

A circular graphic with a cyan, yellow, and red border. Inside the circle is a photograph of the Temple of Apollo in Delphi, Greece, with the sun shining through the columns.

DOWNSTREAM GATEWAY
Space for Earth

SPACE FOR CULTURAL HERITAGE

Arianna Traviglia

24 February 2021

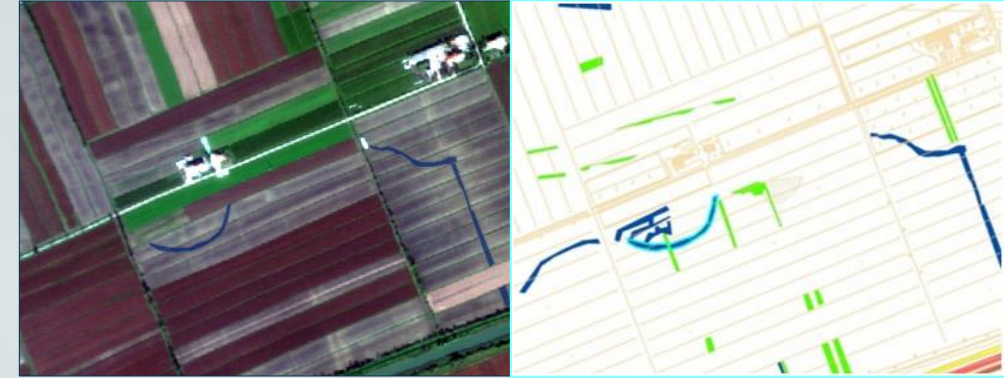
Venice, Italy

ESA UNCLASSIFIED – For ESA Official Use Only

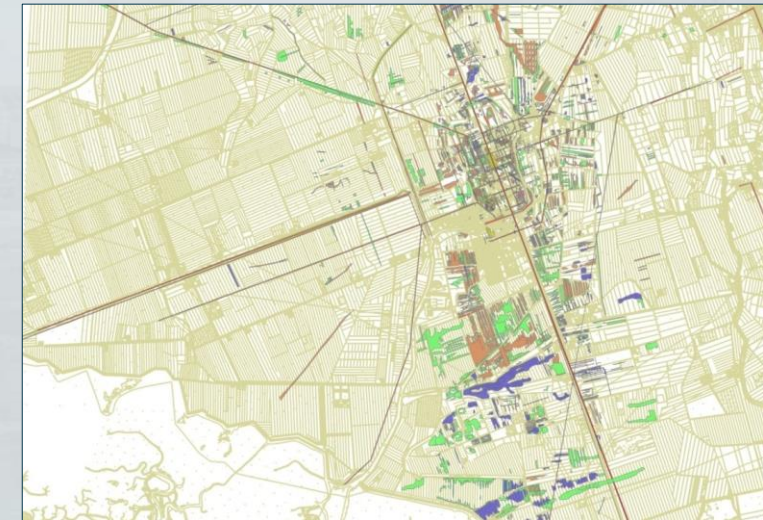
- 🛰️ ‘Practice’ and ‘potential’ of EO for a variety of application in CH management
- 🛰️ ‘**Space verticals**’ have a crucial role to play in the landscape management domain as a technological enablers
- 🛰️ EO can assist local governments to adopt effective solutions for management of Cultural Heritage and landscape planning.



- ✈ Not just a 'pinpointing' activity
- ✈ Nature and attributes of features identified via EO data are normally stored in GIS, handling the complexity of data
- ✈ Looking at relationships between
 - identified object
 - surroundings/landscape
 - other available informationmakes possible to decode the 'trace'.



- ✈ From mapping and interpreting traces to...
- ✈ ...'Charts of archeological risk assessment' based on EO remote identifications
- ✈ Traces related to
 - anthropic
 - natural phenomena.
- ✈ Each trace encapsulates data for re-use of information.



- ✈ Capacity to check large blocks of landscapes in a short timeframe
- ✈ Ability to get a global vision of the landscape (understand connections)
- ✈ EO data Time Series enables to
 - check tentative sites over different seasons and environmental conditions
 - detect changes in status of tentative sites
 - reduce fieldwork by discounting traces that are not validated over >n images
- ✈ Ability to provide crucial information for Landscape Planning and impact assessment.



Benefits of the use of EO data

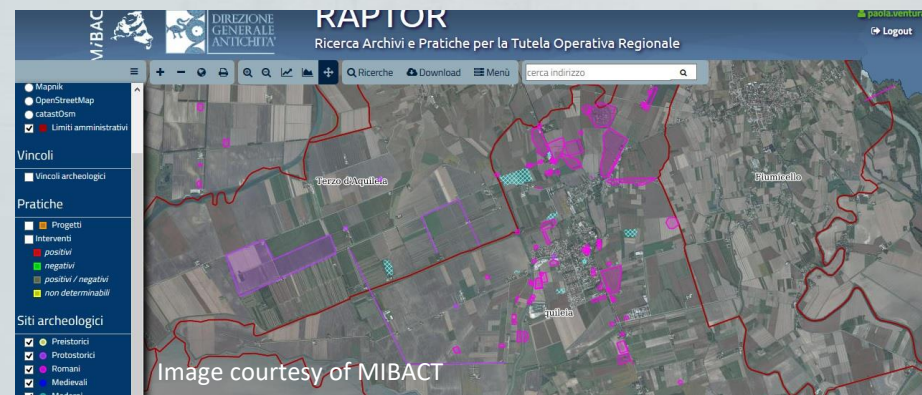
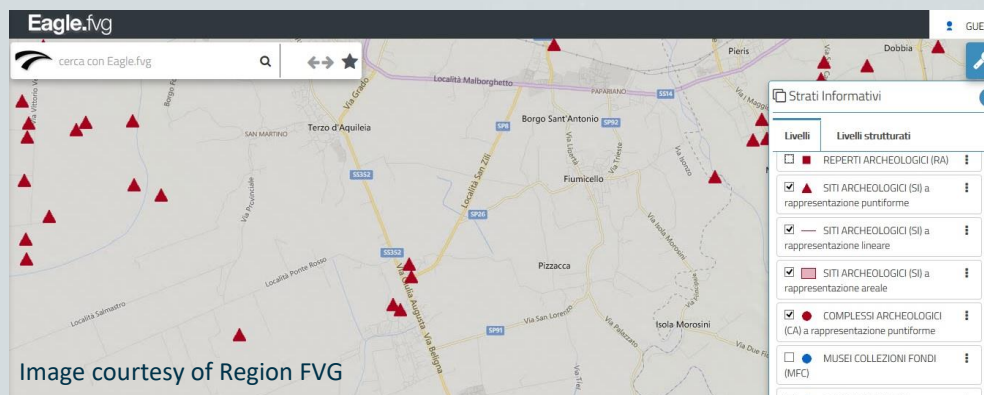


- ✈️ Background information for regional/national Landscape Planning
- ✈️ Prevents adverse impacts during urbanistic development phases
- ✈️ Enables more accurate landscape design and integration of landscape aspects in spatial planning and development processes.



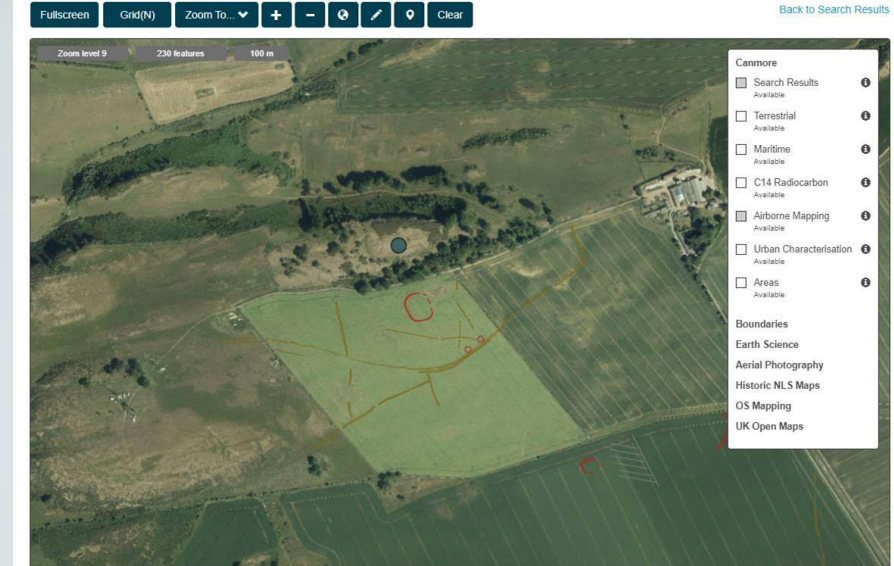
Limits vs benefits for local Governments

- ❖ Lack of dedicated space ('layers') within local existing planning instruments
- ❖ Only 'out of the ground CH' is protected
- ❖ Need to revise current approaches to accommodate vetted information from remote sensing
- ❖ Preventing risks to mitigate consequences (cultural and economic).

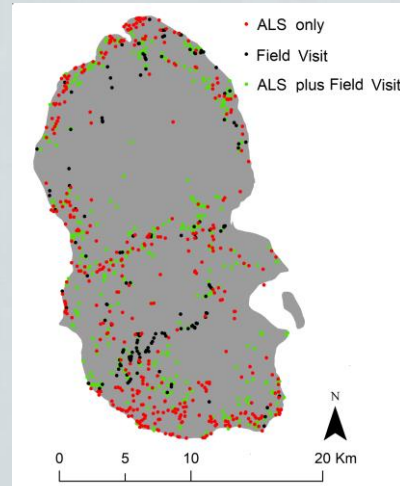


- 🛰️ ‘Best practise’ example of the incorporation of RS data in regional level planning: Scotland (Historic Environment Scotland)
- 🛰️ All RS survey data is incorporated in the ‘National Record of the Historic Environment (NRHE)’, available to all through an online portal.

Map

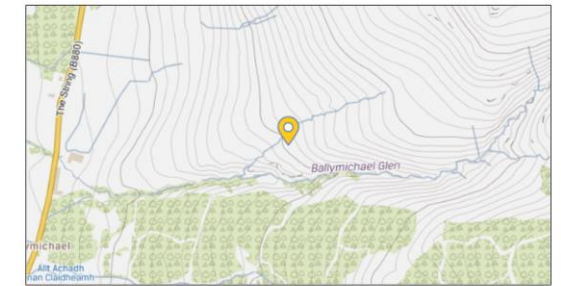


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Hut Circle (Prehistoric)

Site Name Arran, Ballymichael Glen
Classification [Hut Circle \(Prehistoric\)](#)
Canmore ID 358397
Site Number NR93SW 151
NGR NR 93572 31905
Datum OSGB36 - NGR
Permalink <http://canmore.org.uk/site/358397>



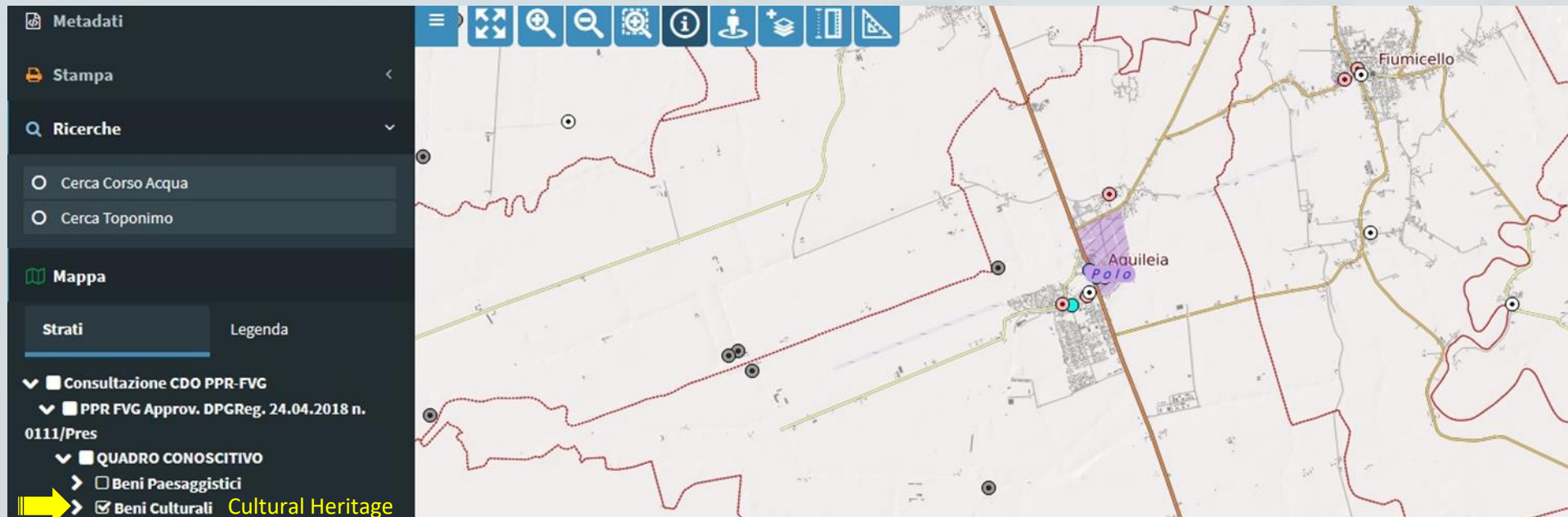
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[Toggle Aerial](#) | [View on large map](#)

[Correction](#)

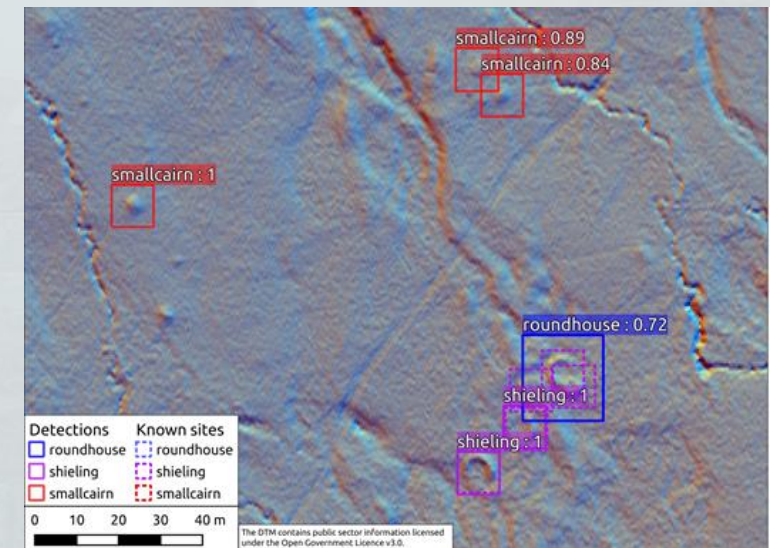
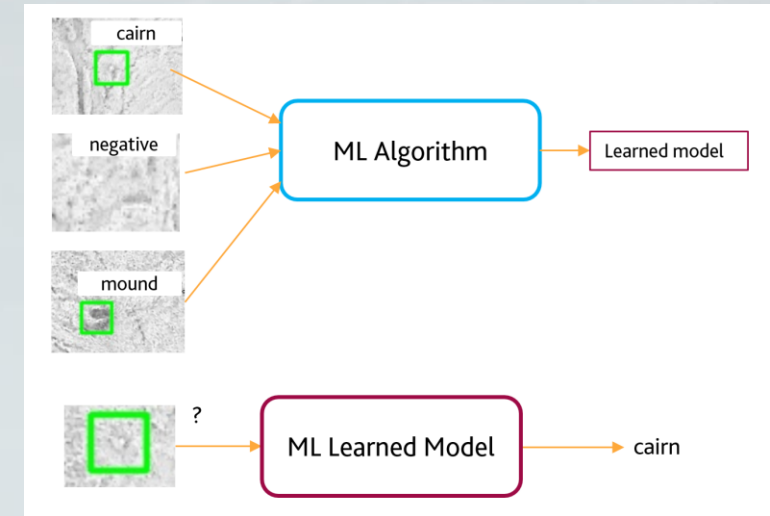
[Favourite](#)

- 🛰️ Create/improve digital infrastructures for organically integrating EO data
- 🛰️ Include detected features in Regional/national Landscape Plans
- 🛰️ Promote regional-level systematic ground-truthing.



A fast moving domain

- ❖ Rapid advancements via AI
- ❖ Detection and monitoring will become easier via automation of landscape monitoring
- ❖ Recently launched research project to automate detection of CH features on imagery from Copernicus
- ❖ Predictive modelling based on patterns to support landscape planning.



Credits: I. Kramer/D. Cowley

- ✈️ Need for inclusion of EO data-derived information to be integrated in
 - land use planning
 - landscape planning
 - impact assessment
- ✈️ Integrate EO data in landscape decision-making (especially for cultural landscapes)
- ✈️ EO data to provide baseline material for professionals in spatial development: planners, designers, architects, engineers and others.

Credits and thanks



RS data courtesy of



REGIONE AUTONOMA FRIULI VENEZIA GIULIA



Thanks for the invitation

