Scooped by Dr. Susan Bliss

Remote sensing images of Earth are obtained from Landsat satellites which is a joint venture between NASA and US Geological Survey. Landsat satellites which make loops around Earth measure urban growth, forest loss, desertification expansion and disaster destruction.

National Geographic stated that 'remote sensing consists of using aerial photography and other methods to view what cannot be seen with the unaided eye'.

1. Satellite eye on Earth 2013

Wild fires of Canada and Indonesia, sand storms and steam spewing volcanoes were among the images captured by European Space Agency and NASA satellites in May

Source: http://www.theguardian.com/environment/gallery/2013/jul/16/ satellite-eye-earth-space-pictures#/?picture=412930398&index=0

a. Saharan dust storm

Year 8 Landforms and Landscapes; Year 10 Land

Source: http://www.theguardian.com/environment/gallery/2013/jul/16/ satellite-eye-earth-space-pictures#/?picture=412930299&index=3

'A strong Saharan dust storm covered the Mediterranean Sea and much of Europe in late May, bringing an extraordinary end to a very dusty month. Dust storms are common in this



region, and the fine particles move as if on a river of air across vast expanses, coming to rest in regions remote from their Saharan origin. African dust, originating from fine particles in arid topsoil, easily lifts in strong winds, and may rise more than 10,000 feet high. Dust clouds can cross the Atlantic, and may reach the Caribbean and the Americas in five to seven days.'

b. Africa's Okavango River empties into the inland Okavango Delta in northern Botswana Year 8 Landforms and Landscapes and Year 10 Inland Water



Source: http://www.theguardian.com/environment/gallery/2013/jul/16/ satellite-eye-earth-space-pictures#/?picture=412930325&index=11

The Okavango River originates in Angola, forms part of the Angola-Namibia border and then ends in northern Botswana. Here, it has formed a depression in the semi-arid Kalahari basin. Appearing purple at the centre of the image is Chief's Island. In the lower-right portion of the image we can see a large cluster of radar reflections from the town of Maun. At the top of the image, a triangle with similar colouring to the delta can be seen. This is a swamp area and national park located mostly in Namibia'

2. New Landsat data just a few clicks away



September 2013 'thousands of never-before-seen data products from the US Landsat satellites acquired over 30 years have been released for online access.'

Source: http://www.esa.int/Our_Activities/Observing_the_Earth/New_ Landsat_data_just_a_few_clicks_away

3. Google Earth photos – before and after satellite images

Source: http://mashable.com/2013/09/03/google-earth-before-after/

a. Dubai, UAE Year 8 Urban

The growth of Emirates boomtown Dubai isn't just visible in its skyscrapers -- it's apparent through its entire coastline. Though most famous for its world map of manmade islands and two palm tree resorts, Google Earth historic images from just 10 years ago show the city's coast has utterly transformed.



Source: http://mashable.com/2013/09/03/google-earth-beforeafter/#gallery/shocking-google-earth-before-and-after-images/ 5226552312d2cd32b300050f

b. Seaside Heights, New Jersey, USA Year 8 Hydrologic hazards

Seaside Heights, N.J.'s boardwalk amusement park was levelled during October 2012's Hurricane Sandy. Missing from the after photo are the Ferris wheel, roller coaster and several buildings.



http://mashable.com/2013/09/03/google-earth-beforeafter/#gallery/shocking-google-earth-before-and-after-images/ 5226552312d2cd32b3000511

c. Moore, Oklahoma (USA) Year 8 Hydrologic hazards

These before-and-after shots of Moore, Oklahoma are somewhat apocalyptic, showing blocks and blocks of destroyed homes. The damage from the May 20 tornado is yet to be repaired.



Source: http://mashable.com/2013/09/03/google-earth-beforeafter/#gallery/shocking-google-earth-before-and-after-images/ 5226552312d2cd32b3000516

4. Urban observatory – London, New York and Tokyo

Year 8 Urban



Urban footprints. Source: http://www.urbanobservatory.com/compare/index.html

New York



Urban Suburban Rural Urbanized open land

This map shows the urbanized area of New York. The urban footprint is based on land use classes to represent urban, suburban, rural and urbanized open land, derived from data supplied by the city and NAVTEQ data.

Tokyo





This map shows the areas which were urbanized, as of 2000.

Data source: Angel, S., J. Parent, D. L. Civco and A. M. Blei, 2010. Atlas of Urban Expansion, Cambridge MA: <u>Lincoln Institute of Land</u> <u>Policy</u>

5. Change Matters – Volcanic eruption of Mt St Helena

Year 8 Landforms and Landscapes – geomorphic hazards

a. Satellite images of Mt St Helena (USA) over time

> Source: http://changematters.esri.com/ compare



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b. How to interpret changes in a satellite image

ICT

Landsat – http://geography.about.com/gi/ o.htm?zi=1/XJ&zTi=1&sdn=geography&cdn= education&tm=117&f=21&su=p284.13.342.ip_ &tt=2&bt=9&bts=51&zu=http%3A//landsat. usgs.gov/

Global Positioning System (GPS)

National Geographic Satellite imagery – http://geography.about.com/od/ geographictechnology/a/gps.htm http://education.nationalgeographic.com.au/ education/topics/satellite-imagery/?ar_a=1

Source: http://changematters.esri.com/compare

ABS resources for teaching about population

The Australian Bureau of Statistics Education Unit has launched QuickGeog activities which may be accessed online or downloaded and edited to meet your needs. Each one is designed to be completed in less than a period. They contain a graphic or table of data taken from ABS publications and a series of questions or activities. The first release of activities focus on population.

If you haven't seen it already, take a look at 'Spotlight' from the ABS, where students may investigate how they fit within the Australian population. This is a very engaging way to begin a study of population.

Are you looking for historical data on the growth of population in Australia or migration patterns over time? Historical datasets have been simplified and uploaded to the Education Services pages on the website. They contain some interactive visualisations to engage students and encourage them to look at the stories contained within the data.

The ABS website also has a new set of State and Territory Indicators (Cat.no. 1367.0) which provide an overview of population, economy and environment for each of Australia's states and territories.

