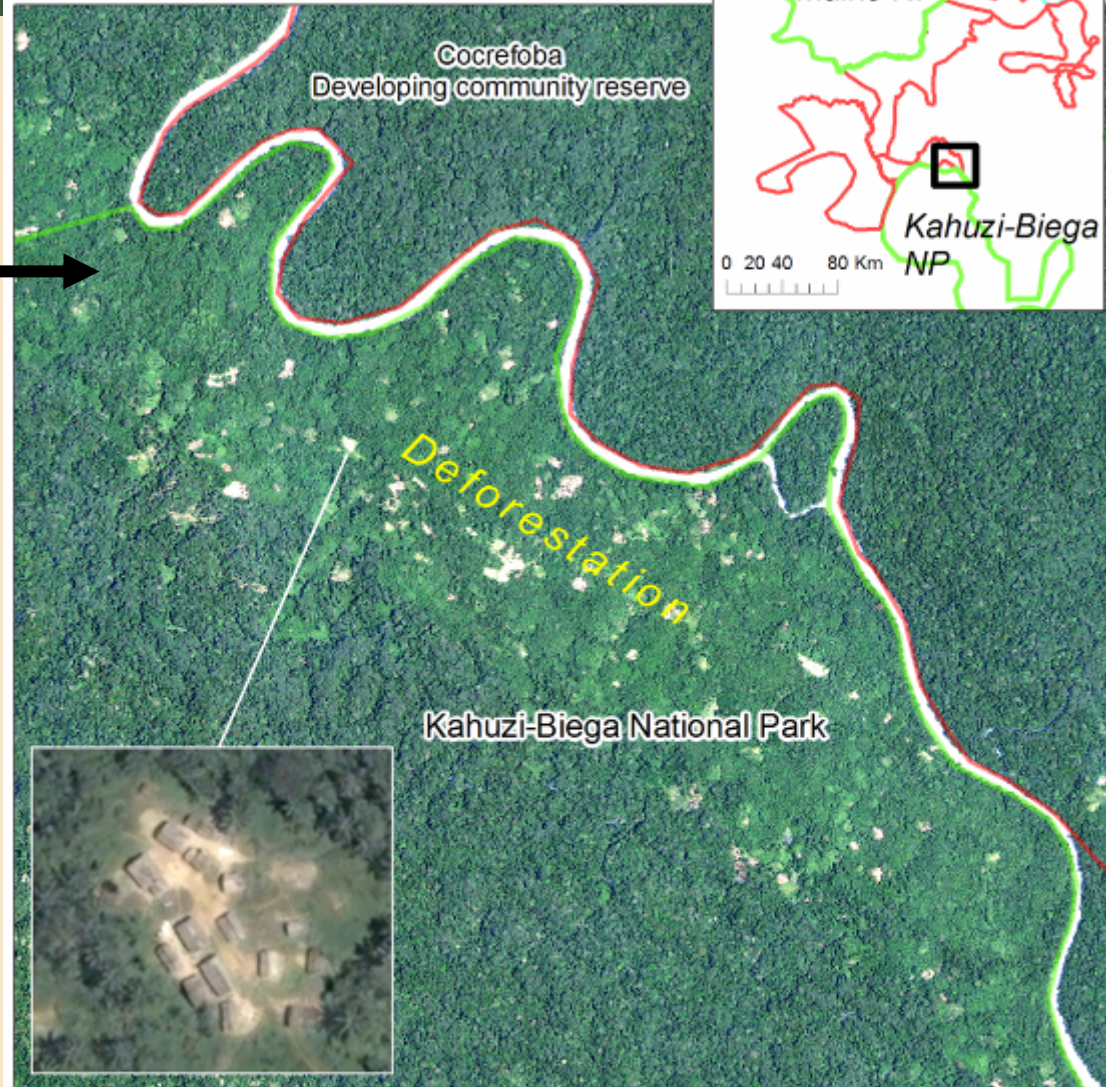
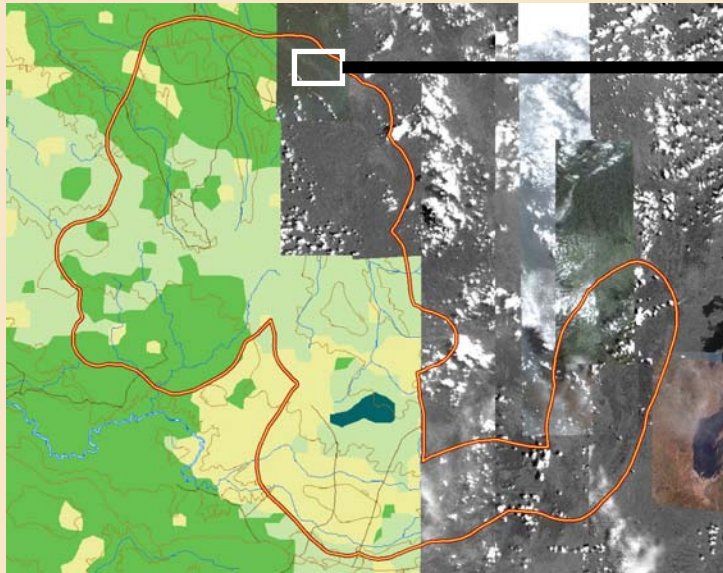
Snare Removal in Kibale National Park Uganda



Field assistant collecting GPS
location of a snare in Kibale





Graueri Landscape in DRC



Protected areas

TYPE

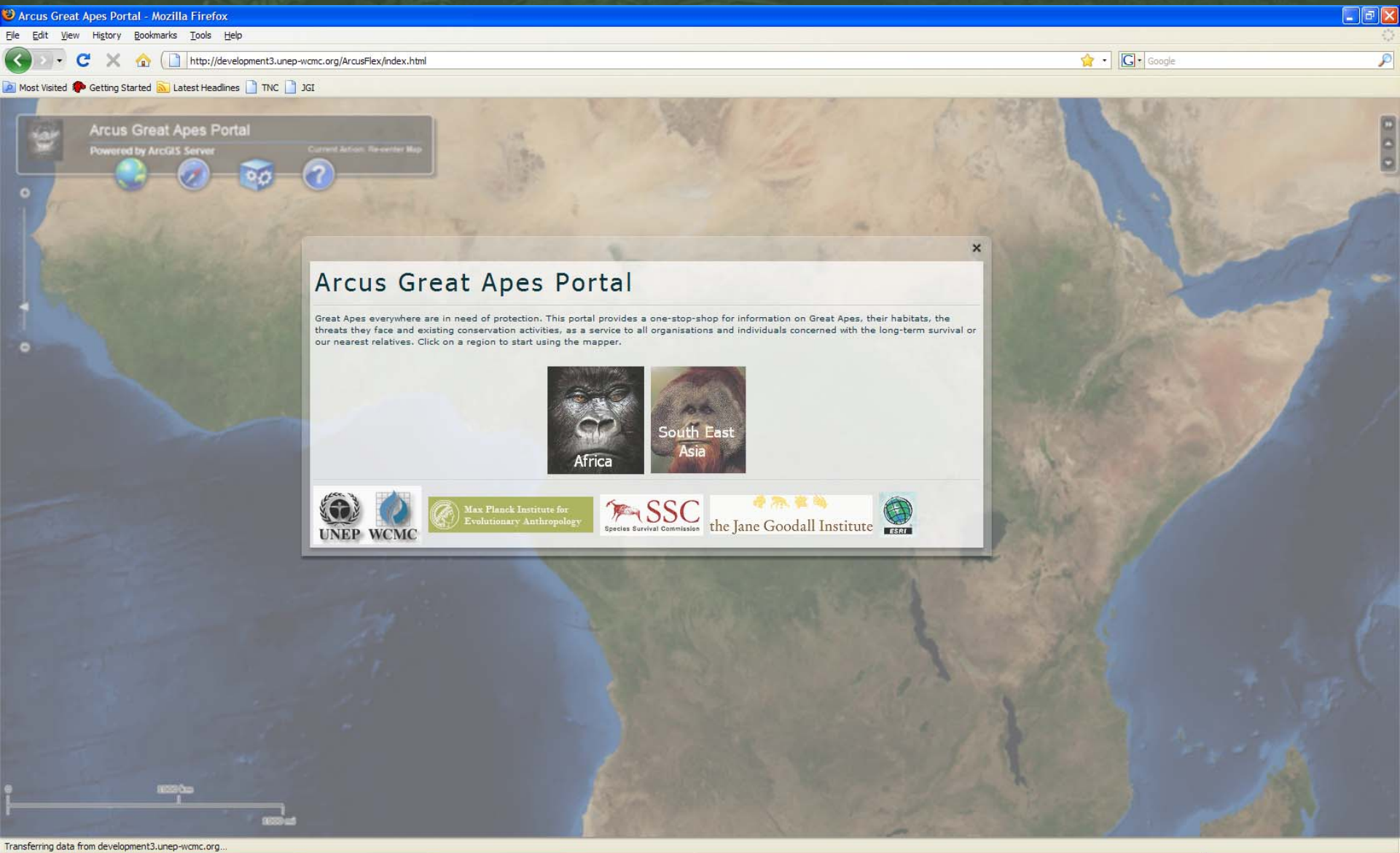
-  Community Reserve
-  Developing community reserve
-  National Park

0 250 500 1,000 Meters



Data sources:
Dian Fossey Gorilla Fund International
0.6 QuickBird satellite imagery -
DigitalGlobe
Map produced by Lilian Pintea, JGI





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GOMBE CHIMPANZEE BLOG



Monday, June 04, 2007

Welcome to the New Gombe Chimpanzee Blog

Longitude: **29.6224** Latitude: **-4.6723**

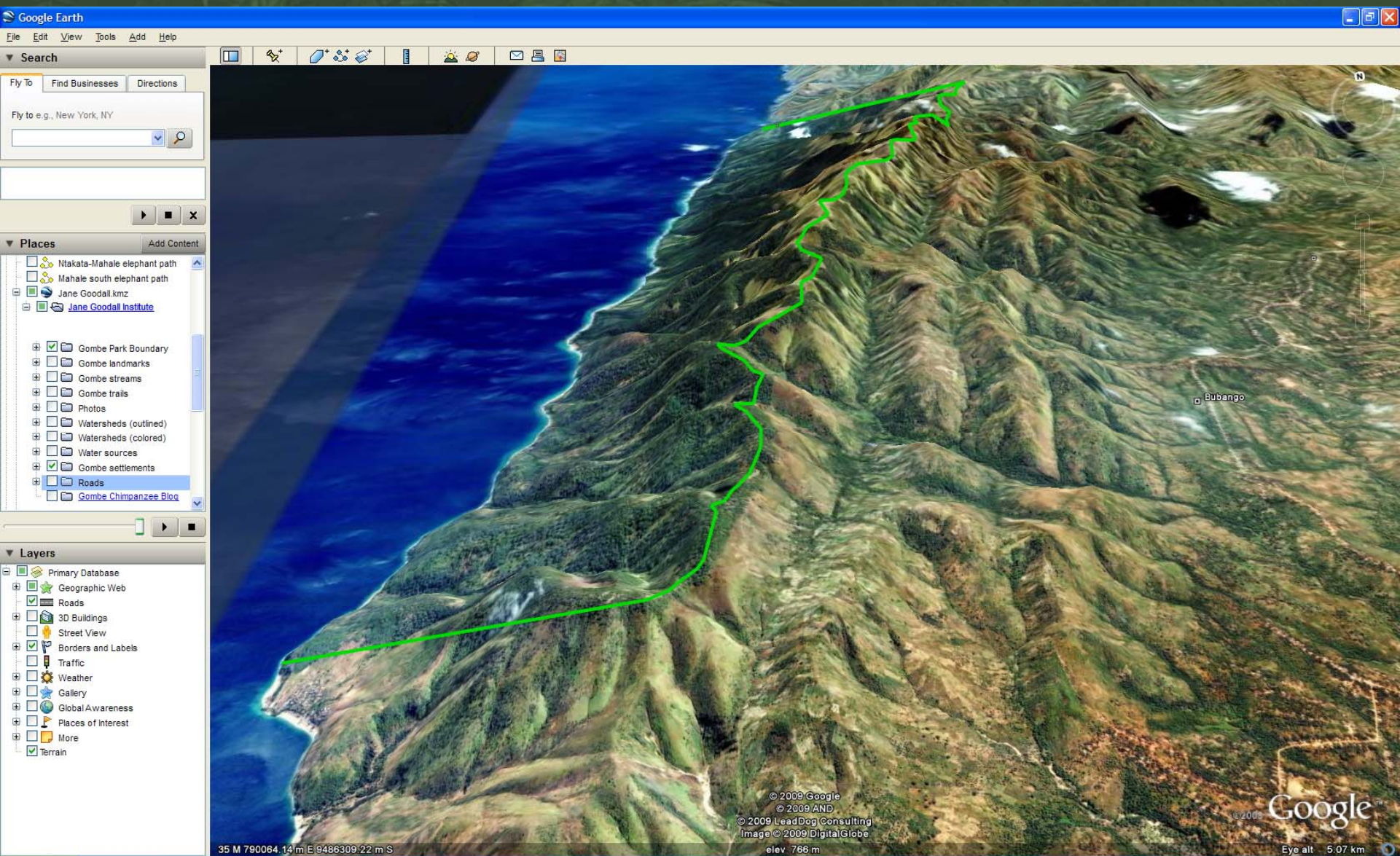


[Open Blog Entry in Google Earth](#) [Comments\(7\)](#) [Make a Comment](#)

The Gombe Chimpanzee Blog

[The Jane Goodall Institute](#)

Location: Gombe National Park,



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