

Dynamic, open and accessible earth observation

Leveraging Earth observation imagery without the need to download

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Imagery and Remote Sensing



Today, we'll look at...

- ❑ ArcGIS: a comprehensive imagery system
- ❑ Free and Open Imagery content
- ❑ Explorer applications^x
- ❑ What's Next?



ArcGIS is a Comprehensive Imagery System

Supporting all aspects of Imagery



Transforming Remotely Sensed Content Into Useful Information

ArcGIS is a Comprehensive Imagery System

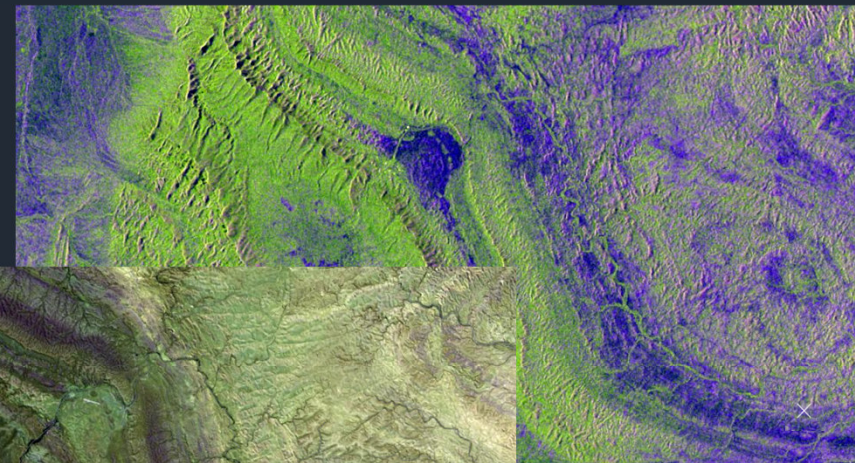
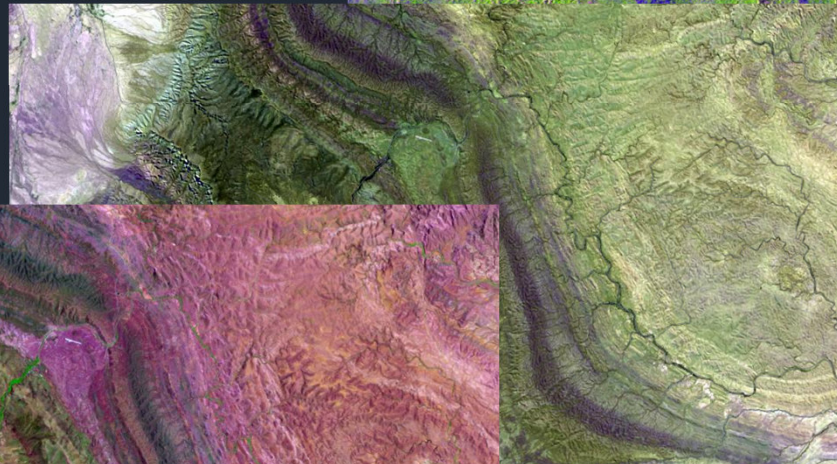
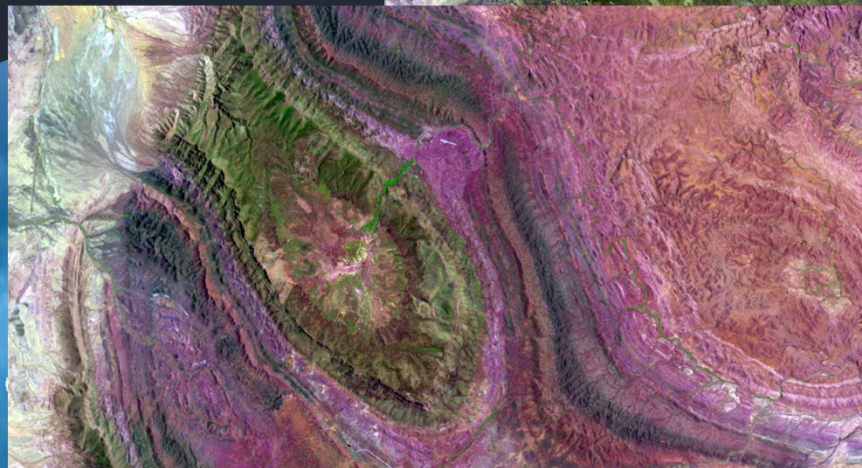
Supporting all aspects of Imagery



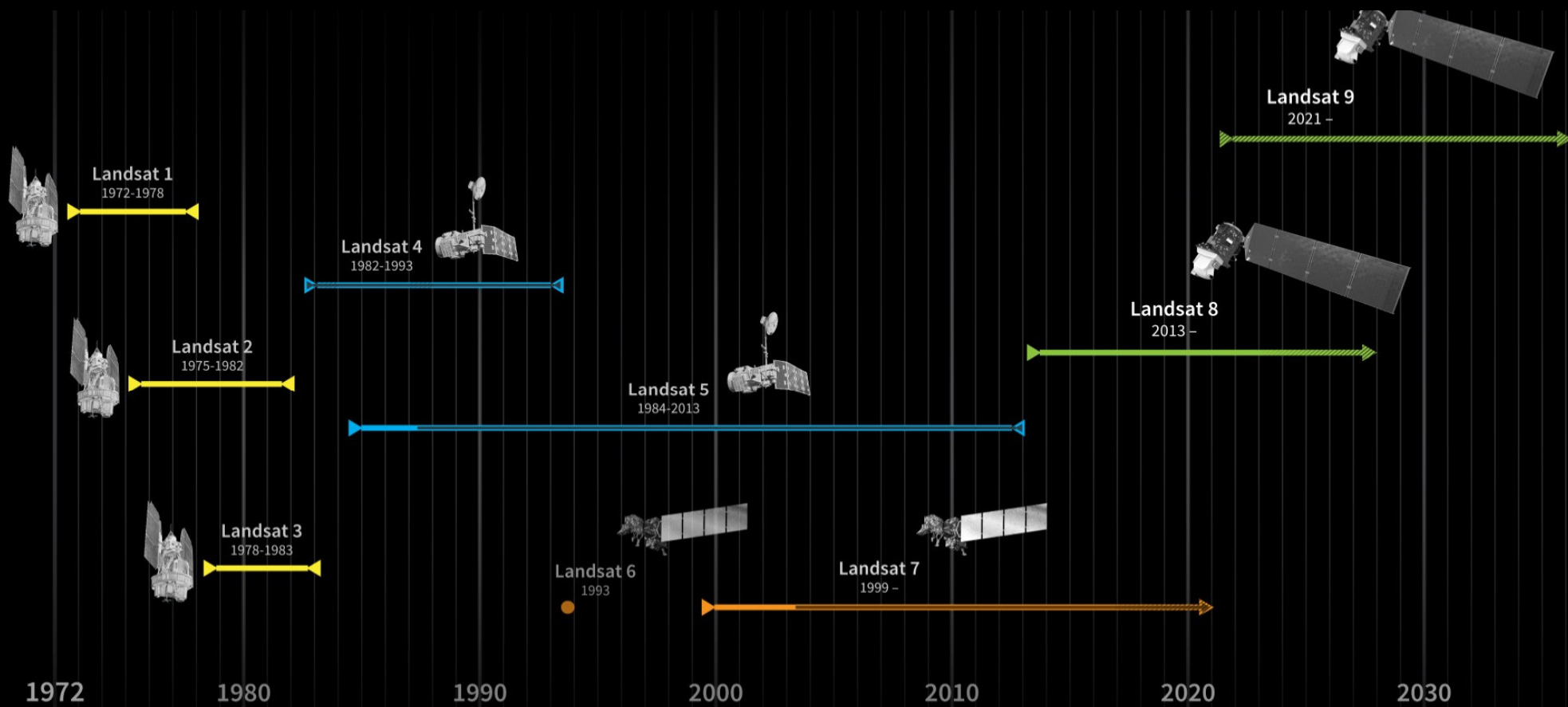


Imagery and Remote Sensing in ArcGIS

Access, Explore, & Analyse Earth Observation Data

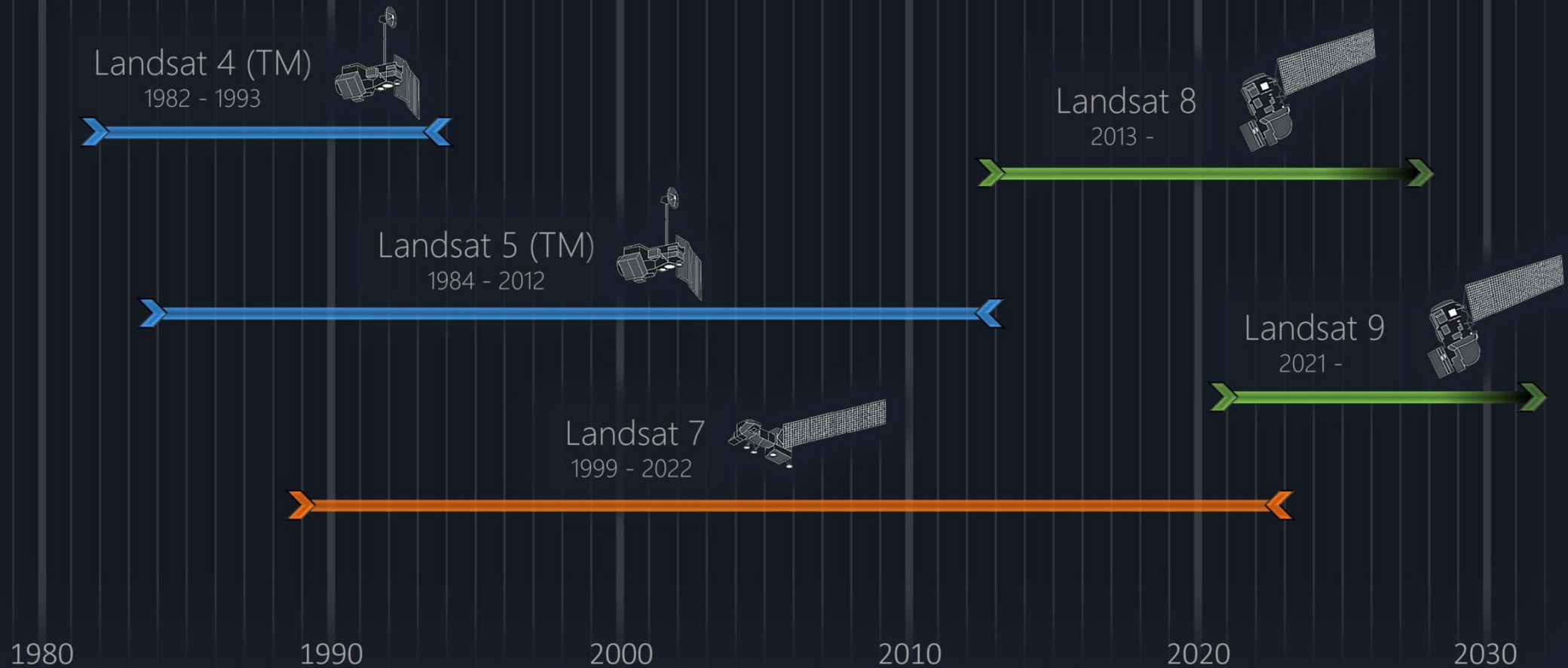


Landsat Legacy



Landsat Level-2 in ArcGIS Living Atlas of the World

One Image Service – 41 years of coverage and counting



Landsat Level-2 as a Web Service

One Image Service – 41 years of coverage and counting

The days of having to

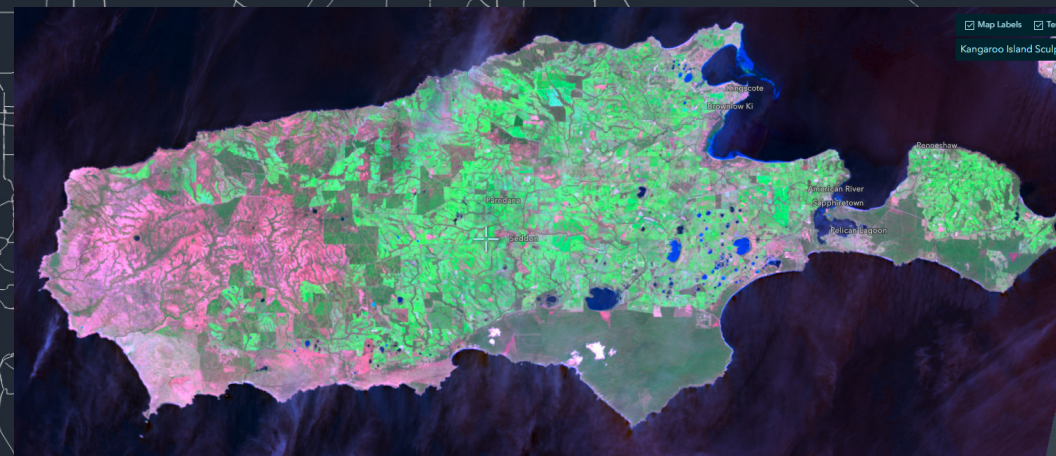
- locate a scene or many scenes
- download,
- store, and
- manage large volumes are behind us.

Landsat Level-2 service provides

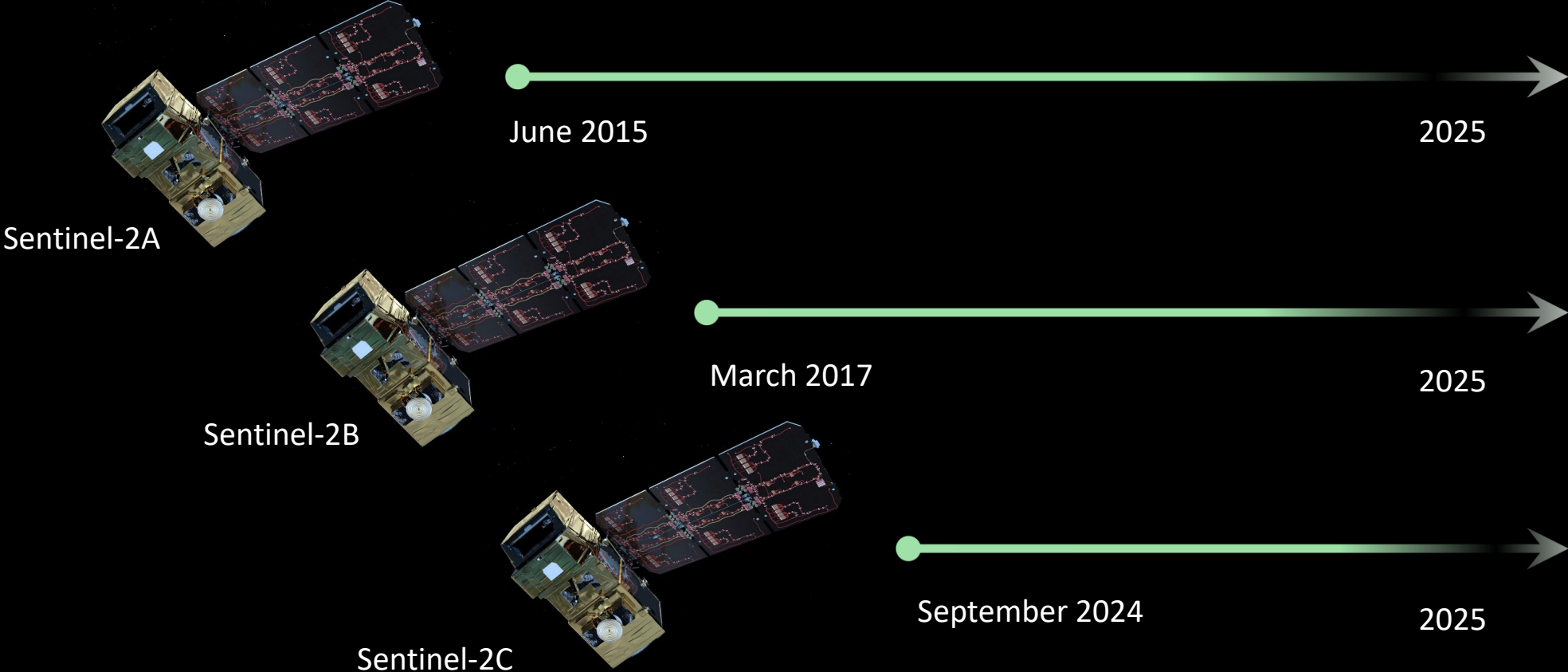
- direct,
- on the fly,

access to the Landsat Level-2 imagery

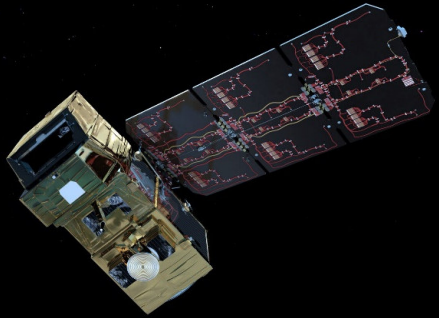
Globally 8.2 million scenes



Sentinel-2



Sentinel-2 in ArcGIS Living Atlas of the World

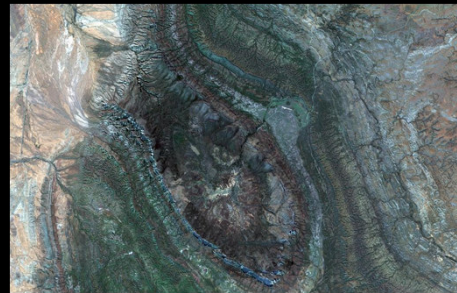
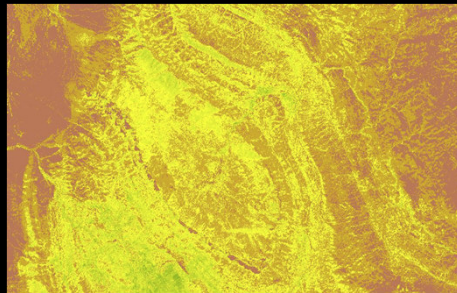
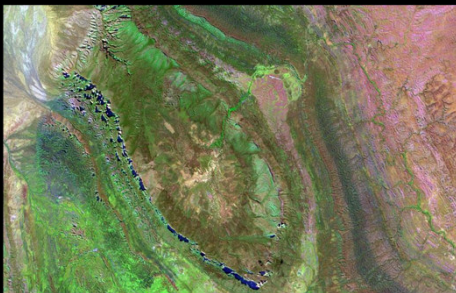
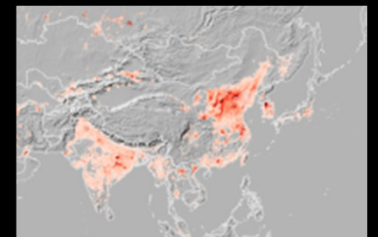
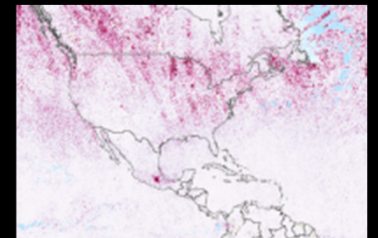
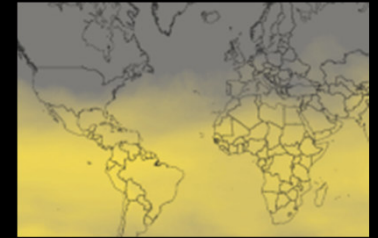


Sentinel Imagery Group in the Living Atlas

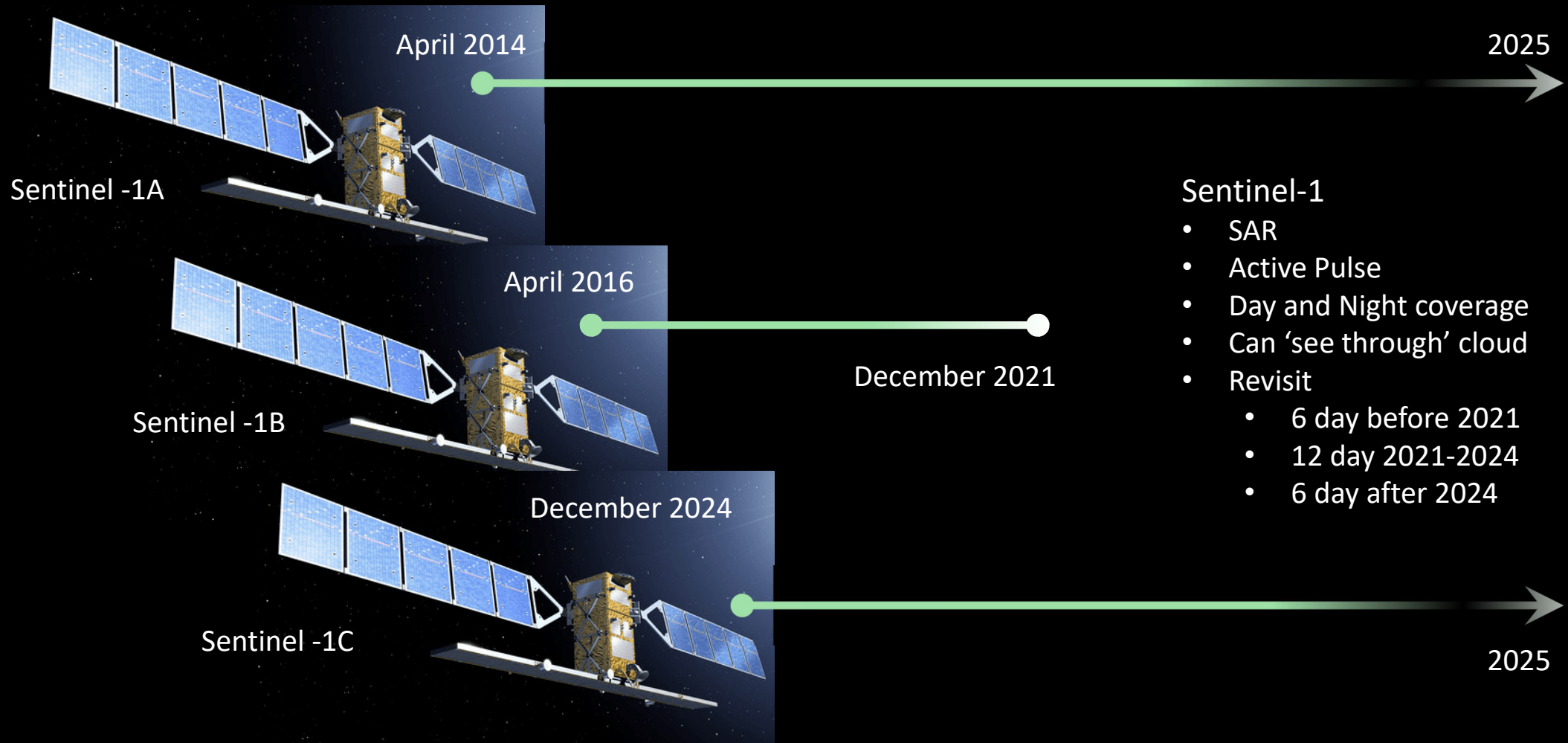
22 unique services including

- Sentinel-2 Views
- Level - 2A
- Level 3 - Ozone
- Level 3 - Carbon Monoxide
- Level 3 – Sulfur Dioxide
- NDVI
- NBR
-

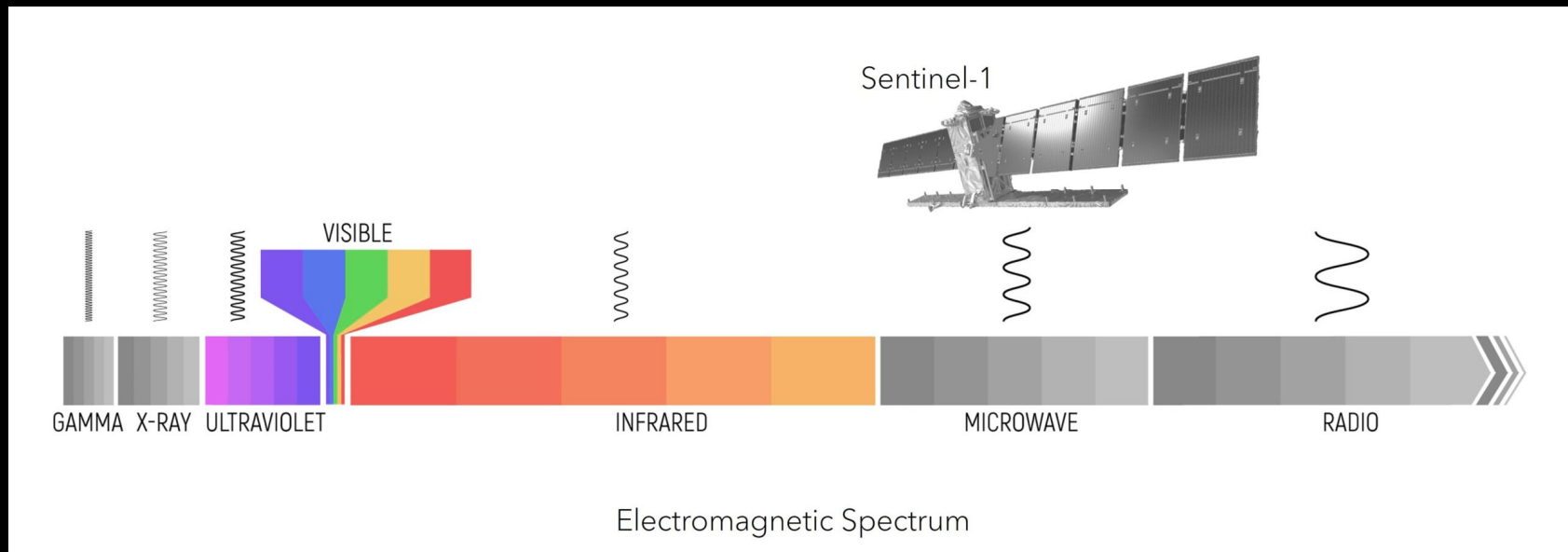
Service : <https://www.arcgis.com/home/group.html?id=658741129719420f83d503a3ba743def#overview>



Sentinel-1 | Synthetic Aperture Radar (SAR)



Sentinel-1 in ArcGIS Living Atlas of the World

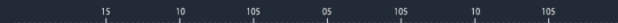


Sentinel-1 leverages light energy in the microwave portion of the electromagnetic spectrum

- Active pulse
- Level 1 product with Radiometric Terrain Correction (RTC)
 - Service : <https://esriau.maps.arcgis.com/home/item.html?id=ca91605a3261409aa984f01f7d065fbc>

Exploring the datasets with **Web-Based Applications**

Using Landsat & Sentinel Explorer Applications



Landsat Explorer Application

One App to analyse 41 years of coverage

Landsat Explorer

A user-friendly experience for exposing Landsat data and performing analysis

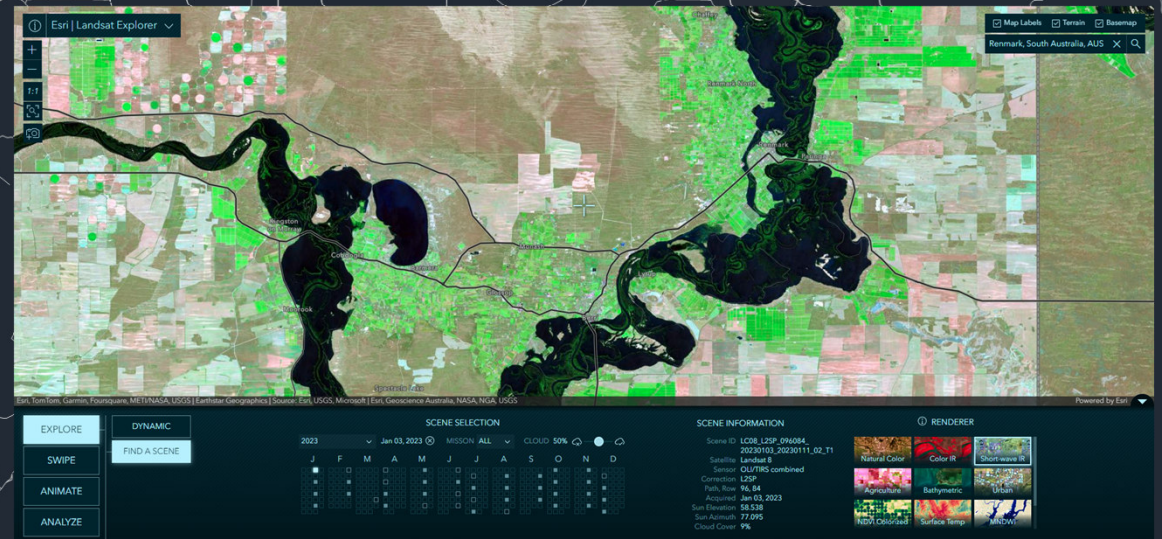
A continuity with Landsat missions 4, 5, 7, 8, and 9,

makes it possible to scientifically analyse and compare images across those missions, from 1982 to present.

Landsat Explorer web application

<https://livingatlas.arcgis.com/landsatexplorer/>

Globally 8.4 million scenes
growing daily...



Sentinel-1 Application

One App to analyse 11 years of coverage

Sentinel-1 Explorer

A user-friendly experience for exposing Sentinel-1 SAR data and performing analysis makes it possible to scientifically analyse and compare images from 2014 to present.

Sentinel-1 Explorer web application

<https://livingatlas.arcgis.com/sentinel1explorer>

Globally 2.2 million scenes



Sentinel-2 Explorer

One App to analyse 10 years of coverage

Sentinel-2 Explorer

A user-friendly experience for exposing Sentinel-2 data and performing analysis makes it possible to scientifically analyse and compare images from 2015 to present.

Sentinel-2 Explorer web application

<https://livingatlas.arcgis.com/sentinel2explorer>

Globally 2.2 million scenes

Sentinel-2 Land Cover Application

One App to analyse 11 years of coverage

Sentinel-2 Land Cover Explorer

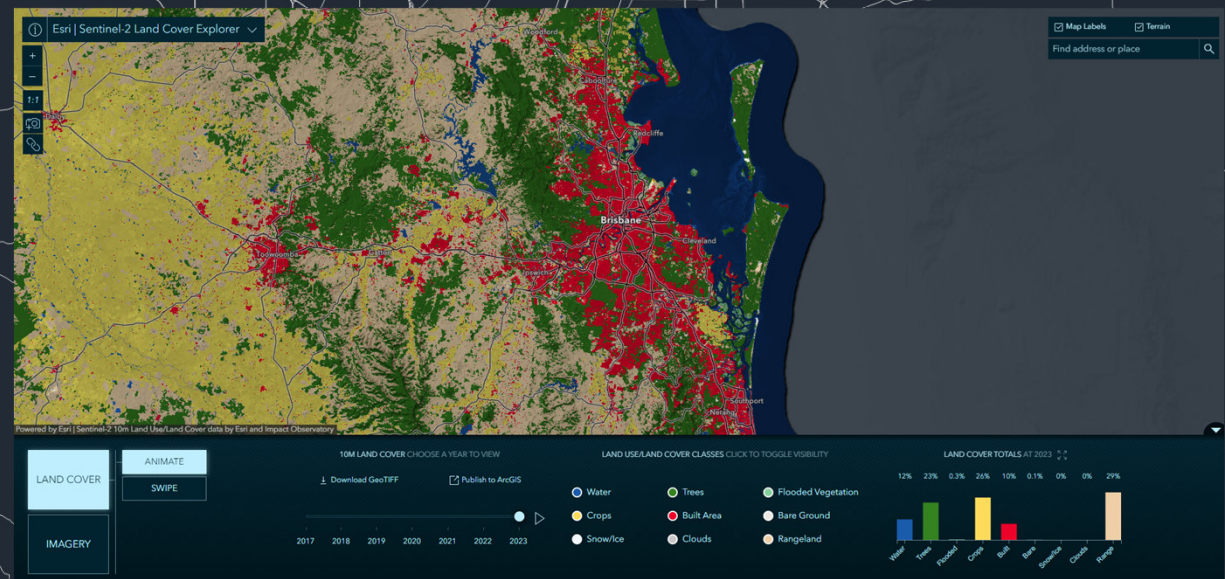
A global map of land use/land cover (LULC) derived from ESA Sentinel-2 imagery at 10m resolution

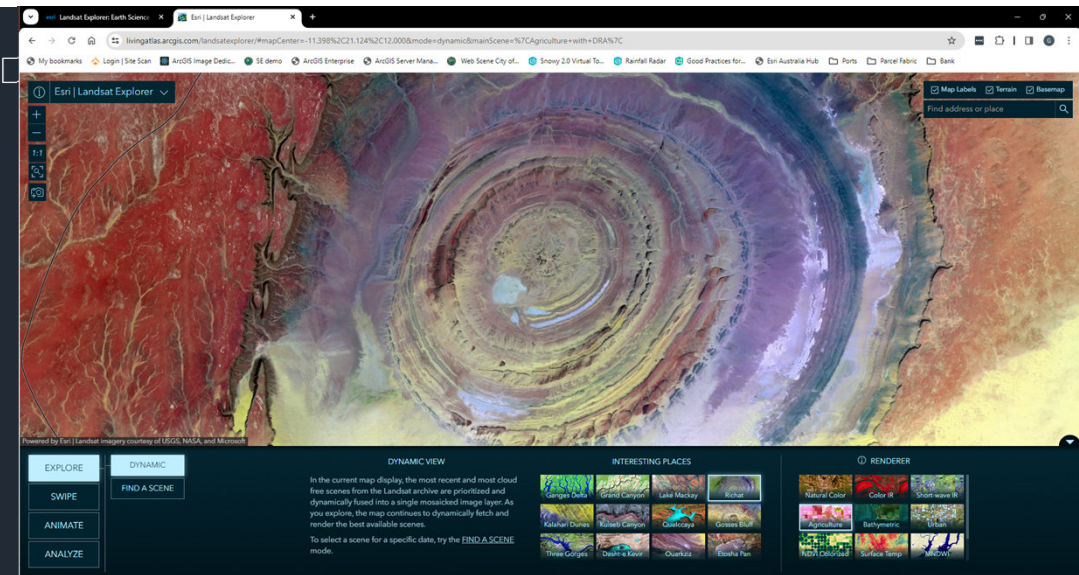
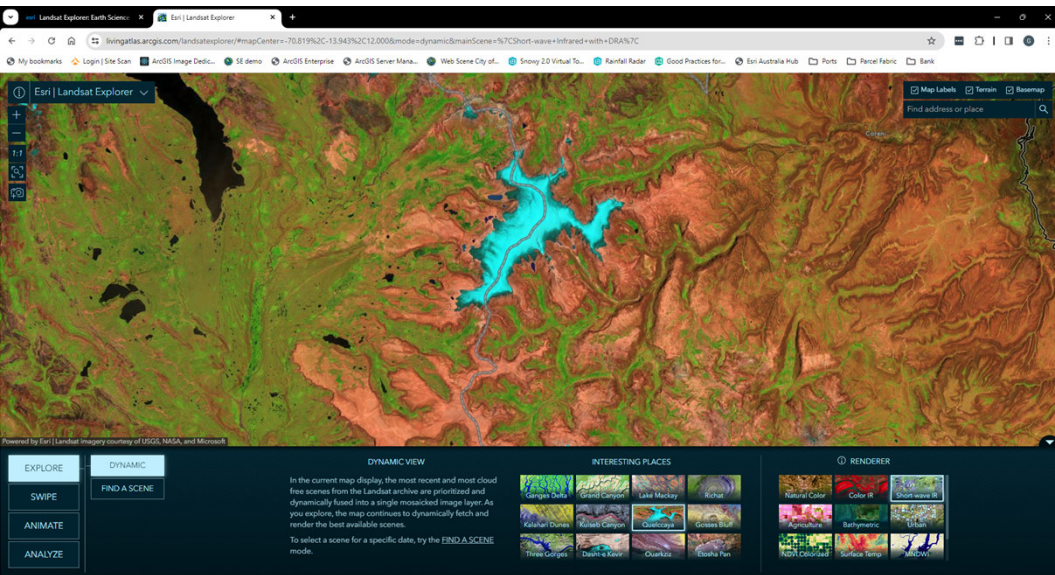
- Result of three-way collaboration among Esri, Impact Observatory, and Microsoft
- 9 landcover classes

Landcover Explorer web application

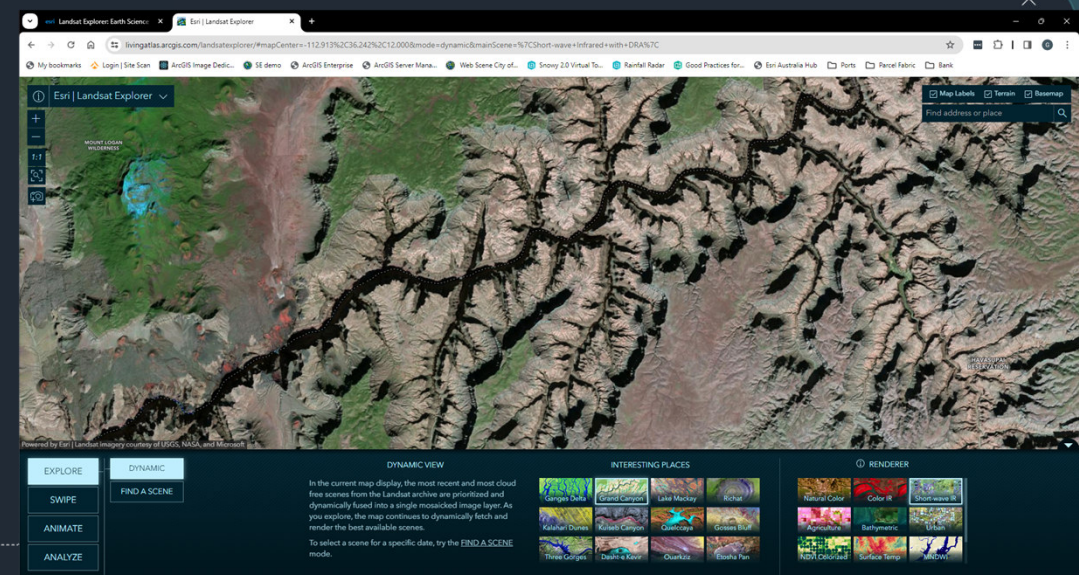
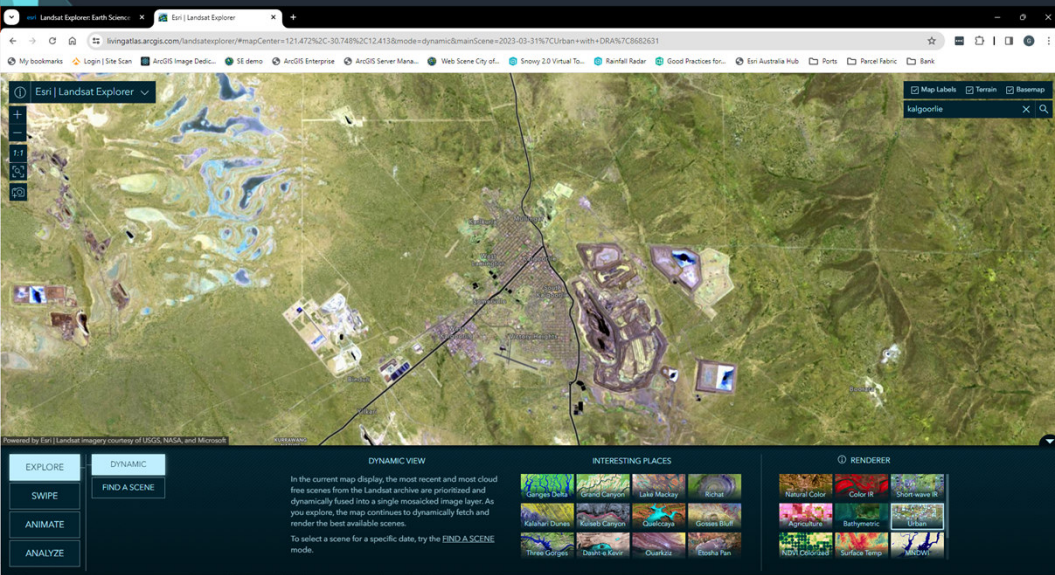
<https://livingatlas.arcgis.com/landcoverexplorer>

400,000 scenes processed each year





Demo: Explorer web applications





EXPLORE | **DYNAMIC**

SWIPE | FIND A SCENE

ANIMATE

ANALYZE

DYNAMIC VIEW

In the current map display, the most recent and most cloud free scenes from the Landsat archive are prioritized and dynamically fused into a single mosaicked image layer. As you explore, the map continues to dynamically fetch and render the best available scenes.

To select an individual scene for a specific date, try the [FIND A SCENE](#) mode.

INTERESTING PLACES

Ganges Delta	Grand Canyon	Lake Mackay	Richat
Kalahari Dunes	Kuiseb Canyon	Quelccaya	Gosses Bluff
Three Gorges	Dasht-e Kevir	Ouarkiz	Etosha Pan

RENDERER

Natural Color	Color IR	Short-wave IR
Agriculture	Urban	NDVI Colorized
Surface Temp	MNDWI	NDM

ArcGIS Imagery Applications

Extending

Landsat Explorer

- <https://livingatlas.arcgis.com/landsatexplorer>

Sentinel-1 Explorer

- <https://livingatlas.arcgis.com/sentinel1explorer>

Sentinel-2 Explorer

- <https://livingatlas.arcgis.com/sentinel2explorer>

Sentinel -2 Landcover Explorer

- <https://livingatlas.arcgis.com/landcoverexplorer/>

GitHub open source

- <https://github.com/Esri/imagery-explorer-apps>

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Continue the Conversation...



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D DIRECTIONS **LIVE** Online

15 10 105 05 105 10 105



 **esri** Australia