Project Centinela

Satellite Data for Conservation in Amazonia and Beyond

Amy Rosenthal | Planet | November 11, 2024

CENTINELA RANGE, ECUADOR

PLANET'S MISSION

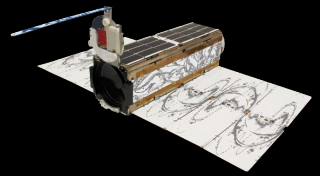
To image the whole world every day and make global change **visible**, **accessible**, and **actionable**.

Our Public Benefit Corporation (PBC) Purpose:

To accelerate humanity toward a more sustainable, secure, and prosperous world by illuminating environmental and social change.

You can’t fix what you can’t see.

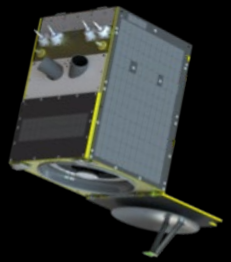
CURRENT CONSTELLATIONS



SuperDove

Always-on Monitoring

- ~180 satellites
- Up to 300 million km^2 / day
- 8-band
- Unique scanning



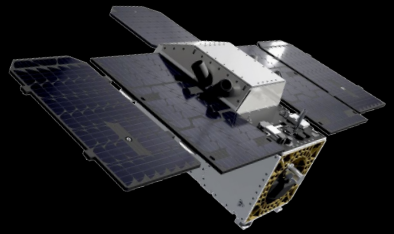
SkySat

High-Resolution Tasking

- ~20 satellites
- 50cm resolution
- RGB, NIR, and Pan bands
- Sub-daily tasking

PLANNED HIGH RESOLUTION UPGRADE

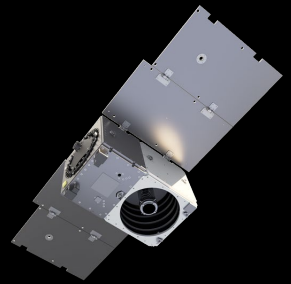
UPCOMING CONSTELLATIONS



Tanager

Hyperspectral Tasking

- 400 - 2500 nm
- ~400 5nm bands
- Industry leading SNR
- First launch this year



Pelican

Very High Resolution Tasking

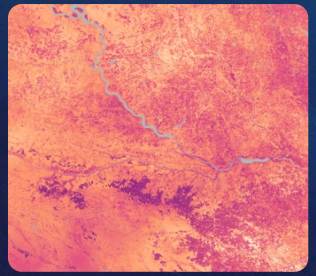
- Initial fleet of up to 30 satellites[1]
- Up to 30cm resolution
- Pan + 6 RGB+NIR bands
- Up to 30 revisits/day
- First fleet this year

[1] Does not include initial 2 demonstration satellites planned for FY'24.

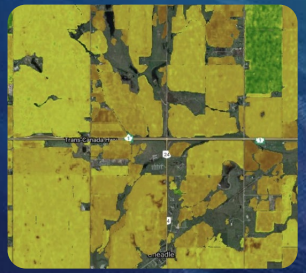
Planetary Variables

AI-powered, validated models of Earth's changing surface

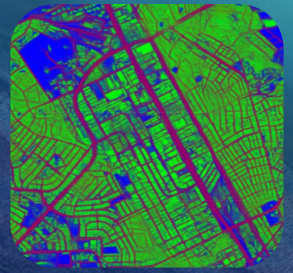
SOIL WATER CONTENT



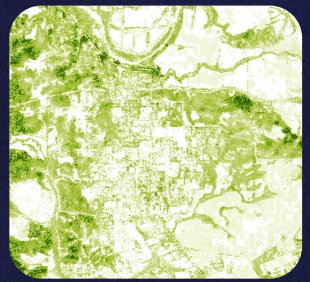
LAND SURFACE TEMP



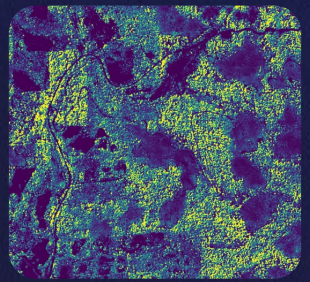
CROP BIOMASS



ROAD & BUILDING DETECTION

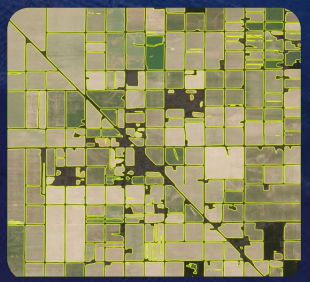


FOREST STRUCTURE



FOREST CARBON

VEGETATION ENCROACHMENT

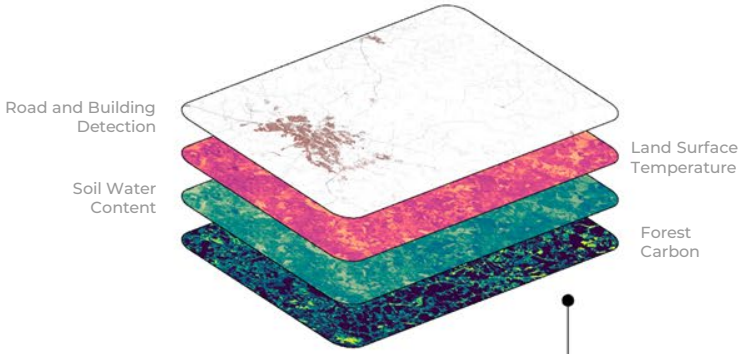


FIELD BOUNDARIES

GULF OF OMAN · Iran · June 3, 2021

Looking Deeper

Planetary Variables and Analytics measure phenomenon and classify objects

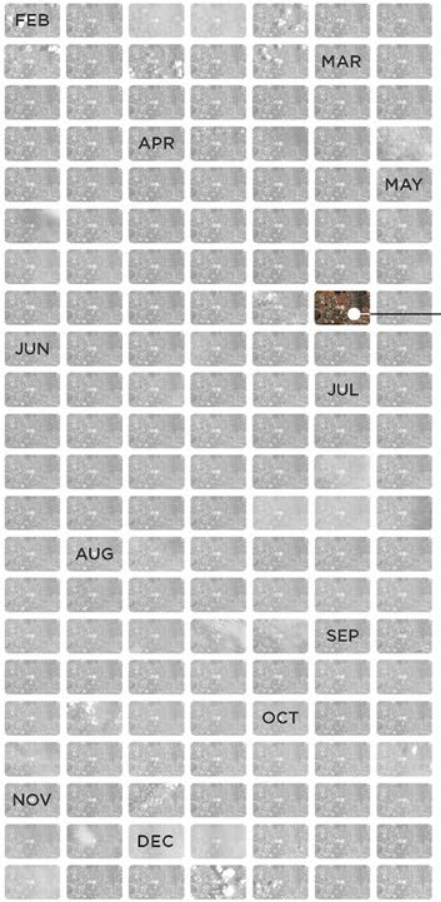


Looking Broader

A daily scan of Earth's landmass and Strategic waterways

Looking Back

An extensive archive provides a view backwards in time



Looking Closer

Automated Change Detection identifies relevant, timely change across broad areas

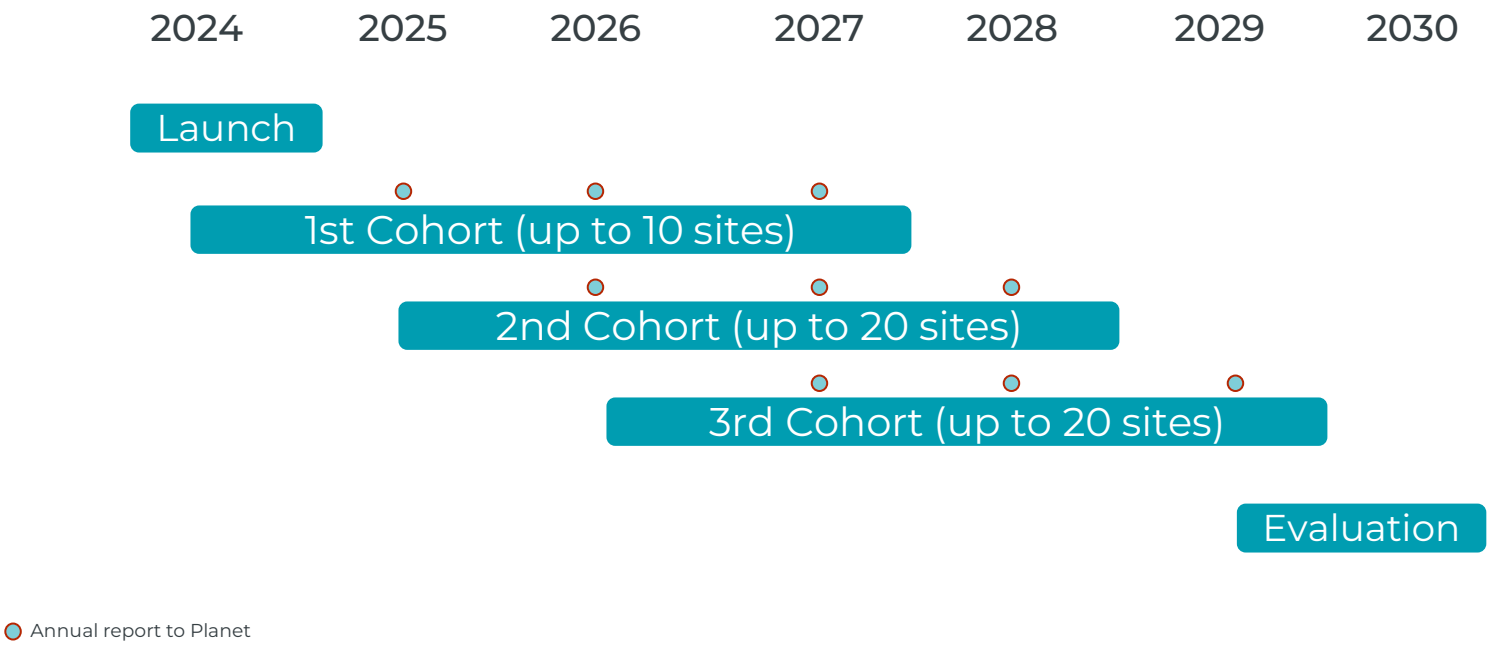
Nuanced decision-making with high-resolution imagery


Introducing our newest
Digital Public Good
PROJECT
CENTINELA
Southern Centinela Range · Ecuador · April 29, 2023

Conservation Imperatives

Project Centinela

Up to 50 sites - 3 cohorts over 5 years



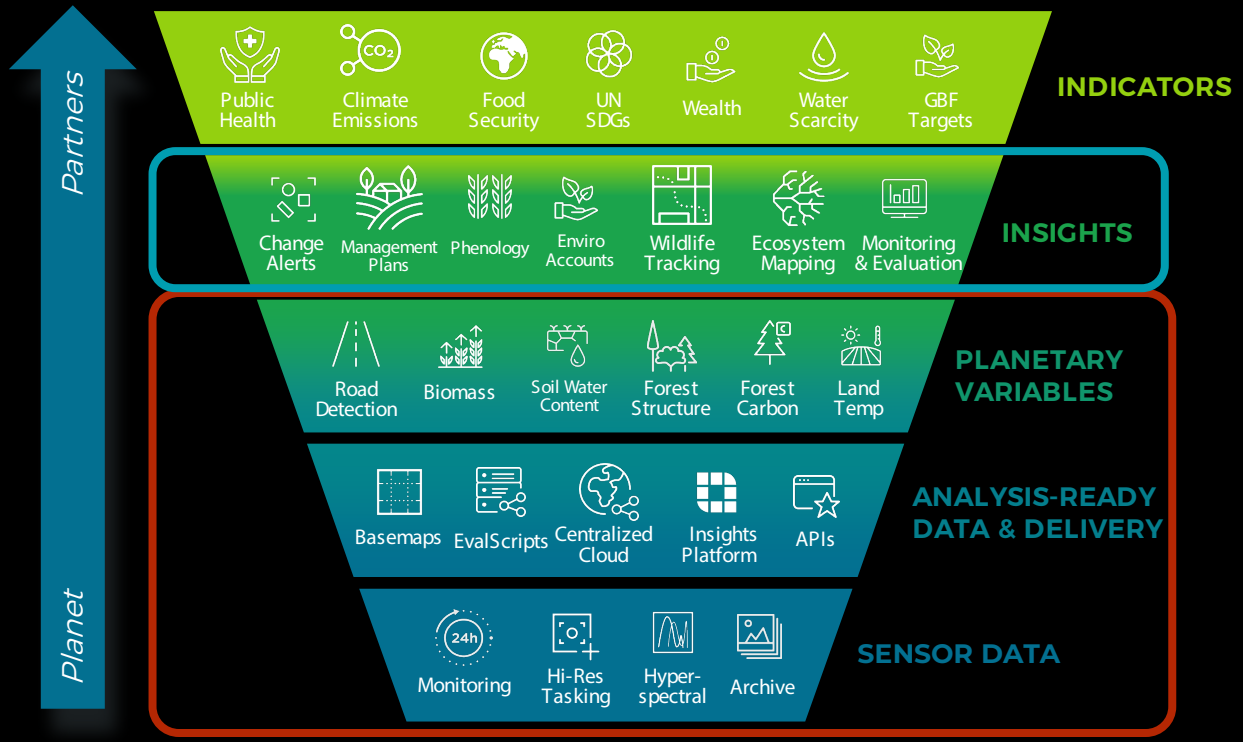
“Biodiversity Subscription” for Centinela sites

Applicants have the opportunity to express interest in:

- **Basemaps**
  - Monthly basemaps (streaming & download)
  - Archive (2020 - present)
- **PlanetScope**
  - Monitoring
  - Archive (2020 - present)
- **SkySat**
  - Limited Flexible Tasking
  - Archive (2020 - present)
- **Planetary Variables**
  - Forest Carbon Diligence (30m)
  - Land Surface Temperature (1km or 100m)
  - Soil Water Content (1km or 100m)
  - Crop Biomass (10m)
- **Analytic Feeds**
  - Road Detection & Change Detection
- **Insights**
  - Platform access + “Basic” Sentinel Hub license (70,000 processing units / month)
  - Technical Quickstart training

Not all data types will be feasible or needed for every hotspot

Data Delivery for Biodiversity Insights



The Power of the Biodiversity Subscription

Combating desertification and advancing restoration

JUSTDIGGIT

CHALLENGE

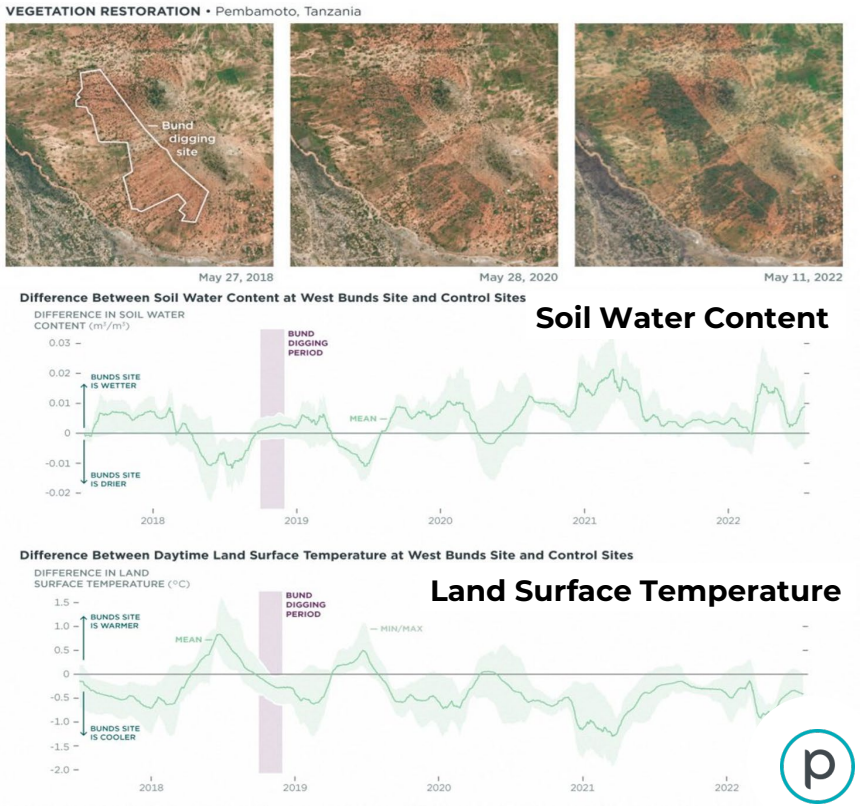
- Fertile areas in East Africa are being degraded into drought-laden deserts due to loss of native vegetation

ACTION

- Justdiggit used **Planet data to evaluate success of regreening over time from locally dug bunds**
- Planetary Variables quantified the liters of water retained by the soil, degrees of surface cooling, and vegetation increase.

RESULTS

- **Bunds increased soil moisture, lowered temperatures, and increased vegetation.**
- JustDiggit has restored 300,000 hectares and more than 10 million trees in sub-Saharan Africa.



Project Centinela Sites

Coastal Forest Grassland/Wetland

Vale do Javari, Brazilian Amazon

Remote, unexplored wilderness; homeland to Indigenous peoples in various stages of contact

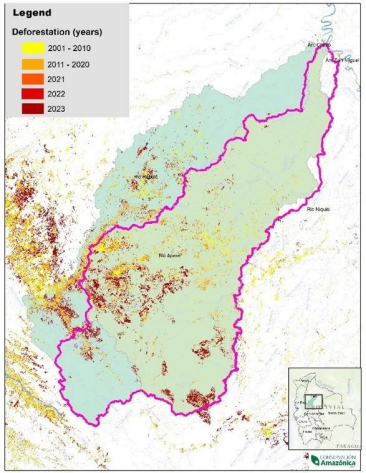
- Helping Indigenous stewards monitor areas at risk of invasion, report environmental crimes, and plan field expeditions in the second largest Indigenous territory in the Brazilian Amazon

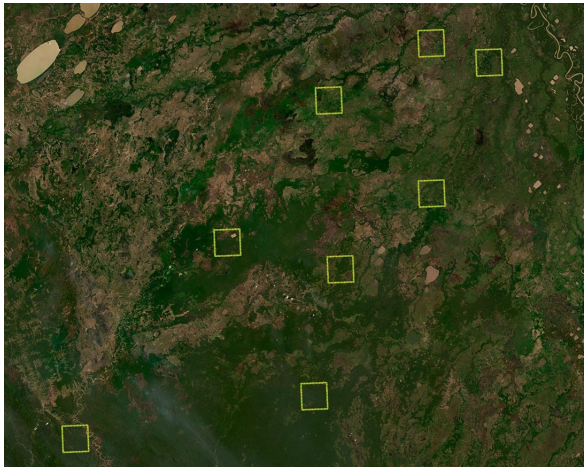
- Planet data monitor borders and rivers for illegal incursions, protecting Indigenous health and the lives of surveillance team

Rio Matos Ramsar Site, Bolivia

Wetland of International Importance with endemic giant water lilies, black spider monkeys

- Supporting the creation of new conservation and protected areas
- Monitoring sustainable cattle grazing and producing alerts for agriculture-driven invasion and degradation
- New application of Planet data to characterize wetland health





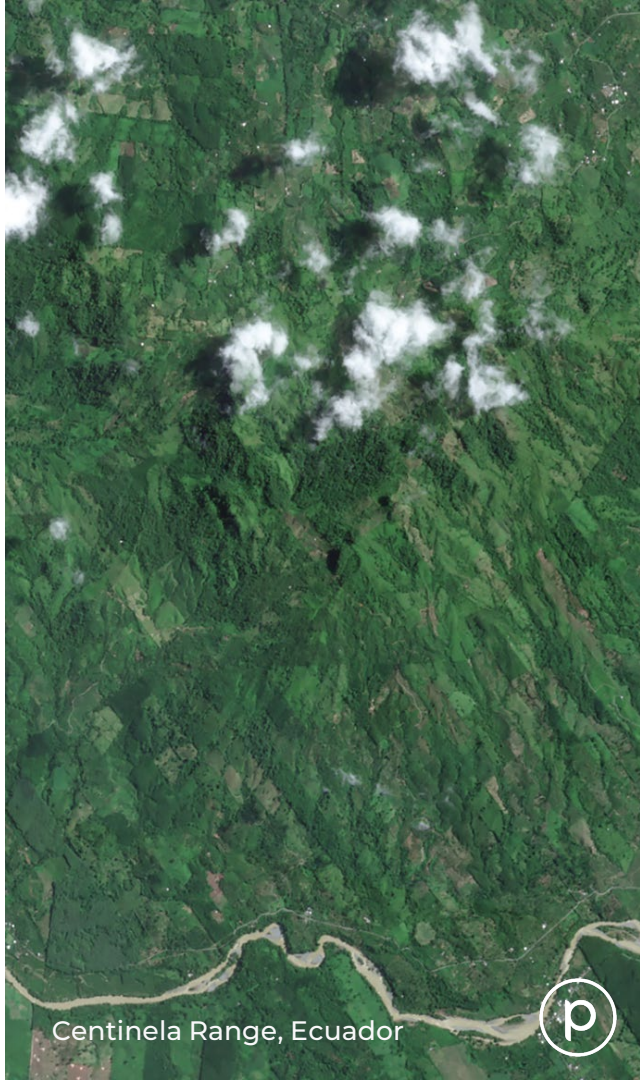
Project Centinela

Open applications for the places that need it most

For up to 50 vulnerable biodiversity hotspots

Evaluation criteria for sites with richness, rarity and risk:

- High conservation value
  - using a recognized approach like KBA, World Heritage Site
- Risk to biodiversity
  - e.g. habitat destruction, overexploitation
- Landscape scale <15,000 sq km
  - e.g. national park, community reserve; not nation or biome
- Priority for underinvested ecosystems
  - e.g. aquatic ecosystems, grasslands and savannas, coastal



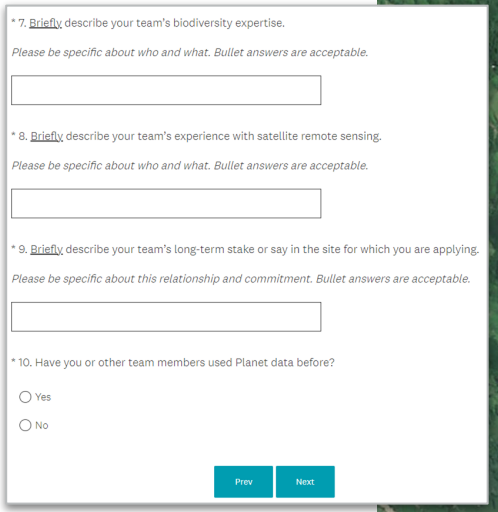
Project Centinela

For those who are ready to hit the ground running and stay committed over the long term

For up to 50 committed teams as end-users

Evaluation criteria for project team:

- Biodiversity expertise
- Experience with remote sensing
- Long-term stake in the place identified



www.surveymonkey.com/r/projectcentinela

Centinela Range, Ecuador

Monitoring of the Andean Amazon Project

www.planet.com/project-centinela/

Thank you

Amazon Boundary: EU JRC, Eva et al. (2005)