

Sentinel Hub Better view from the above

Matej Batič, Sinergise

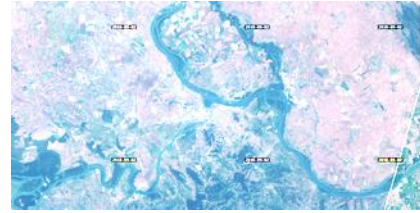
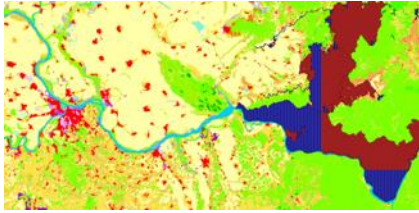
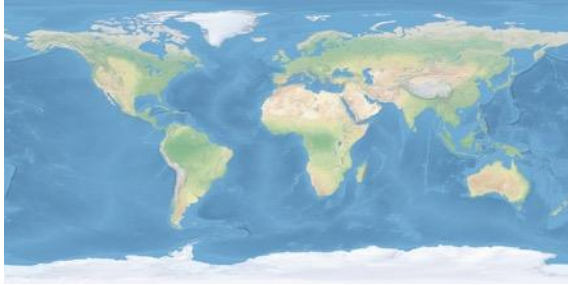
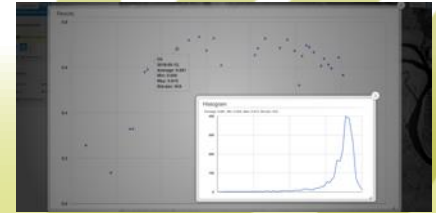
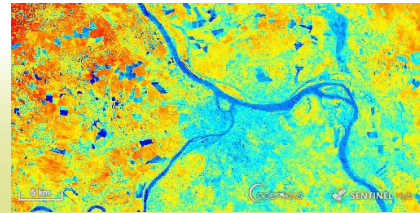


A comprehensive view

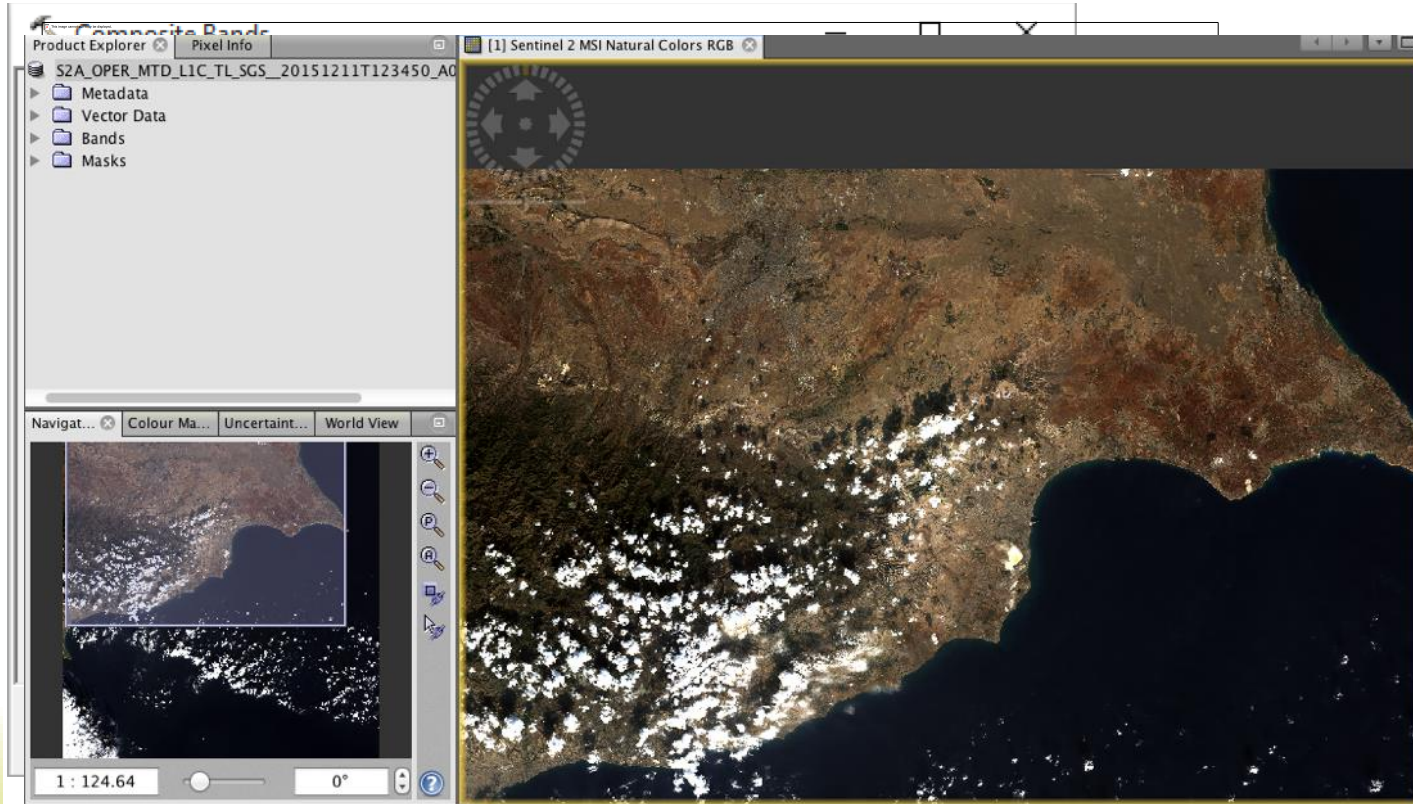


Ulaanbaatar - Sukhbaatar square

Enormous data availability

A screenshot of a data table with multiple columns and rows, likely representing a dataset of spatial or temporal data.

Old methods of working with satellite data



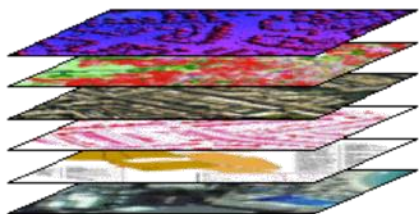
RGB Composite

do not work anymore

Sentinel Hub



Open EO data –
Sentinels, Landsat, etc.



Commercial EO data



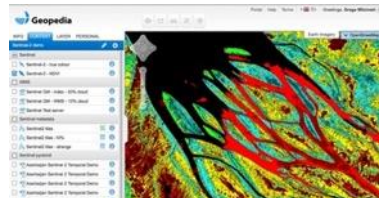
Aerial imagery (drone, plane)



Other raster data



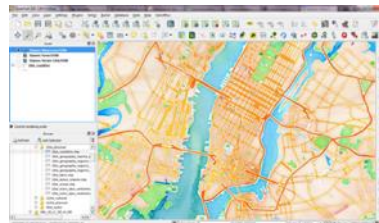
Machine learning



Cloud GIS



Web / Mobile apps



Desktop (QGIS, ArcGIS...)



Scripting
(R, Python, ENVI...)

Sentinel Hub

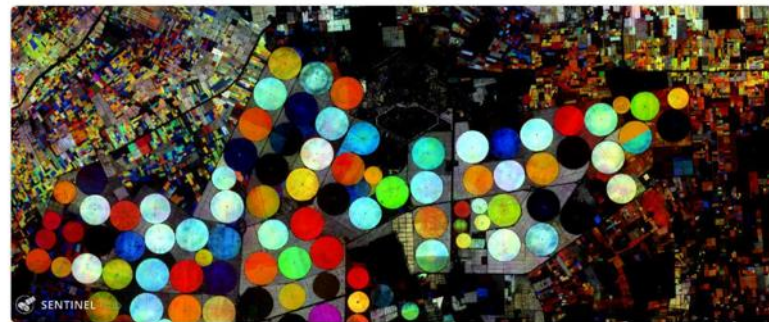
Have we succeeded?

No worries about download, storage,
decoding, stitching scenes, re-projection,
scaling, meta-data parsing,
backscatter calibration, orthorectification ...



HD @HarelDan · 24 Oct 2017

Tip: Blue field growing, Green fields maturing, Yellow Fields ripe, Red fields reaped/drying. Same place, 3 days ago apps.sentinel-hub.com/sentinel-playg



4 5 20



Stef Lhermitte @StefLhermitte · 25 Oct 2017

Wow! The moment even my mom can classify petabytes in seconds on her very old computer is getting closer. Just need to teach her Javascript

2 1 9



HD
@HarelDan

Following

Replying to @StefLhermitte @Pierre_Markuse and 4 others

90's - Grandmas can use a PC.
00's - Grandmas can use the internet.
10's - Grandmas can perform complex
remote sensing analyses.

8:43 AM - 25 Oct 2017

Sentinel Playground, EO Browser

<http://apps.sentinel-hub.com/sentinel-playground/> <http://apps.sentinel-hub.com/eo-browser/>

The image displays two web-based satellite data processing interfaces side-by-side.

Left Panel: Sentinel Hub Playground

- Header: SENTINEL Hub Playground
- Navigation: Rendering, Effects
- Customization menu:
 - Natural color (Based on bands 4,3,2)
 - Color Infrared (vegetation) (Based on bands 8,4,3)
 - False color (urban) (Based on bands 12,11,4)
 - Agriculture (Based on bands 11, 8, 2)
 - Vegetation Index (Based on combination of bands (B8 - B4)/(B8 + B4))
 - Moisture Index (Based on combination of bands (B8A - B11)/(B8A + B11))
 - Geology (Based on bands 12,4,2)
 - Bathymetric (Based on bands 4,3,1)
 - Atmospheric penetration (Based on bands 12,11,8A)
 - SWIR (Based on bands 12,8A,4)
 - NDWI (Based on combination of bands (B3 - B6)/(B3 + B6))
 - SWIR-2,11,12 (Based on bands 2,11,12)
- Button: GENERATE

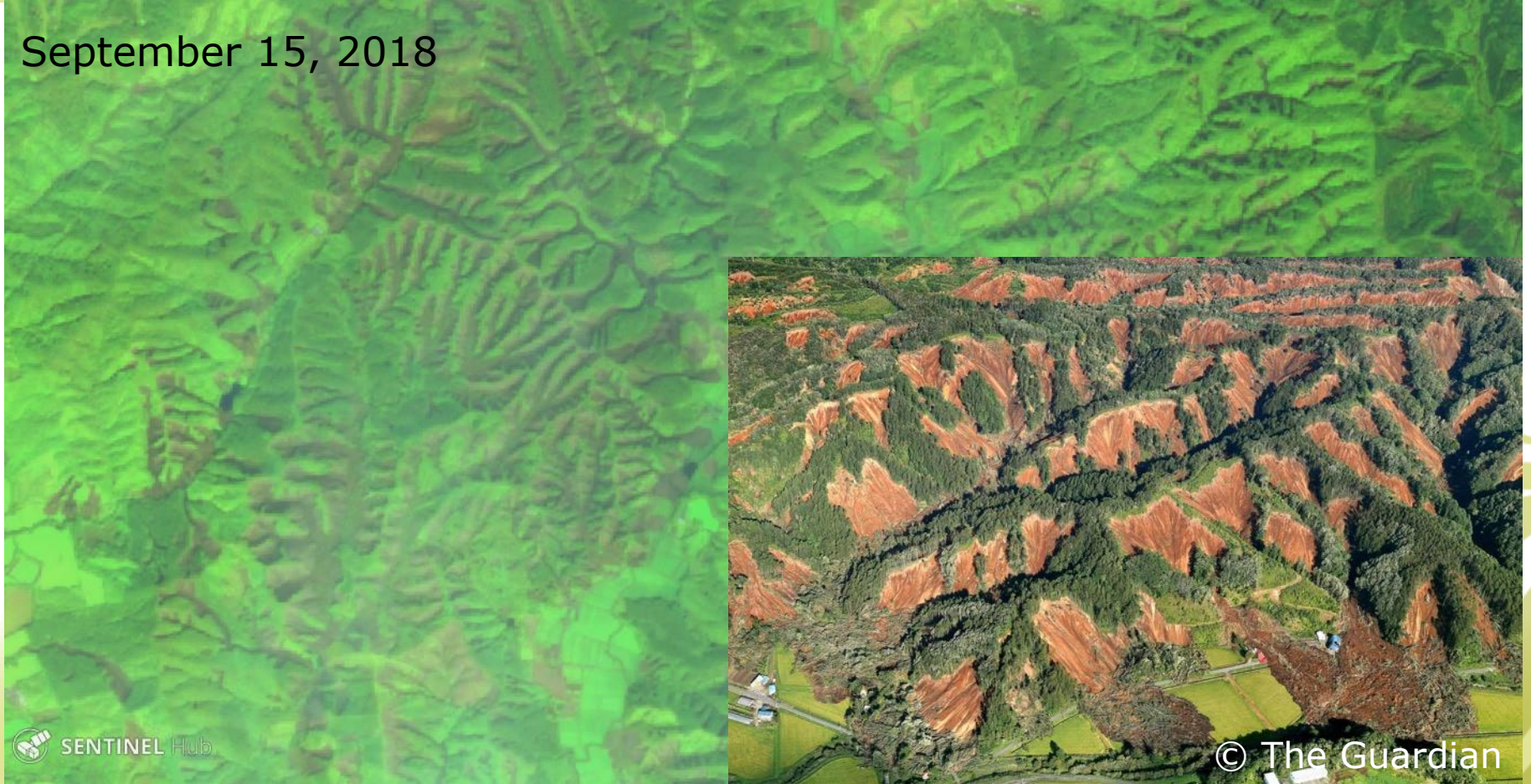
Right Panel: EO Browser

- Header: EO Browser
- Search: Search, Results, Visualization, Pins
- Dataset: SENTINEL-2 L2A (SHOW L1C)
- Date: 2018-09-14
- Rendering options:
 - Custom (Create custom rendering)
 - True color (Based on bands 4,3,2)
 - Scene classification map (Classification of Sentinel2 data as result of ESA's Scene classification algorithm)
 - False color (Based on bands 8,4,3)
 - NDVI (Based on combination of bands (B8 - B4)/(B8 + B4))
- Footer: Powered by SinerGIS with contributions from the European Space Agency v2.14.4

The main map area shows a satellite image of the Belgrade region, Serbia, with various geographical features and labels like 'BELGRADE', 'PANCEVO', and 'Sava' river. A scale bar indicates 2 km. The bottom status bar shows coordinates: Lat: 44.8101, Lng: 20.4778.

Landslides (after Hokkaido earthquake)

September 15, 2018



Floods

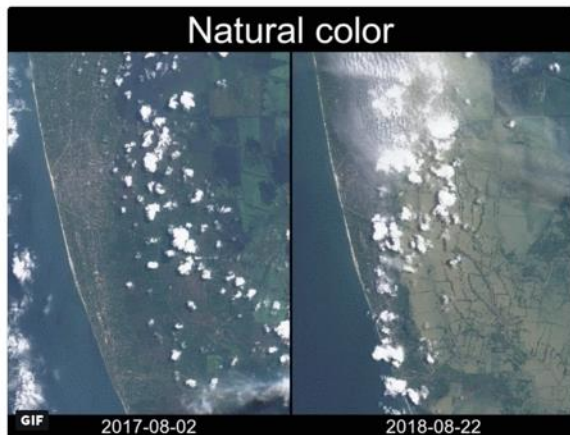


Simon Gascoin
@sgascoin

Following

Three visions of #KeralaFlood in
@sentinel_hub using @CopernicusEU data

Sentinel-2 Natural colors
Sentinel-2 Normalized Difference Water Index
Sentinel-1 Radar backscatter



11:58 AM - 29 Aug 2018

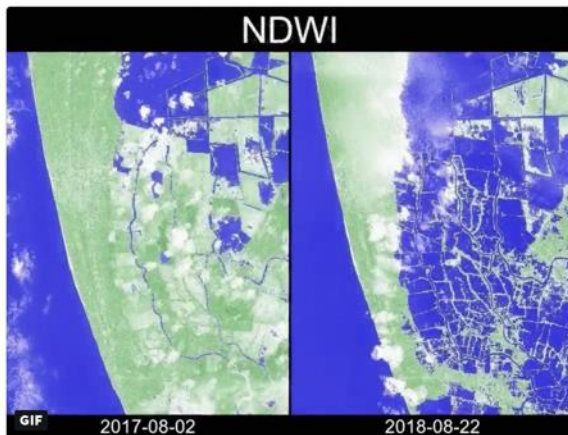


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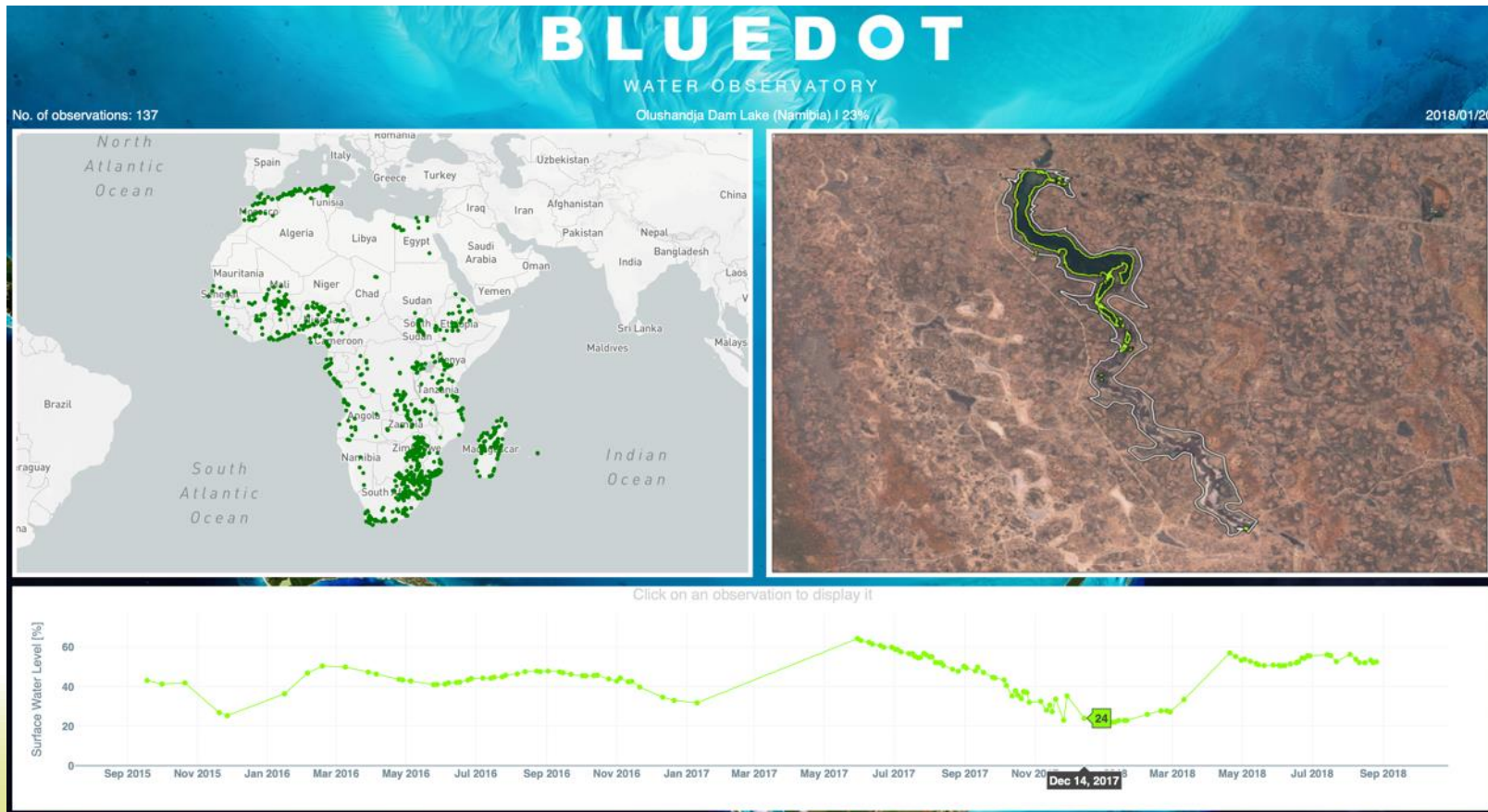
Three visions of #KeralaFlood in
@sentinel_hub using @CopernicusEU data

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Sentinel-2 Normalized Difference Water Index
Sentinel-1 Radar backscatter

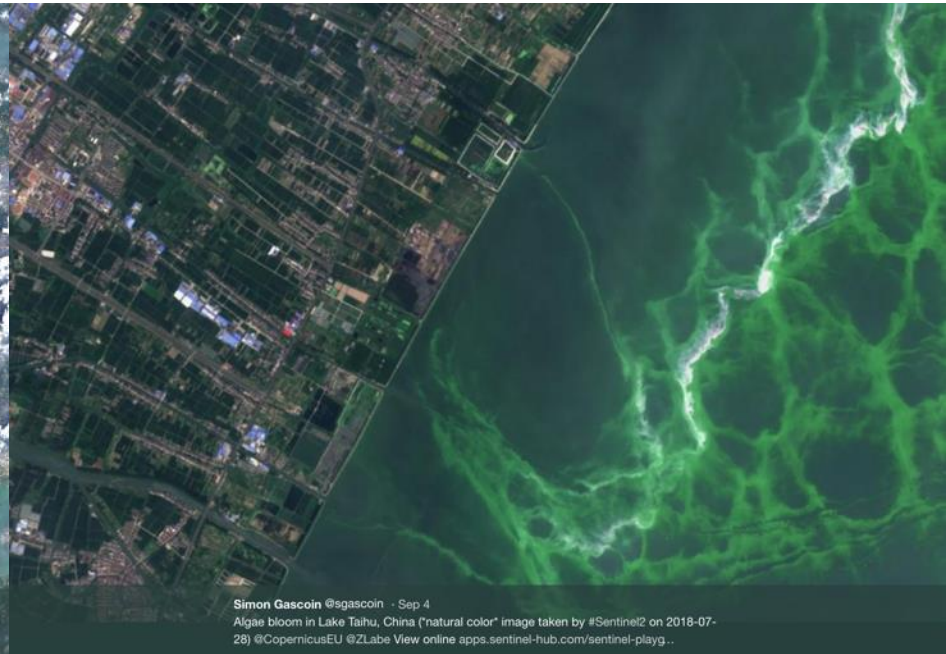


11:58 AM - 29 Aug 2018

Water monitoring

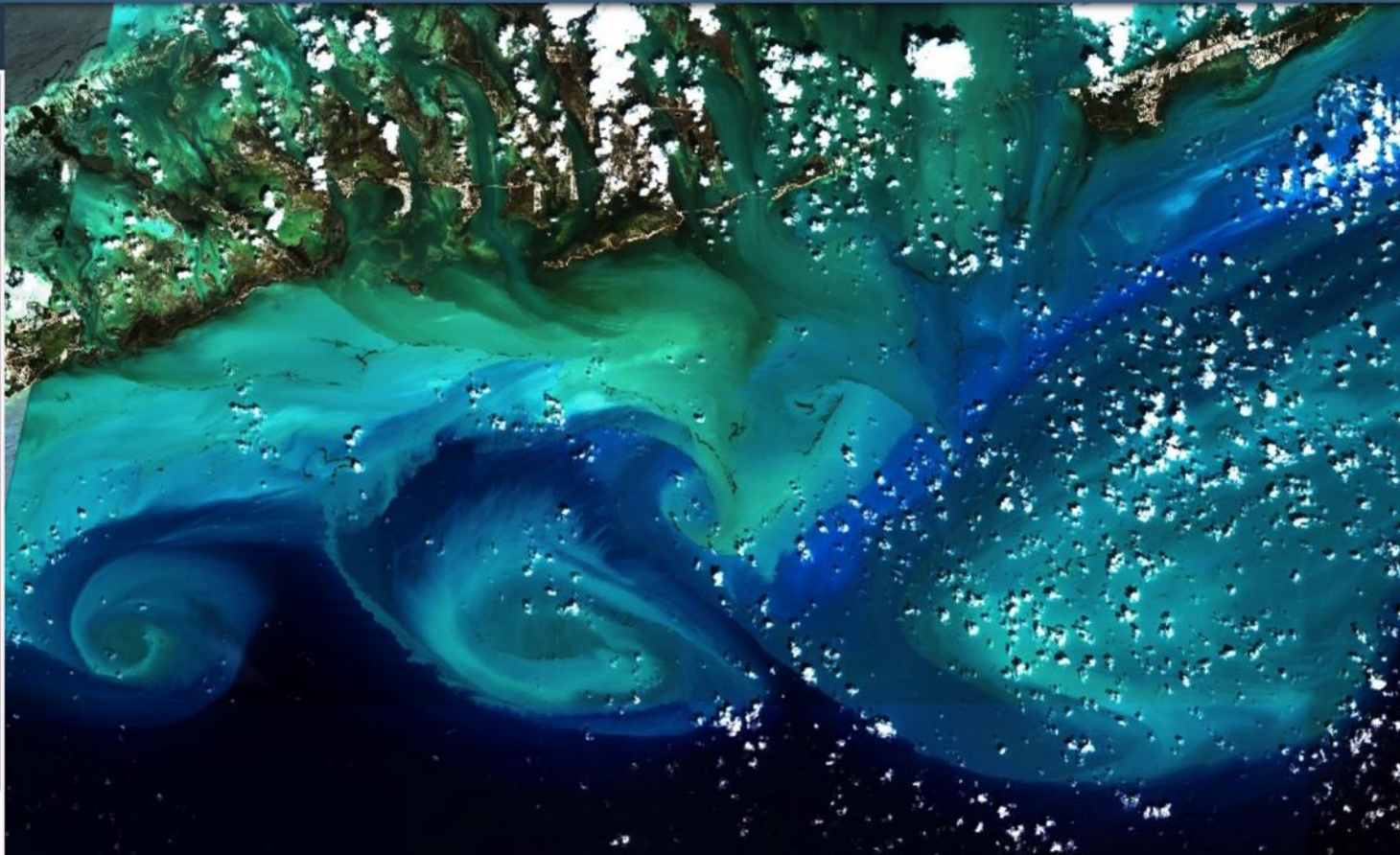


Water monitoring



- Rendering Effects
- Custom
Create custom rendering
- Natural color
Based on bands 4,3,2
- Color Infrared (vegetation)
Based on bands 8,4,3
- False color (urban)
Based on bands 12,11,4
- Agriculture
Based on bands 11, 8A and 2
- Vegetation Index
Based on combination of bands $(B8 - B4)/(B8 + B4)$
- Moisture Index
Based on combination of bands $(B8A - B11)/(B8A + B11)$
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- SWIR
Based on bands 12,8A,4

GENERATE



Florida Keys after Irma, 13/9/17,
Zachary M. Labe, @ZLabe, Copernicus

Water monitoring



Zack Labe ✓ @ZLabe · Sep 2

Satellites are an indispensable tool for monitoring the Earth system. Today's Sentinel-3 terrestrial-chlorophyll-band over Galveston Bay, TX



Ice monitoring



HD

@HarelDan

Following



Glacier du Tacul band ogives moving downhill over 3 years of Sentinel-2 images.
[@CopernicusEU](#) [@sgascoin](#) [@sentinel_hub](#)



Ice monitoring



Simon Gascoin

@sgascoin

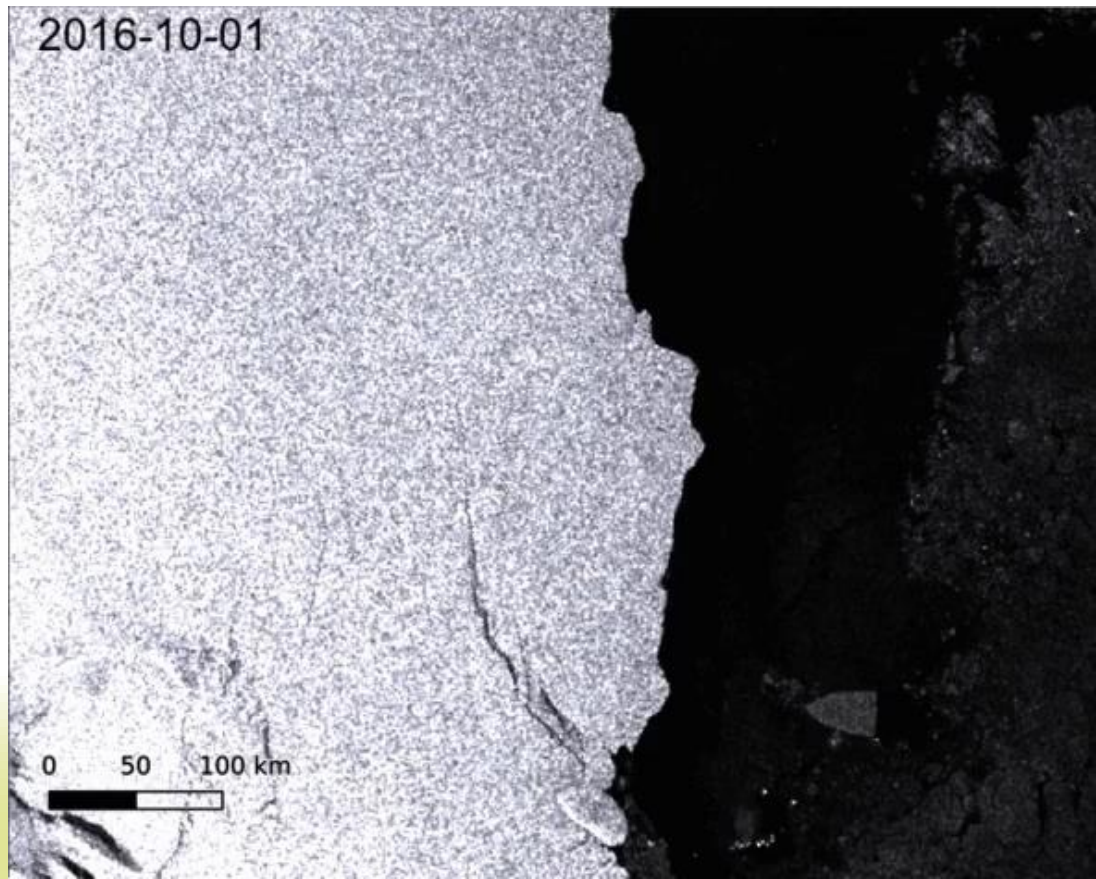
Following



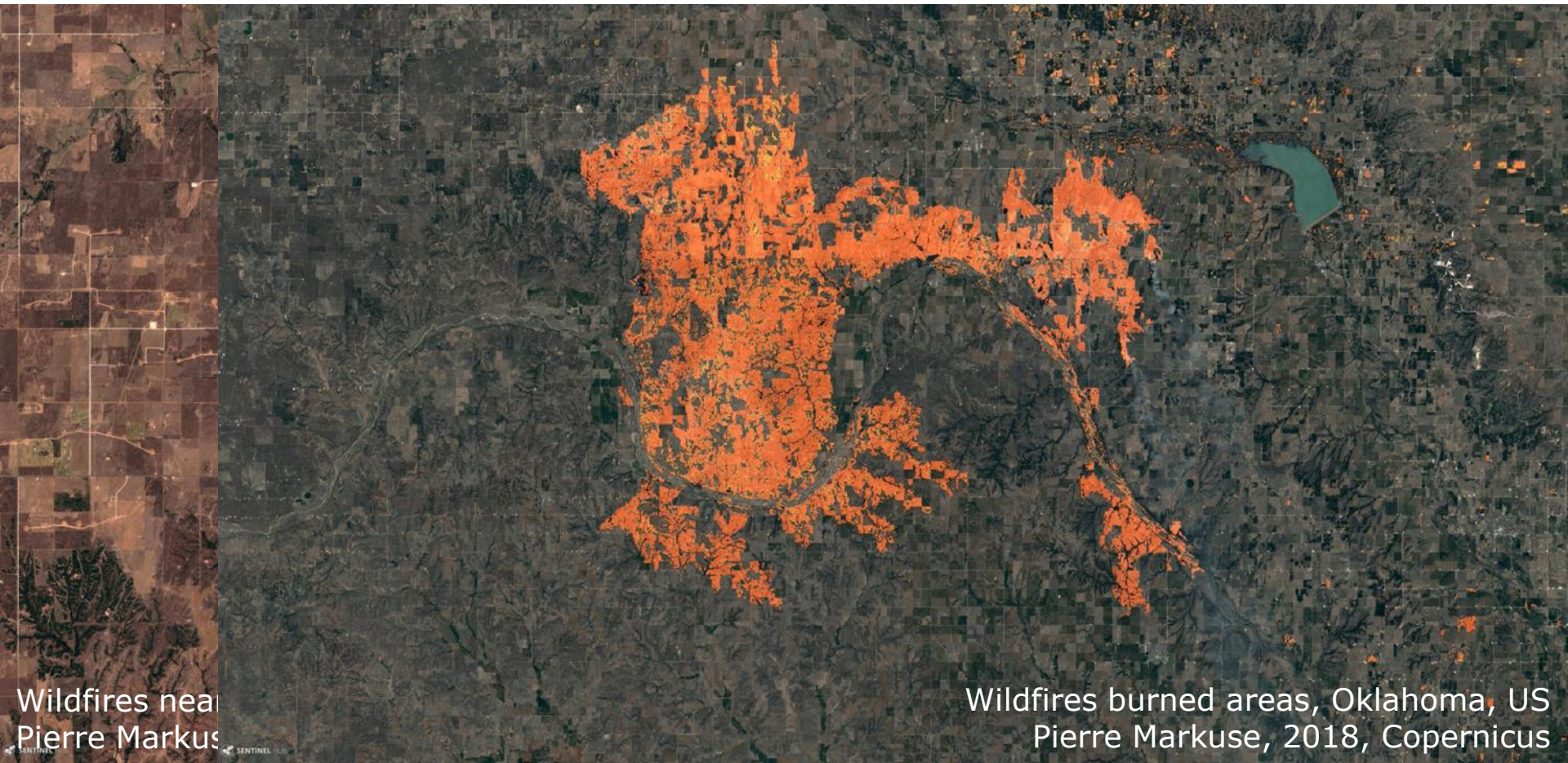
#LarsenC The Movie 🎬 updated

Time lapse of 56 #Sentinel1 extra wide swath images since 2016-10-01.

Iceberg #A68 is leaving my bounding box!



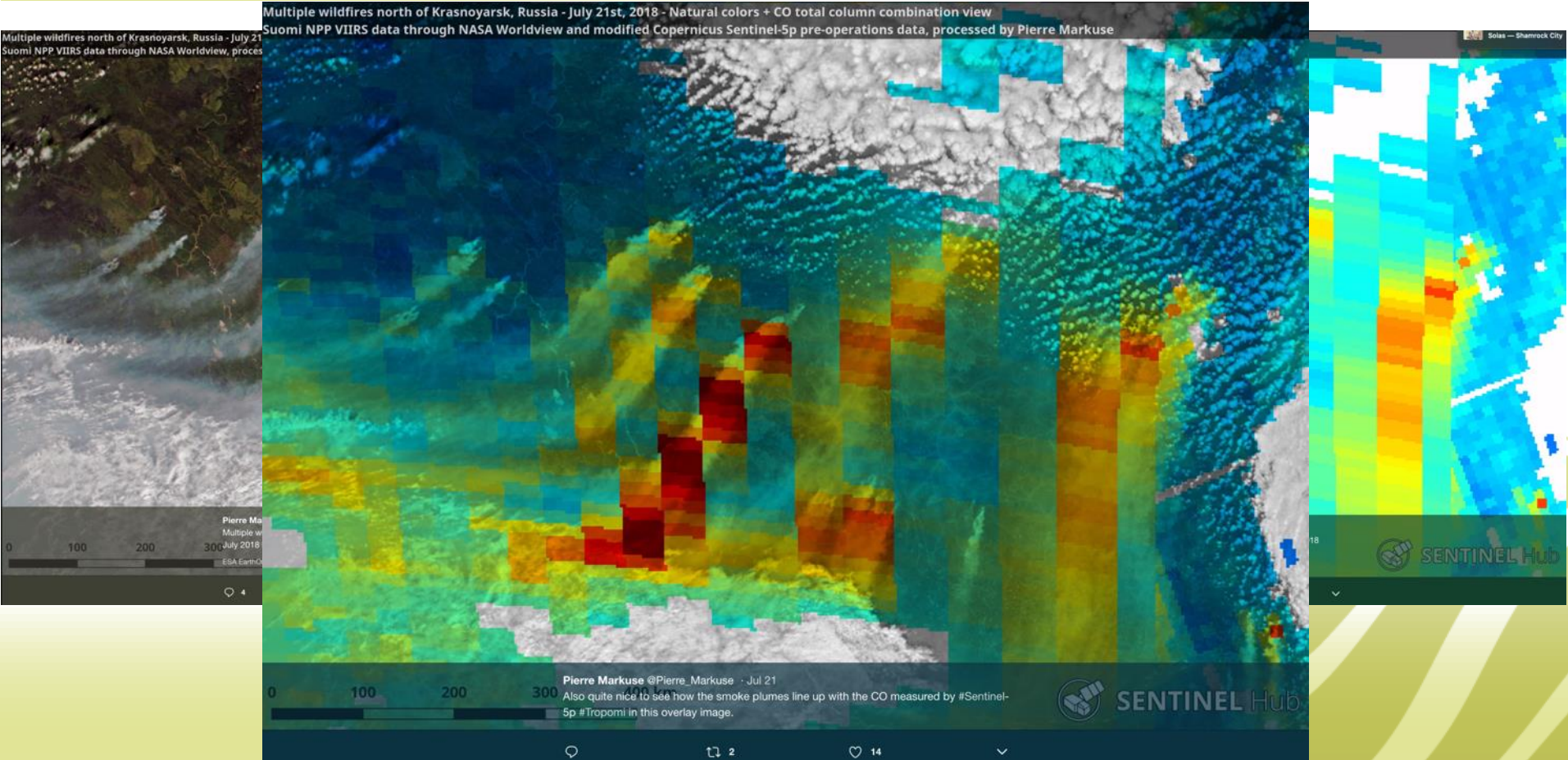
Environmental monitoring (fires, emissions)



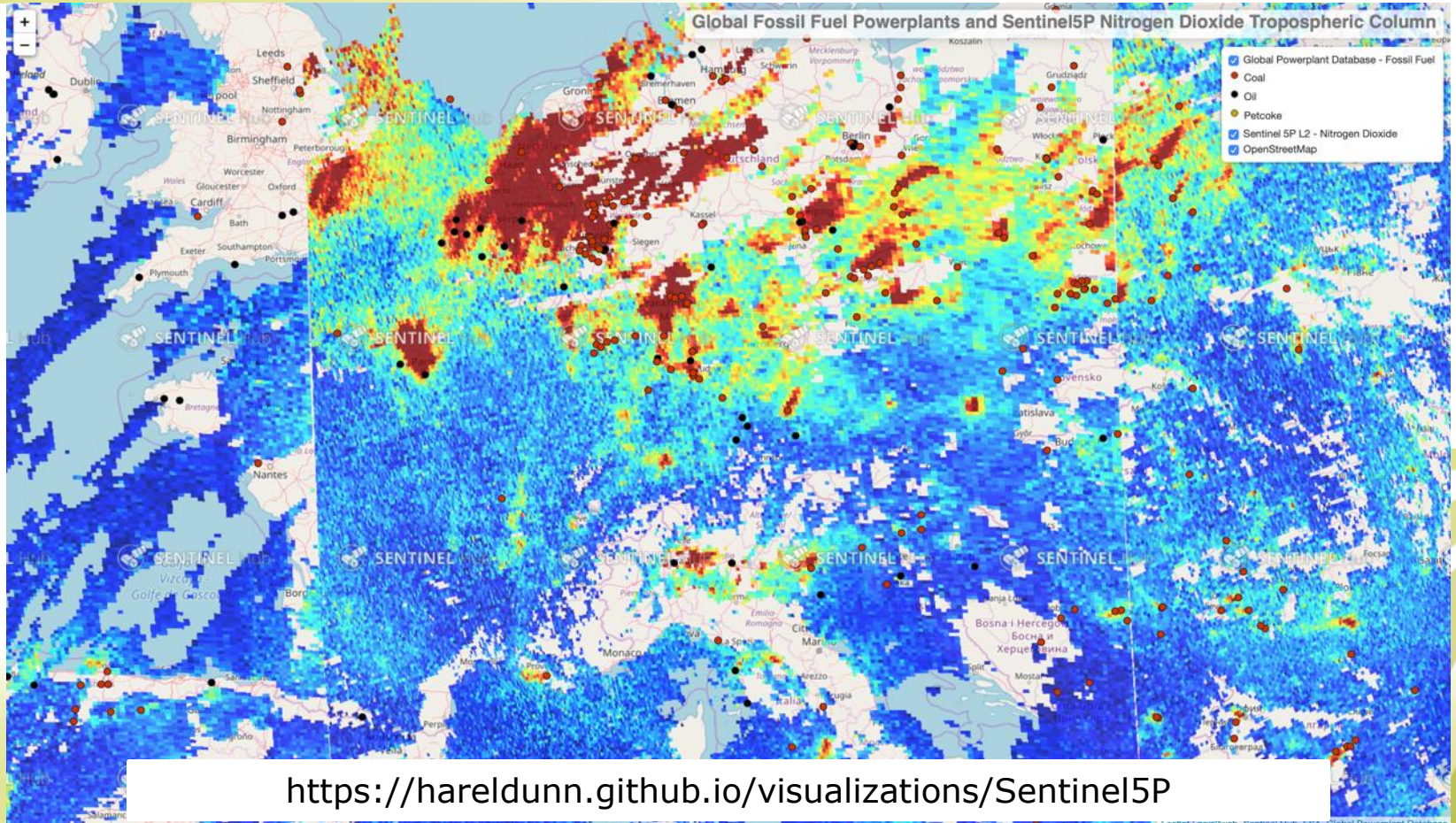
Wildfires near
Pierre Markus

Wildfires burned areas, Oklahoma, US
Pierre Markuse, 2018, Copernicus

Environmental monitoring (fires, emissions)



Environmental monitoring (fires, emissions)



More info



SINERGISE

<http://sentinel-hub.com/>

<http://apps.sentinel-hub.com/eo-browser/>

<http://apps.sentinel-hub.com/sentinel-playground/>

<https://sentinel-hub.github.io/custom-scripts/>

<https://github.com/sentinel-hub>

<https://eo-learn.readthedocs.io>

https://twitter.com/sentinel_hub



*At a time when truth can feel increasingly subjective,
the powerful truth of Earth Observation is more valuable than ever.
Eric Gundersen*

Thank you!

