Australian Government

THE LEONA M. AND HARRY B. HELMSLEY CHARITABLE TRUST

Digital Earth AFRICA

Digital Earth Africa & Australia:
Big Earth Data for SDGs

Dr Stuart Minchin,
Geoscience Australia

GEO GROUP ON EARTH OBSERVATIONS

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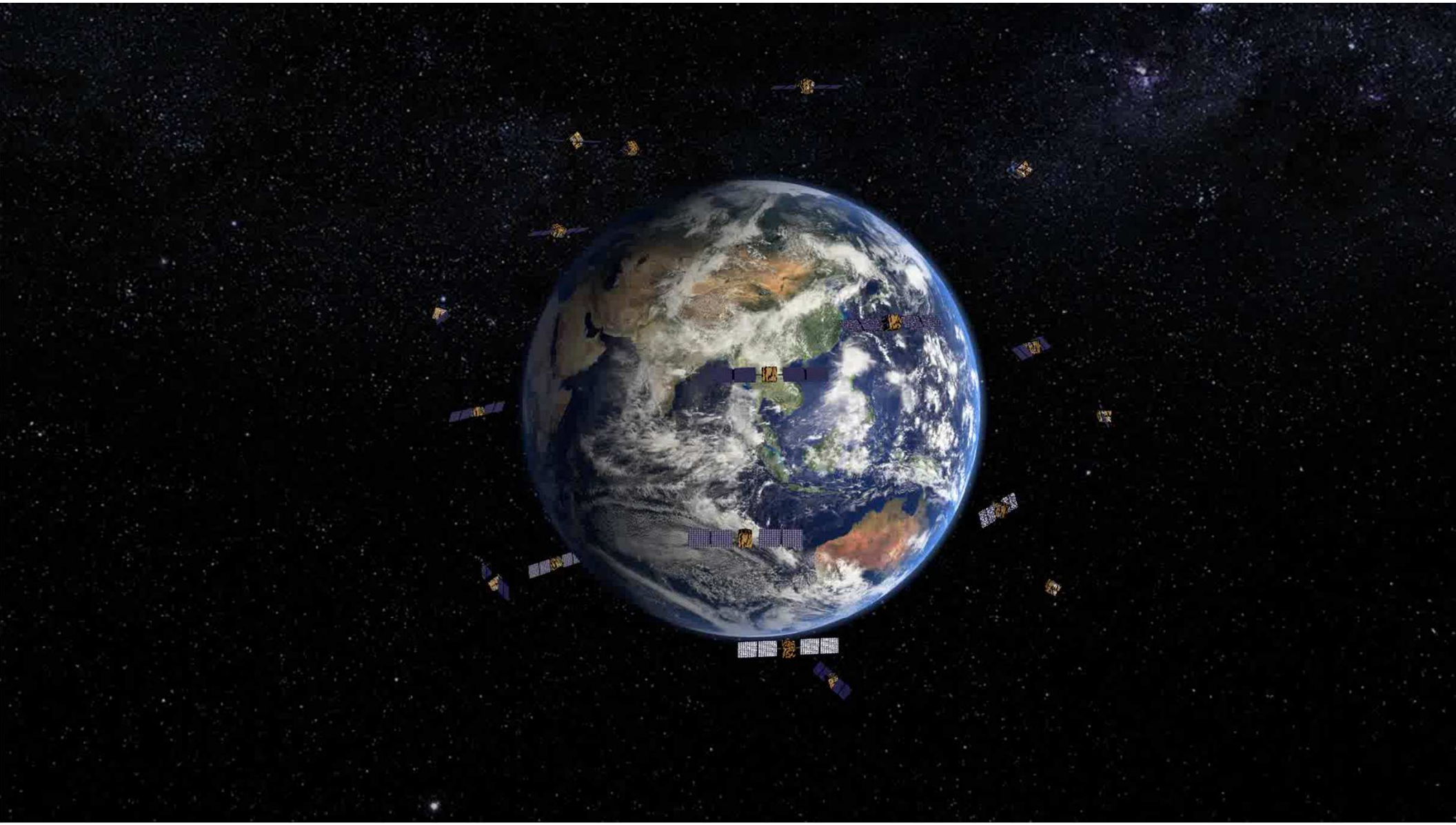
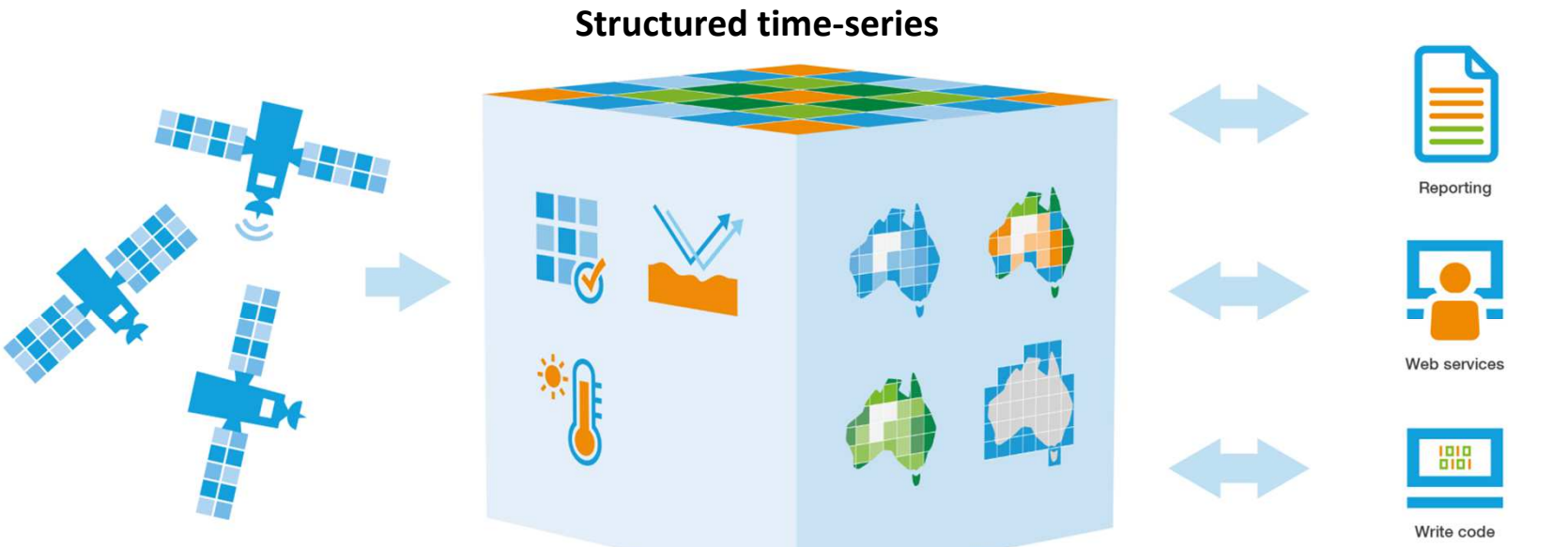


Digital Earth Australia



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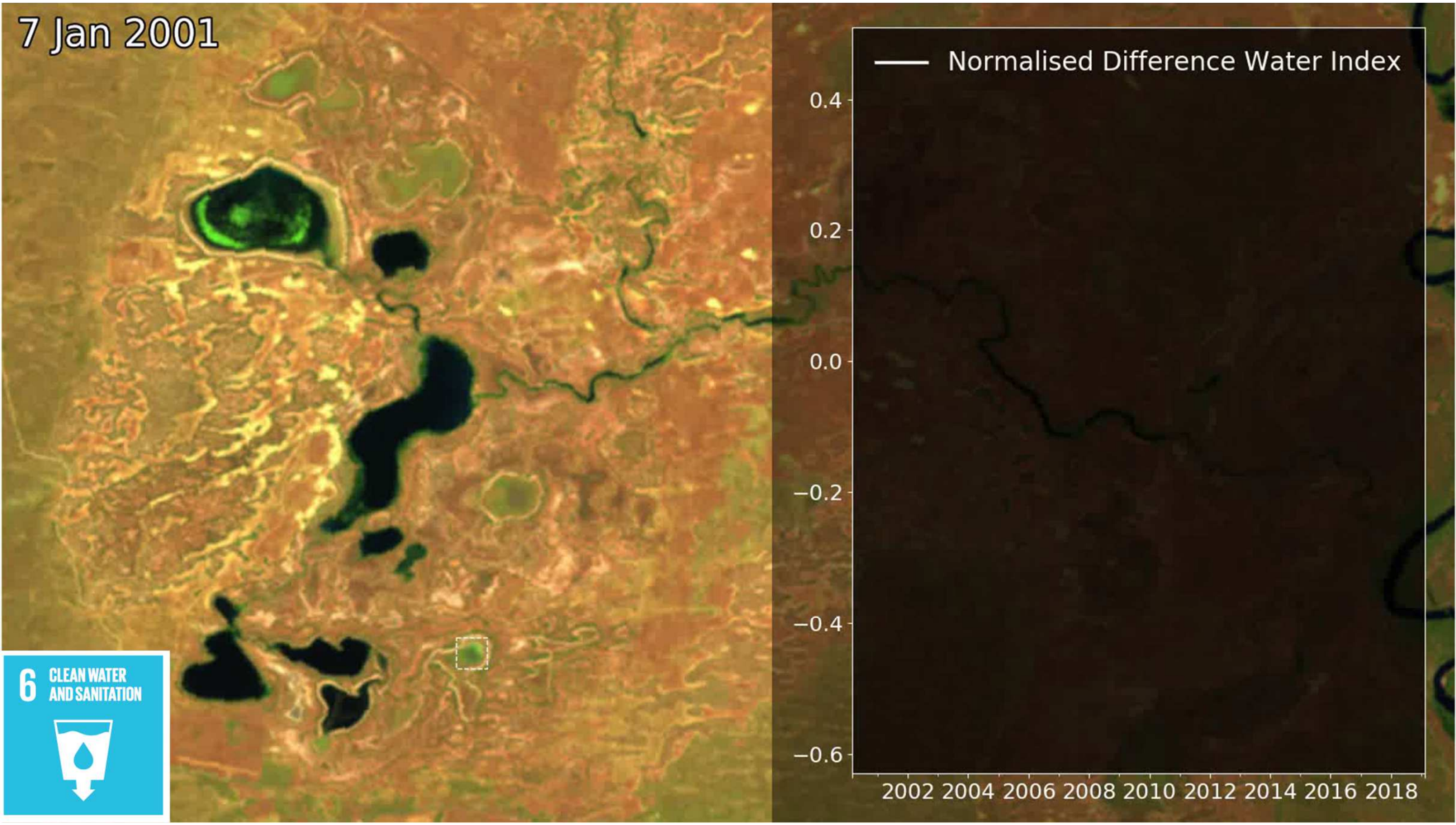
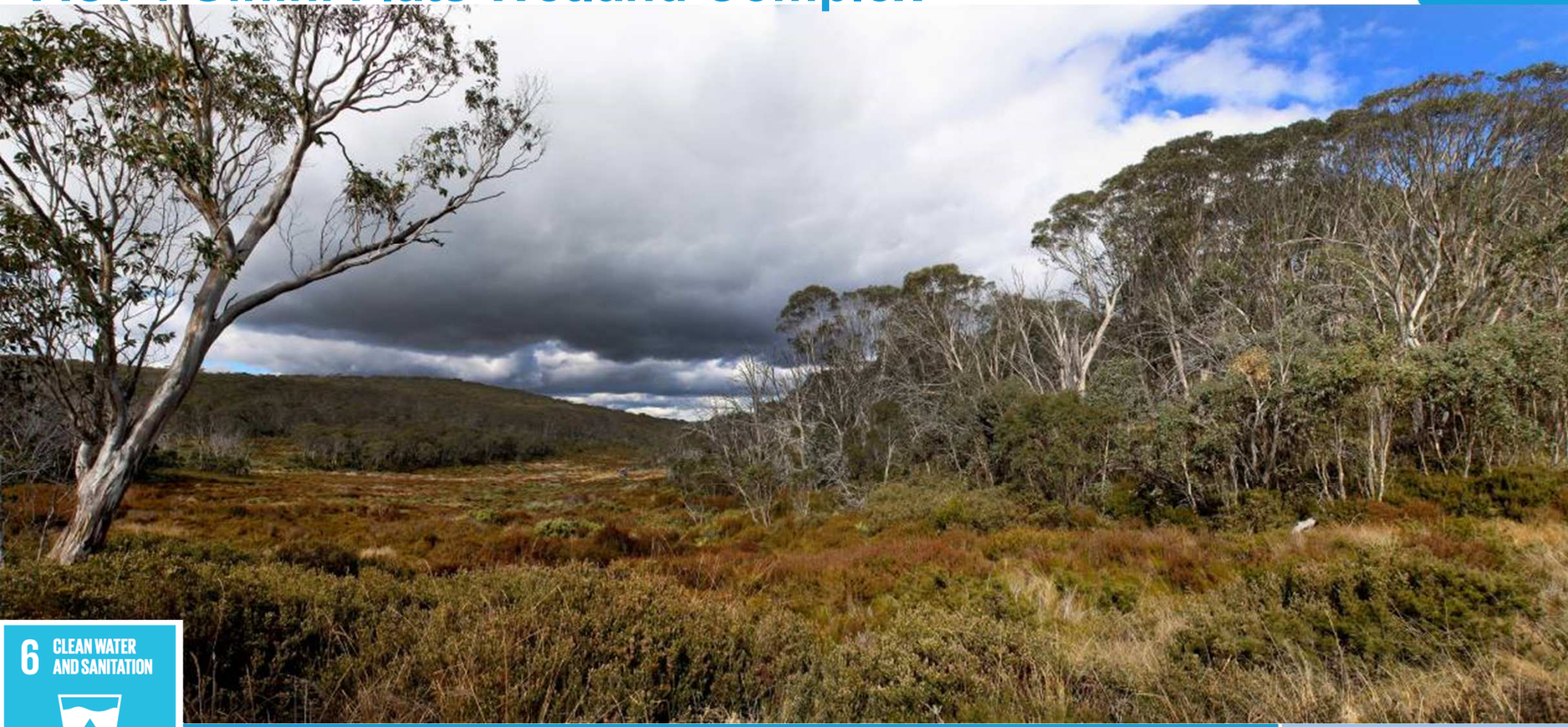
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS


7 Jan 2001
Normalised Difference Water Index
0.4
0.2
0.0
−0.2
−0.4
−0.6
2002 2004 2006 2008 2010 2012 2014 2016 2018
6 CLEAN WATER AND SANITATION

ACT : Ginini Flats Wetland Complex



6 CLEAN WATER AND SANITATION

NCE AUSTRALIA

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ACT : Ginini Flats Wetland Complex

6 CLEAN WATER AND SANITATION

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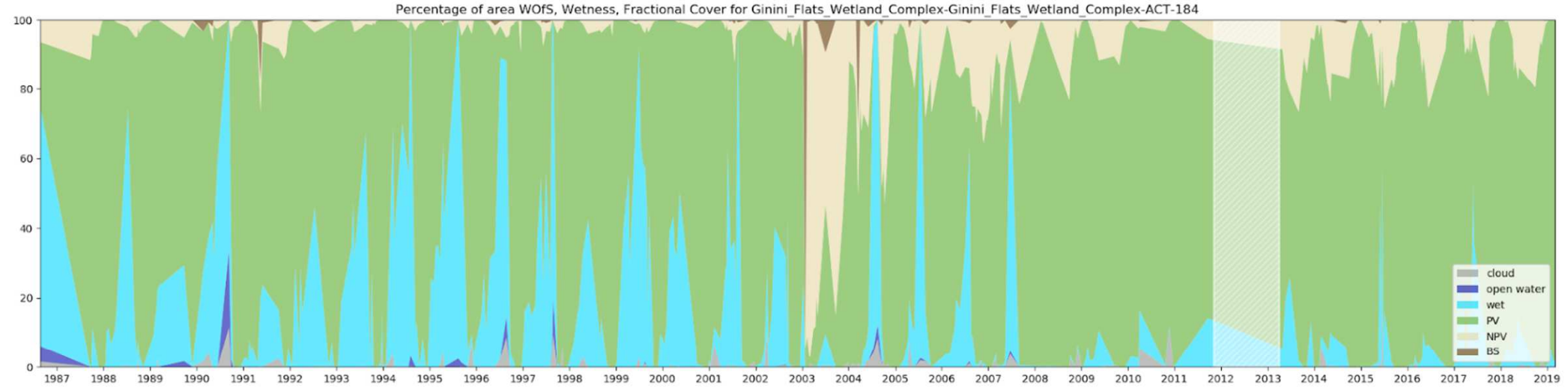
ACT : Ginini Flats Wetland Complex



6 CLEAN WATER AND SANITATION

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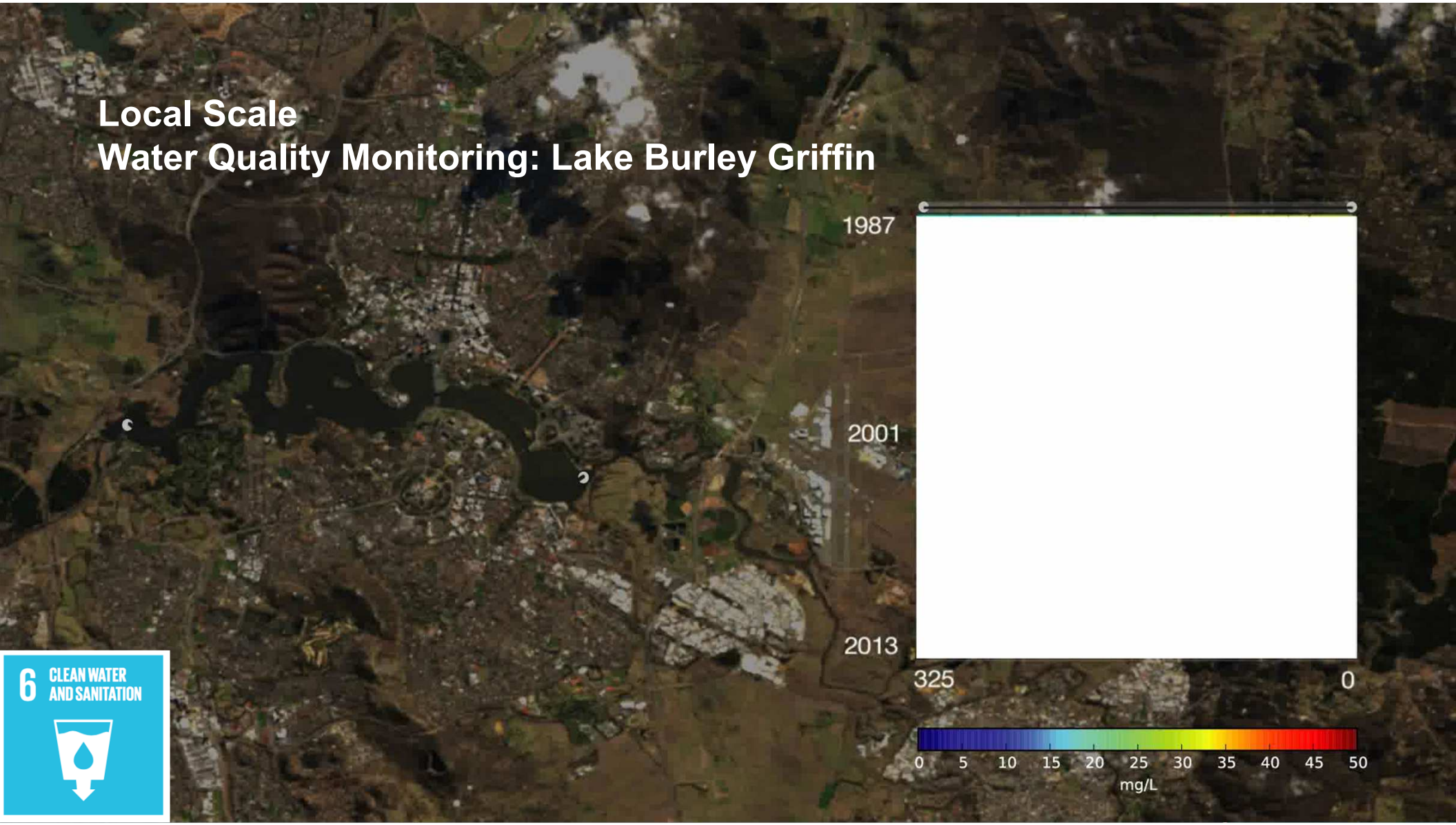
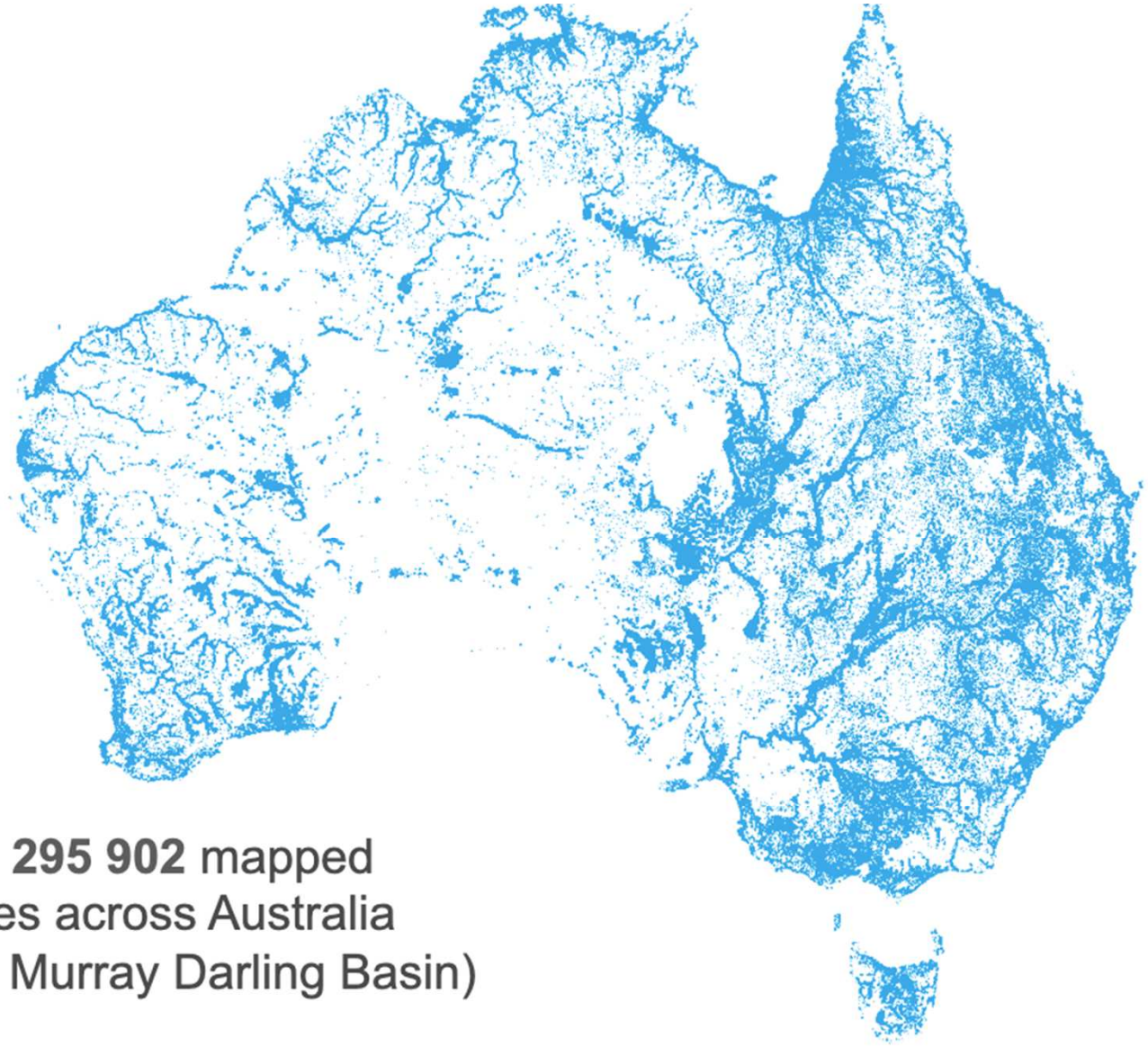
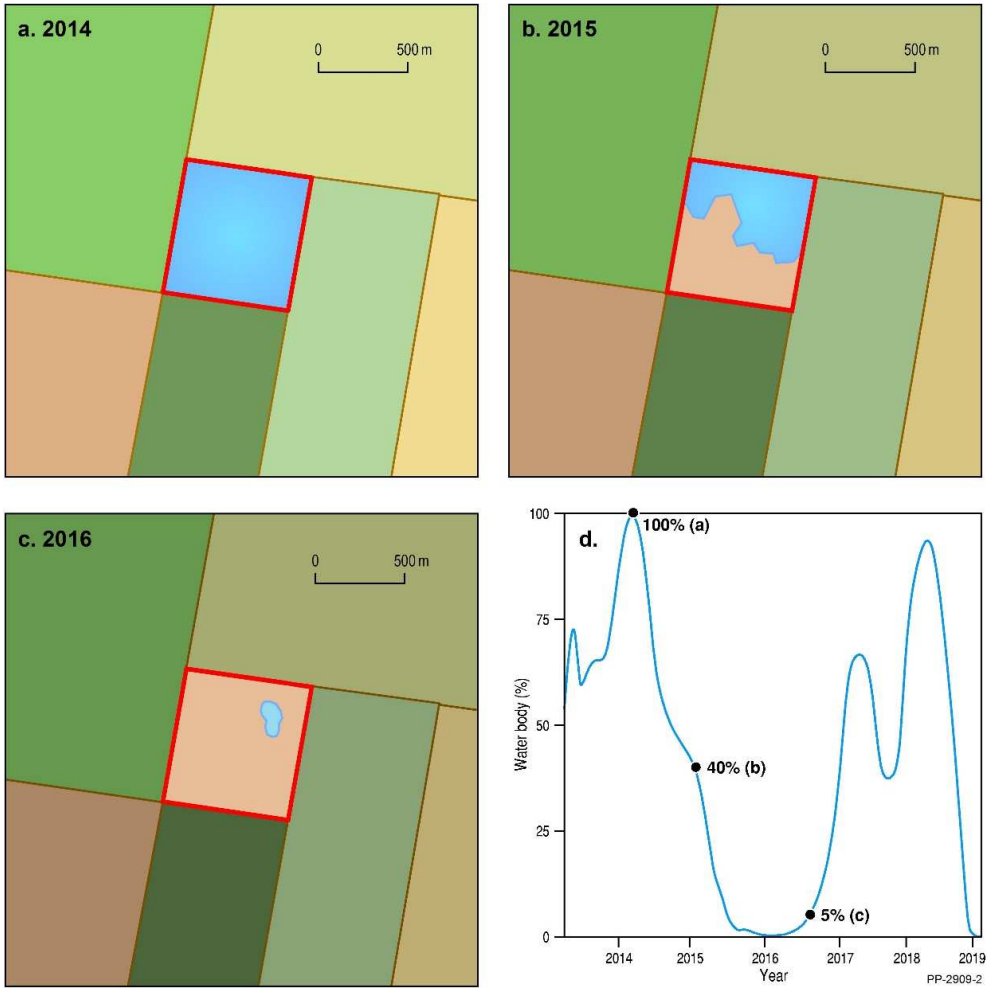
Local Scale
Water Quality Monitoring: Lake Burley Griffin



6 CLEAN WATER AND SANITATION



There are **295 902** mapped
waterbodies across Australia
(58 493 in the Murray Darling Basin)



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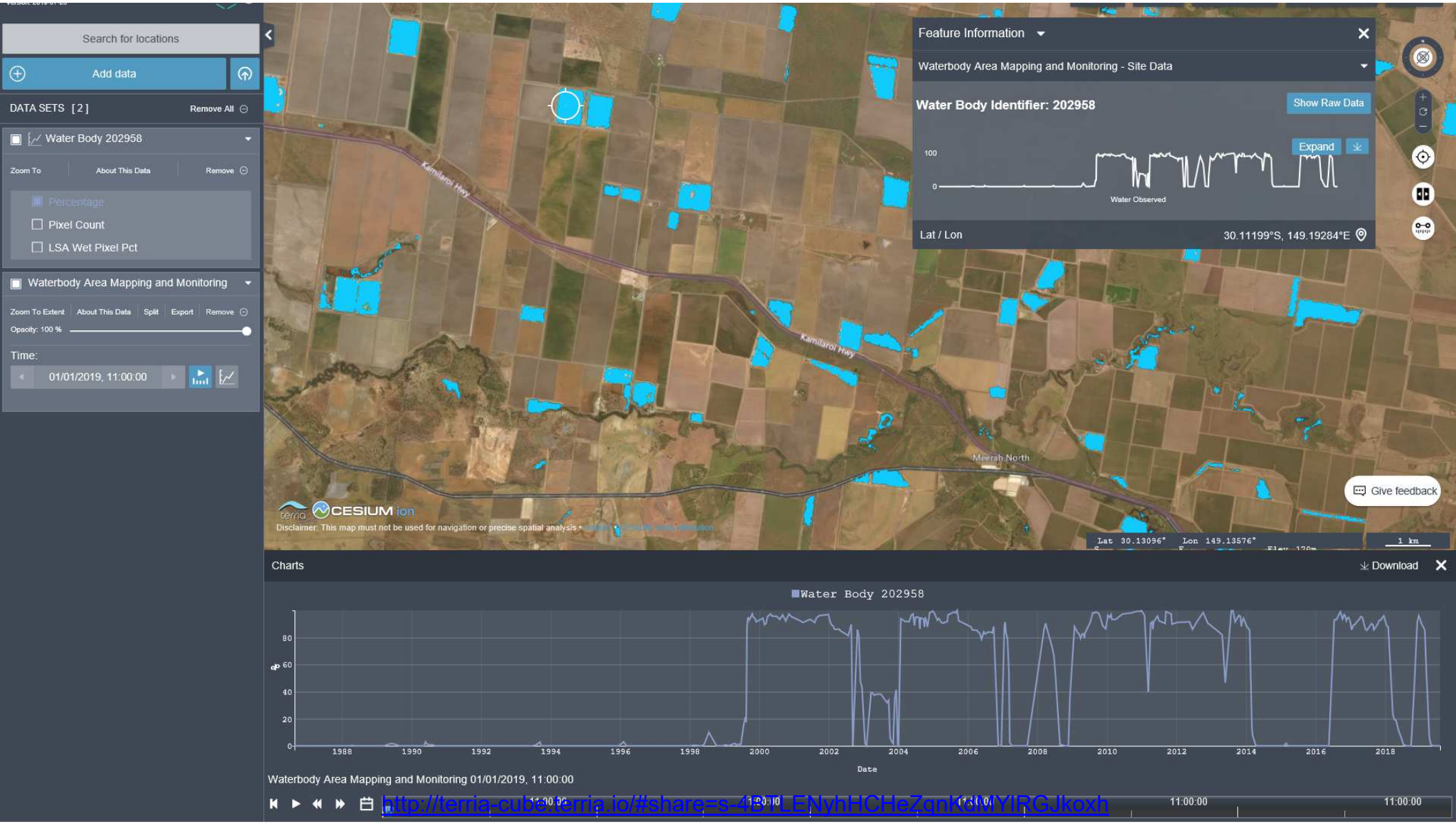
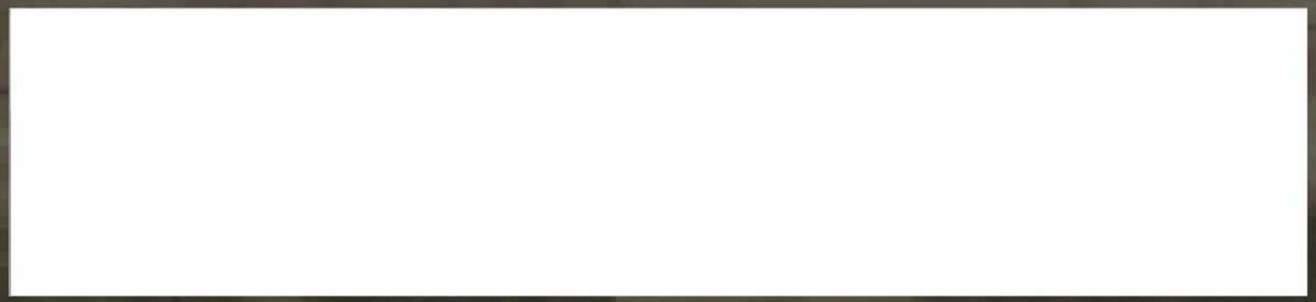


http://terria-cube.terria.io/#share=s-4BTLENyhHCHeZqnK6MYIRGJkoxh



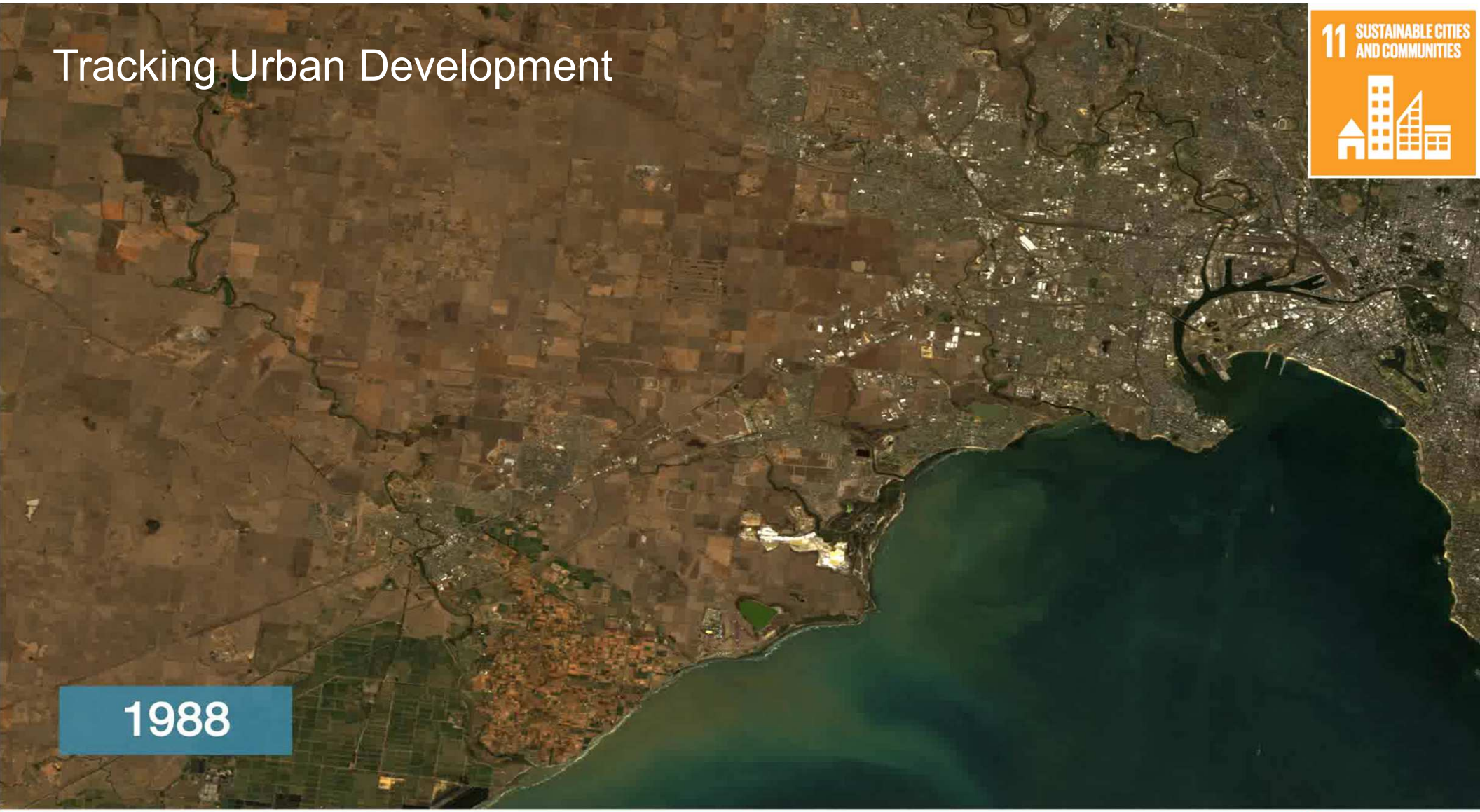
green

dry

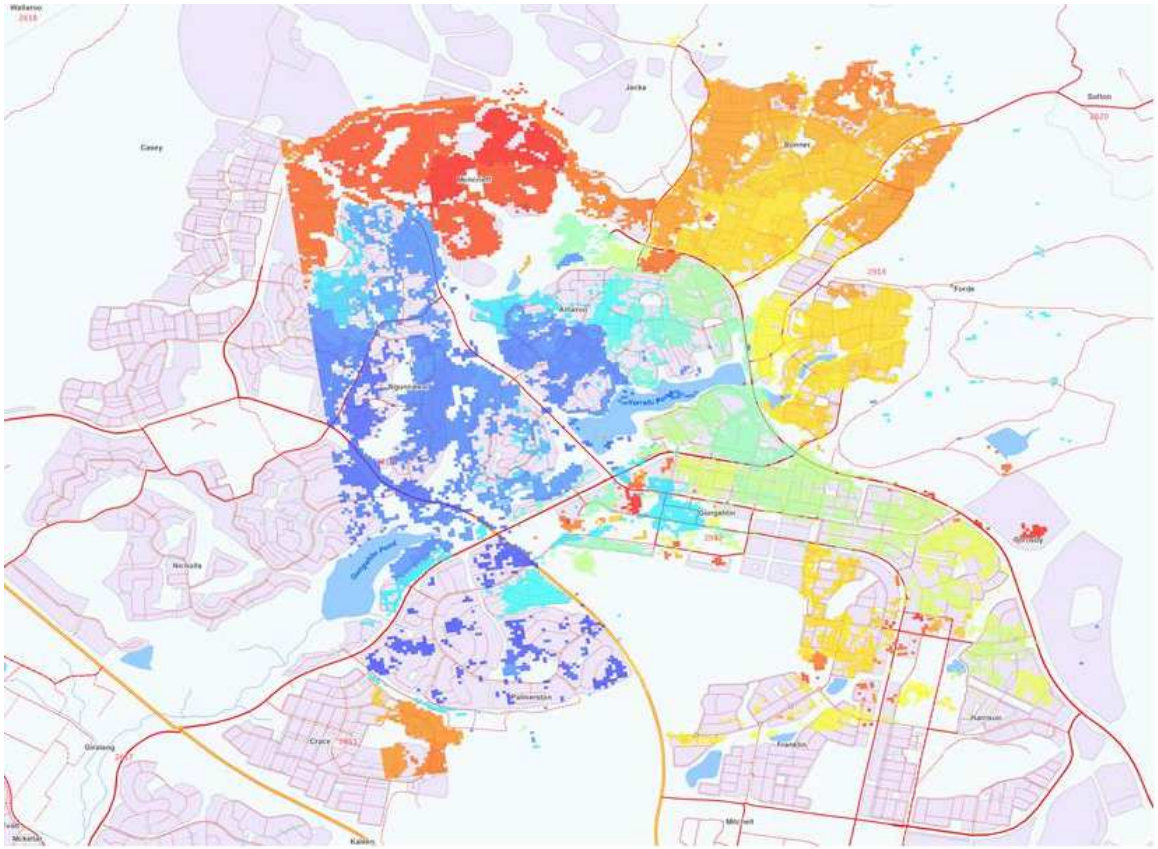
soil

2 ZERO HUNGER

Tracking Urban Development



Urban Development in Northern Canberra



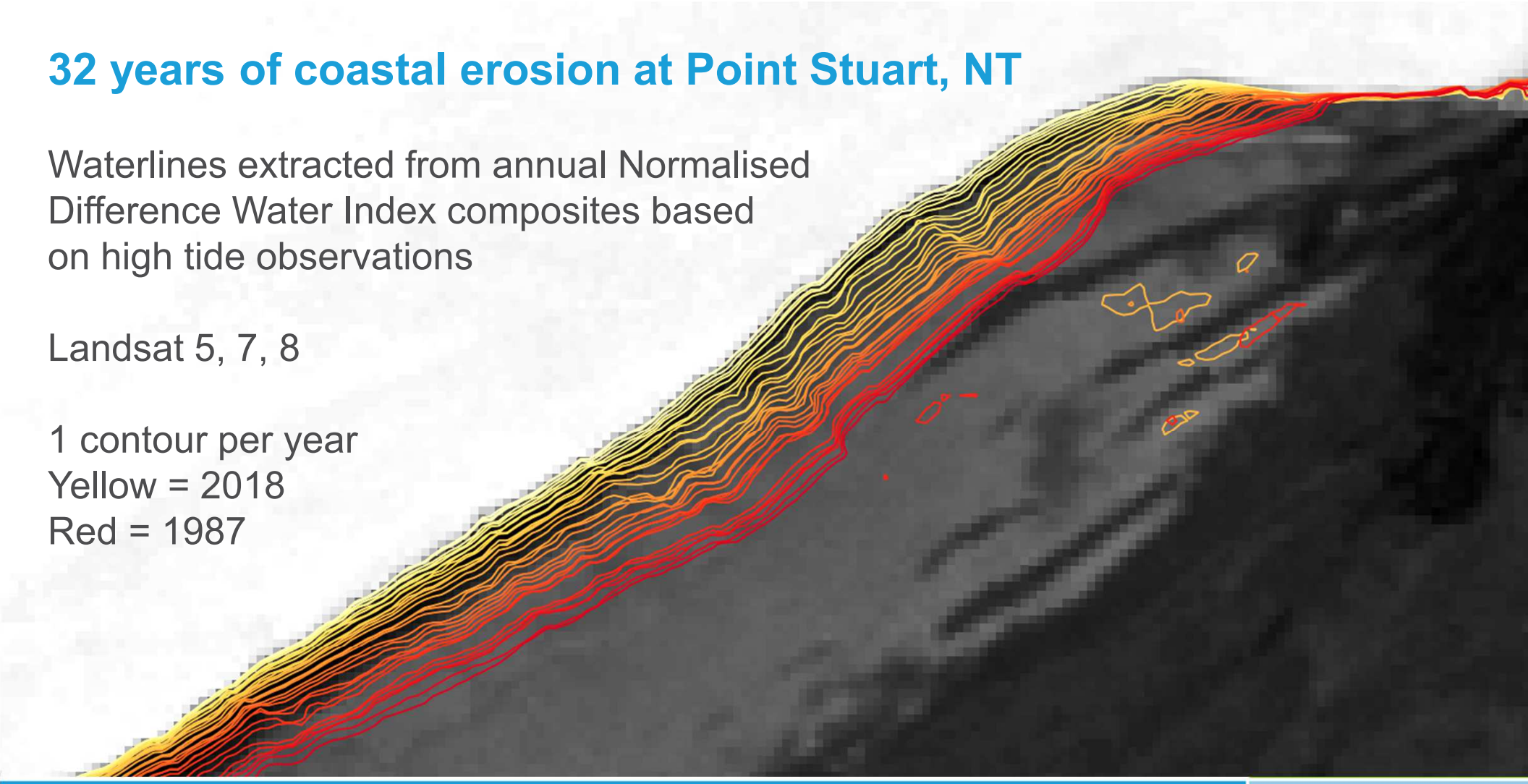
14 LIFE BELOW WATER
1987

32 years of coastal erosion at Point Stuart, NT

Waterlines extracted from annual Normalised Difference Water Index composites based on high tide observations

Landsat 5, 7, 8

1 contour per year
Yellow = 2018
Red = 1987



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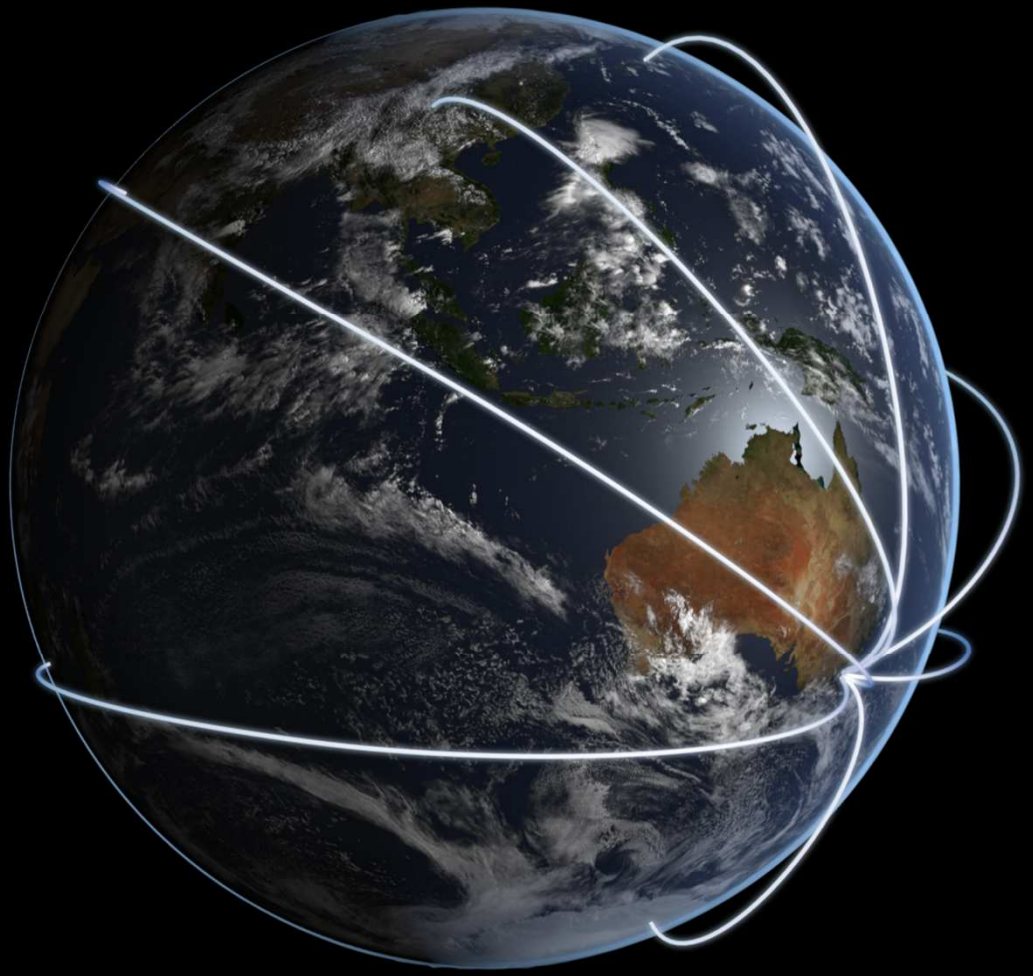
Data Cubes for:

Africa, Antarctica, China, India, Europe, North America, …

Connecting the EO, Spatial and Statistical world to support global SDGs?



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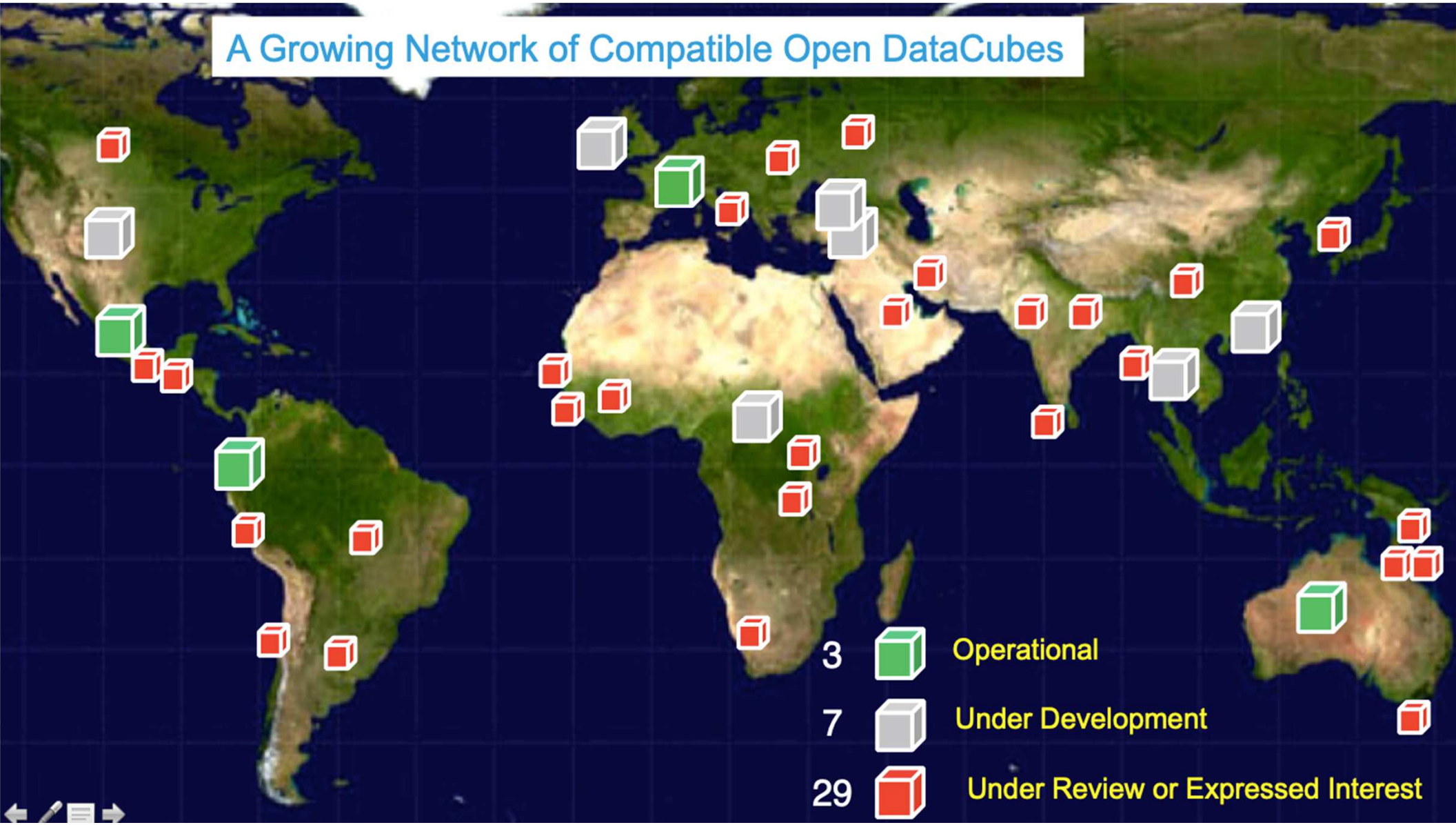

A Growing Network of Compatible Open DataCubes
3
Operational
7
Under Development
29
Under Review or Expressed Interest

Countries

- Tanzania
- Kenya
- Senegal
- Sierra Leone
- Ghana
- Uganda
- South Africa
- Rwanda
- Botswana
- Cote d'Ivoire
- Malawi
- Gabon
- Ethiopia

Use Cases

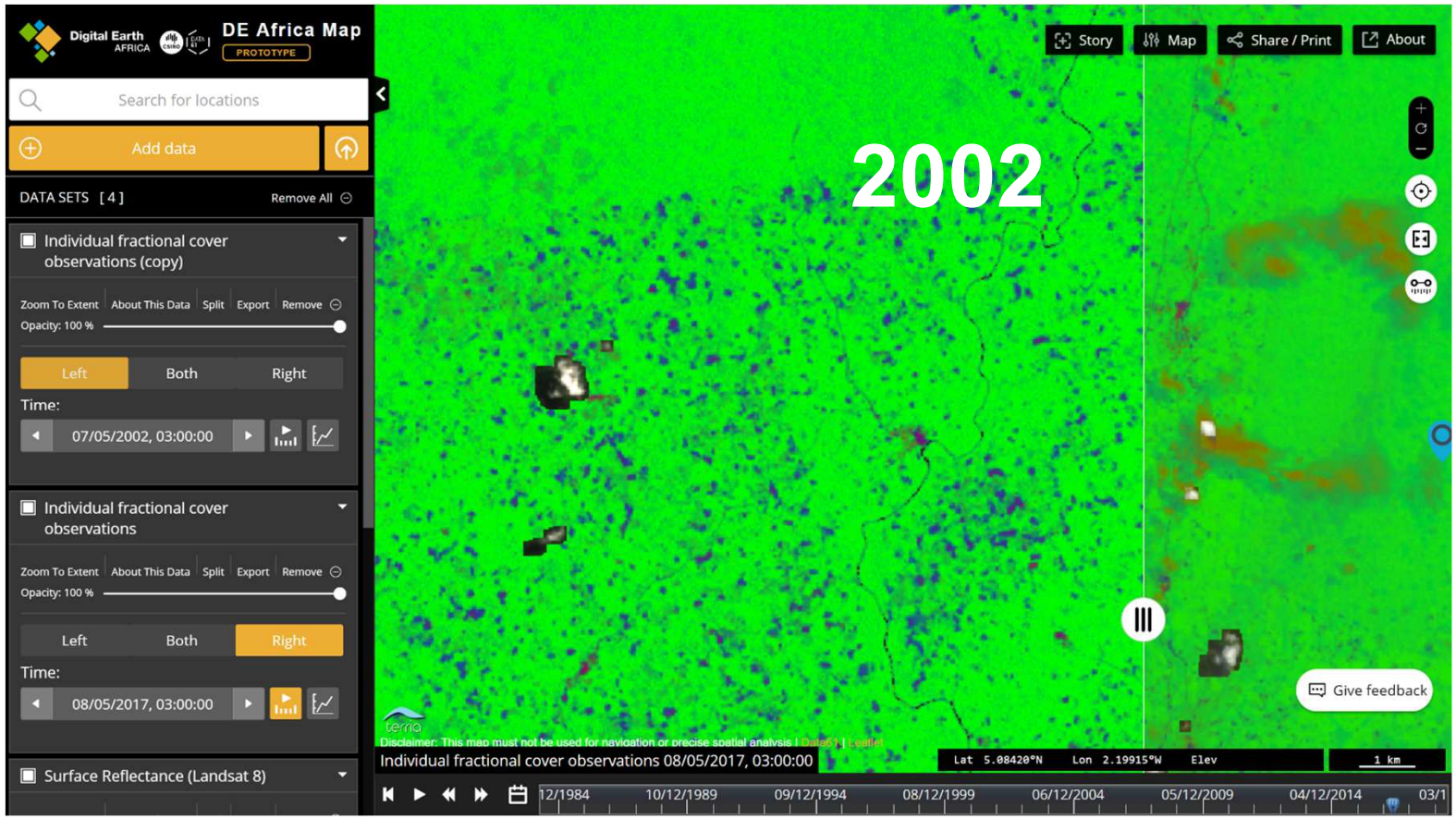
- Agriculture
- Land degradation
- Water quality and extent
- Disease/pests
- Deforestation
- Illegal mining
- Urban growth
- Flood risk
- Unplanned settlements
- Wildfires
- Mangroves
- Landslides
- SDG indicators

Stakeholders

- Geoscience Australia
- Group on Earth Observations (GEO)
- Committee on Earth Observations (CEOS)
- World Economic Forum
- South Africa National Space Agency (SANSA)
- Kenya Office of the Deputy President
- Ghana National Statistics Office
- Global Partnership for Sustainable Development Data
- CGIAR
- UNECA
- Africa Union
- AfDB
- RCMRD
- AGRHYMET

Phase 1 Steering Committee

Ghana - mining on the Ankobra River 2002-2017



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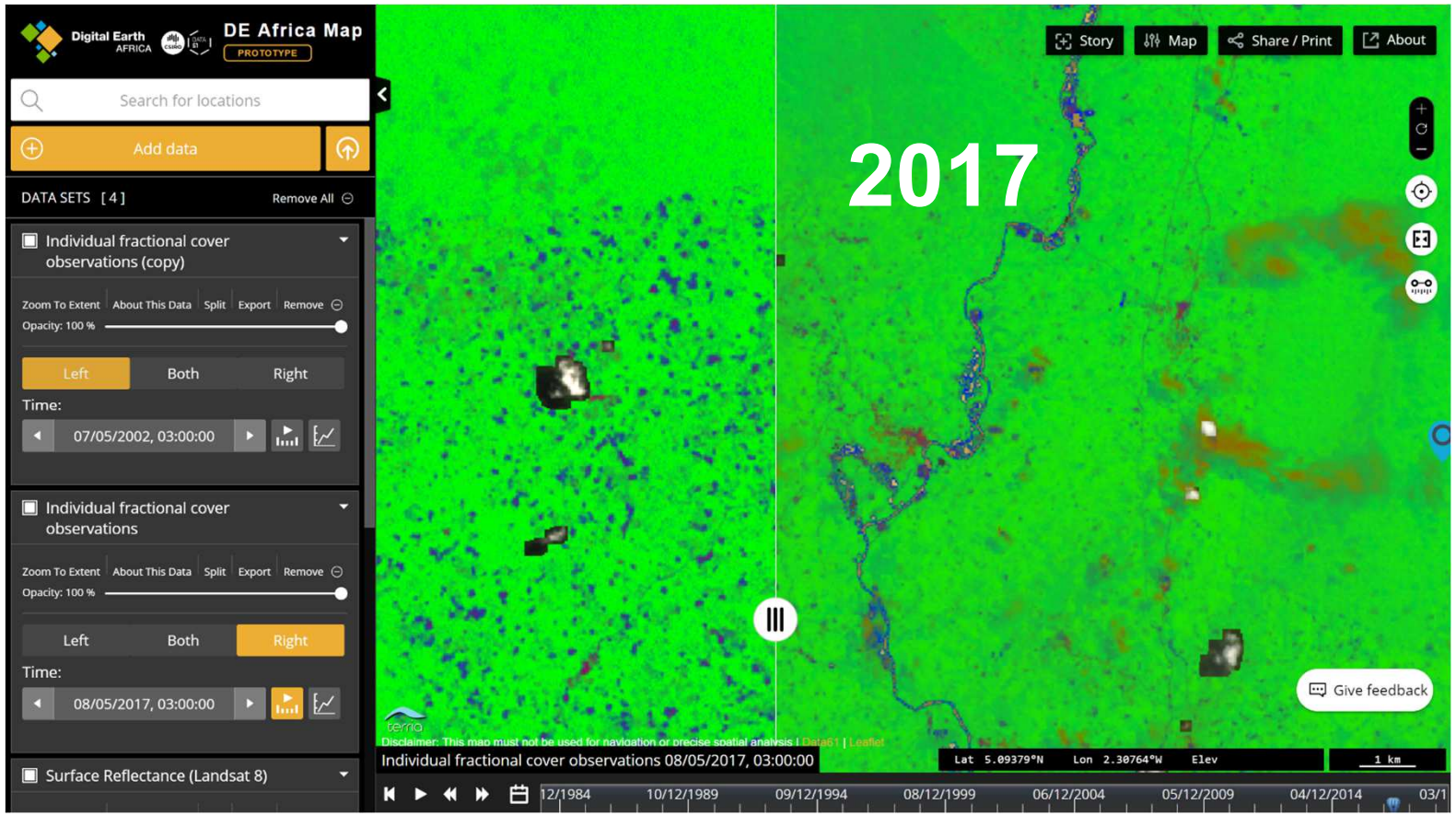

Digital Earth Pacific……

- Climate Change impacts
- Coastal change/ inundation
- Coral bleaching
- Maritime surveillance
- Marine water quality
- Agriculture
- Water
- Vegetation

Is it time for Digital Earth Latin America?

Mexico, Columbia, Brazil, Argentina, Chile.

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Q&A

www.digitalearthafrica.org