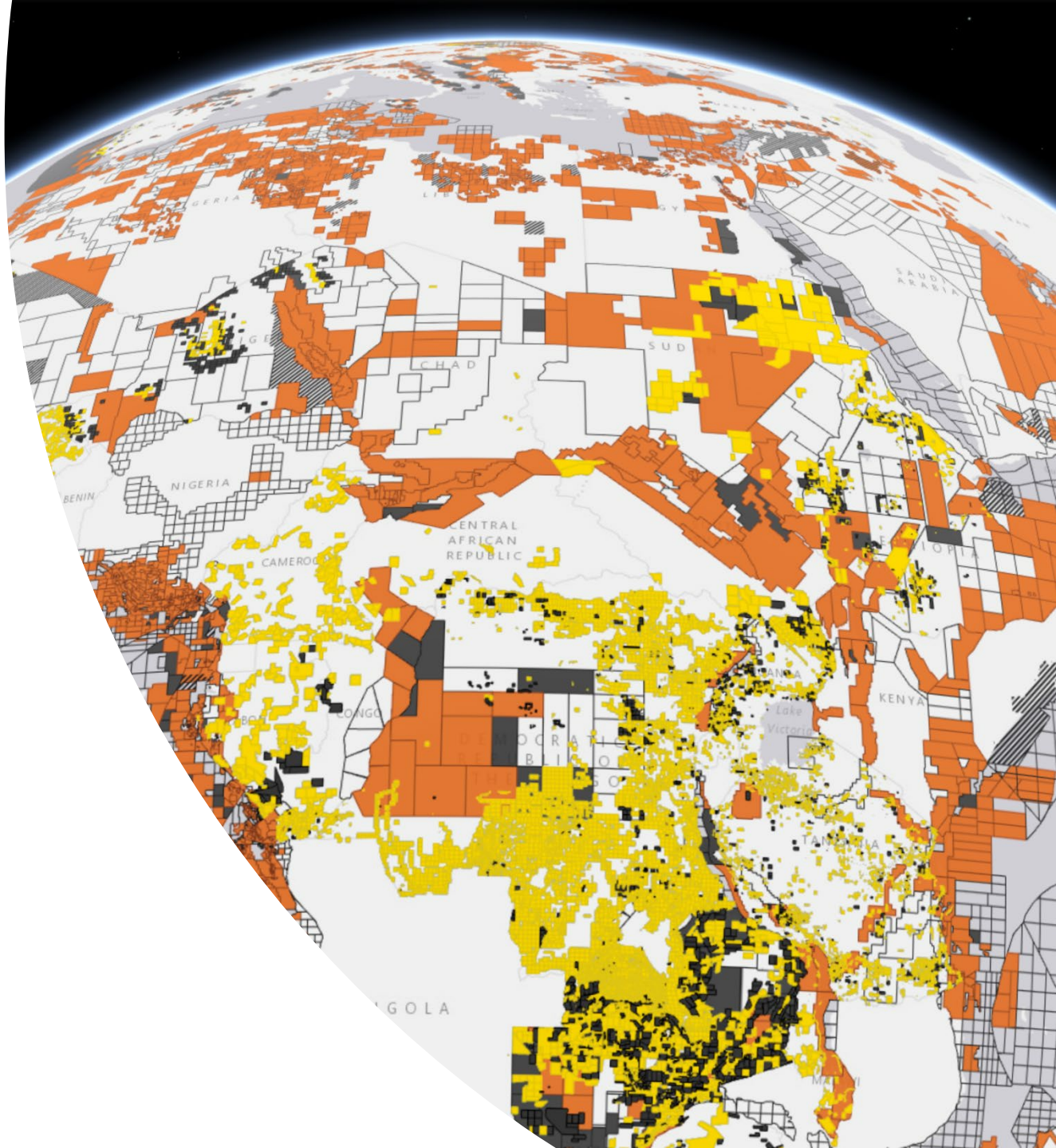
EXPLORING GEOSPATIAL ESG



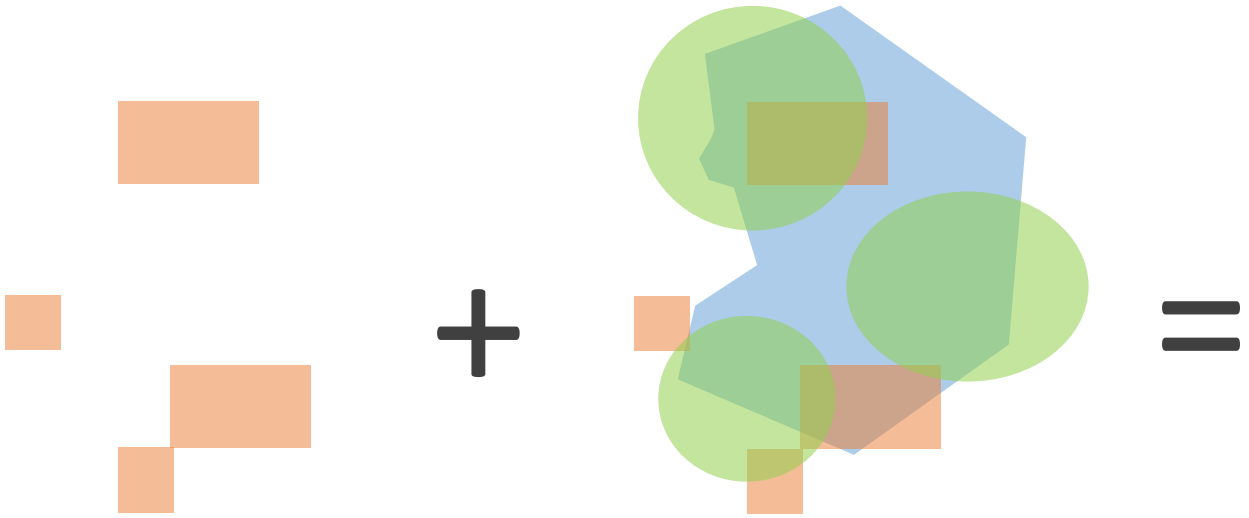
wwf-sight.org
David Patterson

How can we define the **‘biodiversity’** impacts of every asset, every company, every X,Y,Z on the planet?

- Corporate Sustainability Reporting
  - Self Reporting
  - Regulation Reporting
- Web scrapping (NLP)
- Biodiversity Footprint Modelling / Company Financials
- Geospatial Insights / Earth Observation

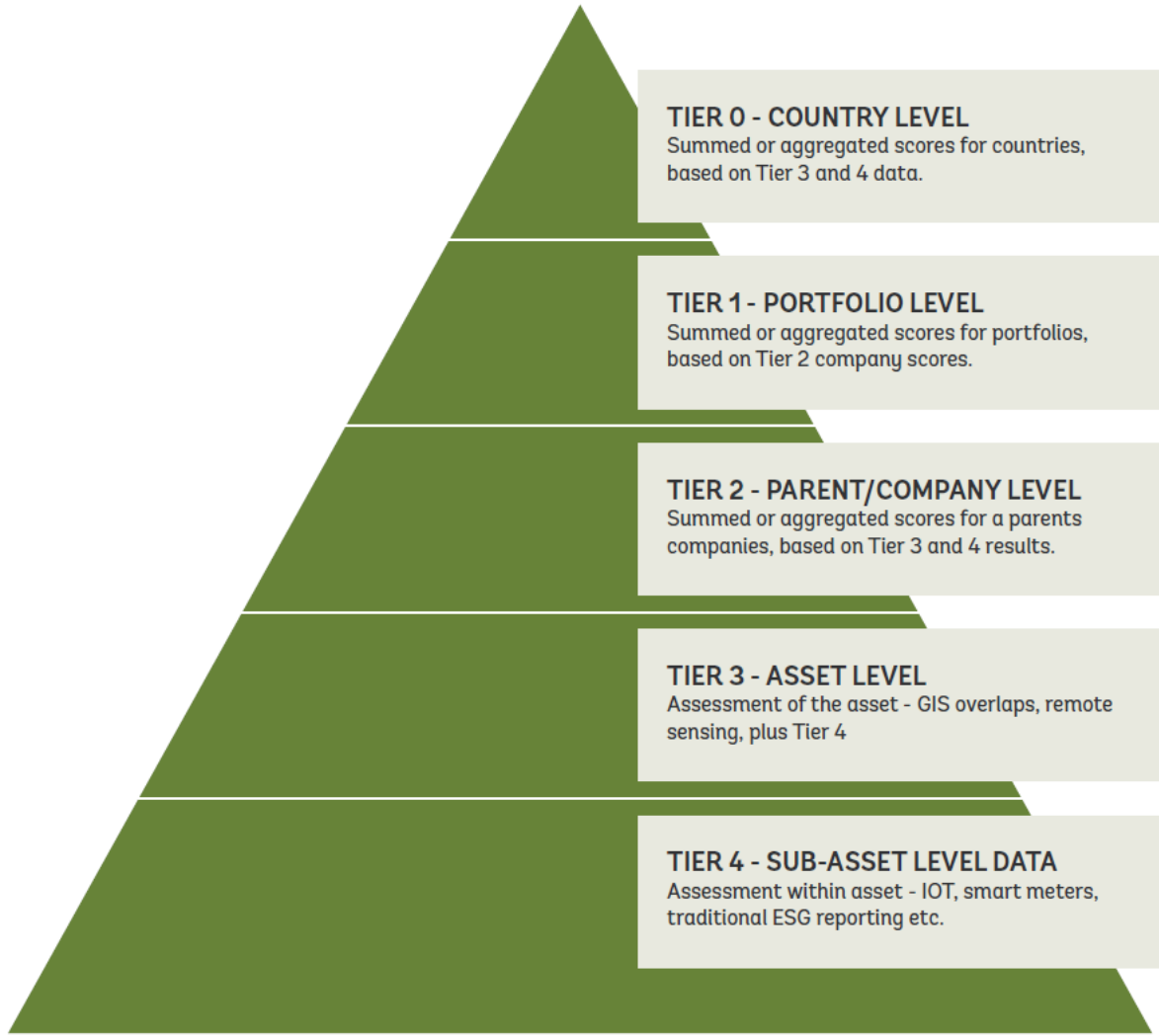
- Or All the Above

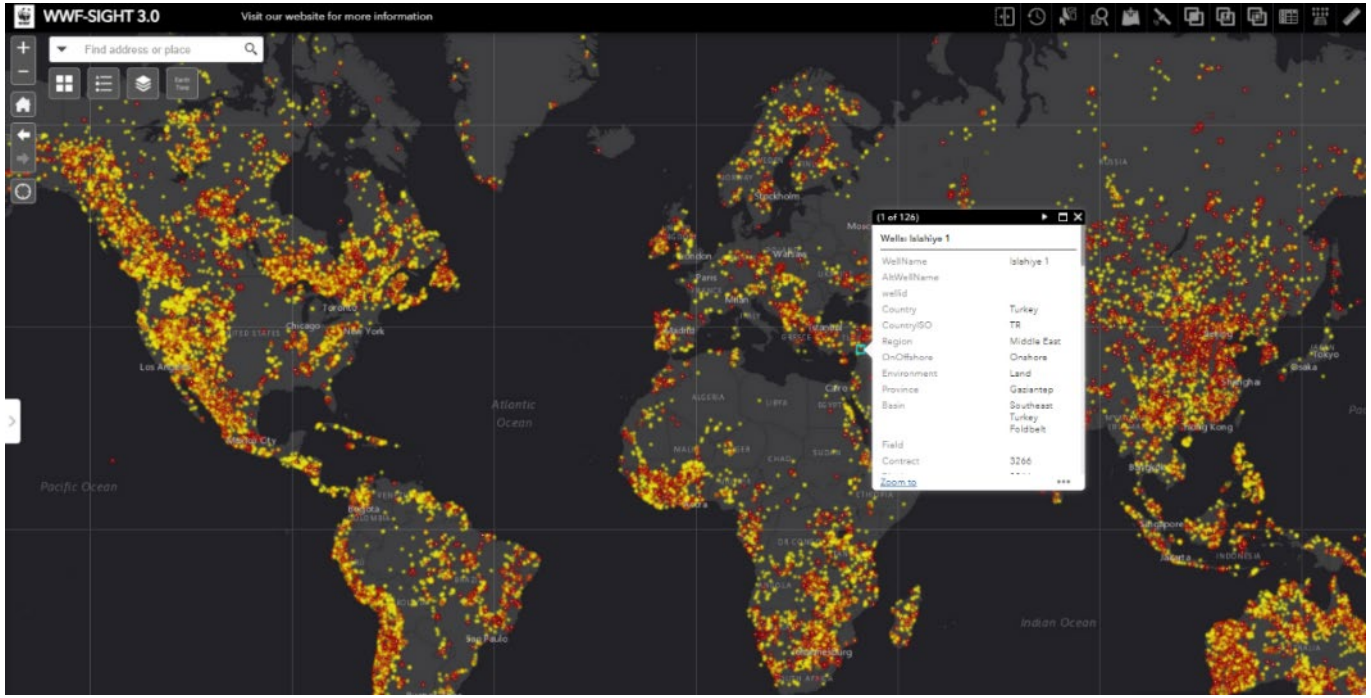
What is the geospatial ESG approach?

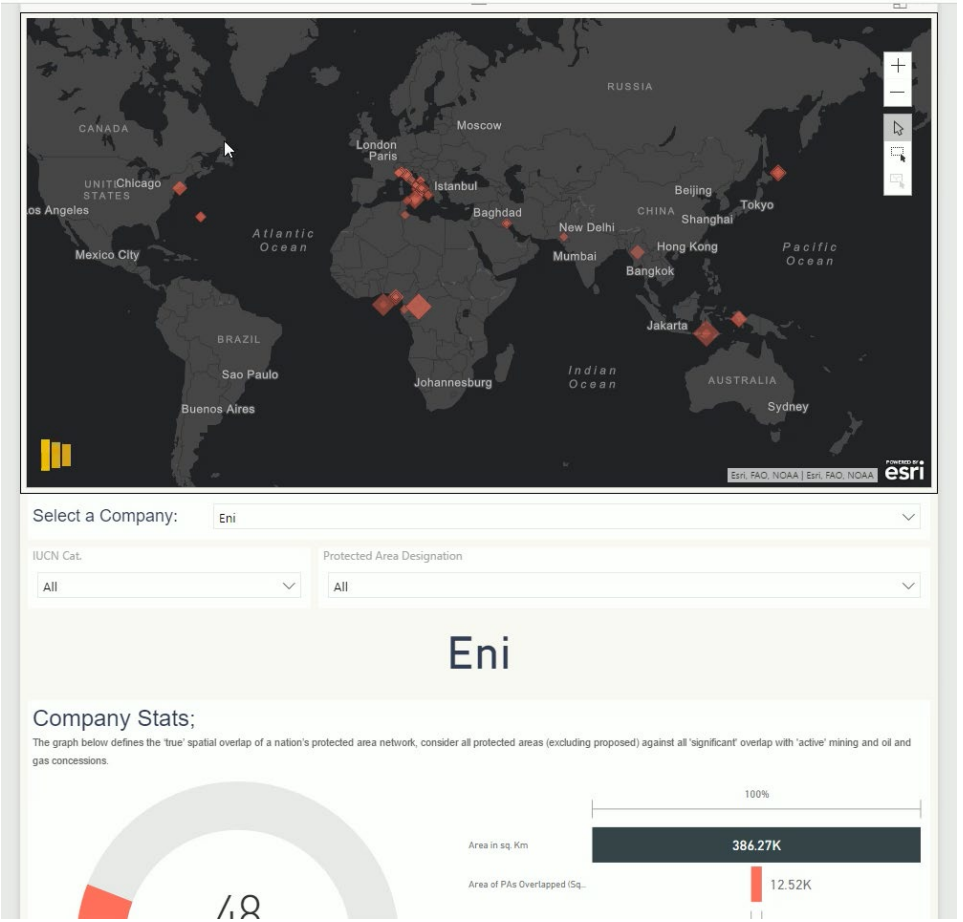


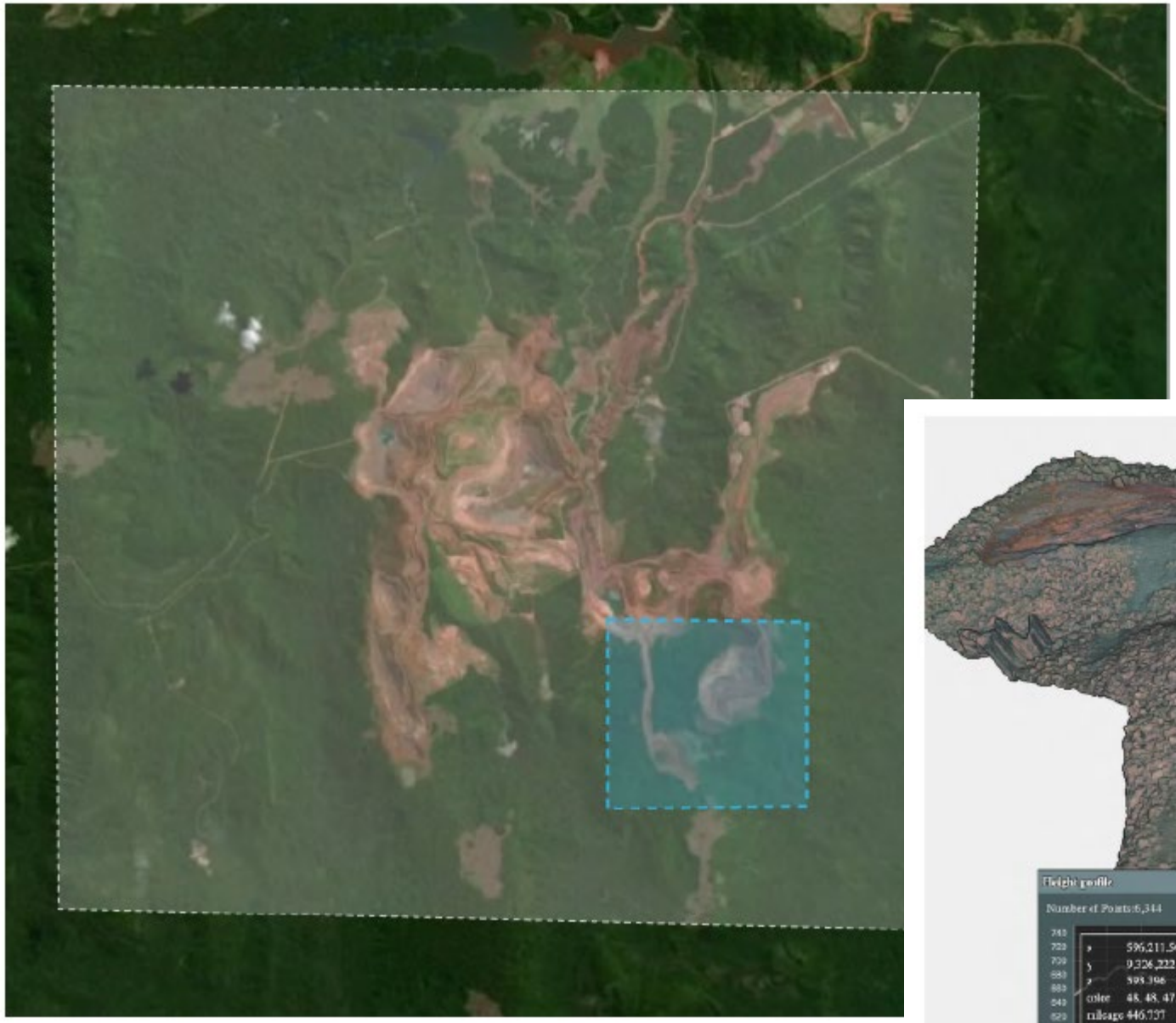
Insights on specific assets / companies / nations

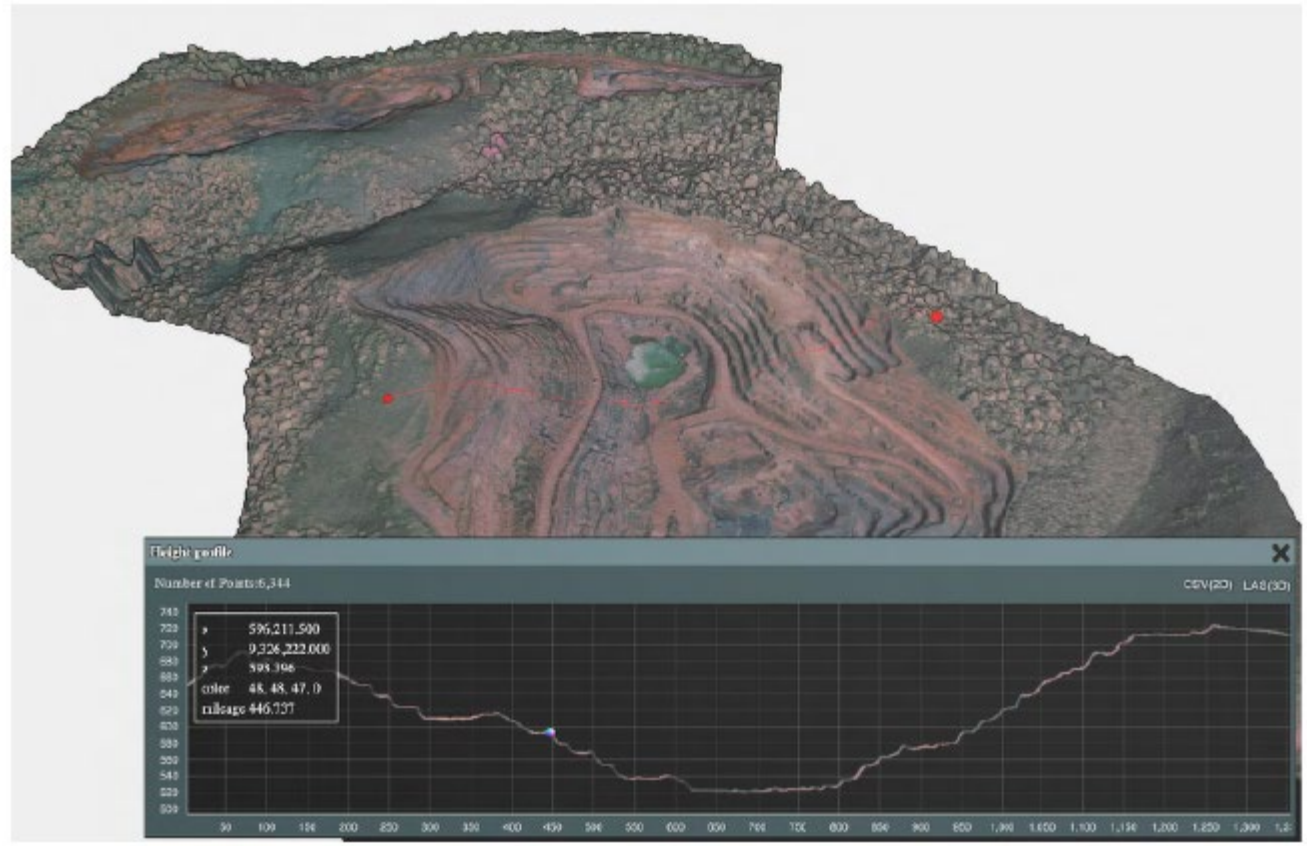
Asset/s + Observation/s = Information


TIER 0 - COUNTRY LEVEL
Summed or aggregated scores for countries, based on Tier 3 and 4 data.
TIER 1 - PORTFOLIO LEVEL
Summed or aggregated scores for portfolios, based on Tier 2 company scores.
TIER 2 - PARENT/COMPANY LEVEL
Summed or aggregated scores for a parents companies, based on Tier 3 and 4 results.
TIER 3 - ASSET LEVEL
Assessment of the asset - GIS overlaps, remote sensing, plus Tier 4
TIER 4 - SUB-ASSET LEVEL DATA
Assessment within asset - IOT, smart meters, traditional ESG reporting etc.


WWF-SIGHT 3.0
Visit our website for more information
Find address or place
(1 of 126)
Wells: Iskenderun 1
WellName Iskenderun 1
AltWellName
wellId
Country Turkey
CountryISO TR
Region Middle East
OnOffshore Onshore
Environment Land
Province Gaziantep
Basin Southeast Turkey Foldbelt
Field
Contract 3266
Zoom to
Atlantic Ocean
Pacific Ocean
Indian Ocean


RUSSIA
CANADA
Moscow
London
Paris
Chicago
Istanbul
Beijing
Tokyo
Shanghai
Baghdad
CHINA
New Delhi
Atlantic Ocean
Mexico City
Mumbai
Hong Kong
Pacific Ocean
Bangkok
Jakarta
BRAZIL
Sao Paulo
Johannesburg
Indian Ocean
AUSTRALIA
Buenos Aires
Sydney
Esri, FAO, NOAA | Esri, FAO, NOAA
Select a Company:
Eni
IUCN Cat.
All
Protected Area Designation
All
Eni
Company Stats;
The graph below defines the 'true' spatial overlap of a nation's protected area network, consider all protected areas (excluding proposed) against all 'significant' overlap with 'active' mining and oil and gas concessions.
100%
Area in sq. Km
386.27K
Area of PAs Overlapped (Sq..
12.52K
48

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CSV(2D) LAS(3D)
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y 9,326,222.000
z 599.396
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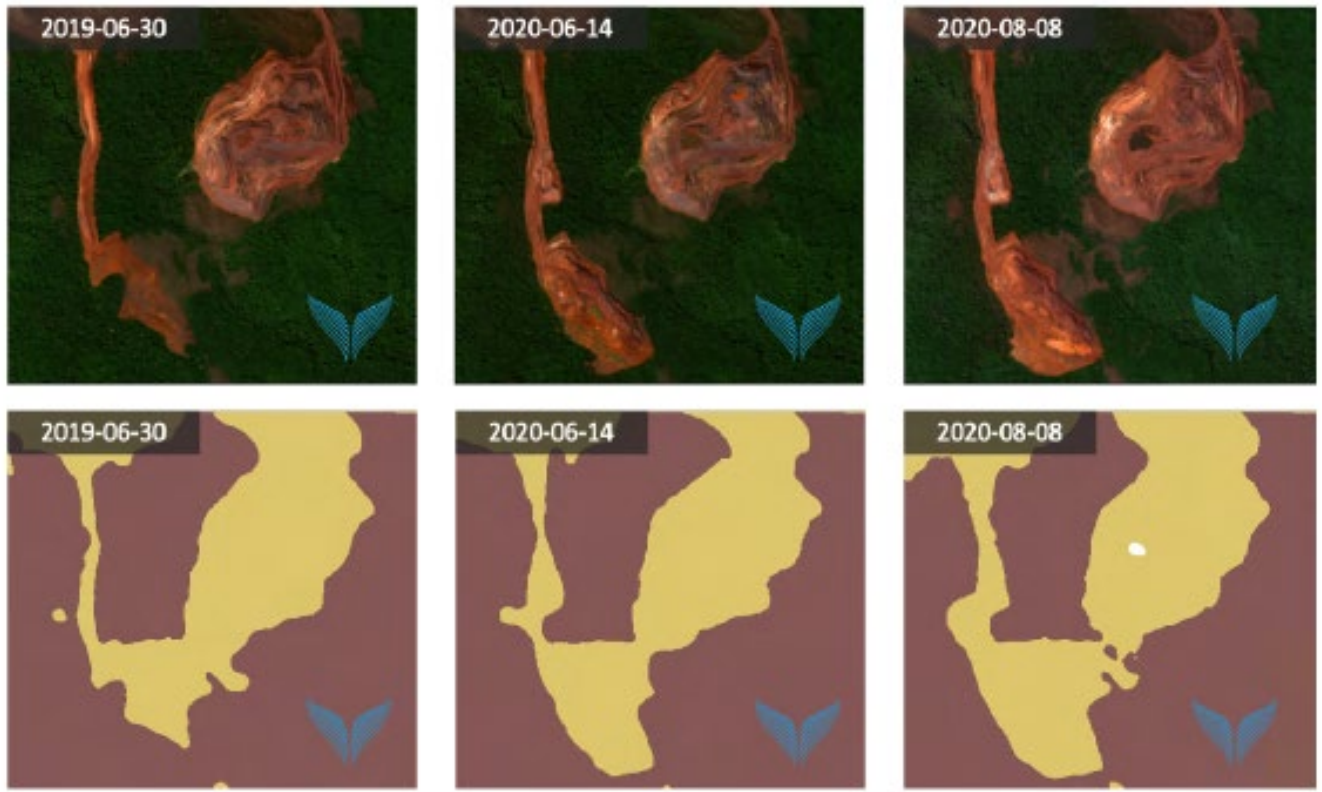
mileage 446.737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2020-06-14
2020-08-08
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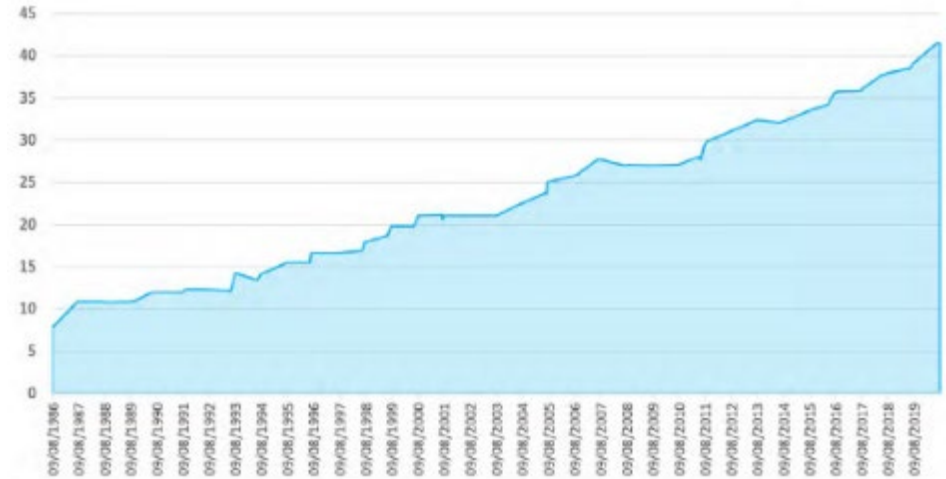
2020-06-14
2020-08-08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35
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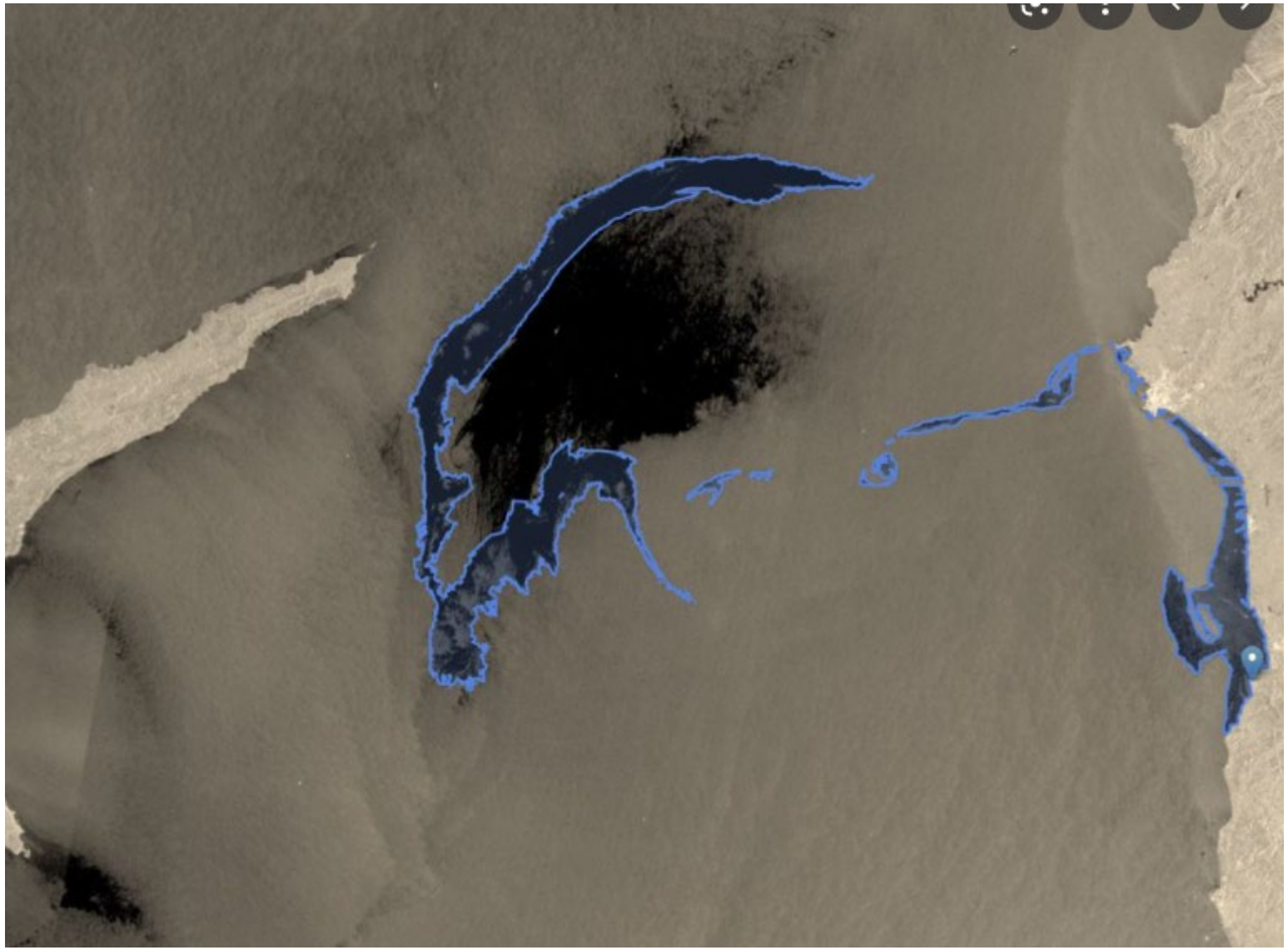
09/08/2019

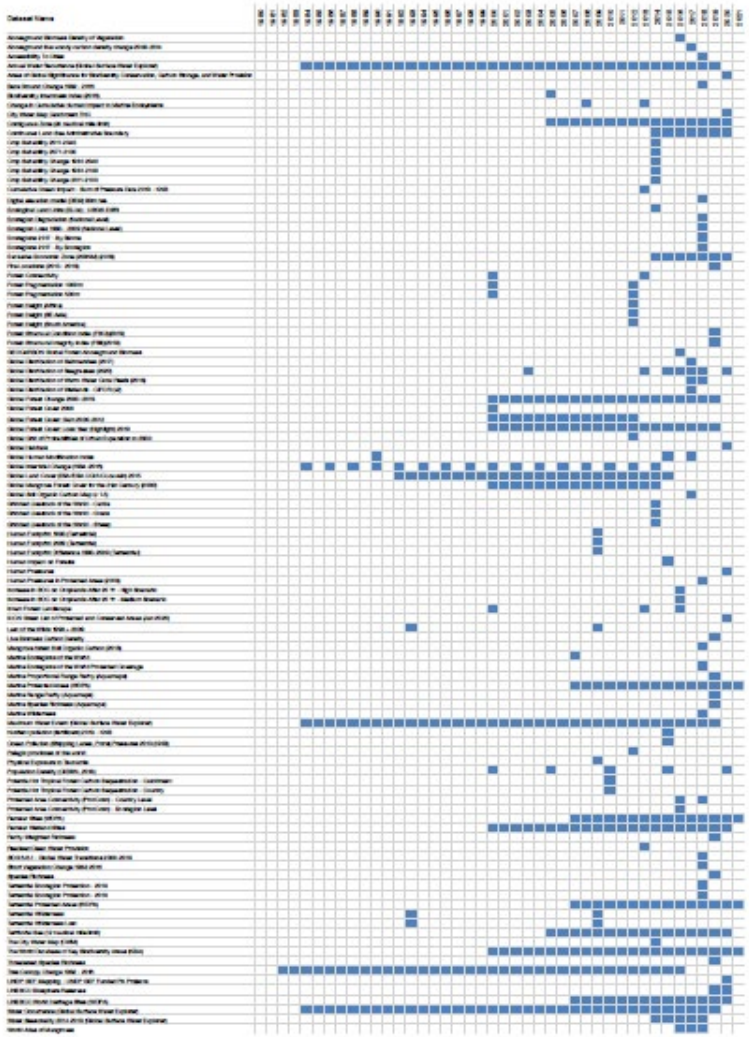


Mine Name	Aurizona	Capanema	Northern System
Ecoregion	Mangroves	Tropical & Subtropical Grasslands, Savannas & Shrublands	Tropical & Subtropical Moist Broadleaf Forests
Biodiversity Intactness Index (Mean Score)	0.94	0.66	0.73
Ground Carbon (Mean Score)	9650	8700	0
Forest Loss 2019 (km^2)	0.99	0.0026	0.0215
Forest Structural Condition Index (FSCI) (Mean Score)	No Data	No Data	1.26
Forest Structural Integrity Index (FSII) (Mean Score)	No Data	No Data	0.12
Protected Areas (Area Overlap – km^2)	6.28[57]	3.13	3.14
Key Biodiversity Areas (Area Overlap km^2)	3.14	3.14	3.14

Data Issues:

- Asset data and supply chain data
- Property Boundaries
- Entity Matching

- Temporal consistency
- Spatial resolution
- Accuracy
- Data interdependencies
- Relevancy
- Challenges of ‘Biodiversity’



Moving Forward on ‘Biodiversity’

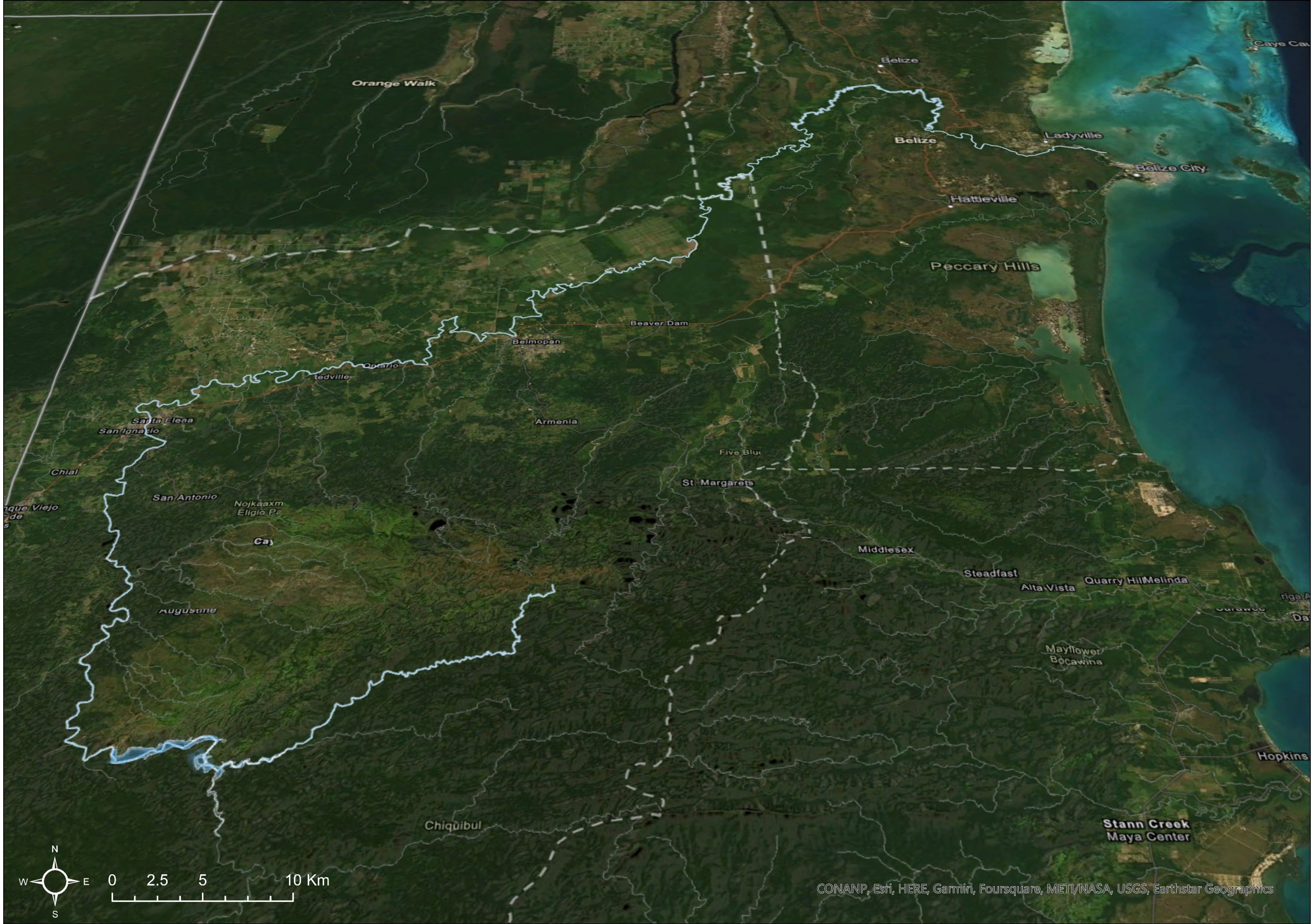
1. Ex-situ ‘biodiversity’ data challenge

   How to define, then quantify, ecosystem and biodiversity impact?
   Environmental impacts as proxies

2. The realities of asset and supply Chain data

   Where are we going to get it from and update it?
   Supply chains importance

3. The need for framework / and public data utilities


Orange Walk
Belize
Belize
Ladyville
Belize City
Hattieville
Peccary Hills
Beaver Dam
Belmopan
Ontario
San Ignacio
Chial
San Antonio
Armenia
St. Margarets
Middlesex
Steadfast
Alta Vista
Quarry Hill
Melinda
Augustine
Mayflower
Bocawina
Hopkins
Stann Creek
Maya Center
Chiquibul
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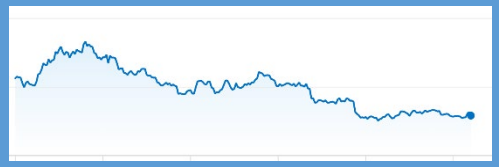
2.5
5
10 Km
CONANP, Esri, HERE, Garmin, Foursquare, METI/NASA, USGS, Earthstar Geographics

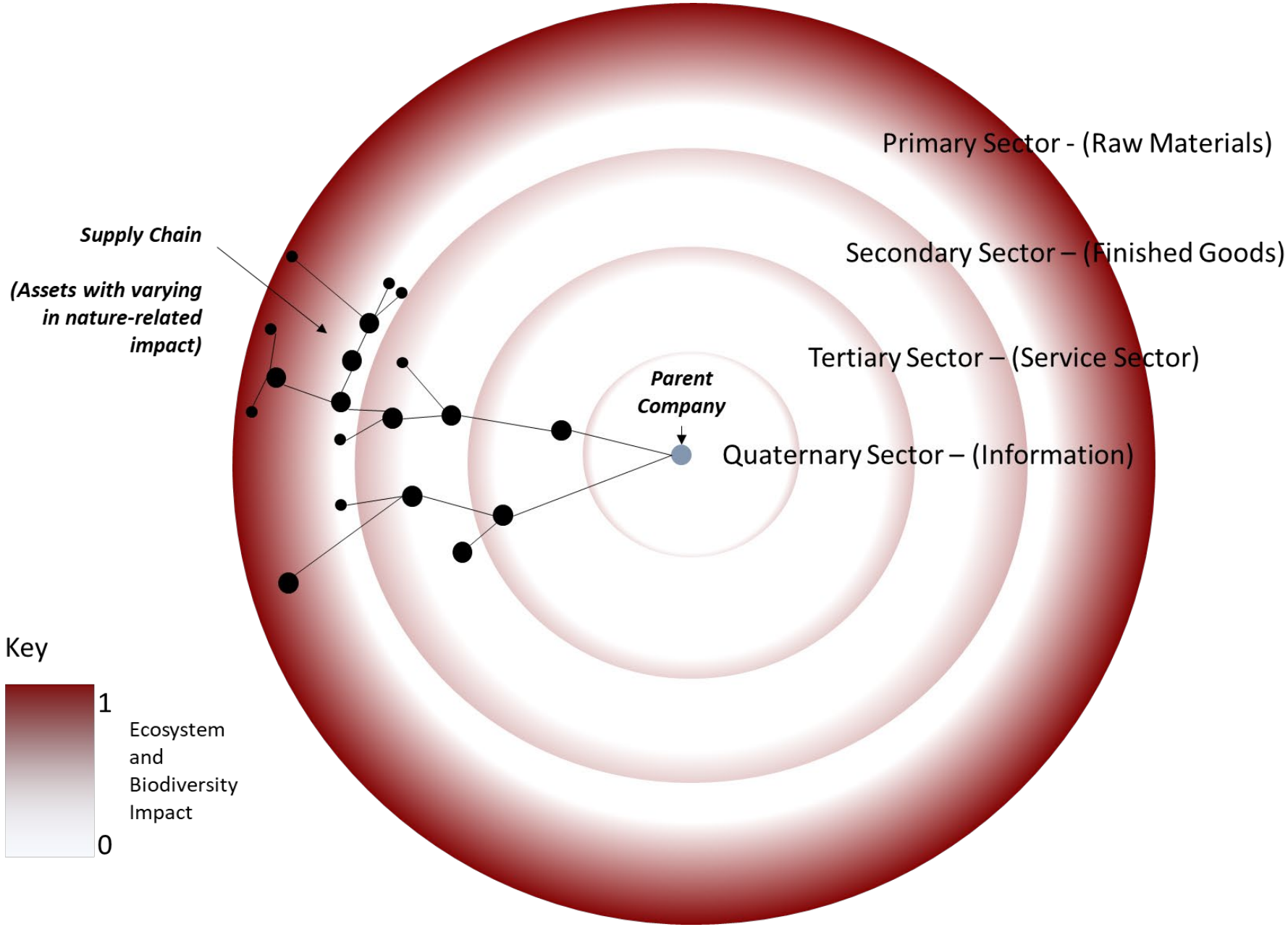
Regional Indicators
(Water Basins – Level 6)

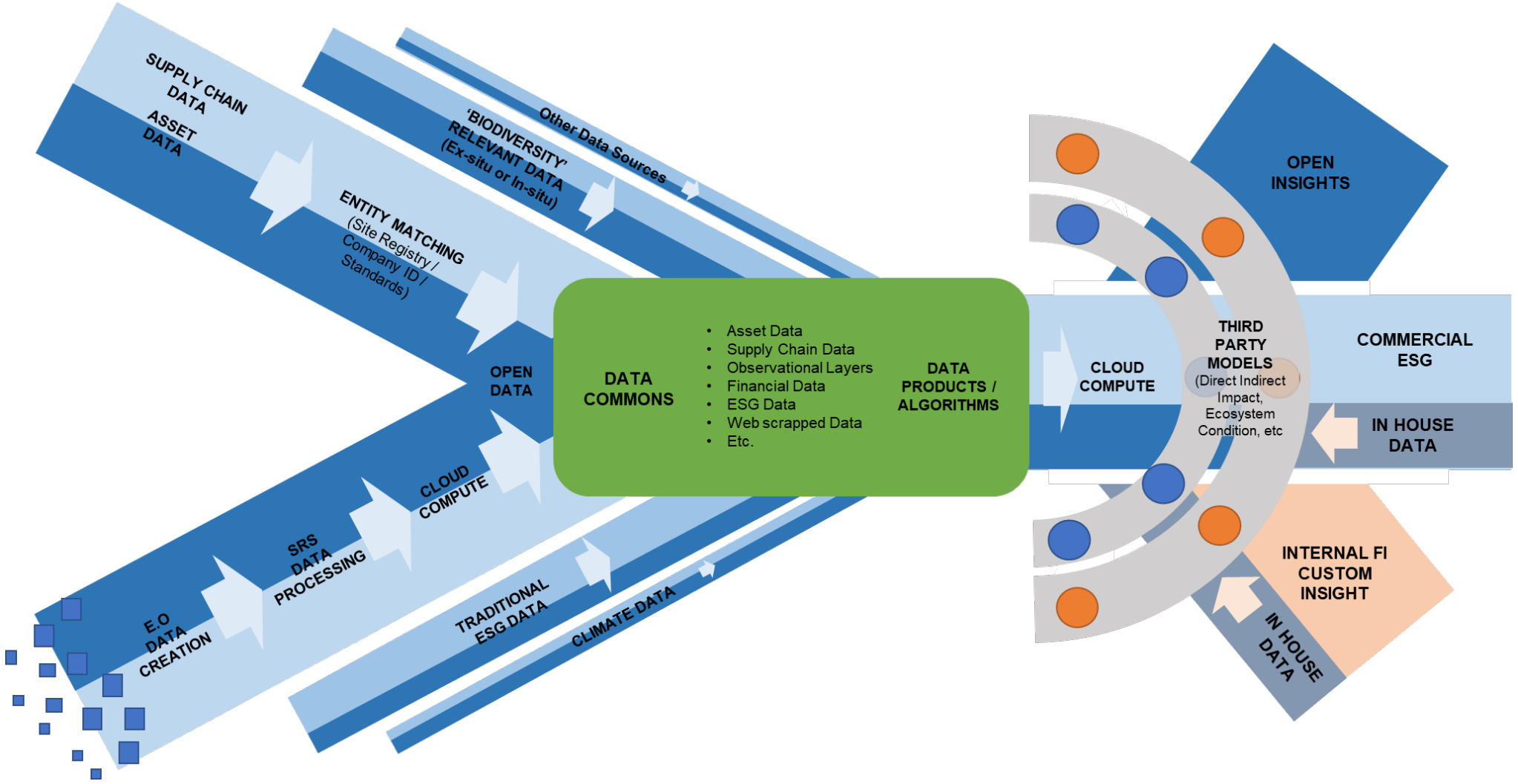
e.g., relative density of mercury river barges

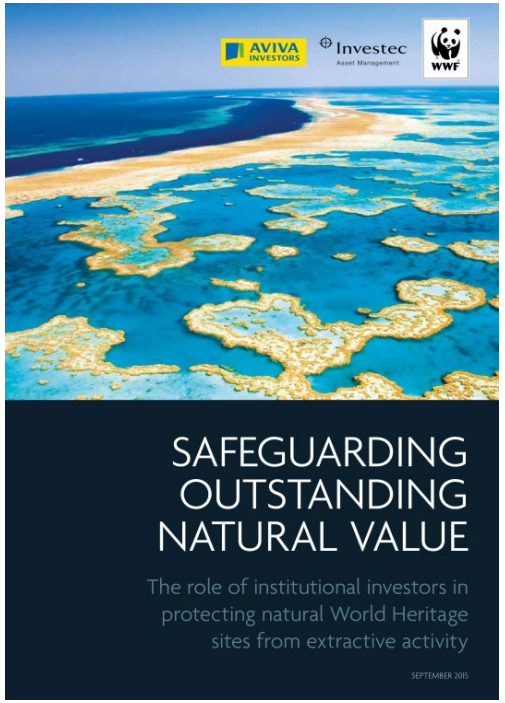


Global Indicators
(Water Basins – Level 6)

e.g., forest extent, forest condition kNVDI, river e-flow inconsistency


Primary Sector - (Raw Materials)
Secondary Sector – (Finished Goods)
Tertiary Sector – (Service Sector)
Quaternary Sector – (Information)
Supply Chain
(Assets with varying in nature-related impact)
Parent Company
Key
1
Ecosystem and Biodiversity Impact
0


SUPPLY CHAIN DATA
ASSET DATA
'BIODIVERSITY' RELEVANT DATA (Ex-situ or In-situ)
Other Data Sources
ENTITY MATCHING (Site Registry / Company ID / Standards)
OPEN DATA
CLOUD COMPUTE
SRS DATA PROCESSING
E.O DATA CREATION
TRADITIONAL ESG DATA
CLIMATE DATA
DATA COMMONS
Asset Data
Supply Chain Data
Observational Layers
Financial Data
ESG Data
Web scrapped Data
Etc.
DATA PRODUCTS / ALGORITHMS
CLOUD COMPUTE
THIRD PARTY MODELS (Direct Indirect Impact, Ecosystem Condition, etc
OPEN INSIGHTS
COMMERCIAL ESG
IN HOUSE DATA
INTERNAL FI CUSTOM INSIGHT
IN HOUSE DATA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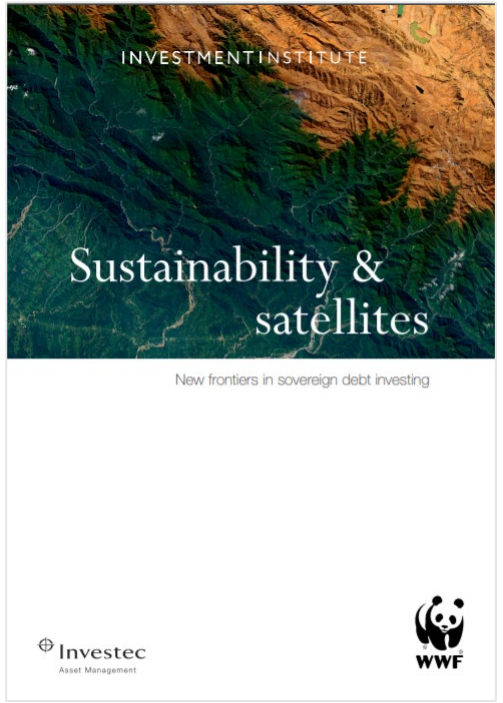
SAFEGUARDING OUTSTANDING NATURAL VALUE
The role of institutional investors in protecting natural World Heritage sites from extractive activity
SEPTEMBER 2015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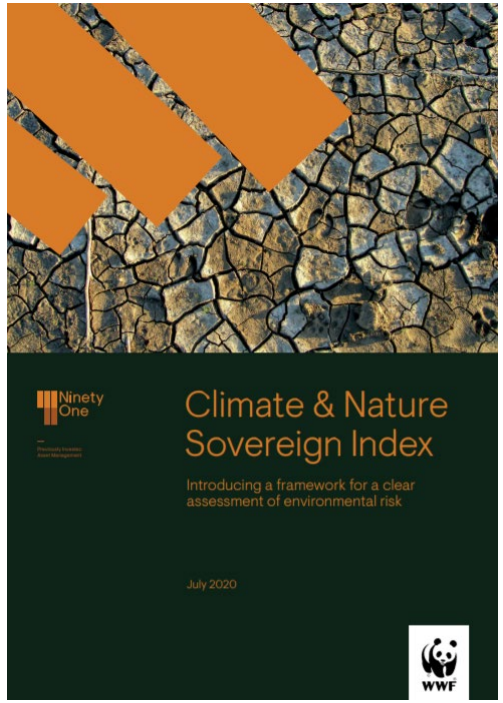
CONSERVING OUR COMMON HERITAGE
The role of spatial finance in natural World Heritage protection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EQUITABLE GROWTH, FINANCE & INSTITUTIONS INSIGHT
Spatial Finance: Challenges and Opportunities in a Changing World
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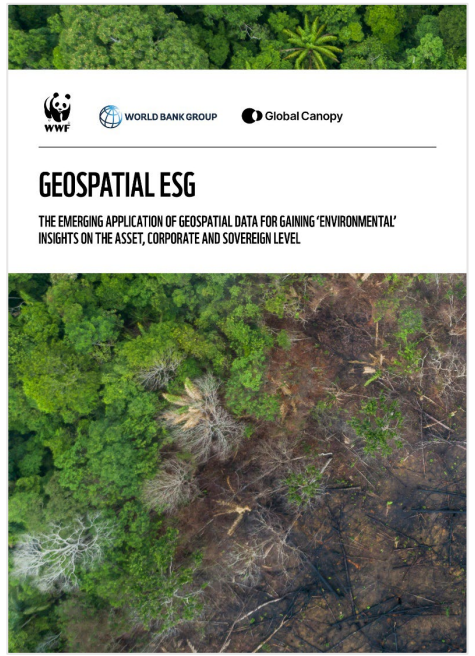
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Global Canopy
GEOSPATIAL ESG
THE EMERGING APPLICATION OF GEOSPATIAL DATA FOR GAINING 'ENVIRONMENTAL' INSIGHTS ON THE ASSET, CORPORATE AND SOVEREIGN LEVEL

Q&A

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