Showcasing Success Stories from **ESA's Heritage Missions**

eesa

Climate Tipping Points

United Kingdom (University of Leeds)

Envisat, ERS, CryoSat

Scientists uncover the threat of sudden and potentially irreversible changes to the icy parts of the planet

Decades of satellite data reveal climate tipping point risks

Ozone Layer Tracking

Belgium (BIRA, Brussels)

Envisat, ERS, TPM missions

ESA missions help track the health of the ozone layer

Preserving the ozone layer

Doppler Effect

Norway (MET, Oslo)

Envisat

Researchers use a new Doppler shift processing method on Envisat data to generate insights about ocean processes

The Doppler effect uncovers Earth's processes

Mapping Oil Slicks

France (VisioTerra, Paris)

Envisat

Historical radar data map thousands of oil slicks in the Gulf of Guinea

A decade of insights into ocean oil slicks

Flood Risk Assessment

Italy (ASI, Rome)

ERS, Sentinel-1

Data mining of pre-, cross-, and post-event radar images of flooded areas unveil flood hazard risks

Flood risk assessment

Offshore Wind Farms

Denmark (DTU, Copenhagen)

Envisat, Copernicus Sentinel-1

Long-term remote sensing data show wind farms can affect local air currents

Data show wind farms can affect local air currents

Lake Water Loss

United States of America (CIRES, Colorado)

Envisat, CryoSat, Landsat, Copernicus Sentinel-3 and more

Research drawing on three decades of remote sensing data shows volume of lake water reducing on a global scale

Heritage data help reveal worldwide trend

Elastic Interaction Between Volcanoes

Spain (ITER, Canary Islands)

Envisat

Radar data show that active changes in one volcano can trigger a dynamic response in another

Data show how volcanoes communicate with each other

Sea Ice Decline

France (LEGOS, Toulouse)

Envisat, ERS, CryoSat

Timeseries of polar sea ice thickness spanning nearly three decades, reveal how sea-ice is evolving

Long-term perspective on sea ice change

Ground Subsidence Mapping

Italy (e-GEOS, Rome)

Envisat, ERS, COSMO-SkyMed

About 20,000 radar images from 1992 to 2014, mapped subsistence on a national scale across Italy

Ground subsidence mapping

Urban Sprawl Detection

Czech Republic (VSB, Ostrava)

ERS, Landsat-5, Copernicus Sentinel-1 and -2

Heritage data train neural network to detect urban change

Monitoring changing urban footprint

● Single mission   ● Multimission