



Google  
**Developers**



# Maps for Good

You want to change the world. We want to help.

Rebecca Moore

Engineering Manager, Google Earth Outreach & Earth Engine

Dave Thau

Developer Advocate, Google Earth Engine

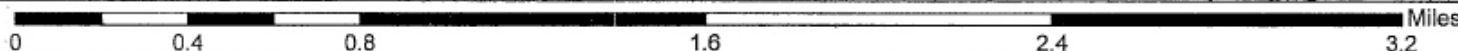
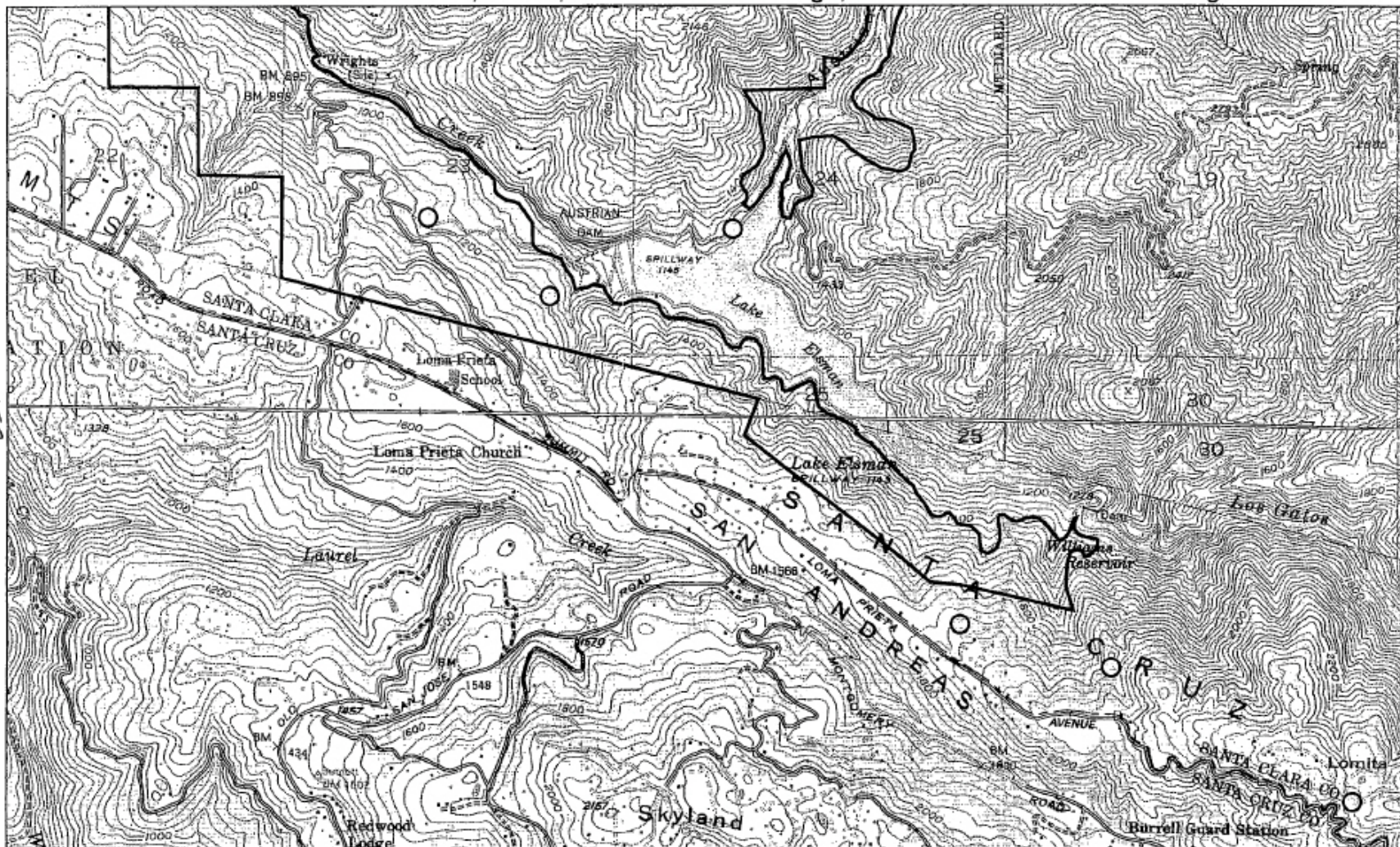
Kevin Bluer

Developer, AXS Map

Jake Wall

PhD Researcher, Save the Elephants

Lands of San Jose Water Company:  
 Notice of Intent to Harvest Timber & Request for Information on Domestic Water Supplies  
 Area found on Los Gatos, Laurel, and Castle Rock Ridge, California USGS 7.5' Quadrangles



**Legend**

-  Non-industrial Timber Management Plan Area
-  Helicopter Landings



**RECEIVED**  
 OCT 18 2005  
 COAST AREA OFFICE  
 RESOURCE MANAGEMENT

**BIG CREEK**  
 Big Creek Forestry Department  
 3564 Highway 1  
 Davenport, CA 95017  
 matt@bigcreek.com





Google earth

Los Gatos Creek Watershed

Trail Ridge

Helicopter Landing Zone  
Helicopter Landing Zone

Austrian Gulch

Lake Ellsman

Summit Road

Building Blocks Pre-School

CT English Middle School

Loma Prieta Elementary School

Loma Prieta Ave.

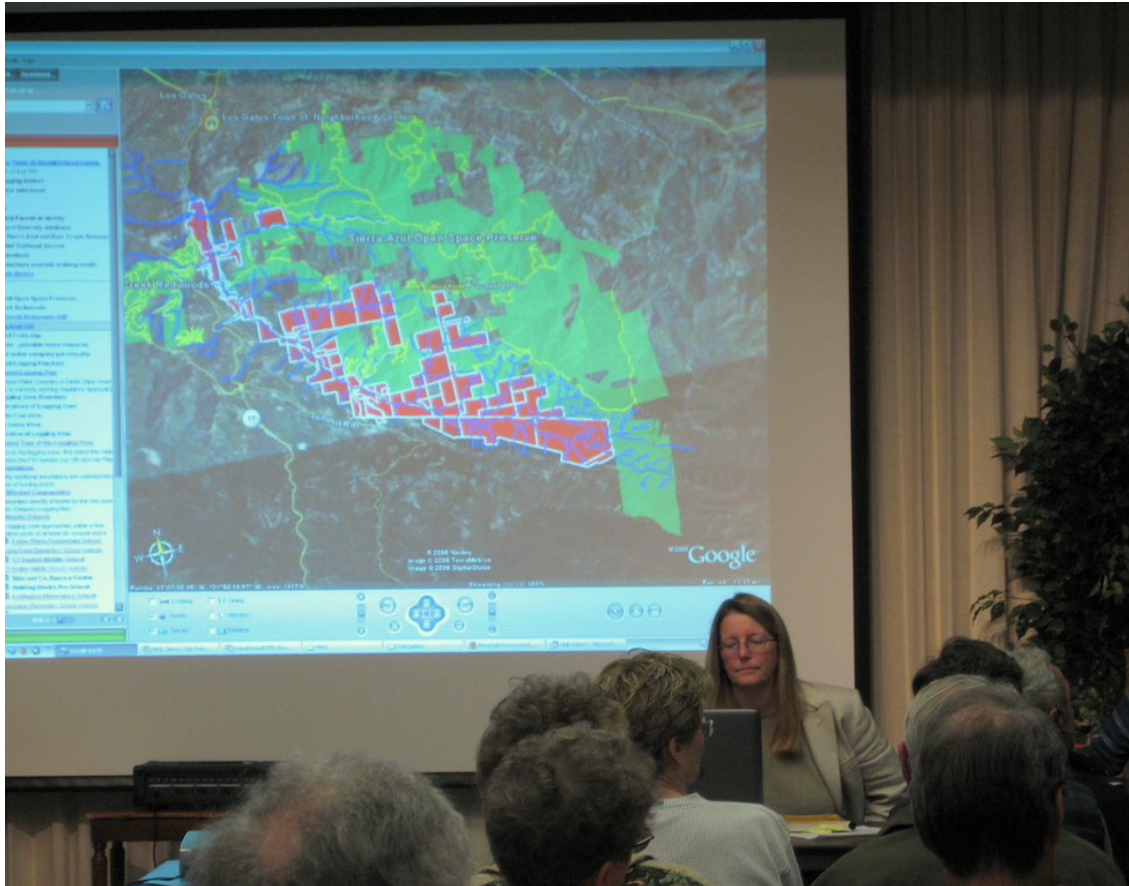
Los Gatos Creek

Lake Williams

Helicopter Landing Zone







*"I thought I was well-informed regarding SJWC's application to log the watershed above Lexington. But I nearly fell off my chair when I had a good look at Rebecca Moore's Google Earth presentation of the logging zone."*

*"This three-dimensional presentation gave an amazing topographic bird's eye view of how invasive the logging will be."*

-- Letter to the Editor, Mountain Network News, by resident Lisa Sgarlato



🕒 Mar 20, 2006 7:07 pm US/Pacific

# Mountain Residents Fight Water Co. Logging Plans

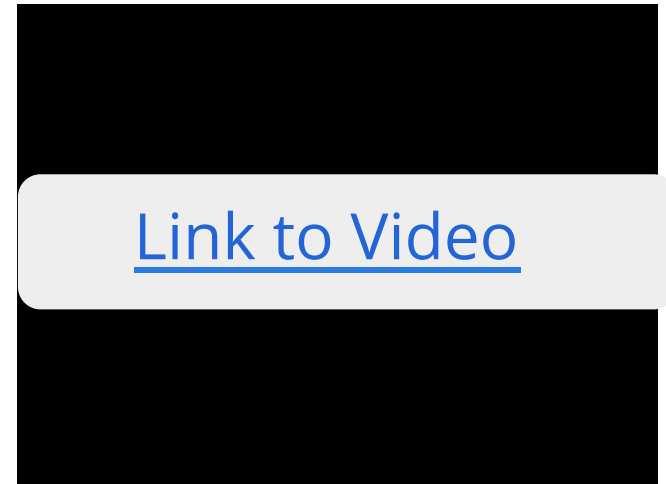
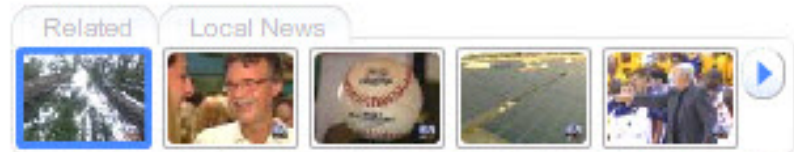


**Tony Russomanno**  
Reporting


*(CBS 5) LOS GATOS* A Google Earth virtual fly-over along a 5-mile length of Los Gatos Creek - between Lexington Reservoir and Lake Elsman in the Santa Cruz Mountains - shows the 1,000 acres of land the San Jose Water Company wants to log. The map was created by software engineer Rebecca Moore, who lives in the area, and it's being used to galvanize opposition to the company's plans.

"So instead of having an abstract map," says resident and logging opponent Kevin Flynn, "people can actually see their houses, see their schools, see where the logging zone is, and it changes an abstract concept to something that is quite striking."

Flynn lives in one of the neighborhoods bordering the area planned for logging. "The largest trees, and the largest percentage of the cut will be the largest redwoods here, as well as the largest Douglas fir. Most all of these redwoods here are about 100 years old."



**FEATURED STORY**  
South Bay Logging Plan Draws Residents' Ire  
March 20, 2006, 7:20 p.m. PT

[Local News](#)  [Video Library](#)



*Courtesy CBS News*



**DEPARTMENT OF FORESTRY AND FIRE PROTECTION**OFFICE OF THE DIRECTOR  
RUBEN GRIJALVA, CHIEFP.O. Box 944246  
SACRAMENTO, CA 94244-2460  
(916) 653-7772  
Website: [www.fire.ca.gov](http://www.fire.ca.gov)

# Impact: Stopped the Logging

Davenport, California 95017

**NOTICE OF INELIGIBILITY**

The California Department of Forestry and Fire Protection (CAL FIRE) received this Non-industrial Timber Management Plan (NTMP) on June 19, 2006. At the time, San Jose Water Company indicated that its timberland ownership was less than 2,500 acres. Upon receipt of public comments that questioned the number of acres owned by San Jose Water Company, CAL FIRE conducted its own investigation. Using information developed by CAL FIRE post filing, CAL FIRE has concluded that the landowner listed in the above referenced NTMP is ineligible for a Non-industrial Timber Management Plan. CAL FIRE has determined that the landowner owns more than 2,500 acres of timberland as defined in Public Resources Code (PRC) § 4526 of the Z'berg-Nejedly Forest Practice Act of 1973. Based on this acreage determination, the landowner does not meet the definition of a "Non-industrial tree farmer" pursuant to PRC § 4593.2 (b).



## TECHNOLOGY JOURNAL.

# Activists Start Googling

### Internet Maps Illustrate Environmental Woes

By KEVIN J. DELANEY

**A**CTIVISTS TRYING to save the planet are adding Google Earth to their arsenals. Appalachian Voices, which campaigns against coal mining that removes mountaintops, is among those leading the way. The Boone, N.C., nonprofit and partner of community organizations today will begin directing consumers who enter their ZIP Codes on its site to images of specific mountaintops that have been razed to provide coal for their electricity providers, and potentially for their own homes.

The new service uses the mapping and aerial imagery provided by Google Inc.'s Earth and Maps offerings to show actual pictures of the mountaintops. The Google services are popular for providing free detailed aerial images of most places in the world, allowing computer users to easily zoom in for a peek. Google Maps can be accessed over the Web, and Google Earth requires special software be installed on a user's computer.

Now those Google programs are making possible efforts to raise the awareness of Americans to the impact of their consumer

it that much more relevant to their day-to-day life," says Mary Anne Hitt, Appalachian Voices' executive director.

Using the nonprofit's new service a person in Washington, for example, might learn that there are four power plants feeding his electricity provider that use coal mined with mountaintop-removal methods. A satellite map shows their locations and the mines they draw from, which the individual can zoom in on. The Appalachian Voices site—[www.ilovemountains.org/myconnection](http://www.ilovemountains.org/myconnection)—provides related data, such as photos, videos and information about the

for one, has added a code to the label of organic bananas that consumers can enter at a special Web site. The site provides information about the history and location of the farm where the bananas grew, as well as a link to data that can be viewed in Google Earth. There consumers can zoom in on aerial images of the farm.

Appalachian Voices is just one of the nonprofits making extensive use of Google Earth. The Jane Goodall Institute offers a blog about chimpanzees in the Gombe Chimpanzee Reserve in Tanzania that, when viewed from Google Earth, shows the locations of specific chimps.

Local activists have used Google Earth to illustrate the impact of development projects. Google's Ms. Moore, for example, rallied opposition to a proposed logging project in California's Santa Cruz Mountains by mapping the area and creating a virtual fly-through in Google Earth.

"We're going to see an onslaught of new environmental content in particular that's very effectively done because of all of this help that the Google Earth Outreach program is making available," says Frank Taylor, editor of the Google Earth Blog, which is unaffiliated with

## Seeing

*Continued from*  
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Josh Deutsch  
Downtown Reco  
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blog," says Mr.  
necessarily try  
your fifth album



The [ilovemountains.org](http://ilovemountains.org) Web site links zip codes and mine operations.

choices, mines and local communities. A user

Earth Blog, which is unaffiliated with



**You want to change the world. We want to help.**

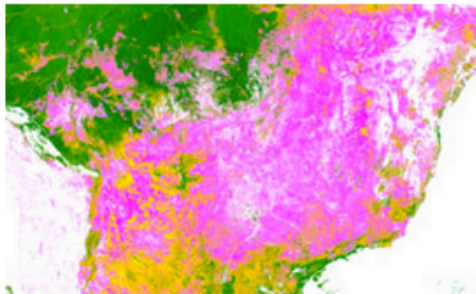
Google Earth Outreach gives nonprofits and public benefit organizations the knowledge and resources they need to visualize their cause and



[earth.google.com/outreach](http://earth.google.com/outreach)

#### Rio+20 UN Conference

Google Earth Outreach will be at Rio+20 in Brazil from June 13-22, where we'll be showcasing a lineup of influential organizations using Google mapping technology for sustainable development. [Learn more](#)



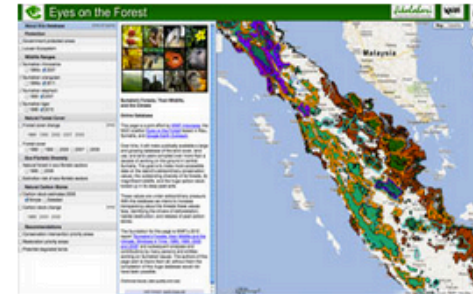
#### "Geo for Good" User Summit

This special three-day mapping technology workshop for nonprofits will be hosted by Google Earth Outreach at the Google headquarters in Mountain View, California from September 26-28. [Apply now](#)



#### Google Maps Engine Grants

Nonprofit organizations in Canada, Brazil, the UK and US can now apply for grants of Google Maps Engine! This platform allows you to put your maps into Google's cloud infrastructure for sharing, editing and publishing. [Learn more](#)



# Developer Grants 2011: \$323,000 total awarded to 16 Developers



Golden Gate National Parks Conservancy



Atlantic Public Media



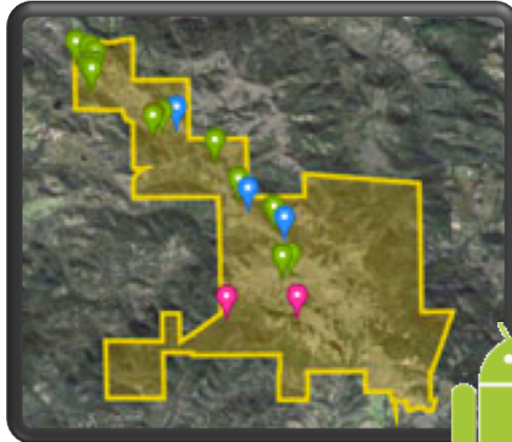
Habitat Map



Sea Turtle Conservation Bonaire



WWF & Eyes on the Forest



iNaturalist



Eyes on the Forest: Sumatra x  
maps.eyesontheforest.or.id

**Eyes on the Forest**

**About this Database** [hide all layers]

**Protection**

- Government protected areas
- Leuser Ecosystem

**Wildlife Ranges**

- Sumatran rhinoceros
  - 1980s  2007
- Sumatran orangutan
  - 1990s  2011
- Sumatran elephant
  - 1985  2007
- Sumatran tiger
  - 1996  2010

**Natural Forest Cover**

- Forest cover change [play]
  - 1985 | 1990 | 2000 | 2007 | 2009
- Forest cover
  - 1985  1990  2000  2007  2009

**Eco-Floristic Diversity**


- Natural forest in eco-floristic sectors
  - 1985  2009
- Extinction risk of eco-floristic sectors

**Natural Carbon Stores**

- Carbon stock estimates 2009
  - Simple  Detailed
- Carbon stock change [play]
  - 1985 | 2000 | 2009

**Recommendations**

- Conservation intervention priority areas
- Restoration priority areas
- Potential degraded lands



**Sumatran tiger (*Panthera tigris sumatrae*)**  
**Critically Endangered**

Estimating tiger numbers in Sumatra is very difficult due to inaccessibility of the terrain, the secretive nature, and the low density of the species.

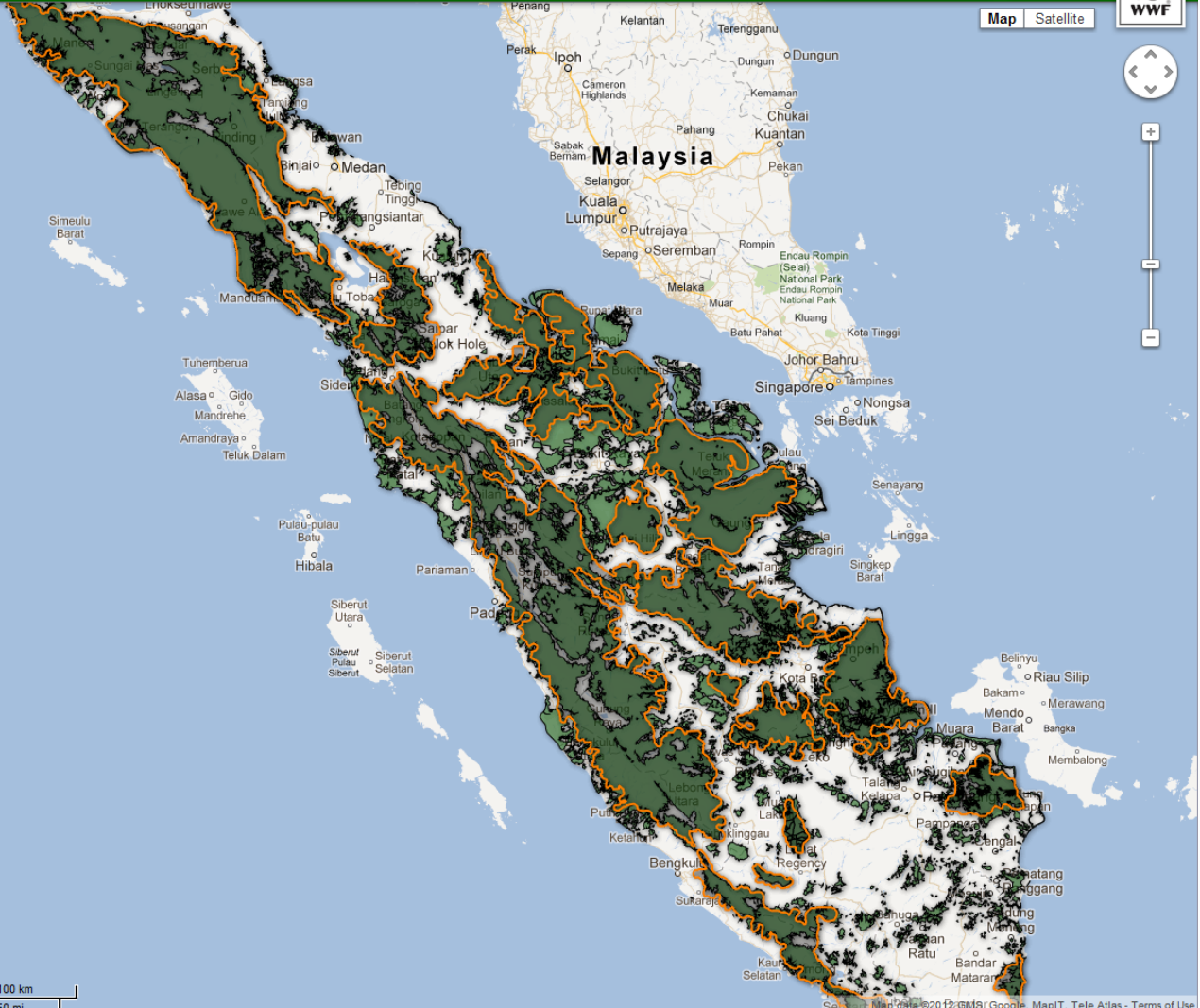
In the absence of field survey data, scientists used information on the suitability of habitat for tigers to identify three "Level I Tiger Conservation Units (TCU)" and four "Level II TCUs" [see 1996 map] where tigers had a high to medium probability of surviving for the long term (Wikramanayake *et al.* 1998). In 2006, tiger experts updated the analysis and considered two Tiger Conservation Landscapes (TCLs) - Bukit Tigapuluh and Kerinci Seblat - as Global Priority landscapes (Sanderson *et al.* 2006).

In the late 2000s, the Ministry of Forestry (2007) suggested a minimum of 250 adult tigers may have been living in 8 of the 18 tiger habitats across Sumatra, and Wibisono & Pusparini (2010) found through an island-wide questionnaire survey that Sumatran tigers may have been present in 29 habitat patches of more than 250 square kilometers. But tigers might have been present in areas for which "no recent evidence" was reported or areas of less than 250 km<sup>2</sup> that remained unreported.

Loss and fragmentation of natural forest, illegal poaching and trade of body parts, and poaching of tiger prey have been the Sumatran tiger's biggest threats.

All tiger ranges shown are indicative. Tigers may live outside of them.

data sources  
additional resources



Google 100 km / 50 mi

Selanjor, Map data ©2012 GMS, Google, MapIT, Tele Atlas - Terms of Use

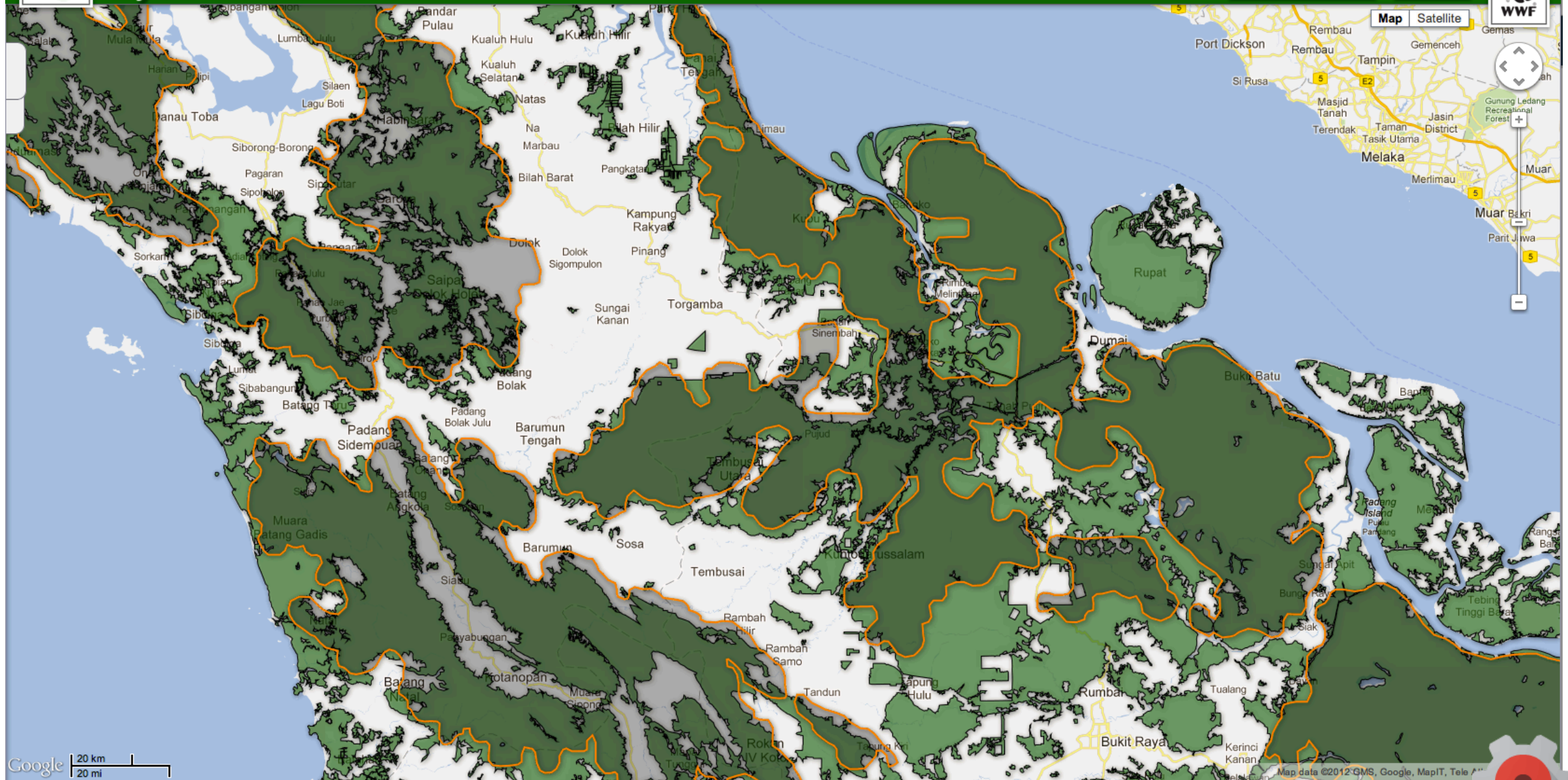
Logos: Jikalahari, WALHI, WWF

Map Satellite





# Eyes on the Forest



Google 20 km 20 mi

Map data ©2012 GMS, Google, MapIT, Tele...



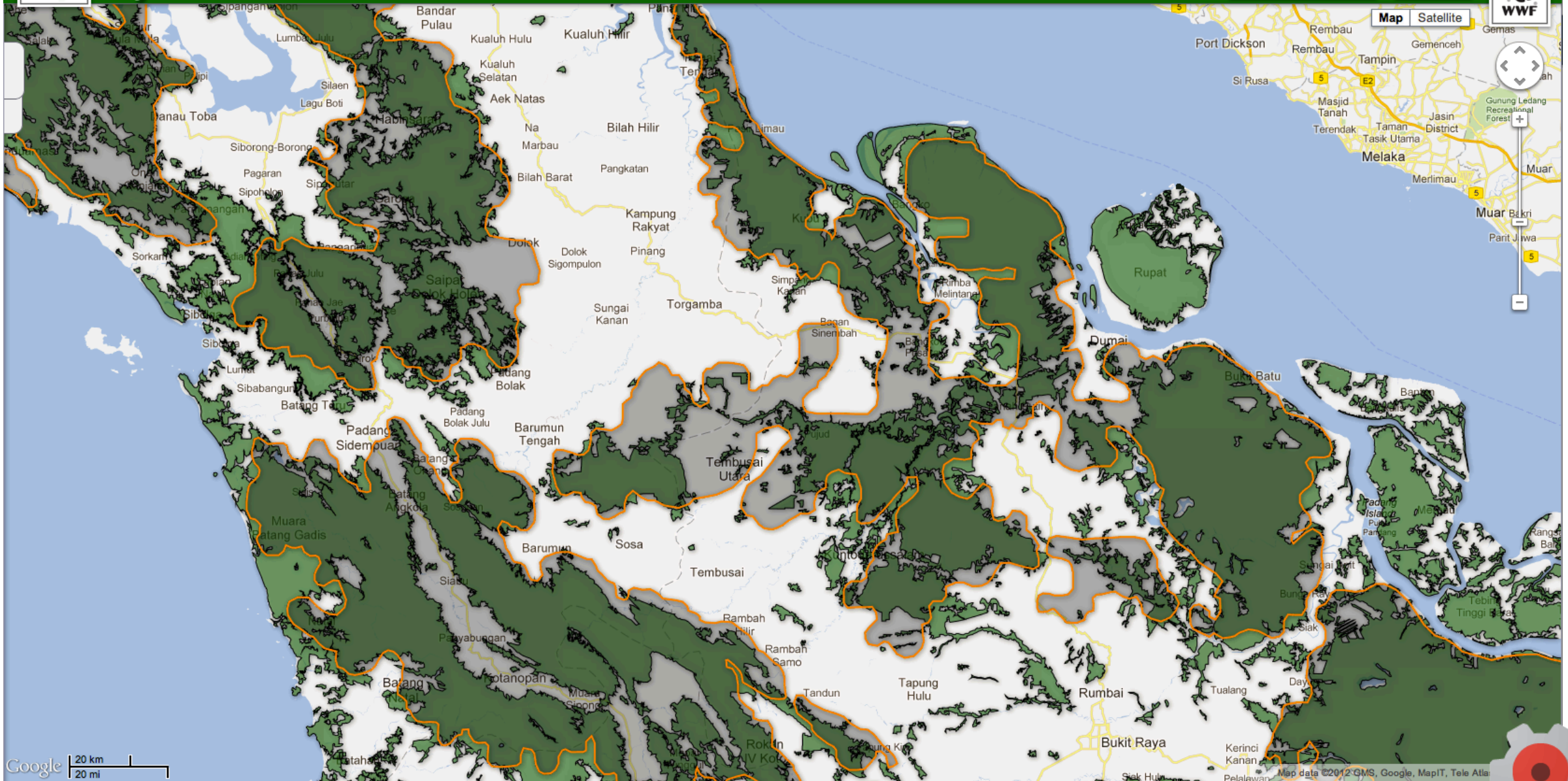
 1990 Forest Cover

 1996 Tiger Range

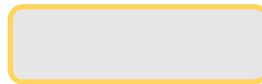




# Eyes on the Forest



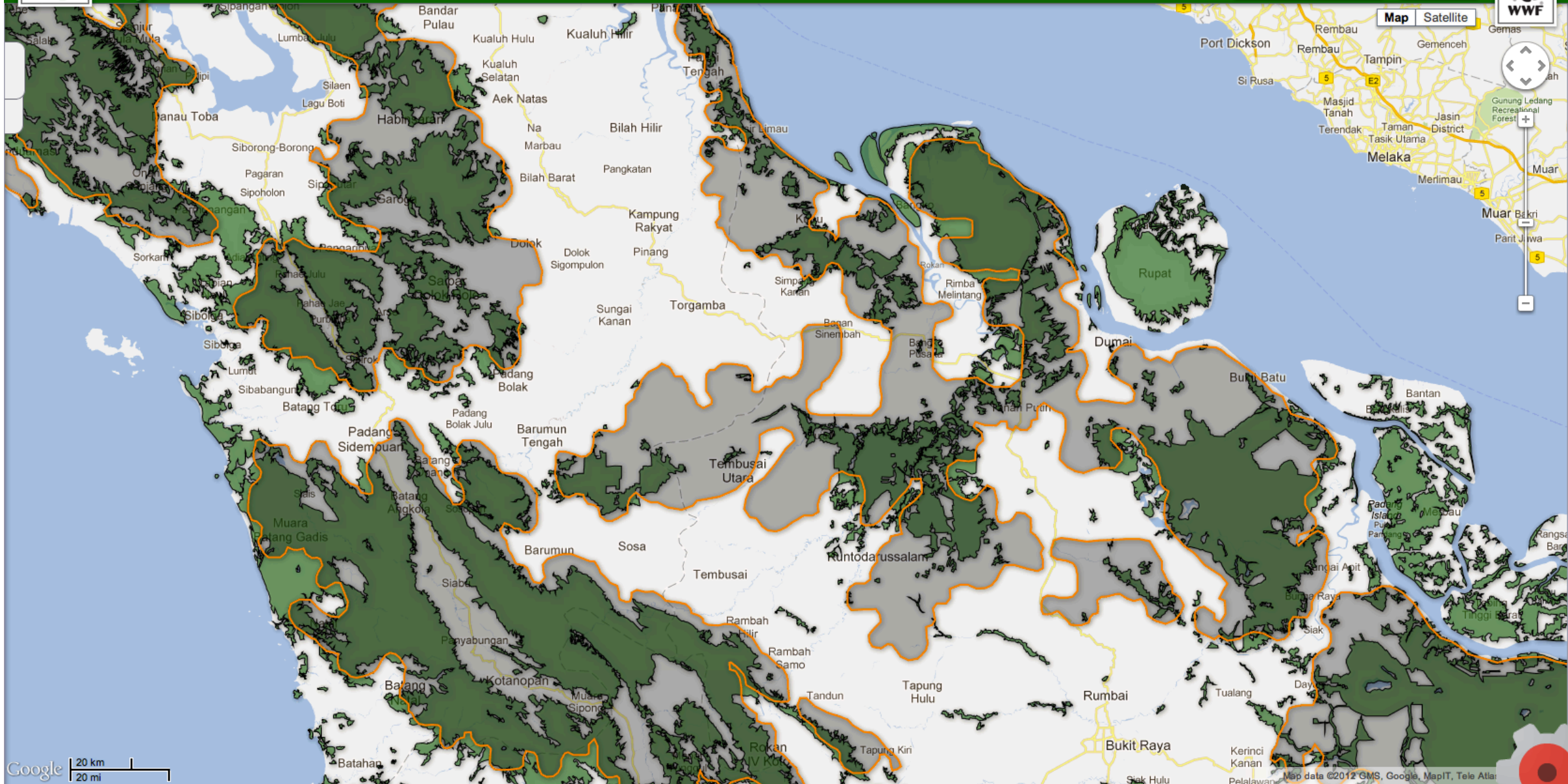
**2000 Forest Cover**



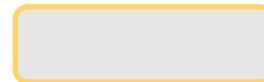
**1996 Tiger Range**



# Eyes on the Forest



**2007 Forest Cover**

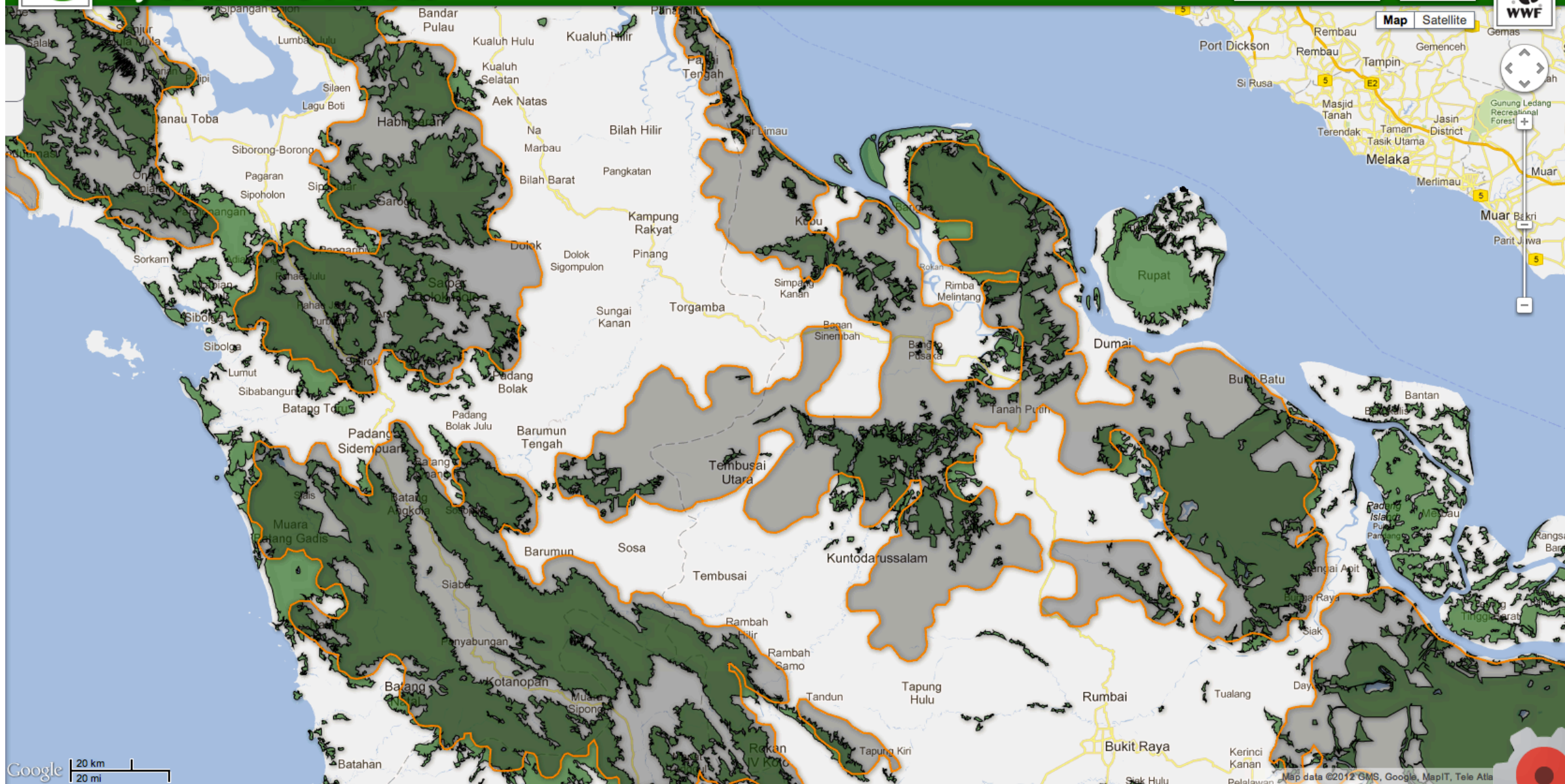


**1996 Tiger Range**

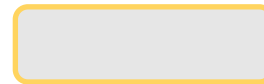




# Eyes on the Forest



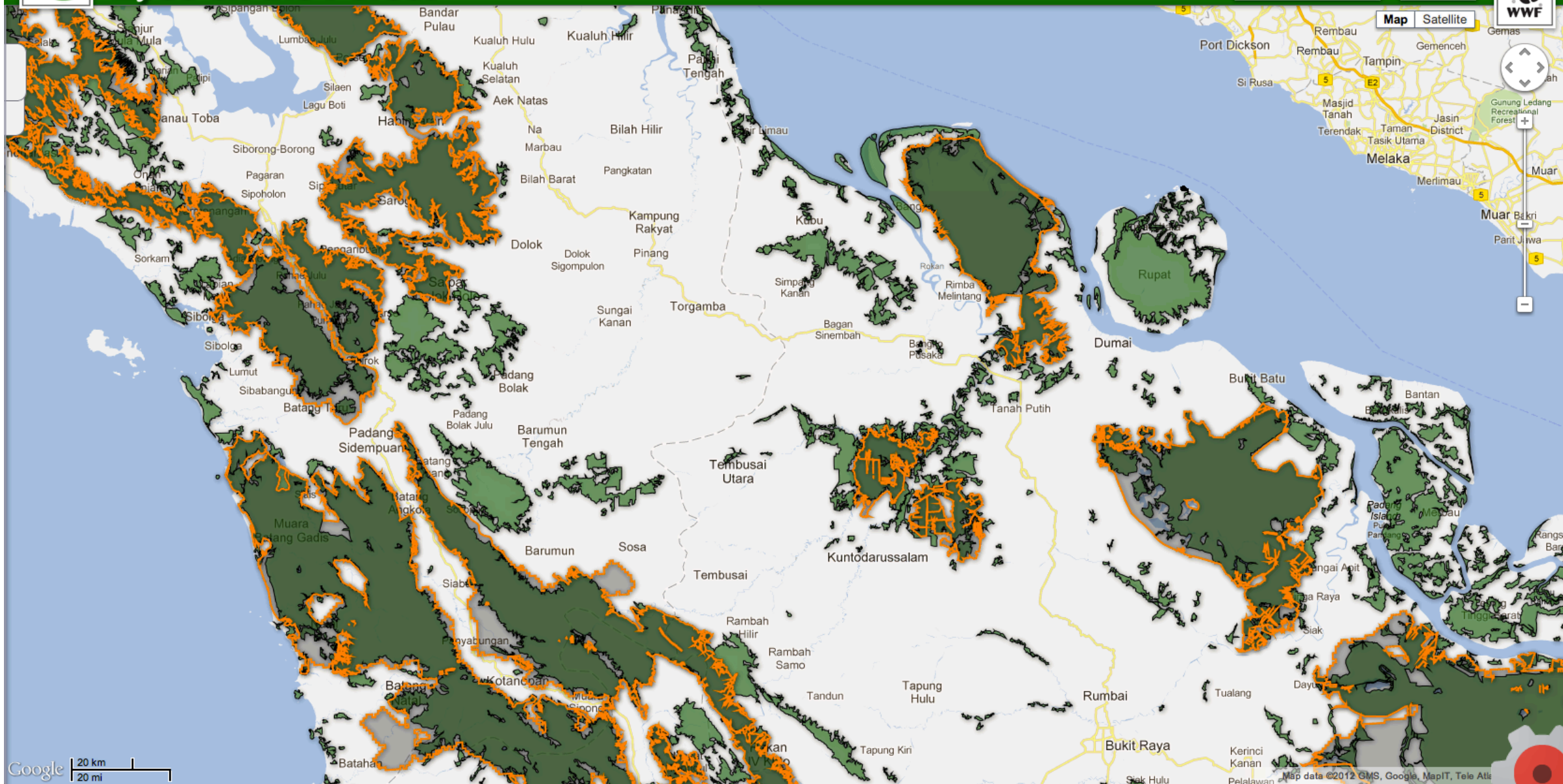
**2009 Forest Cover**



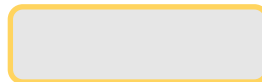
**1996 Tiger Range**



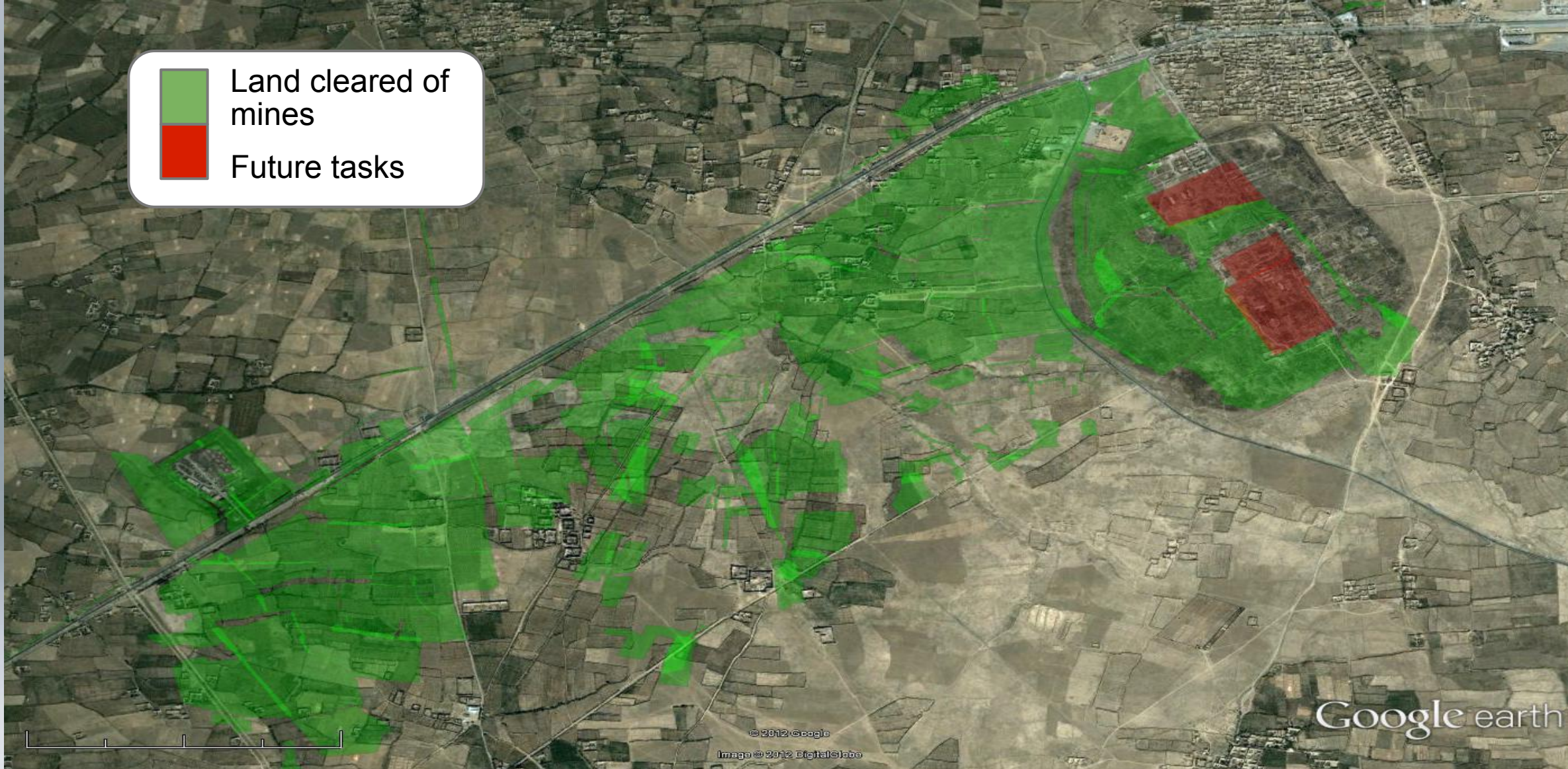
# Eyes on the Forest



**2009 Forest Cover**



**2010 Tiger Range**



## Bagram, Afghanistan



2002

Kunje



Data shown are from HALO's database and are specific to HALO's area of operations.

 Minefield

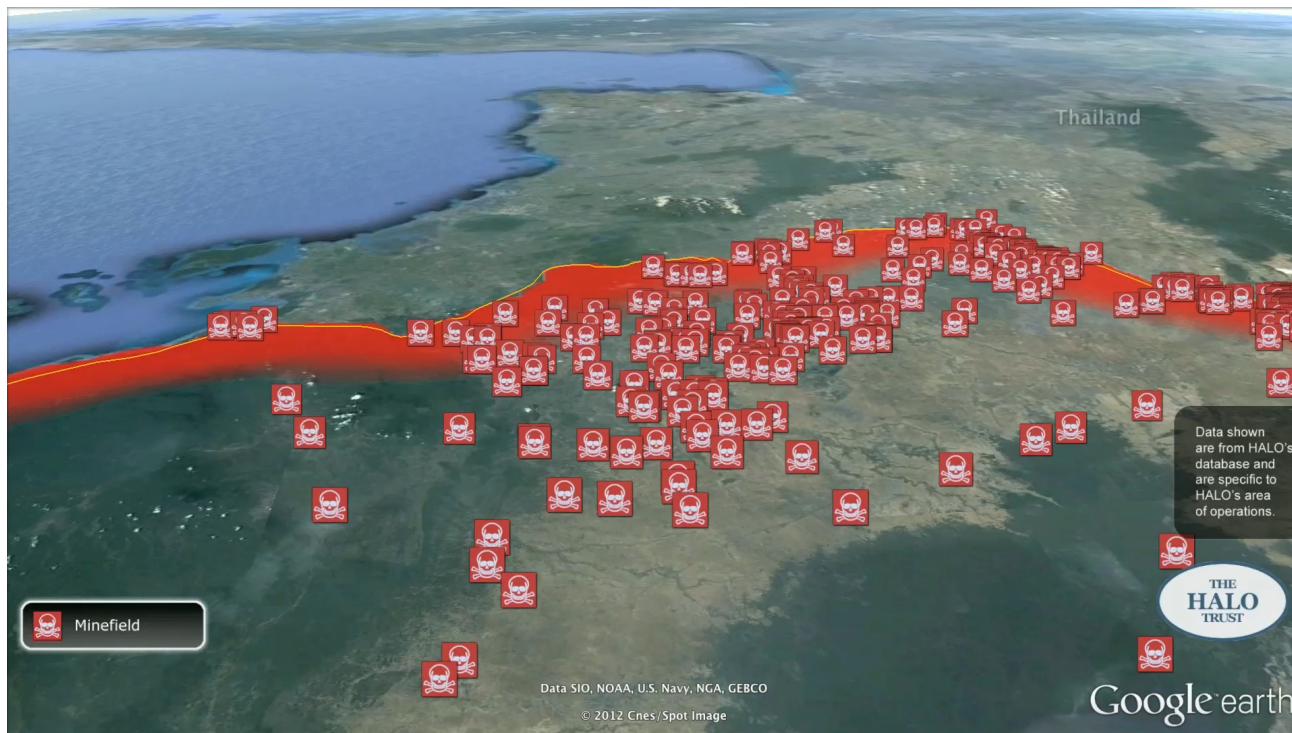


2011

 Kunje



# HALO Trust: Landmine removal



“Explore a Minefield in Google Earth”  
with Angelina Jolie [Link to site](#)

- Bagram was once the front line between Taliban & Northern Alliance fighters  
Locals called this “Devil’s Garden” due to the high level of landmine contamination
- HALO Trust uses Earth Pro features like GIS data import and high-resolution printing that help them track land mine clearance operations
- Once HALO cleared the mines, 70,000 displaced people could return to their homes and today locals are again growing wheat, vegetables and grapes

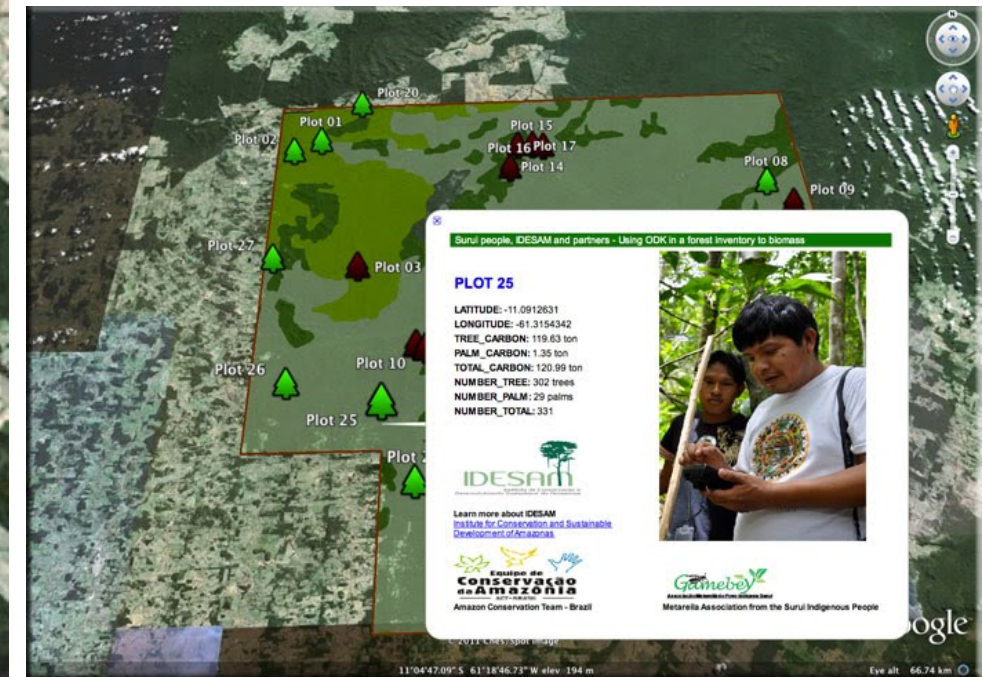
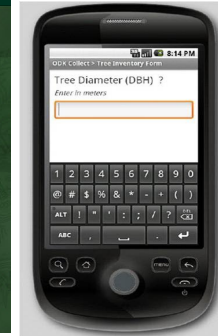


[Link to KML File](#)

# Cultural Mapping: Brazilian Amazon Surui Tribe



# Cultural Mapping: Surui Culture and Carbon Map





# Maps for Good



## Seeing is Believing

Show people what's at stake

## Improve Operations

Improve internal logistics and efficiency

## Engage Inspire Impact

Engage supporters,  
Inspire action,  
Change the world



# Maps for Good



**Dave Thau**

Developer Advocate  
Google Earth Engine



**Kevin Bluer**

Developer  
AXS Map



**Jake Wall**

PhD Researcher  
Save the Elephants





# Geo Analysis for Good with Google Earth Engine

Dave Thau

Developer Advocate



© 2012 Cnes/Spot Image  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
Image © 2012 TerraMetrics



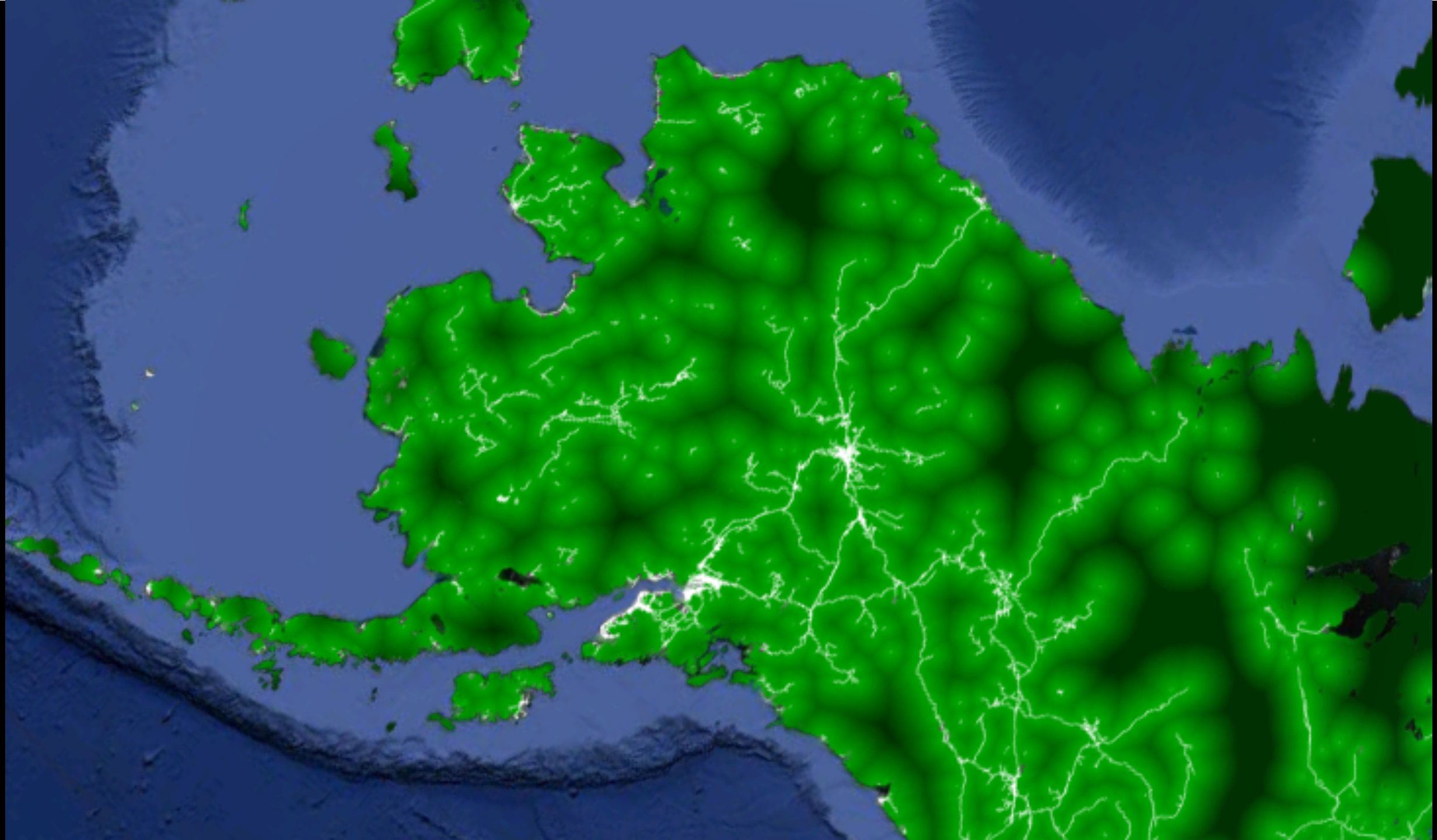
lat 11.162069° lon -72.580101° elev -104 m

Google earth

Eye alt 9639.62 km



Data SIO, NOAA, U.S. Navy, NGA, GEBCO





© 2012 Ches/Spot Image

Google earth

Imagery Date: 5/31/2007

lat -10.921749° lon -61.130198° elev 187 m

Eye alt 122.15 km

5/25/2012  
6/2008 6/2009

Navigation toolbar with icons for Home, Street View, Layers, Settings, Print, **History**, Weather, Moon, and other features. The History icon is circled in red.

Navigation controls including a compass, a north arrow, and a vertical zoom slider.

© 2012 Cnes/Spot Image  
Image © 2012 DigitalGlobe

Google earth

Imagery Date: 6/2/2009

2009

lat -11.011934° lon -61.439781° elev 233 m

Eye alt 12.49 km



8/10/2008  
6/2008 6/2009

N



Image NASA  
Image © 2012 DigitalGlobe

Imagery Date: 8/10/2008 2009

lat -11.025697° lon -61.408439° elev 211 m

Google earth

Eye alt 12.49 km

6/8/2008  
6/2008 6/2009

N



Image NASA

Google earth

2009

lat -11.025697° lon -61.408439° elev 211 m

Eye alt 12.49 km

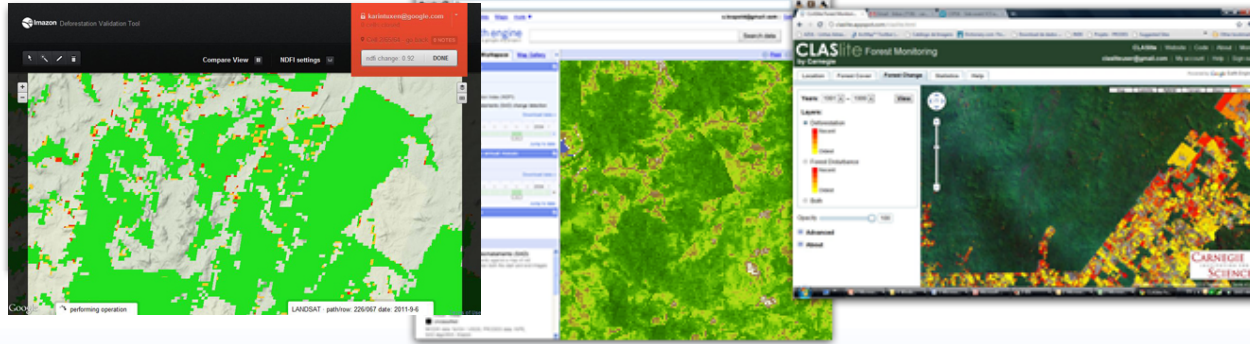
# Applications

IMAZON (SAD)

Earth Engine

CLASLite

... and more to come



# Google earth engine

## Computation



## Data

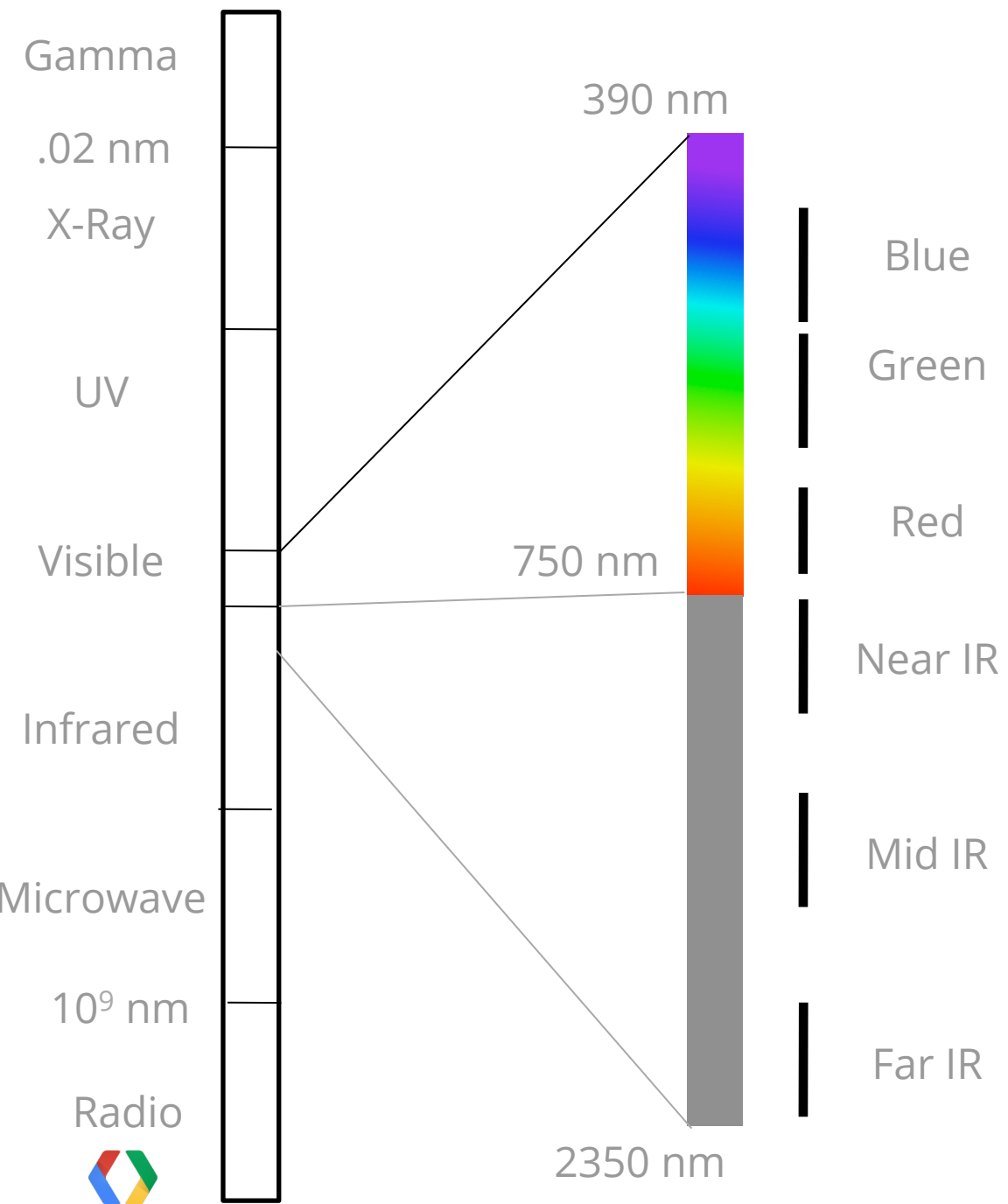


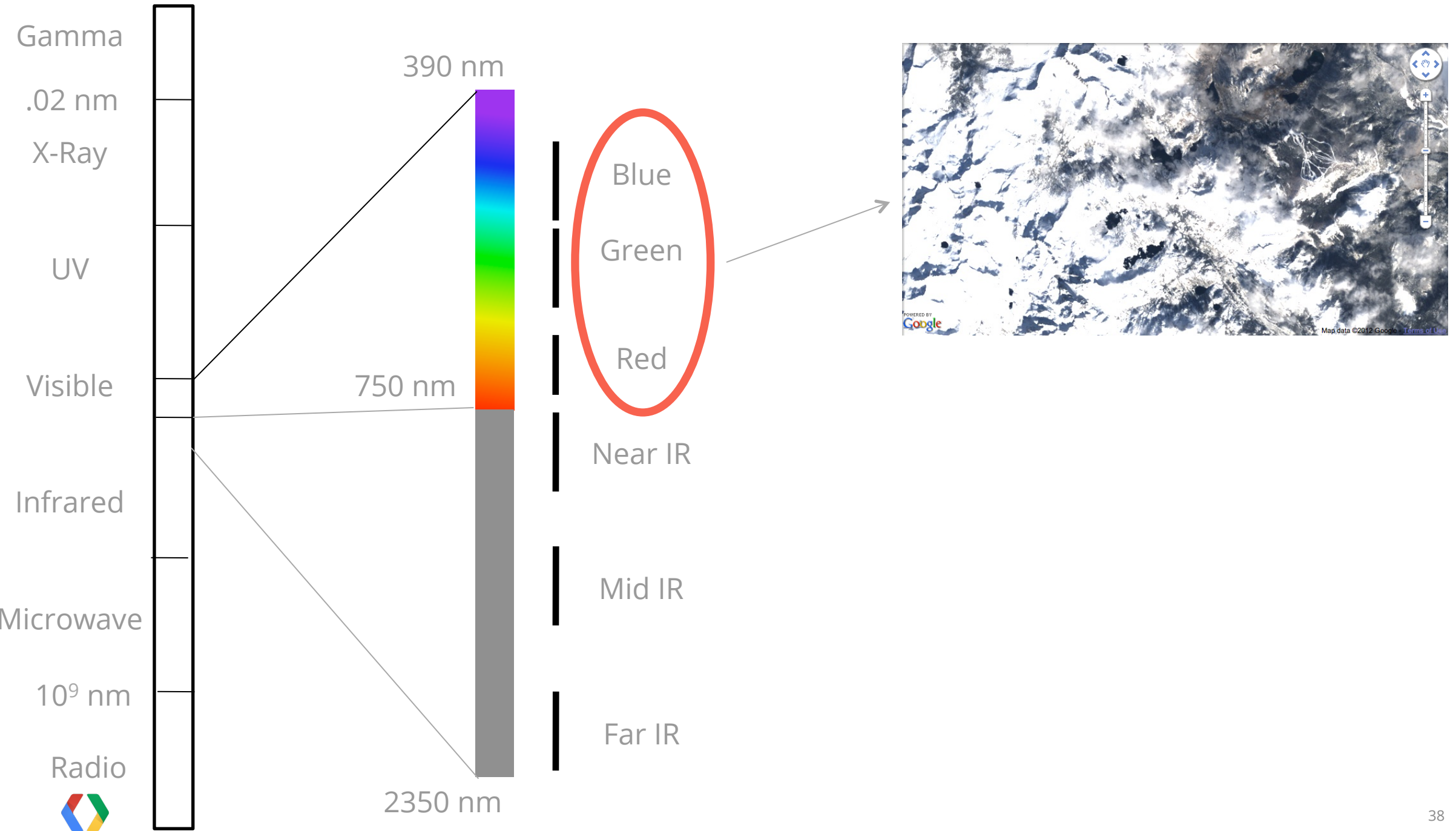
# Earth Engine Archive

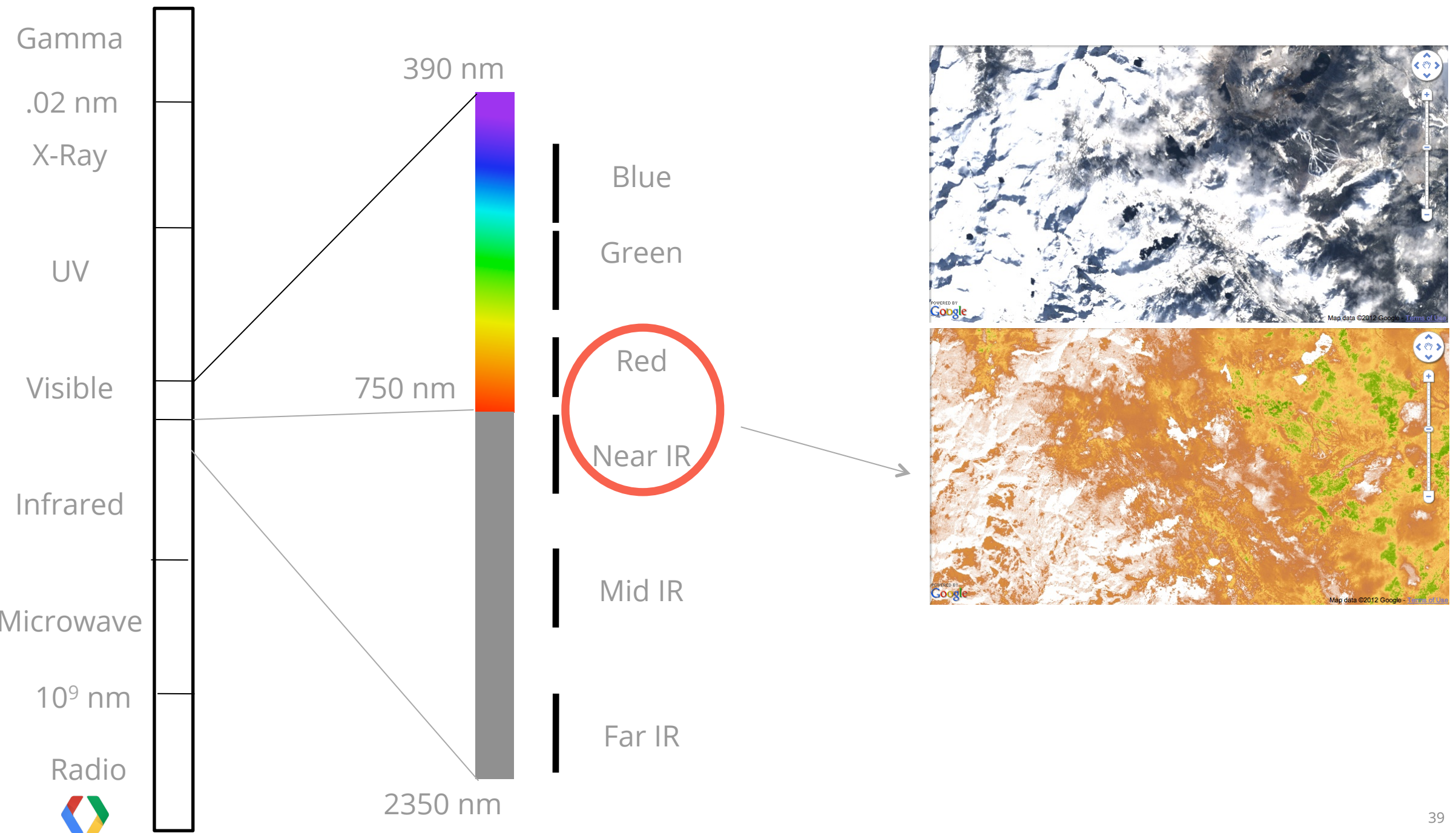
<http://earthengine.google.org>

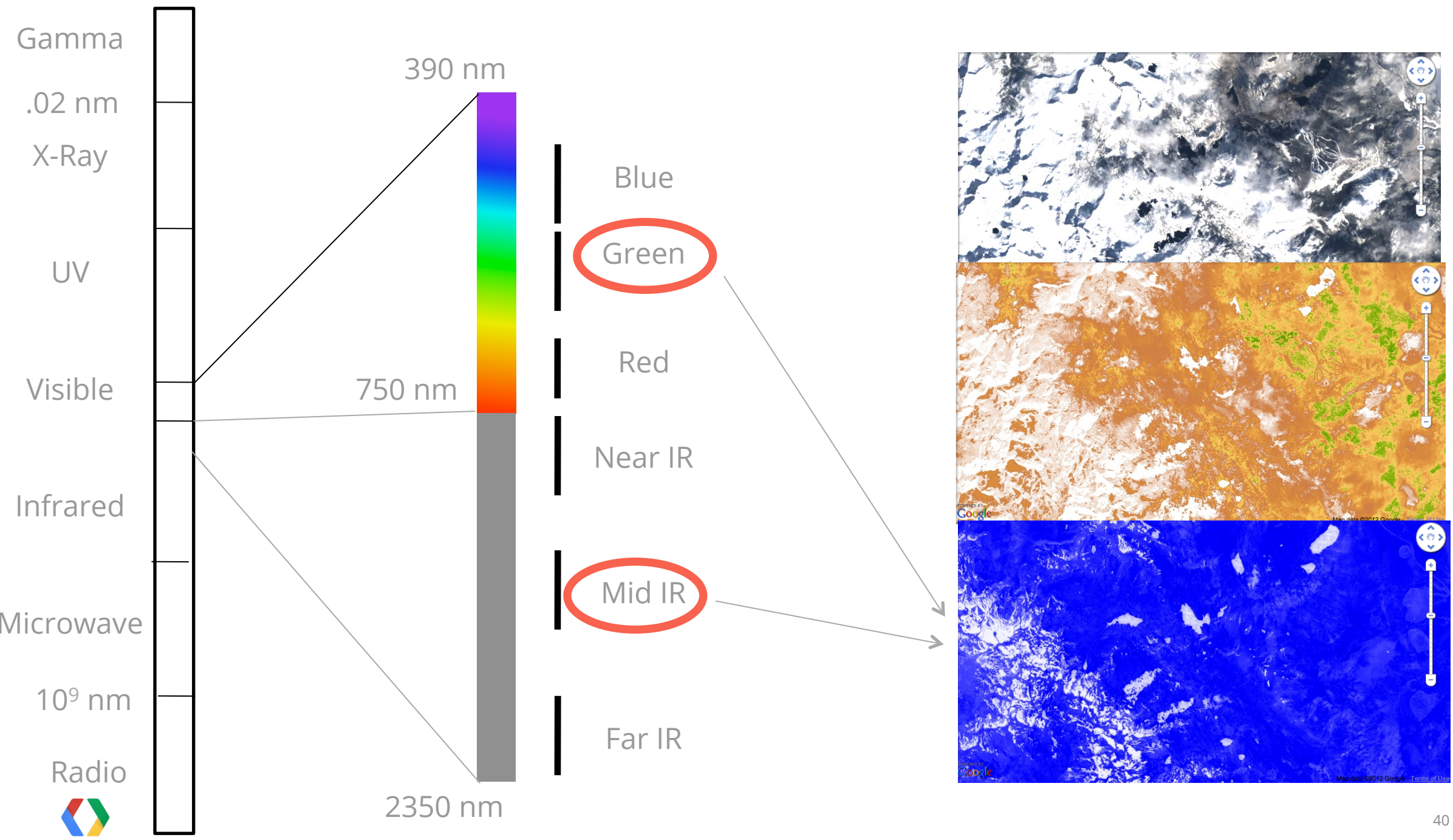
- **Daily global** satellite feeds for current data
- **40 years** of historical data
- Elevation data
- Atmospheric data
- And more...













# JavaScript and Python API

## PSEUDOCODE

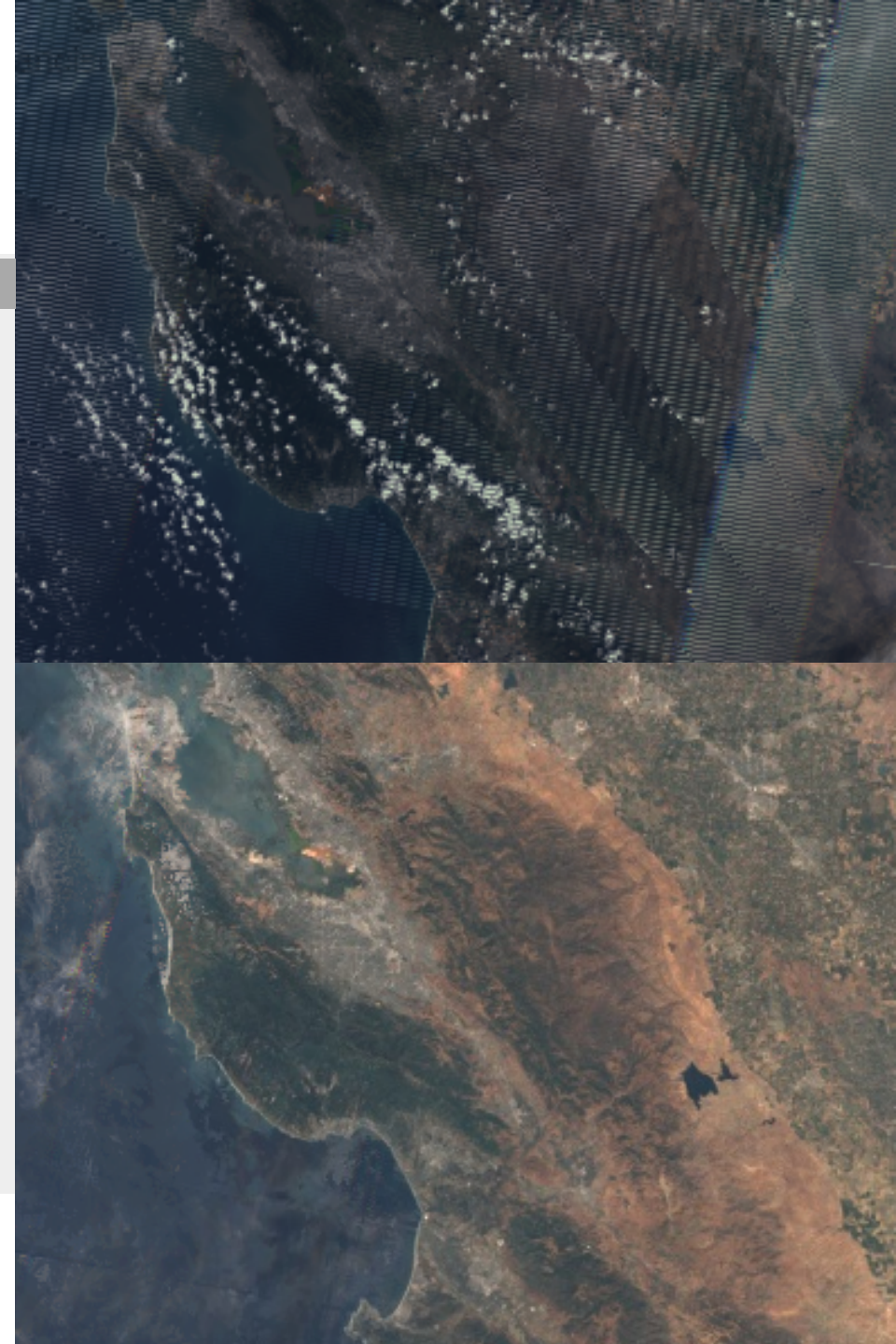
```
// Make a median composite from one year of Landsat 7
// Warning: This is pseudocode

// Get Landsat 7 Image Collection
collection = ImageCollection("Landsat7")

// Filter it down to 2011
collection.filter(new Date("1/1/2011"), new Date("12/31/2011"))

// For each band, for each pixel, calculate the median
// and make an image of the result
medianImage = collection.median()

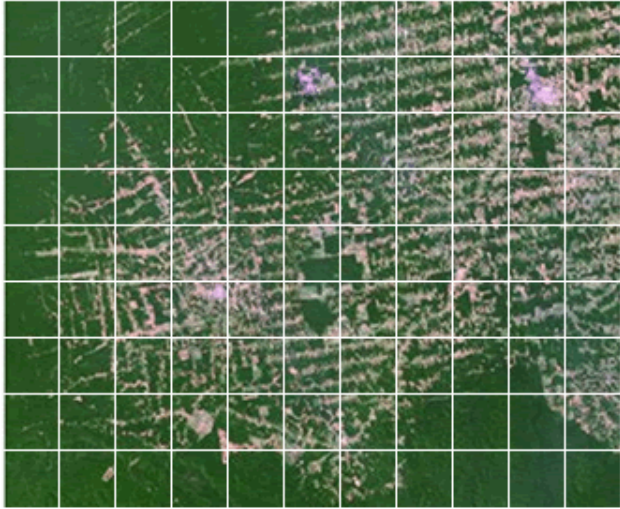
// Add the image to a map
addToMap(medianImage)
```





Original image



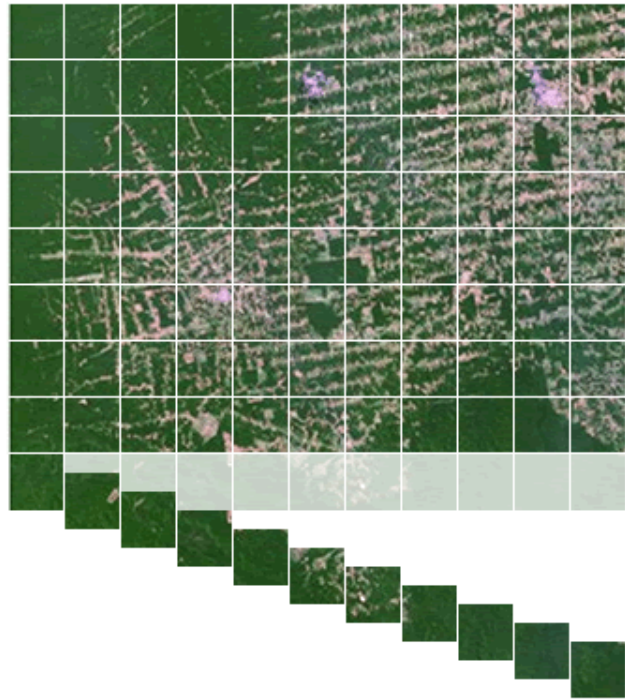


Original image

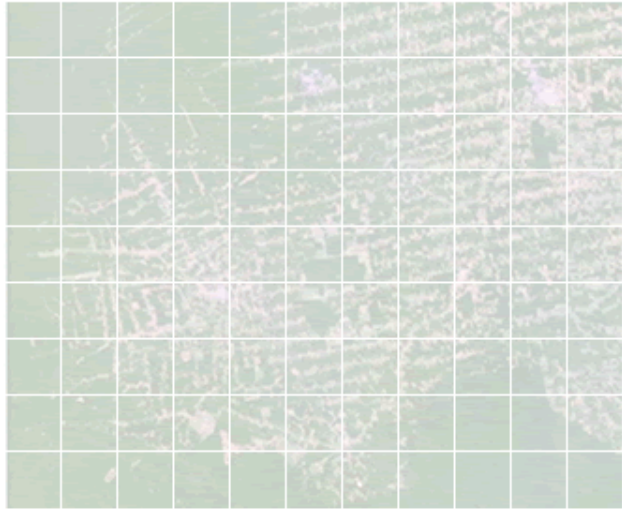
... is divided into 256px sub-units.

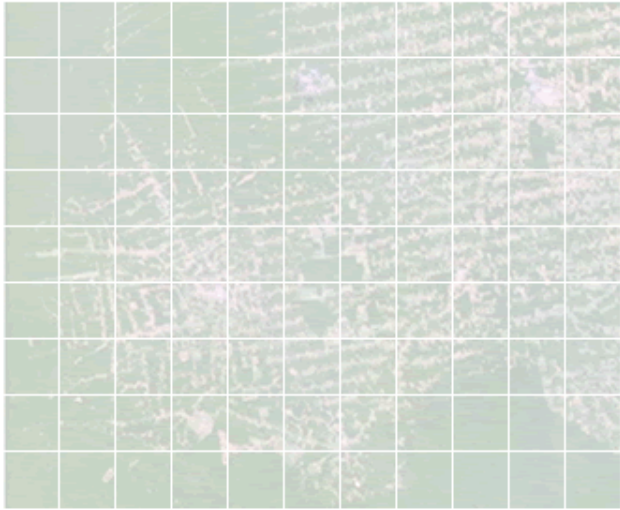


Sub-units are distributed



Sub-units are distributed  
... to separate machines.

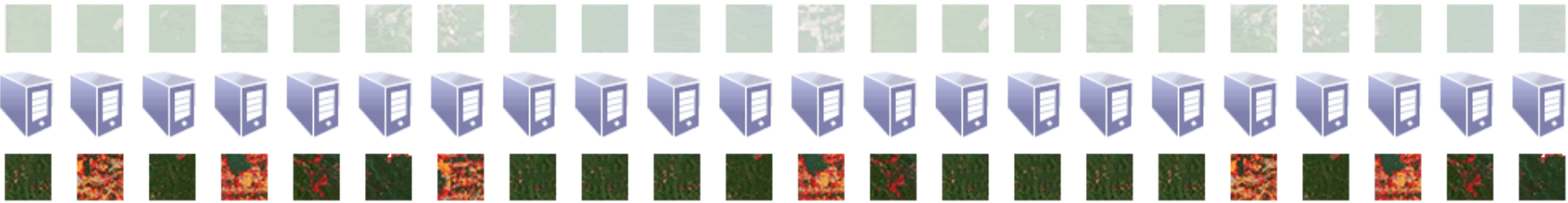
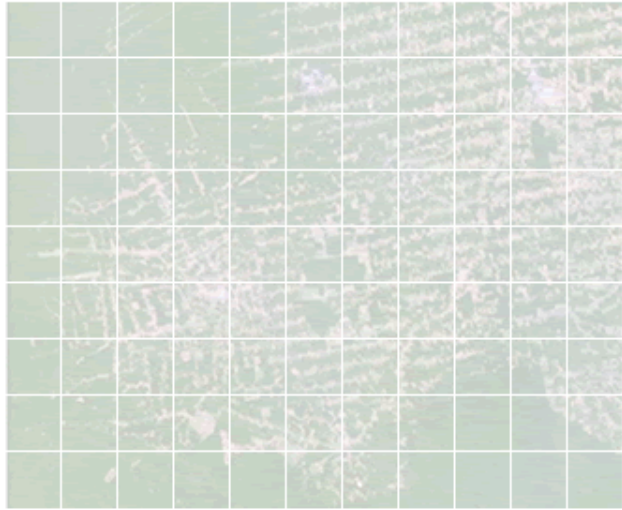




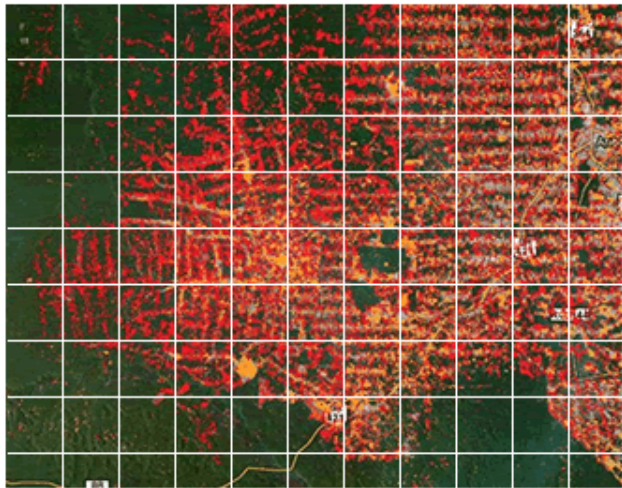
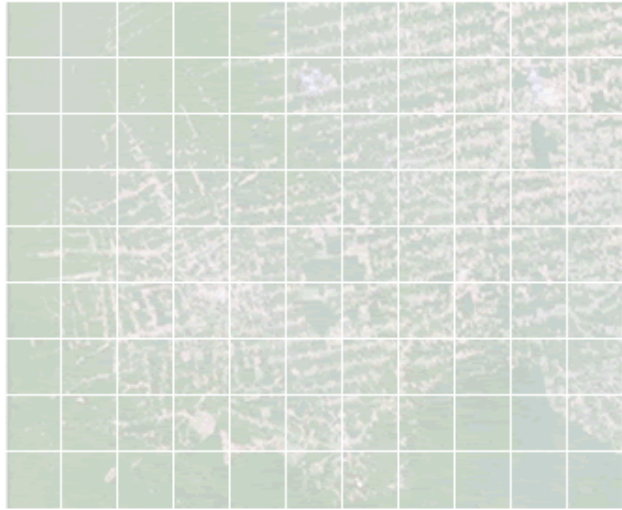
Sub-units are distributed  
... to separate machines  
... where they can be processed  
in parallel.



Thousands can be processed simultaneously

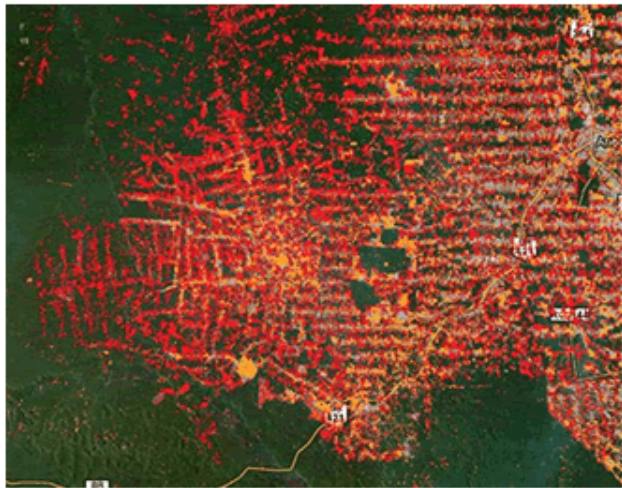
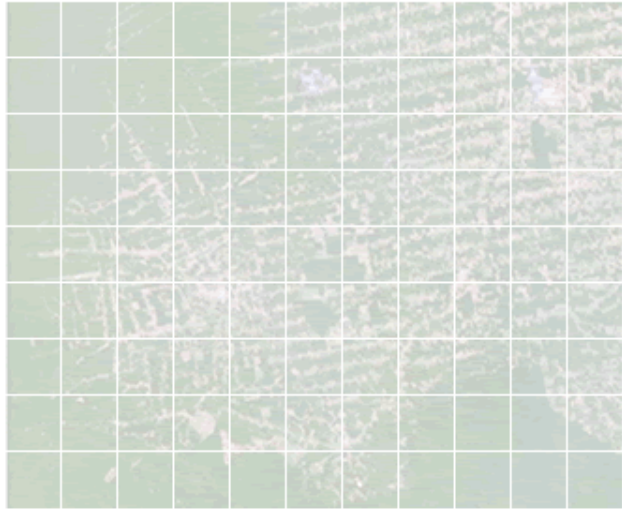


Result is reassembled





Result is reassembled  
... into a finished image





## Mexico Forest Map

Finest scale Mexican forest map created to date

18 Terabytes of input data

15,000 computation hours

Elapsed time: less than one day



## Mexico Forest Map

Finest scale Mexican forest map created to date

18 Terabytes of input data

15,000 computation hours

•  
Elapsed time: less than one day

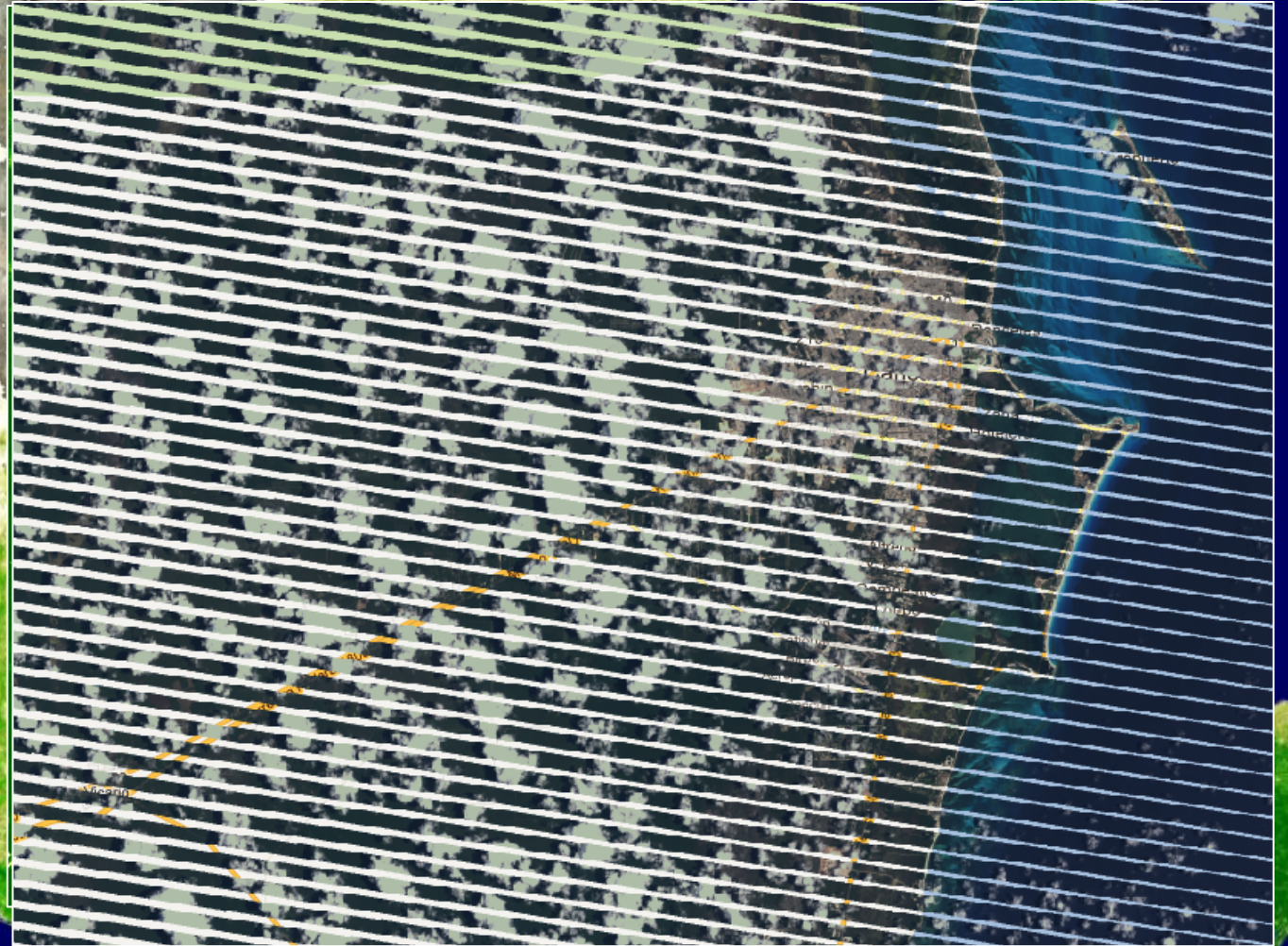
## Mexico Forest Map

Finest scale Mexican forest map created to date

18 Terabytes of input data

15,000 computation hours

Elapsed time: less than one day



## Earth Engine: classify

Choose a project ▾

Save

Train

Classify

Compare

Region: Viewport ▾

Classes +

[Add class](#)

Data +

Percentile Composite (Landsat 7 Reflectance)

Algorithm

Classifier Resolution (m)

Fast Naive Bayes ▾

30

Build model and display results

Results

Model, trained May 25, 2012 at 4:06pm (100%)



# Earth Engine: classify

Choose a project ▾

Save

Train

Classify

Compare

Region: Viewport ▾

Classes +

■ Non Forest - 9 points

■ Forest - 12 points

[Add class](#)

Data +

Hand-drawn points and polygons

Percentile Composite (Landsat 7 Reflectance)

Algorithm

Classifier Resolution (m)

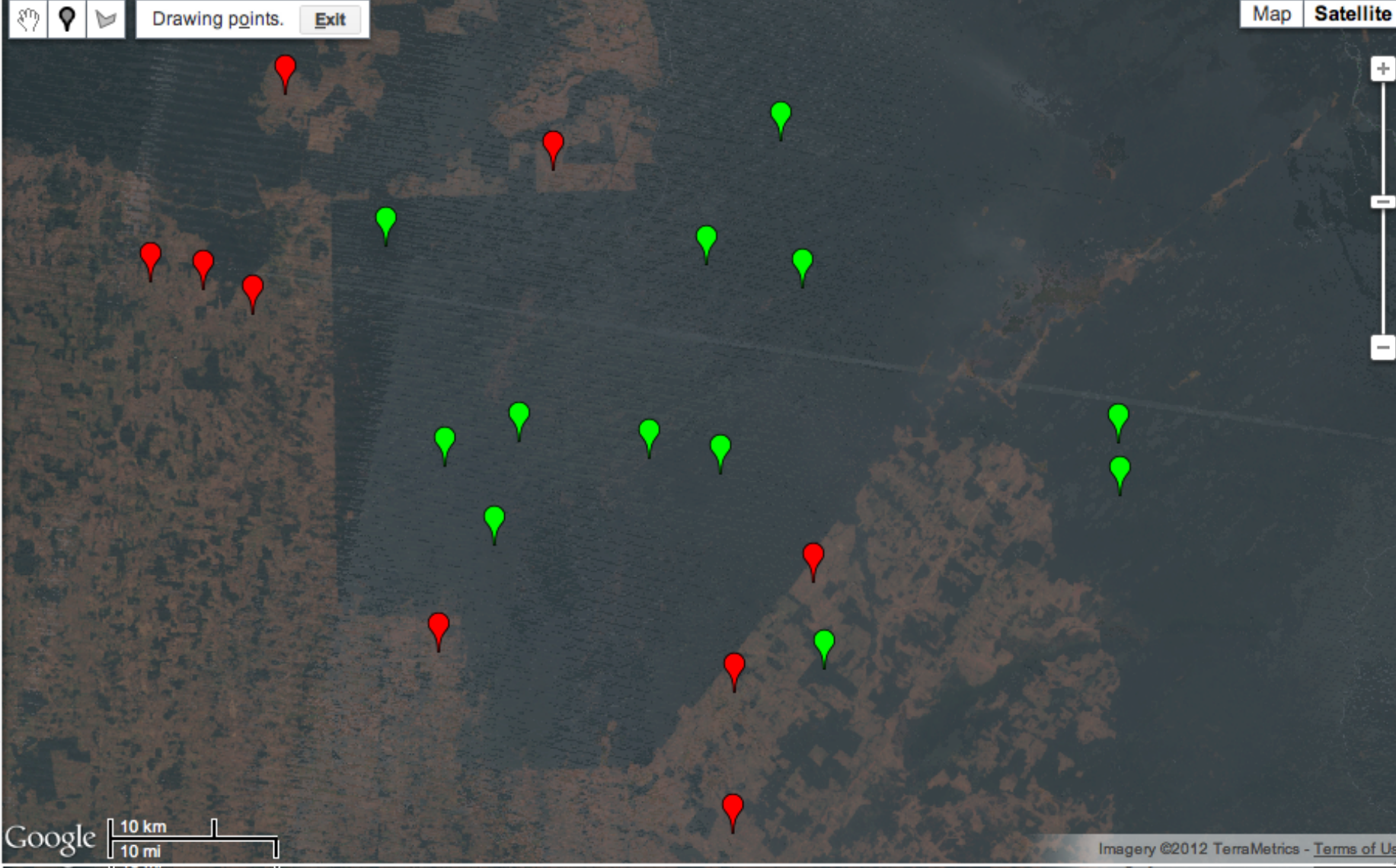
Fast Naive Bayes ▾

30

[Build model and display results](#)

Results

Model, trained May 25, 2012 at 4:06pm (100%)



# Earth Engine: classify

Choose a project ▾

Save

Train

Classify

Compare

Region: Viewport ▾

Classes +

■ Non Forest - 9 points

■ Forest - 12 points

[Add class](#)

Data +

Hand-drawn points and polygons

Percentile Composite (Landsat 7 Reflectance)

Algorithm

Classifier Resolution (m)

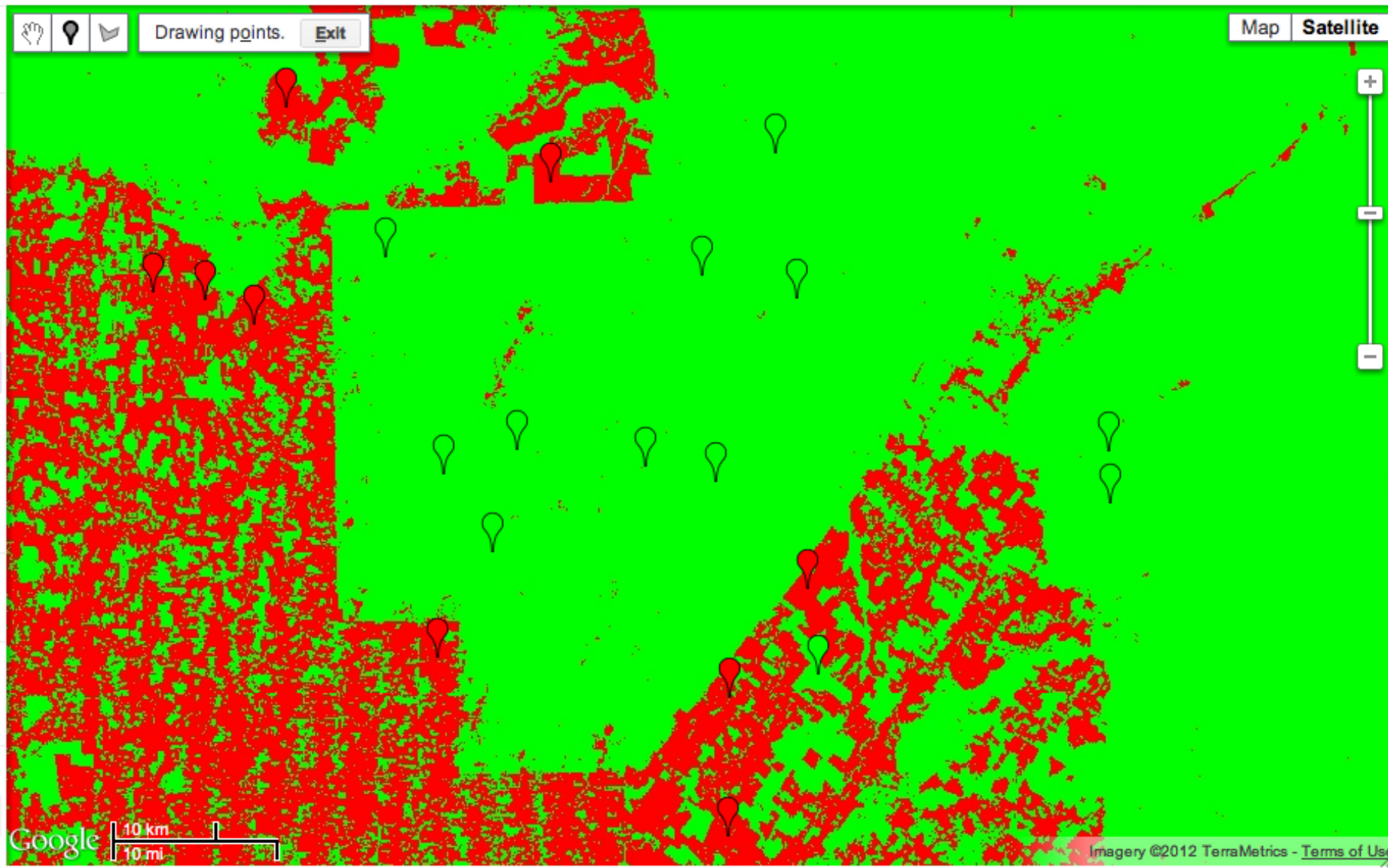
Fast Naive Bayes ▾

30

Build model and display results

Results

Model, trained May 25, 2012 at 4:06pm (100%)



thau@google.com

1 cells closed

Cell 2/52/73 - go back

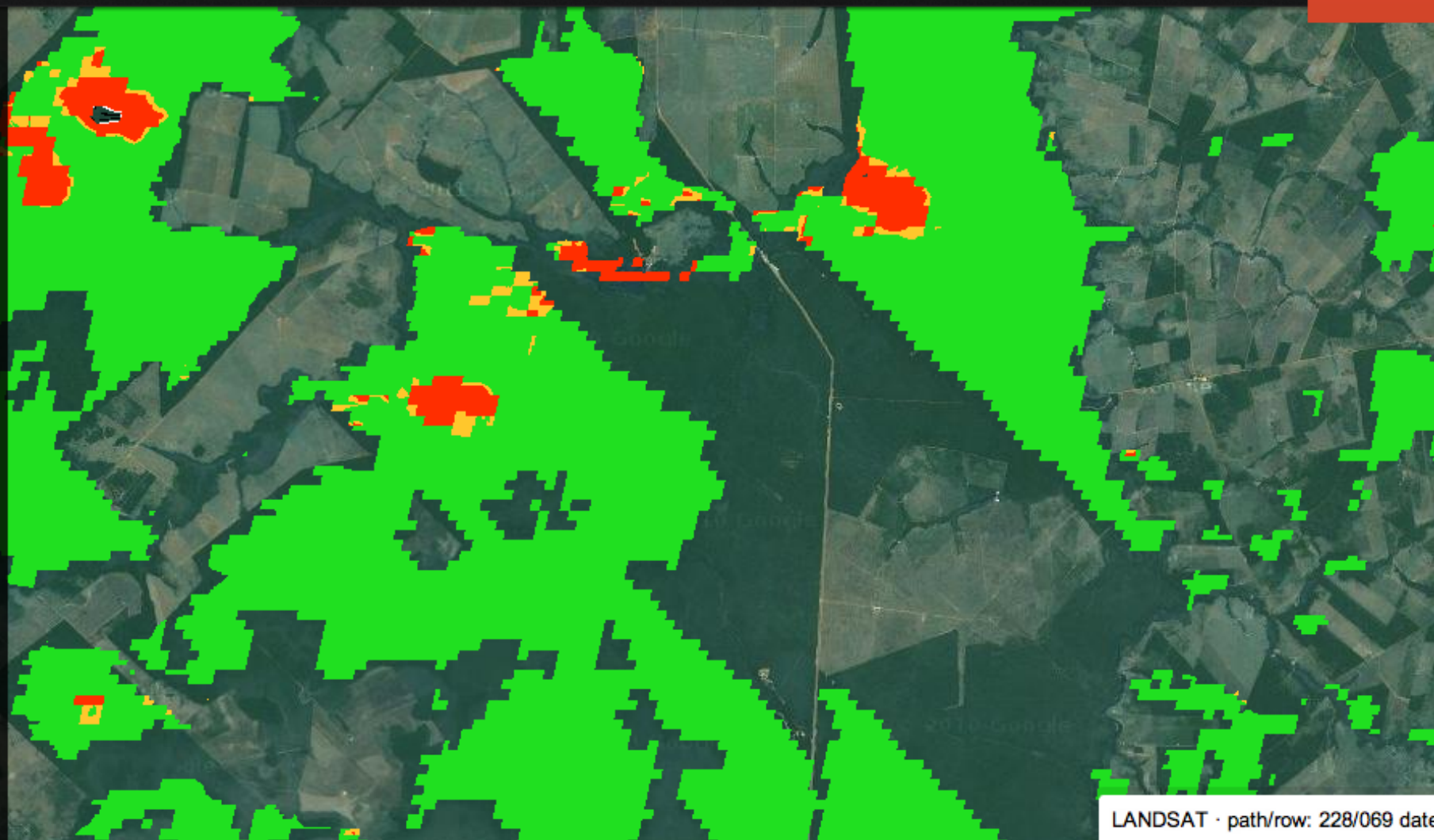
0 NOTES

ndfi change: 0.03

DONE

Compare View

NDFI settings



LANDSAT · path/row: 228/069 date: 2012-4-15



# Earth Engine Summary

Easily accessible satellite imagery

---

API for performing analyses with that imagery

---

Parallelized and run in the Google cloud

---



# Thank you

To sign up for our trusted tester program: [earthengine-beta@google.com](mailto:earthengine-beta@google.com)

[thau@google.com](mailto:thau@google.com)

+davethau





# Introducing AXS Map

Jason Dasilva

# Changing the world of accessibility through maps






# Creating AXS Map


Kevin Bluer

## Search Terms: "Restaurant" in "New York"

 SEA Thai Restaurant  
114 North 6th Street,  
Brooklyn



Know this place? [Add a Review](#)

 Miyako Japanese  
Restaurant  
143 Berry Street, Brooklyn


Accessibility Unknown

Know this place? [Add a Review](#)

 S & B Restaurant Inc  
194 Bedford Ave # A,  
Brooklyn


Accessibility Unknown

Know this place? [Add a Review](#)

 Juliette  
135 North 5th Street,  
Brooklyn

Accessibility Unknown

Know this place? [Add a Review](#)

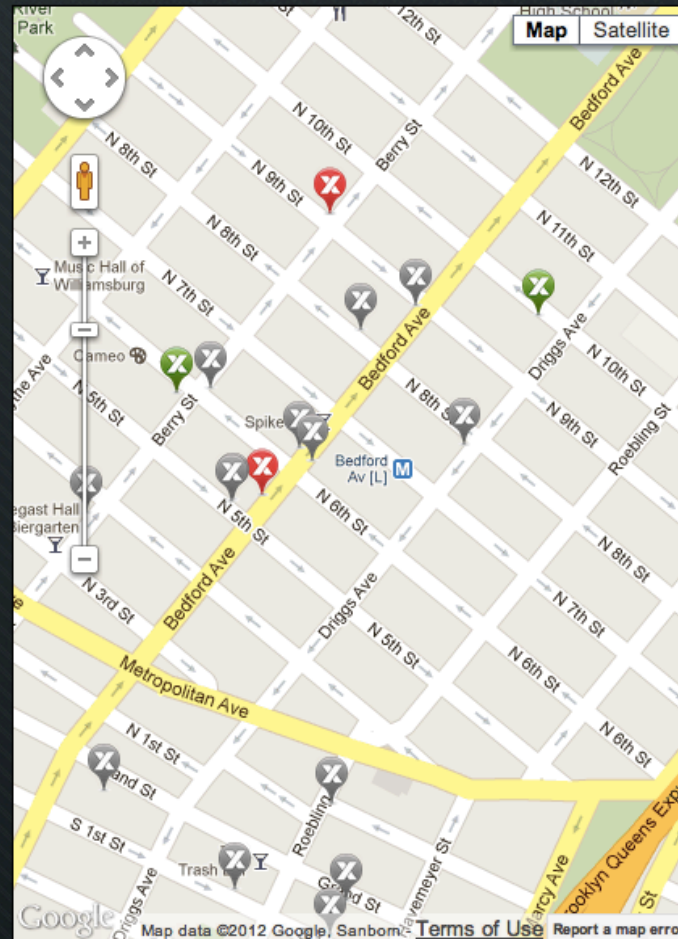
 Miranda Restaurant  
80 Berry Street, Brooklyn



Know this place? [Add a Review](#)

 REFRESH MAP

Auto-Refresh Map



## SEA Thai Restaurant

114 North 6th Street  
Brooklyn, Brooklyn

[\(718\) 384-8852](tel:(718)384-8852)

<http://www.seathainyc.com/sea/brooklyn/>

Google Rating: ★★☆☆ (view Google reviews)



Entry (2 Reviews)



Bathrooms (2 Reviews)

[▶ ADD YOUR REVIEW](#)



Spacious

2 vote(s)



Quiet

0 vote(s)



2nd Entry

0 vote(s)



Parking

0 vote(s)



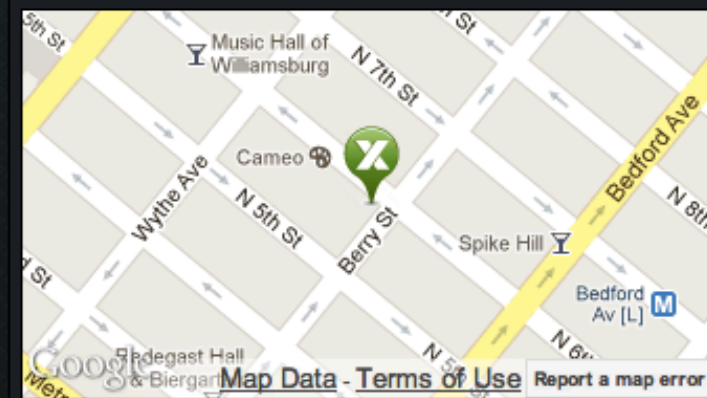
Ramp

0 vote(s)



Braille

0 vote(s)



[View Larger Map](#)



## SEA Thai Restaurant

114 North 6th Street  
Brooklyn, Brooklyn

1

### Rate the Entry

Click the star(s)



2

### Rate the Bathroom

Click the star(s)



3

### Other Attributes?

Click the icon(s)



Spacious?



Quiet?



Parking?



Ramp?



2nd Entry?



Braille?

4

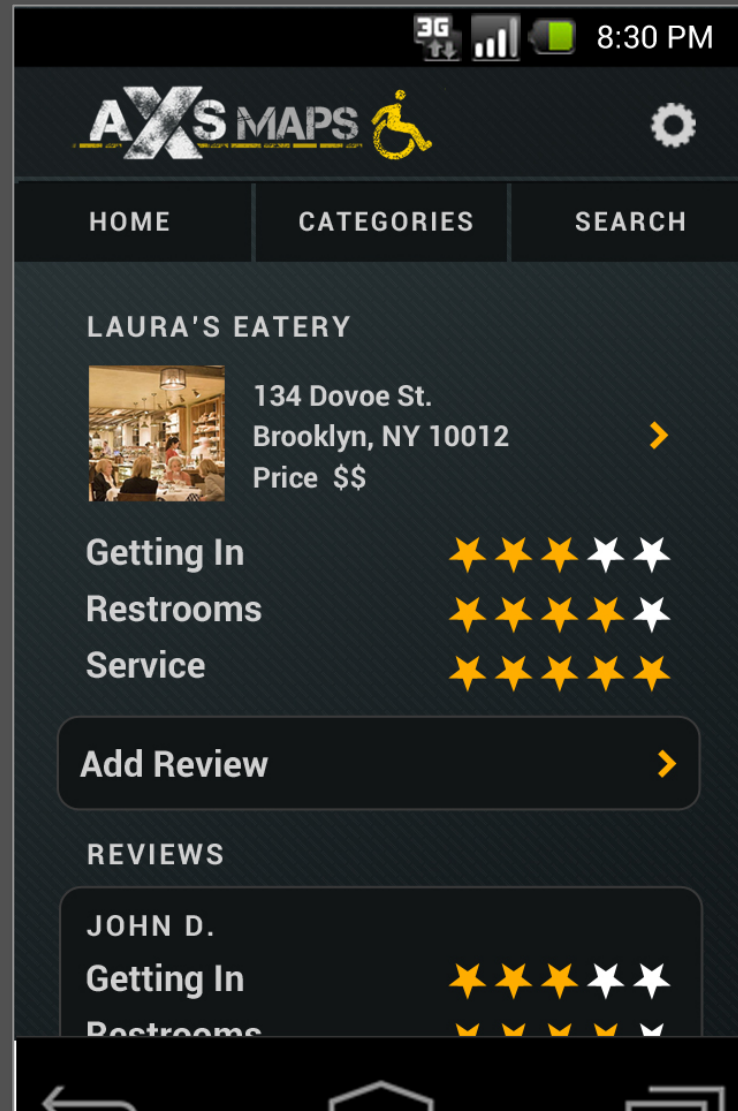
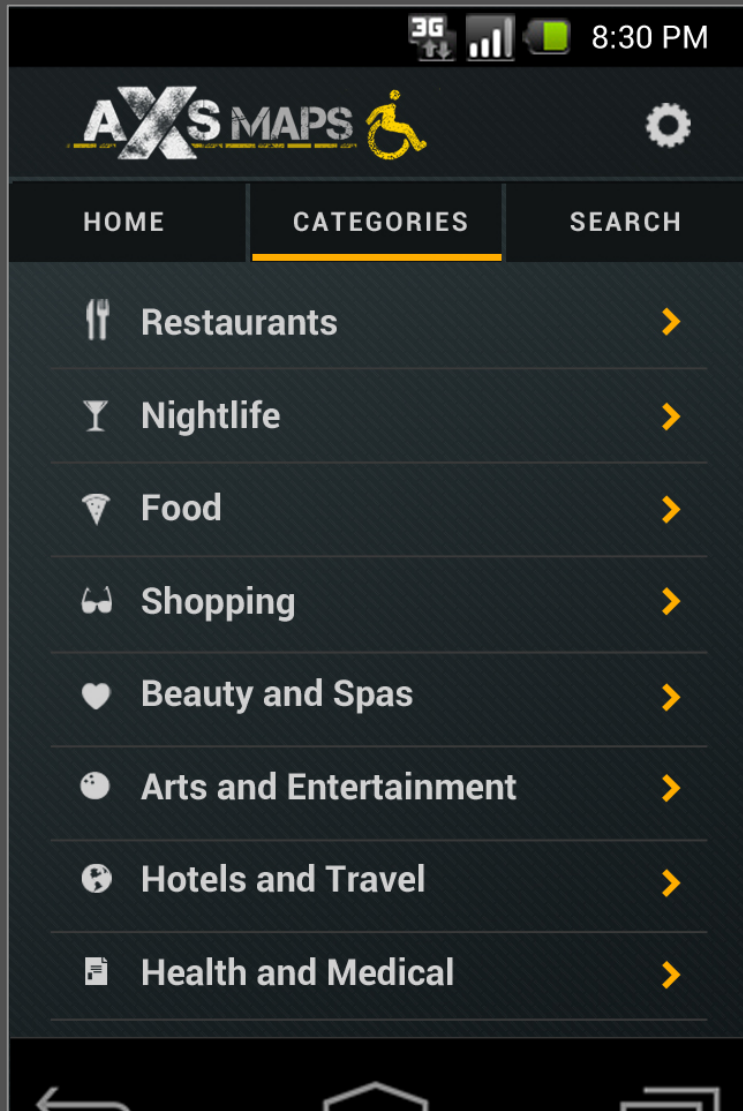
### Comments

Write your comments,  
advice, tips, etc.

Very accessible, and great staff too. Toilets a slight squeeze but still able to make it :)







# Visual Design

- Goals
  - Ease of Use, Broad Appeal, Accessible
- Accessible Interface
  - White and Black
  - Big Fonts + Icons
  - WCAG compliance
- Interactive Wireframes
  - Balsamiq Mockups
  - HTML 5 mocks
- “...journey, not a destination”



# Technology Stack

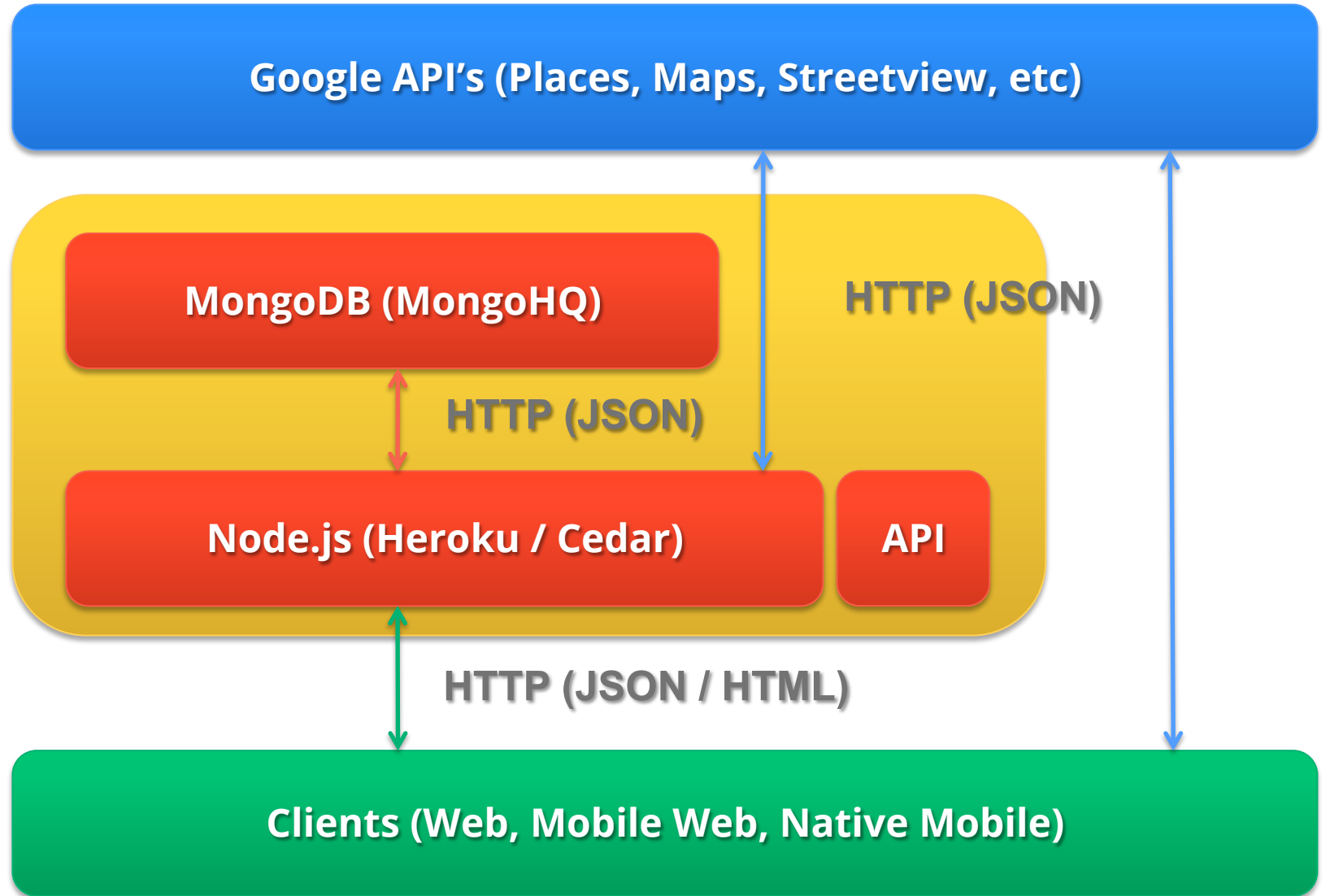
Google™

mongoDB

node JS™

HTML5

CSS3



# Core Technical Design Decisions

- JavaScript everywhere
  - App Server (node.js)
  - Clients (Web, PhoneGap)
  - Database (MongoDB, JSON)
- Cordova / PhoneGap Experiences
  - Author native applications using HTML 5
  - Very positive experience



Phone**Gap**

JavaScript

```
var http = require('http');
http.createServer(function (req,
res) {
    res.writeHead(200, {'Content-
Type': 'text/plain'});
    res.end('Hello World\n');
}).listen(1337, '127.0.0.1');
console.log('Server running at
http://127.0.0.1:1337/');
```



# AXS Map API

- Two core elements
  - Augmentation layer on top of the Google Places API
  - RESTful endpoints (as used by the application)

```
{“gettingin”: 5, “restrooms”: 4, “spacious”: true, “quiet”: true, “parking”:  
false, “ramp”, true, “secondentry”, false, “braille”: true}
```

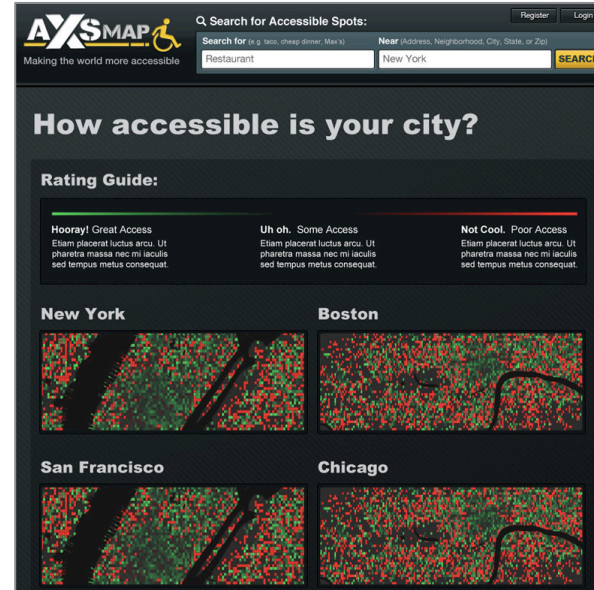
JSON

- We’d love to share :)
- Reach out to us at [kevin@bluer.com](mailto:kevin@bluer.com)



# Upcoming Releases

- Photo Upload
- Richer Filters
- Android App (followed by iOS)
- Ongoing Tweaks and Fixes



Visualization



Augmented Reality



Gamification



# axsmap.com

Changing the world of accessibility through maps.

Kevin Bluer – [kevin@bluer.com](mailto:kevin@bluer.com)

Jason Dasilva – [jdasilvax@gmail.com](mailto:jdasilvax@gmail.com)





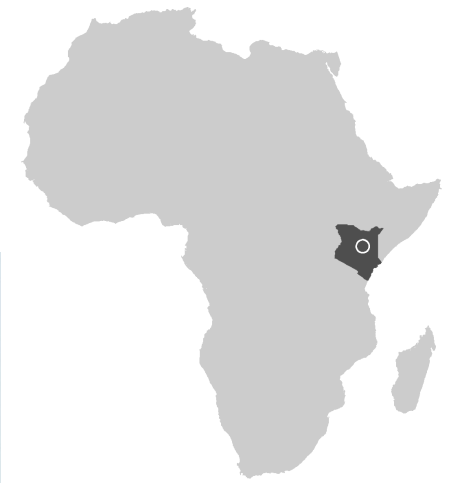
# Realtime monitoring of elephant movements for conservation

Jake Wall

PhD Researcher from Save the Elephants (Kenya)



# *Loxodonta africana*



# GPS Tracking

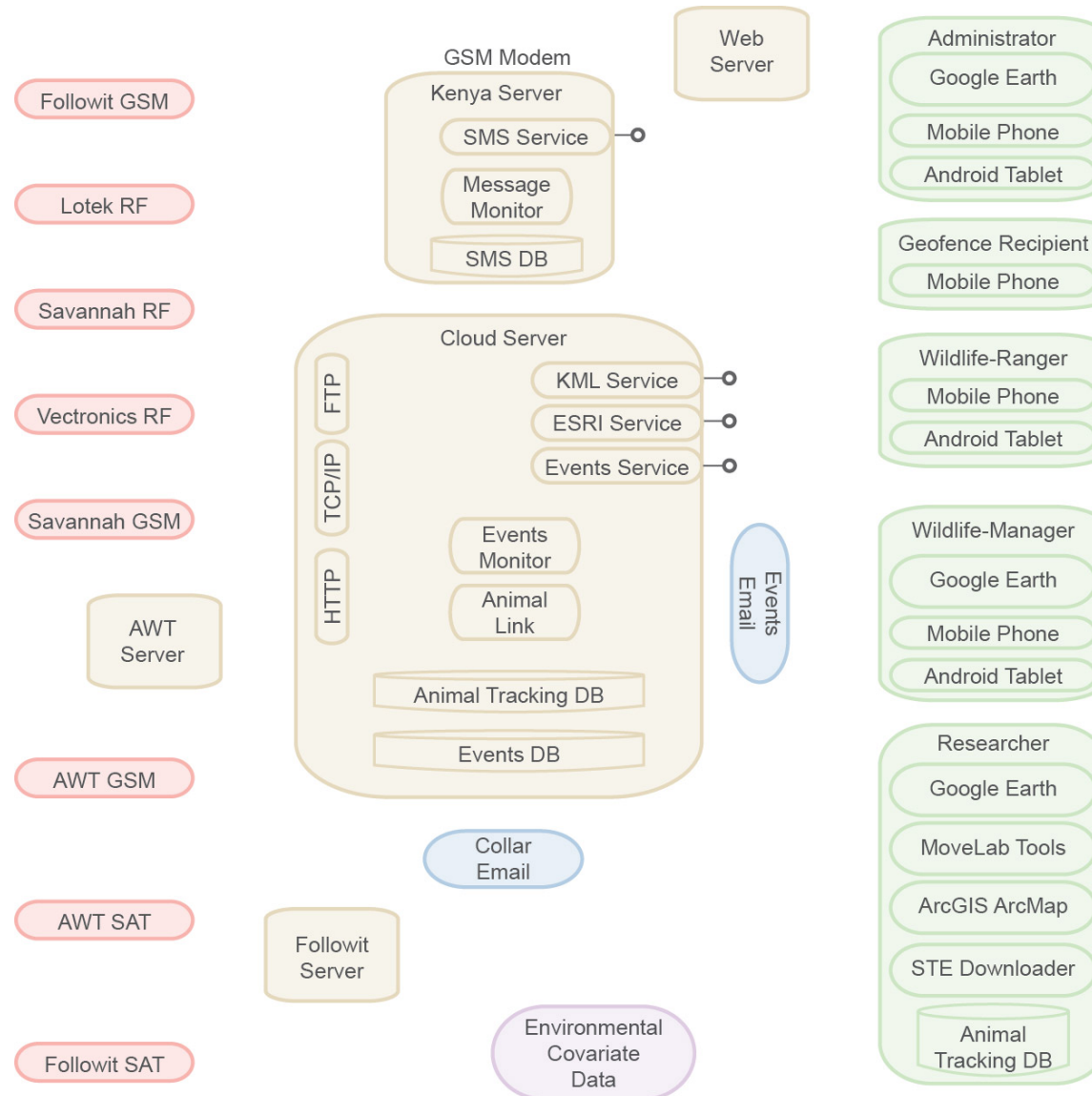


# 3 System Requirements

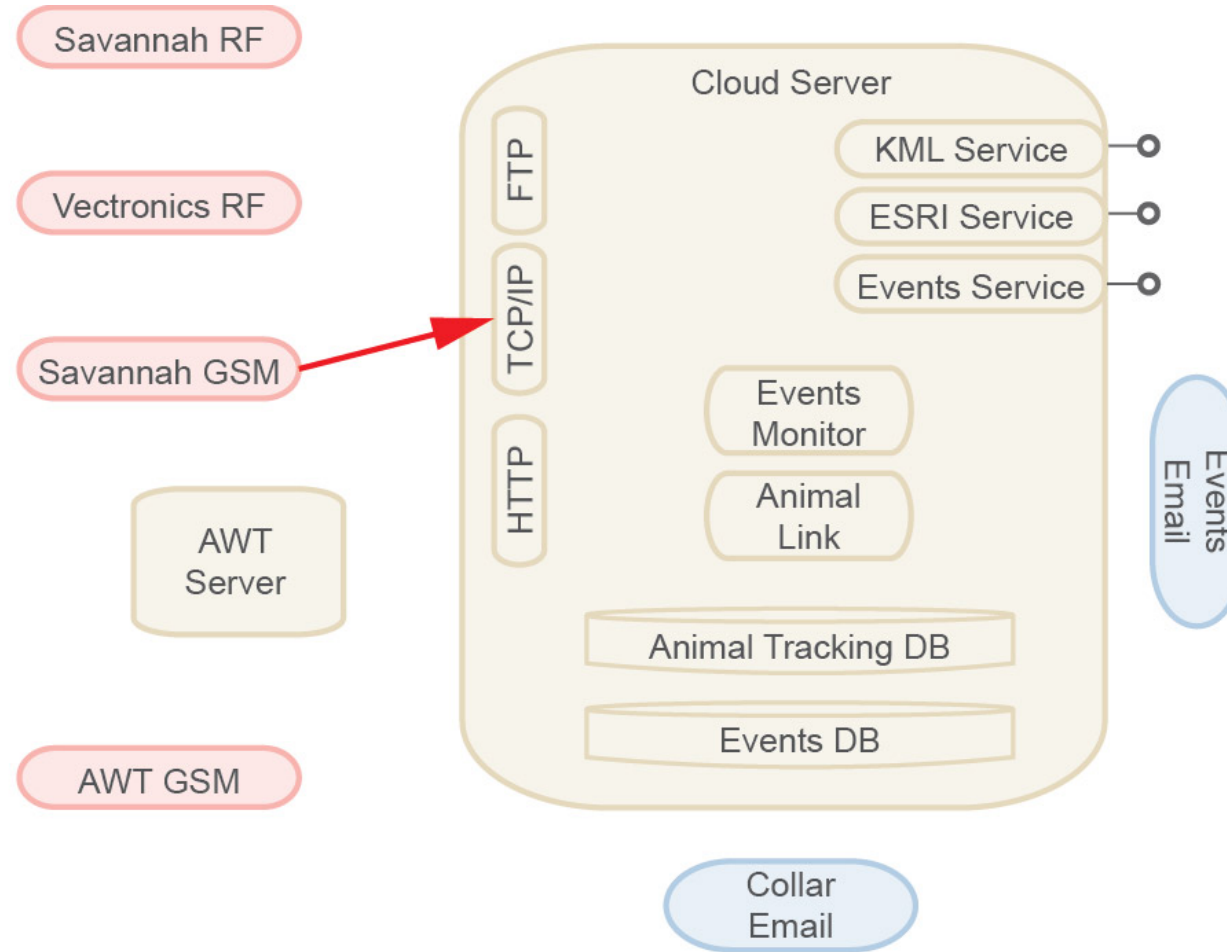
- Location Data Security
  - Password authentication
- Real-time Access
  - Minimize time for data to travel from elephant to user
- Configurable multi-user system
  - Researchers
  - Wildlife managers
  - Public & Education
  - Data time delay



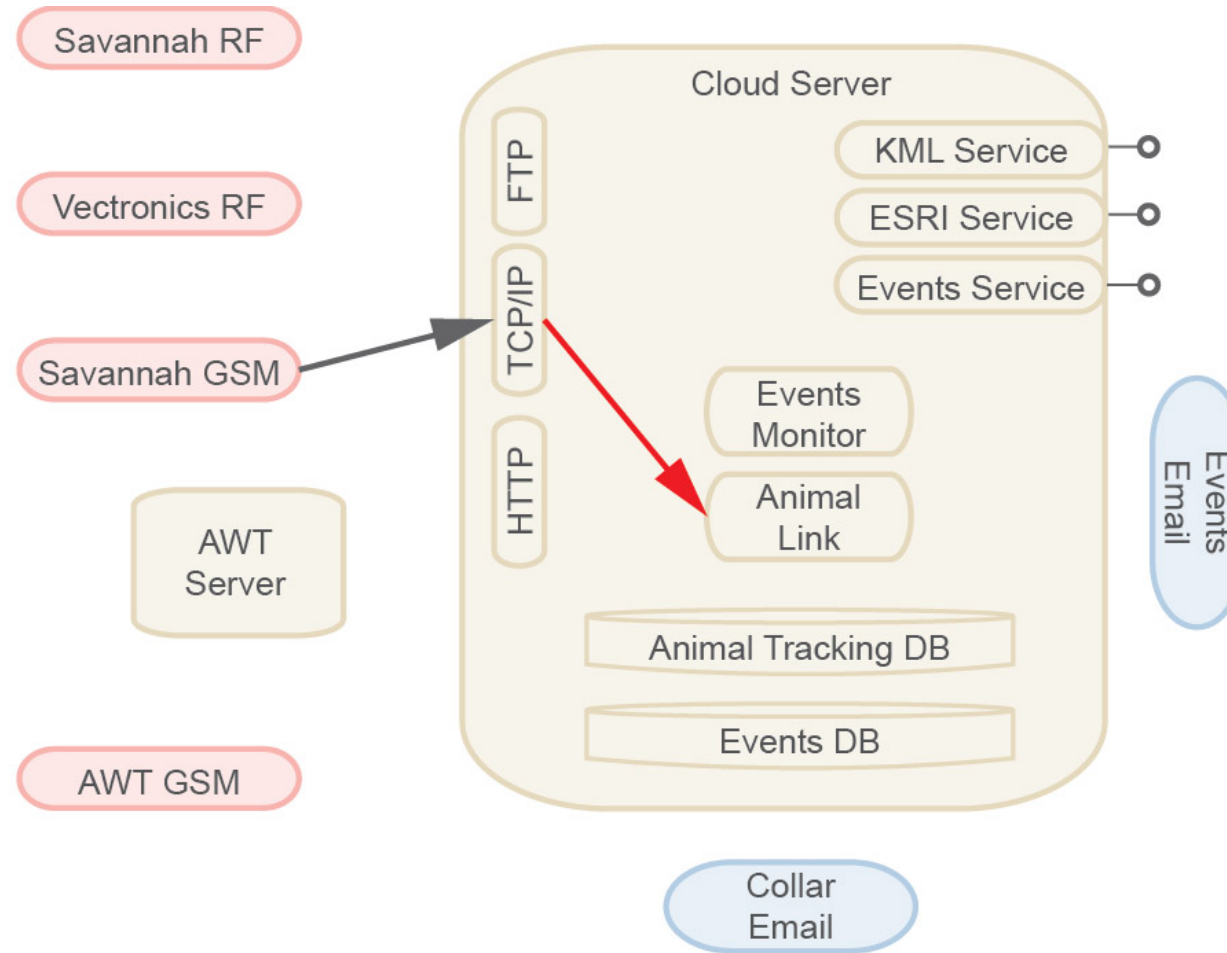
# STE Tracking Animals for Conservation System



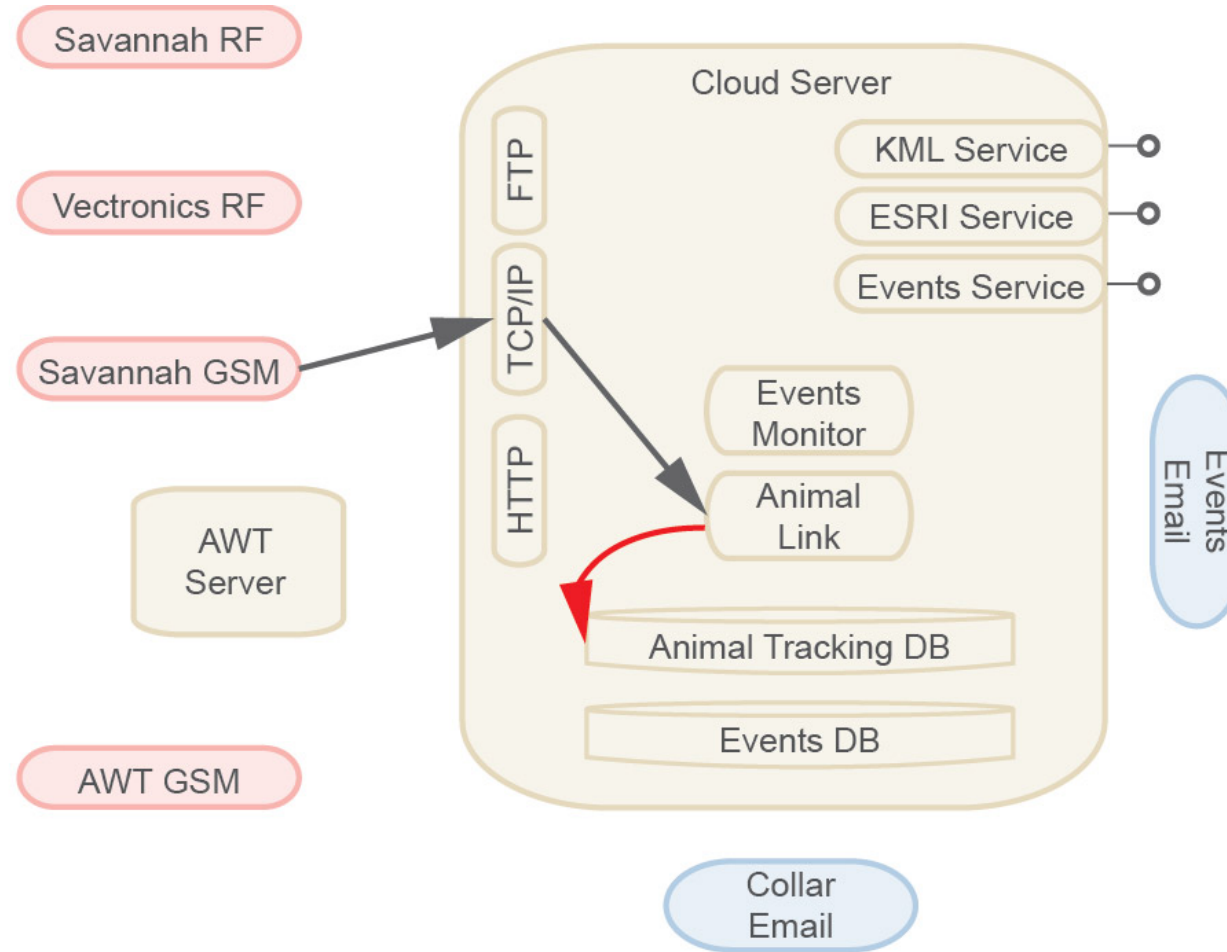
# STE Tracking Animals for Conservation System



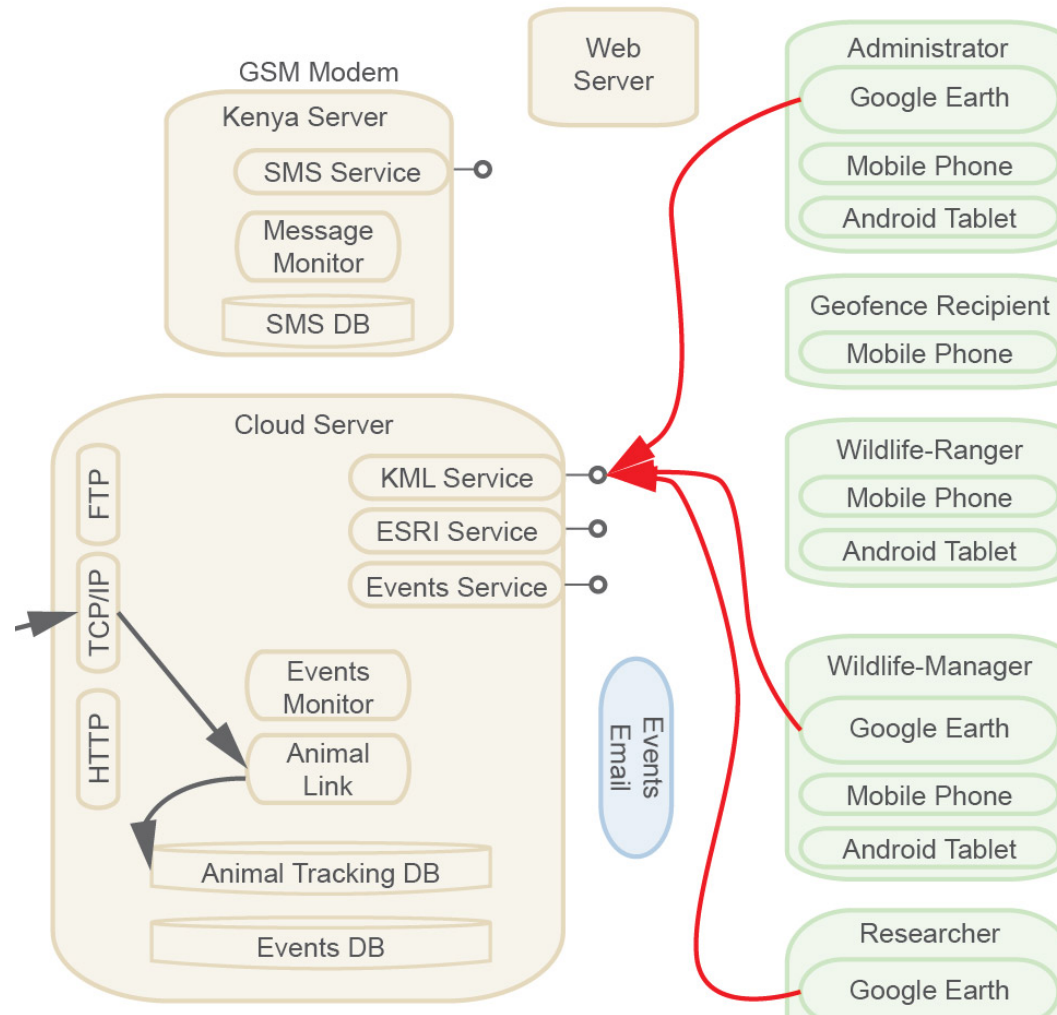
# STE Tracking Animals for Conservation System



# STE Tracking Animals for Conservation System

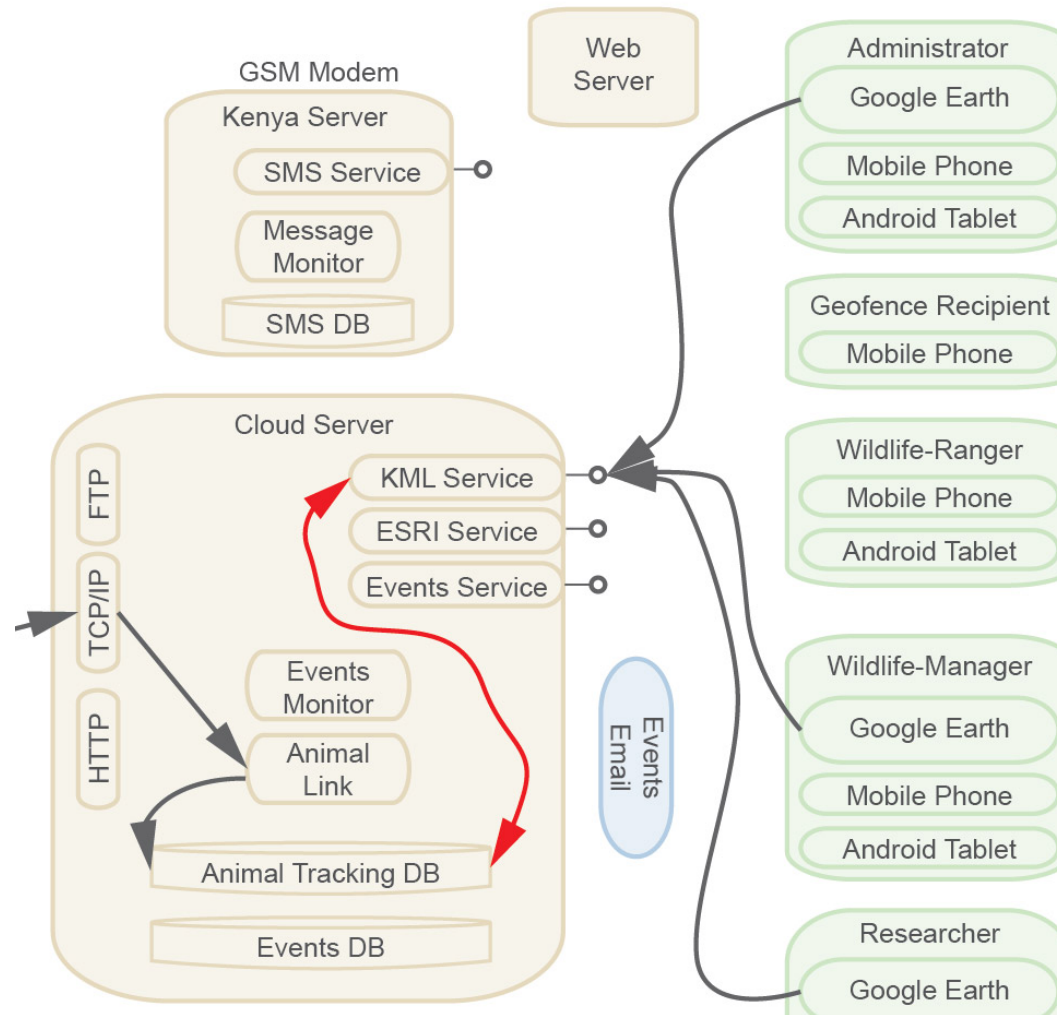


# STE Tracking Animals for Conservation System

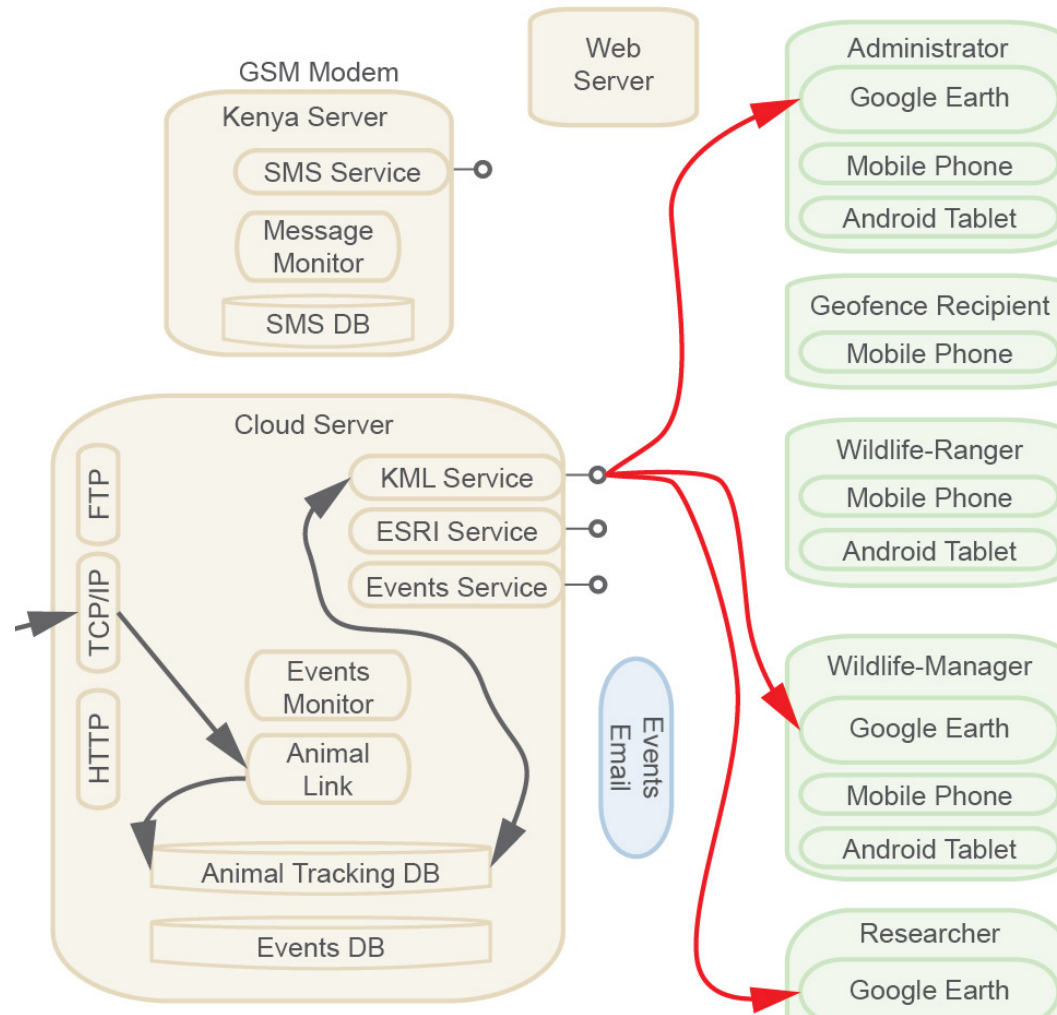




# STE Tracking Animals for Conservation System



# STE Tracking Animals for Conservation System



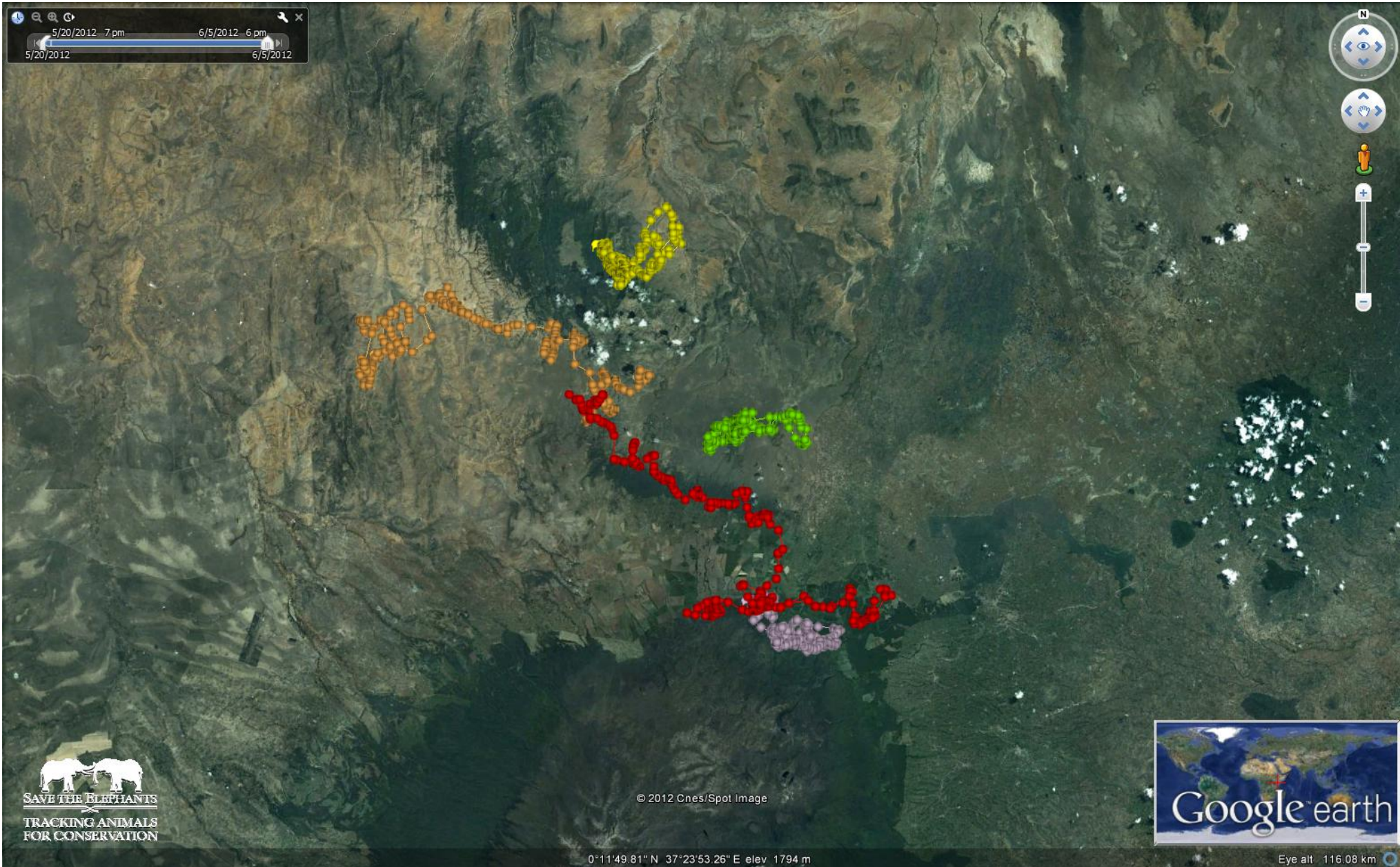
# KML Web Service

C#

```
namespace KMLServiceLibrary
{
    [ServiceContract]
    public interface IKMLDataService
    {
        [OperationContract]
        string GetDataStructure(string Username, string Password, string databaseConnection, string
outputServerAddress);
    }

    [ServiceContract]
    public interface IKMLTrackingService
    {
        [OperationContract]
        string GetTrackingData(string Username, string Password, string databaseConnection, string history, int
chrono, bool filter);
    }
}
```







# savetheelephants.org

Realtime monitoring of elephant movements for conservation.

Jake Wall  
walljcg@gmail.com  
+1-604-723-1224





**Announcing...**  
**Google Earth Outreach**  
**Developer Grants 2012**

Rebecca Moore

# Announcing...

## Google Earth Outreach Developer Grants 2012

Funding for developers to build cutting-edge maps for nonprofits.

Average Grants are between

**\$10,000 - \$20,000**



The screenshot shows the Google Earth Outreach website interface. At the top, the Google logo is followed by "Earth Outreach". Below this is a navigation bar with links for Home, Explore Tools, Tutorials, Success Stories, Grants (highlighted), and Resources. Underneath the navigation bar are two sub-links: Software Grants and Developer Grants. The main content area features a heading: "Sometimes nonprofits need a little technical help from a developer". Below the heading is a paragraph explaining that Google Earth Outreach Developer Grants aim to spur the development of more stellar examples of how Google mapping technologies can help nonprofits in their work by awarding funding for the technical development of mapping projects. A second paragraph states that the organization is not currently accepting applications for Google Earth Outreach Developer Grants and provides a link to sign up to receive announcements. A third paragraph suggests checking out the Developer Marketplace to find recommended developers. To the right of the text is a map of Africa showing the percentage of electricity generated from hydropower. The map is color-coded according to a legend: 85% - 100% (dark orange), 70% - 84% (orange), 50% - 69% (light orange), 30% - 49% (yellow), and Less than 30% (light yellow). The map also features the logos for "Friedrich Schiller University" and "Google".





# Google Earth Outreach Developer Grants 2012

**DEADLINE TO APPLY:  
AUGUST 1, 2012**

## How does it work?

Nonprofits apply at [www.google.com/earth/outreach/grants/developer/index.html](http://www.google.com/earth/outreach/grants/developer/index.html)

All funding goes to developers...YOU!

## Developers:

- [Contact a nonprofit](#) you've been dying to work with but didn't have the resources
- If you don't have a project in mind, get yourself listed in the [Developer Marketplace](#)
- Come to the [Develop for Good booth](#) on Floor 2 and meet the Earth Outreach team



# Get Listed in the Developer Marketplace

Learn more at the Develop for Good Booth!



## Developer Marketplace

Find a developer to help develop your map project. Explore the list of Google Earth, Maps and SketchUp developers who work with public benefit organizations and are approved by Google Earth Outreach.

[Go to the Developer Marketplace](#)

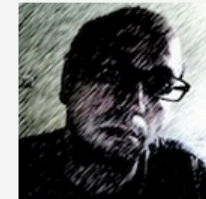
Join our network of developers!



**David Tryse**  
davidtryse@gmail.com  
Developer  
Dublin, Ireland



**GreenInfo Network**  
gin@greeninfo.org  
Non-profit organization  
San Francisco, CA, USA



**Eduardo Garcia-Milagros**  
eduardogarmi@gmail.com  
Developer  
Murcia, Spain



**MapTogether**  
team@maptogether.org  
Developers  
Chicago, IL, USA

[www.google.com/earth/outreach/resources/developers.html](http://www.google.com/earth/outreach/resources/developers.html)



**You want to change the world. We want to help.**

Google Earth Outreach gives nonprofits and public benefit organizations the knowledge and resources they need to visualize their cause and tell their story in Google Earth & Maps to hundreds of millions of people.



# earth.google.com/outreach

how Google products can help your nonprofit and visit us at the Google booth. [See the schedule](#)

Rio Negro, Amazon riverside communities, and a trail into the Amazon Rainforest. [Read the story](#)

to drive decision-making with colleagues or educate the public about your cause. [Take the tutorial](#)



Looking for specific information?

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Share this site: 21



# <Thank You!>

You want to change the world. We want to help.

rmoore@google.com

+rebeccatmoore

#io12

thau@google.com

+davethau





Google  
Developers