



ECOPOTENTIAL

improving future ecosystems benefits through Earth observations

2018 calendar



This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 641762



This project is funded by the European Union



Image © Scott Wilson

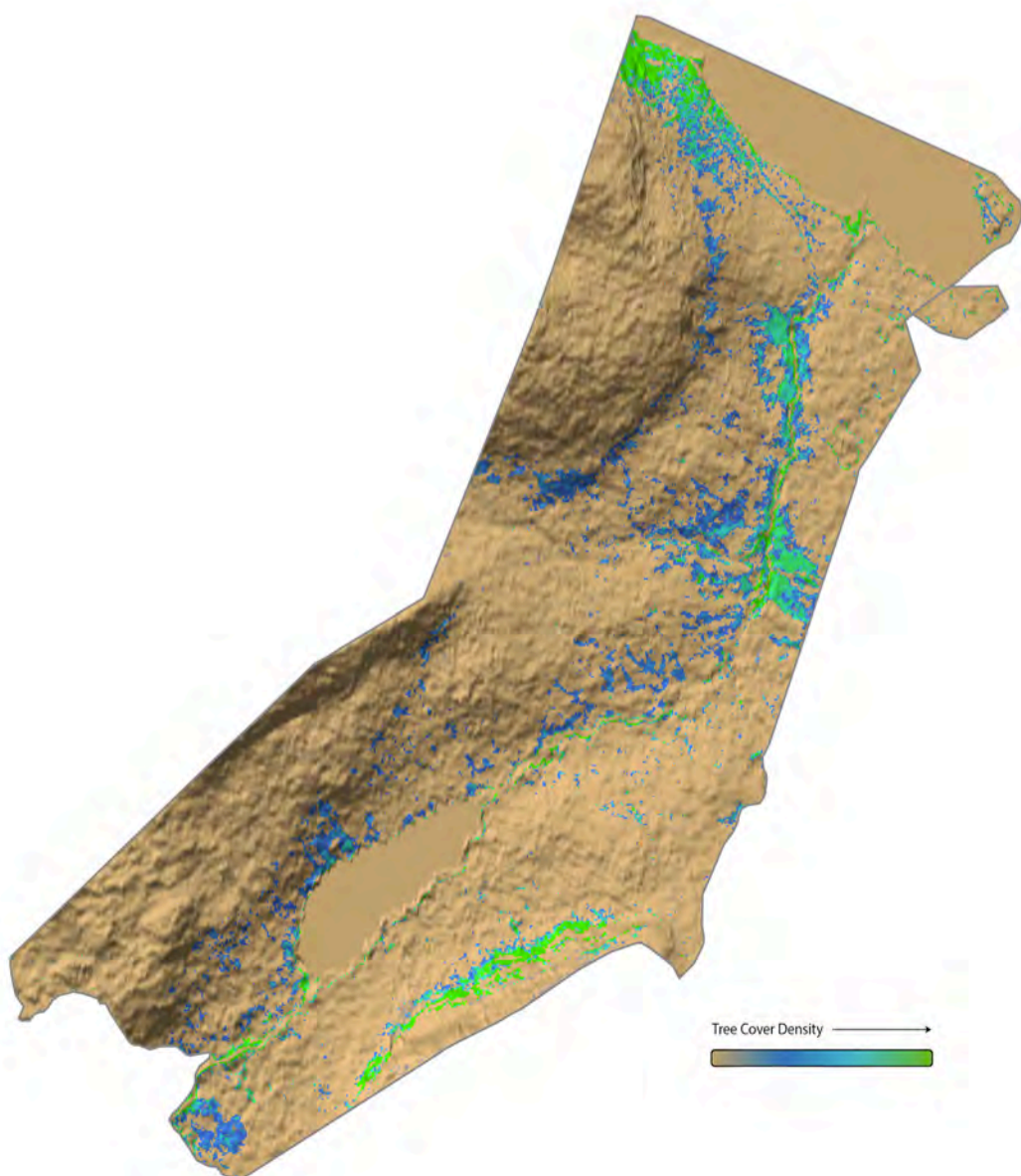
Abisko National Park - Sweden

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January 2018



MON 1	TUE 2	WED 3	THU 4	FRI 5	SAT 6	SUN 7
MON 8	TUE 9	WED 10	THU 11	FRI 12	SAT 13	SUN 14
MON 15	TUE 16	WED 17	THU 18	FRI 19	SAT 20	SUN 21
MON 22	TUE 23	WED 24	THU 25	FRI 26	SAT 27	SUN 28
MON 29	TUE 30	WED 31				

In Abisko National Park, ECOPOTENTIAL scientists investigate the effect of climate change on the landscape: a warmer climate can advance the treeline north and upward, but also cause more frequent and severe insect outbreaks, which push the treeline further south.

The ECOPOTENTIAL project is using satellite imagery to detect the treeline, in order to find out whether the forest will advance due to warming or retreat due to insect herbivory. Other important processes can also be tracked, including phenology and rates of vegetation growth.



Image © Carl Beierkuhnlein

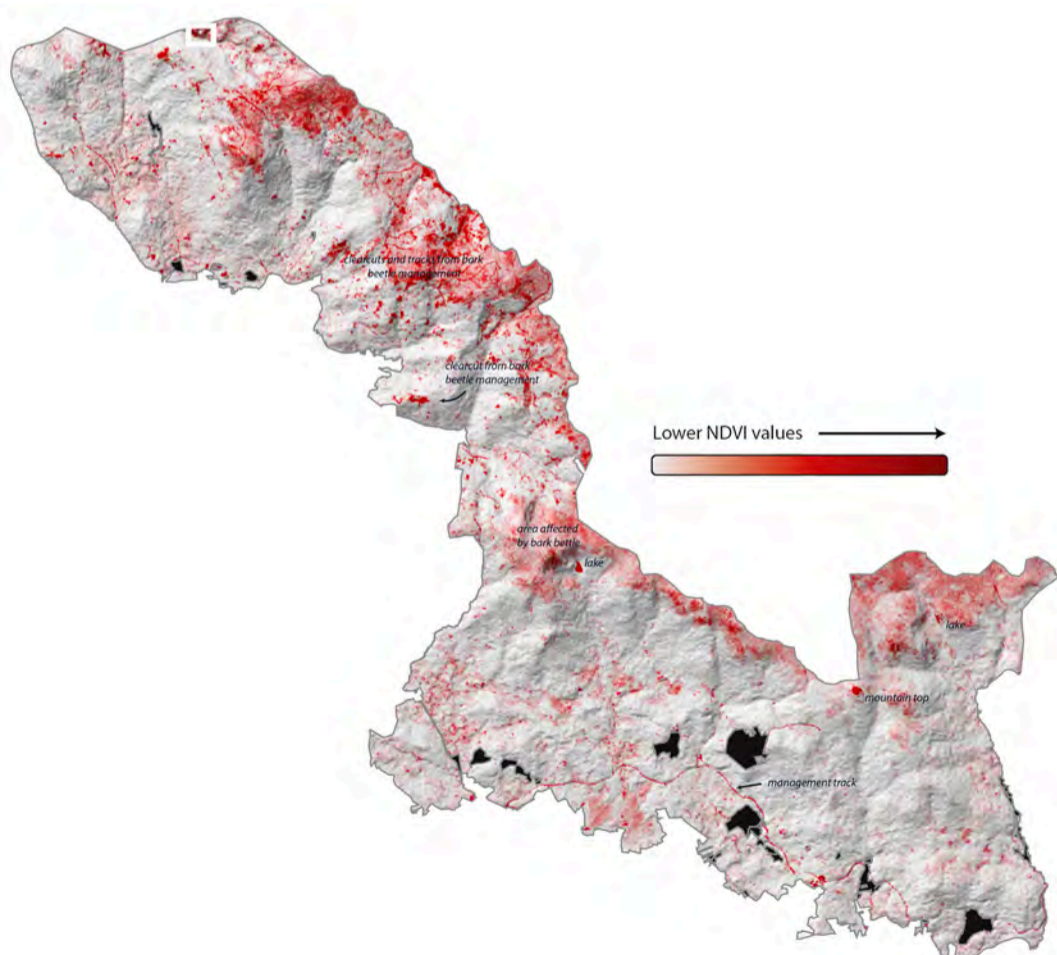
Bavarian Forest National Park - Germany

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February 2018



	THU	FRI	SAT	SUN
	1	2	3	4
MON	5	6	7	8
TUE	9	10	11	12
WED	13	14	15	16
THU	17	18	19	20
FRI	21	22	23	24
SAT	25	26	27	28
SUN				

In the Bavarian Forest National Park, Earth observations and remote sensing are being used by ECOPOTENTIAL scientists to better understand how vegetation is evolving over time and for detecting patterns of dominant plant species, linking habitat characteristics with terrain and tracking animal movements. The park researchers are also carrying out intensive research on tree regeneration, the role of dead wood, and the impact of global warming and extreme climatic events on the future development of these ecosystems.

Normalized Difference Vegetation Index (NDVI) map.
 Red areas are affected by bark beetle outbreaks.
 Landsat-8 image (11/07/2016) courtesy of NASA/U.S. Geological Survey.



Image © Jean-François Bègue, Réunion National Park

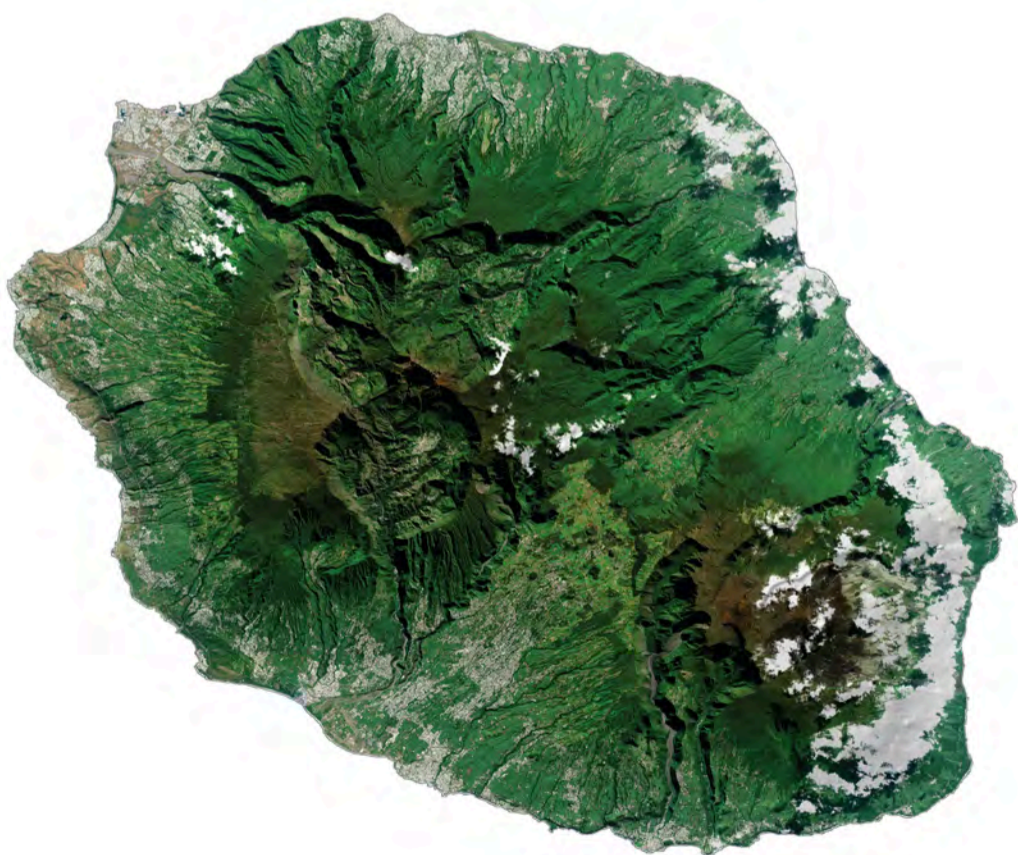
Reunion - France

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This project is funded by the European Union

March 2018



	THU	FRI	SAT	SUN
	1	2	3	4
MON	THU	FRI	SAT	SUN
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MON	THU	FRI	SAT	SUN
12	15	16	17	18
MON	THU	FRI	SAT	SUN
19	22	23	24	25
MON	THU	FRI	SAT	
26	29	30	31	

ECOPOTENTIAL focuses on ecological land-cover, water cycle research and monitoring of protected areas on Réunion. Earth Observation allows scientists to map the ecosystems on the volcanoes, the land-use changes and how this influences ecosystem services. The results will inform terrestrial and marine spatial planning decision-making to maintain Réunion's unique beauty and the quality of human life for generations to come.



Image © Marc Thibault-Tour du Valat

The Camargue - France

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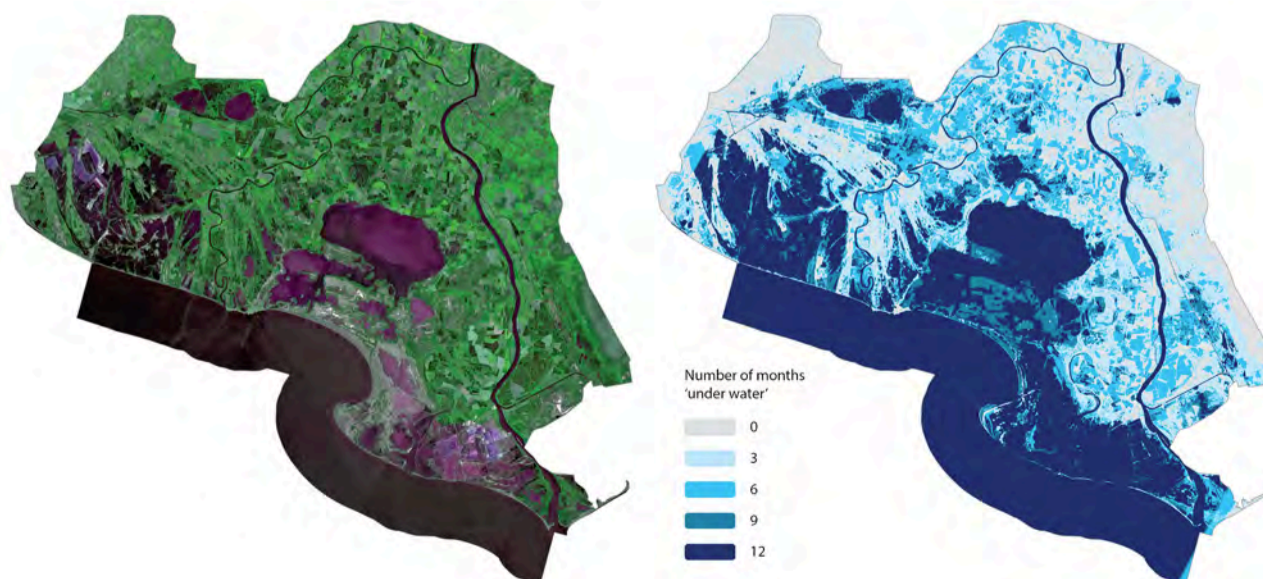


This project is funded by the European Union

MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN
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23	24	25	26	27	28	29	30						

April 2018

Monitoring the short and long-term dynamics within the Camargue is necessary to guide wetland management in order to ensure the preservation of its integrity. ECOPOTENTIAL is providing Earth Observation tools to routinely monitor the seasonal water dynamic of the Camargue wetland and changes in land cover, land use and crop types. Climate projections for 2050 and 2100 will be analysed to assess the potential impact of climate change on wetland hydrology. This information will be used to propose management and adaptation measures.



On the left, an image of the Camargue acquired from Sentinel 2 on 07 July 2016. On the right, the image shows the number of months of the year during which parts of the Camargue are flooded. Credit: Tour du Valat.



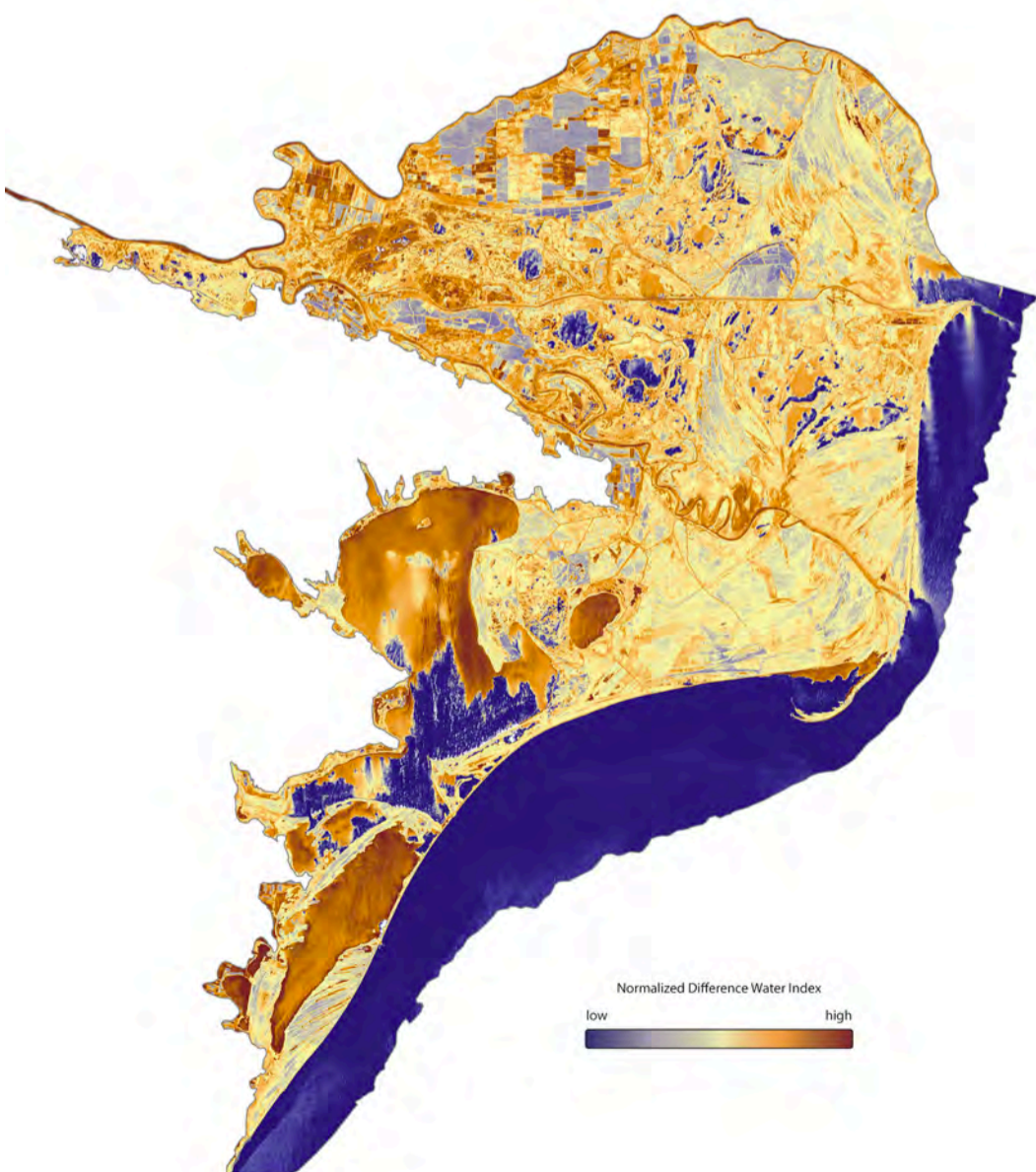
Danube Delta Biosphere Reserve - Romania - Ukraine

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May 2018



	TUE	WED	THU	FRI	SAT	SUN
	1	2	3	4	5	6
MON	TUE	WED	THU	FRI	SAT	SUN
7	8	9	10	11	12	13
MON	TUE	WED	THU	FRI	SAT	SUN
14	15	16	17	18	19	20
MON	TUE	WED	THU	FRI	SAT	SUN
21	22	23	24	25	26	27
MON	TUE	WED	THU			
28	29	30	31			

The ECOPOTENTIAL project uses Earth Observation and in-situ data to investigate how the indicators of water quality (chlorophyll, turbidity etc.) in Danube Delta relate to the tourists presence, and thus developing important monitoring tools to support management and conservation decisions.



Image © Peter Boev

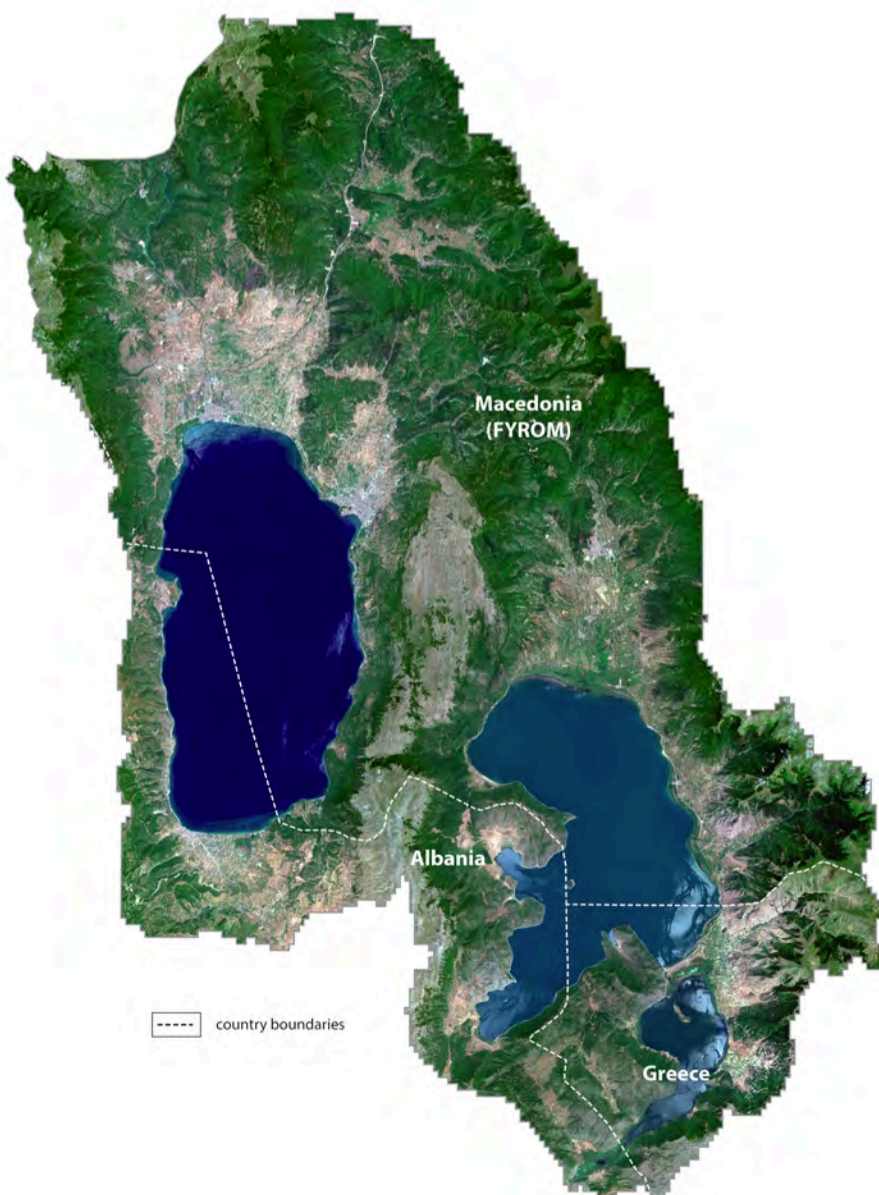
Lakes Ohrid and Prespa (Albania - FYROM, Greece)

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This project is funded by the European Union

June 2018



				FRI	SAT	SUN
				1	2	3
MON	TUE	WED	THU	FRI	SAT	SUN
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MON	TUE	WED	THU	FRI	SAT	SUN
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MON	TUE	WED	THU	FRI	SAT	SUN
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The ECOPOTENTIAL project uses in-situ and Earth Observation data to assess the properties of Lake Ohrid waters and of the habitat of endemic species as the Ohrid Trout (*Salmo letnica*). A simple ecological model will help to evaluate the sensitivity of phytoplankton, zooplankton and fish to the changing conditions.

Remote Sensing image of Lakes Ohrid Prespa (11/09/2017) produced from ESA data (Sentinel-2). The borders between The Former Yugoslav Republic of Macedonia, Albania and Greece are reported.

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Image © Izak Smit

Kruger National Park - South Africa

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July 2018



MON	TUE	WED	THU	FRI	SAT	SUN
2	3	4	5	6	7	1
MON	TUE	WED	THU	FRI	SAT	SUN
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MON	TUE	WED	THU	FRI	SAT	SUN
16	17	18	19	20	21	22
MON	TUE	WED	THU	FRI	SAT	SUN
23	24	25	26	27	28	29
MON	TUE					
30	31					

In order to monitor whether the mixture of vegetation typical of the Savanna is being maintained over millions of hectares in Kruger National Park, ECOPOTENTIAL researchers are using Earth Observation technology as the “eye in the sky”. By mapping and monitoring grasses and trees, this technology is helping researchers to understand the pattern of changes over time and feed this information back to the park managers.

Yellow, green and light blue colours: areas with woody vegetation; black areas: open spaces with less vegetation. Biomass model produced from ESA Sentinel-1 data by CSIR for ECOPOTENTIAL.

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Image © Dimitris Poursanidis

Mediterranean Large Marine Ecosystem

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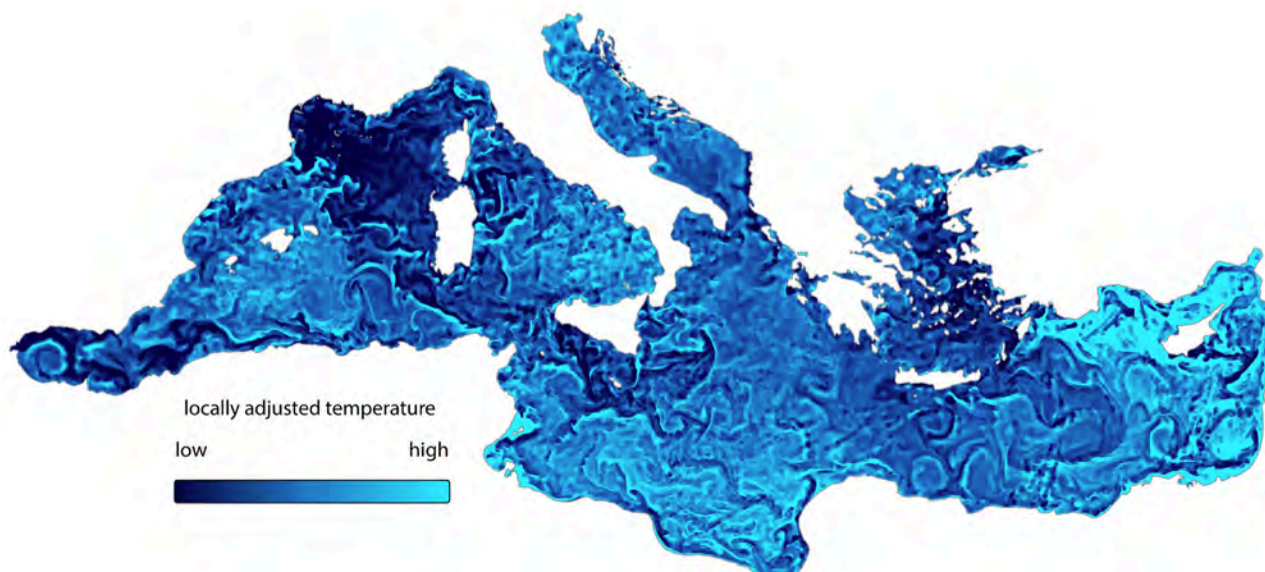


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MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN
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13	14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31									

August 2018

Through the use of Earth Observation (by examining over 12,000 images) and other tools, the ECOPOTENTIAL project team has observed that over the past few decades the Mediterranean Sea has become progressively warmer, which has favoured the establishment of invasive species. In the near future, the warming of the Mediterranean Sea will affect the movement and distribution of fish, generating new food-provision scenarios.



Water circulation patterns in the Mediterranean (23/07/2014), identified from the Sea Surface Temperature product from the Copernicus Marine Environment Monitoring System. [2017, ISPRA].



Image © Tomas Ruginis

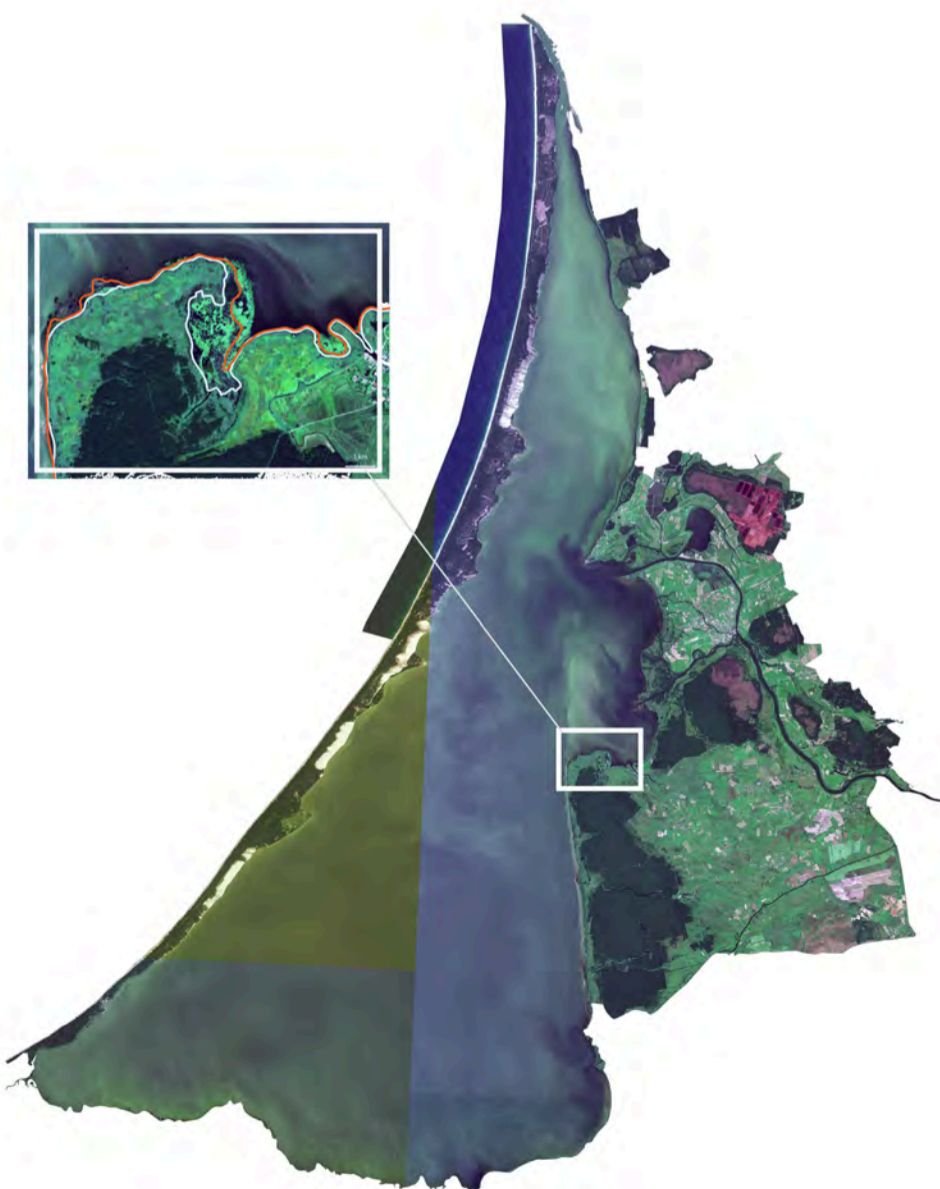
Curonian Lagoon - Lithuania and Russia

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September 2018



MON	TUE	WED	THU	FRI	SAT	SUN
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Earth Observation tools can be used to monitor a number of processes in the Curonian lagoon and its surroundings. As one of the richest fishing areas in the Baltic Sea region, field observations and analysis of hydroperiod and flood distribution, obtained from satellite images by ECOPOTENTIAL, play an important role in modelling the spawning and recruitment of commercial fish species. Analysis of flood levels and distribution through Earth Observation can also detect changes in waterbird habitats and agricultural activities.

Sentinel-2 image (16/08/2017) of the Curonian lagoon and Nemunas Delta.
Small image: water level changes (red: low water level; white: high water level).



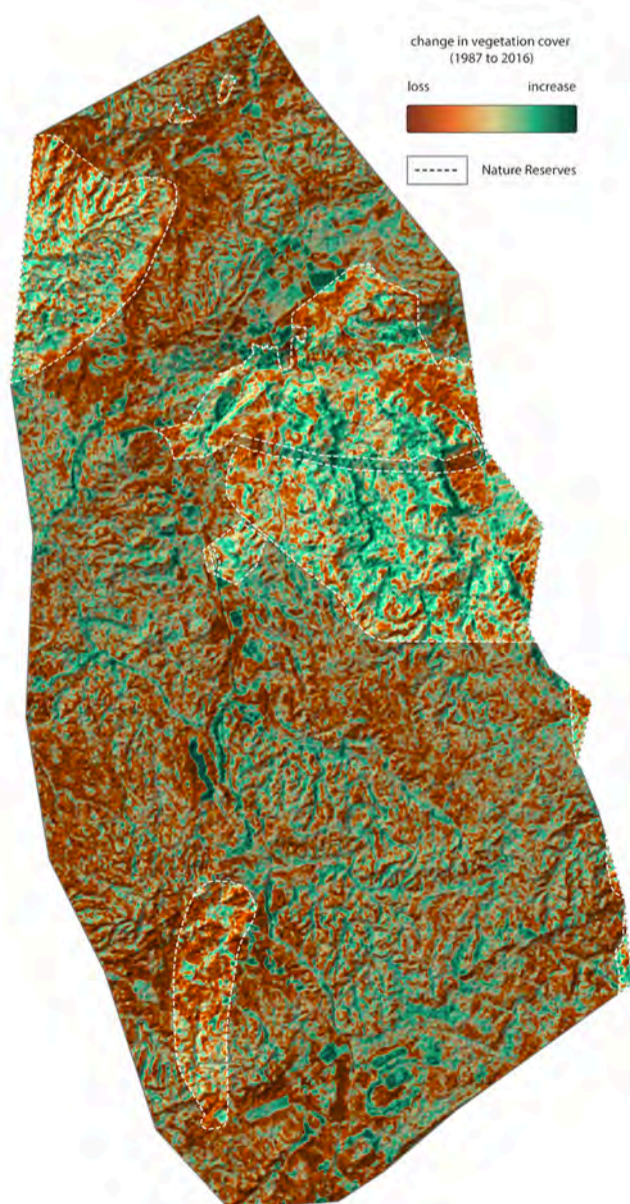
Image © Silvia Giamberini

Har HaNegev - Israel

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October 2018

MON	TUE	WED	THU	FRI	SAT	SUN
1	2	3	4	5	6	7
MON	TUE	WED	THU	FRI	SAT	SUN
8	9	10	11	12	13	14
MON	TUE	WED	THU	FRI	SAT	SUN
15	16	17	18	19	20	21
MON	TUE	WED	THU	FRI	SAT	SUN
22	23	24	25	26	27	28
MON	TUE	WED				
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The ECOPOTENTIAL project employs multiple methodologies to study human–environment interactions in Har HaNegev area, including remote sensing, biodiversity surveys and social research. These various research strands will be integrated to support policy-relevant directives for future development and conservation.



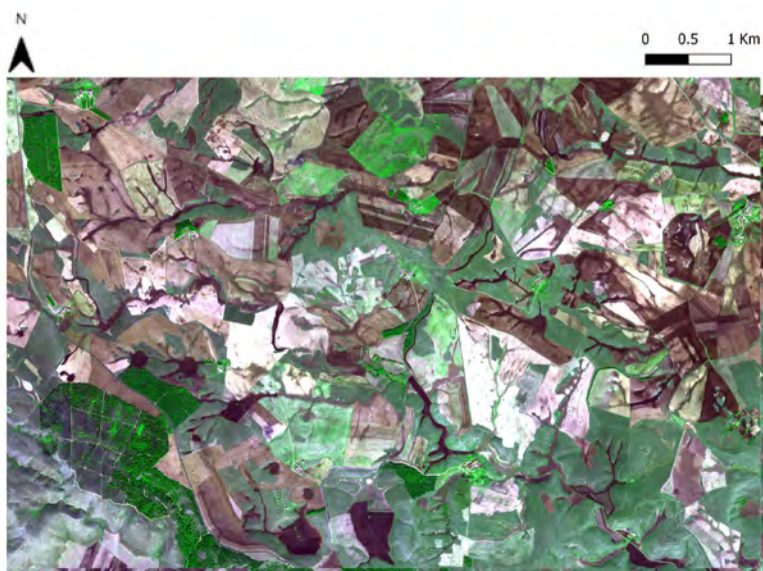
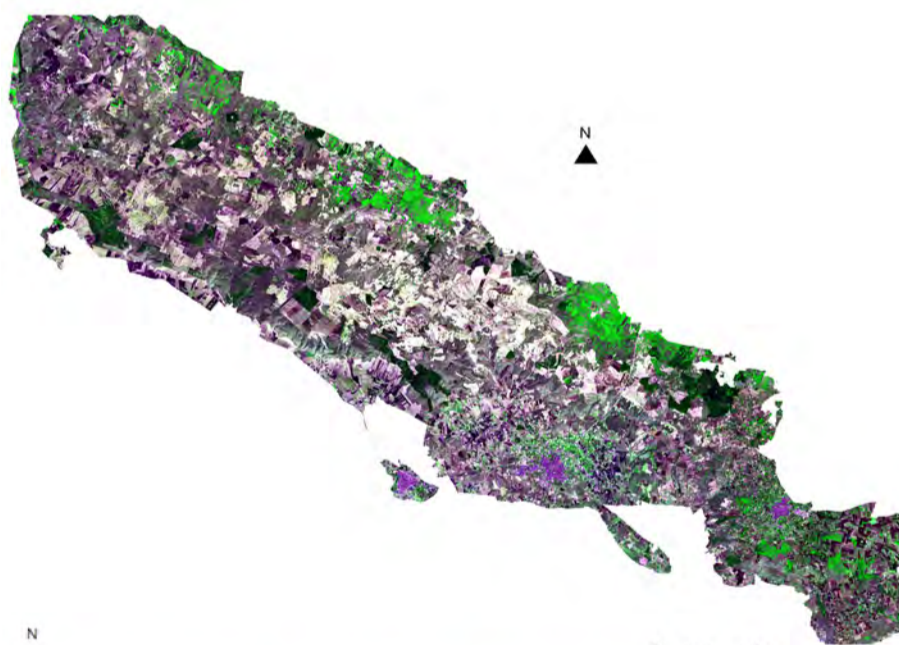
Image © Luciano Montemurro, Archivio fotografico Centro Studi Torre di Nebbia

Murgia Alta - Italy

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November 2018

	THU	FRI	SAT	SUN
	1	2	3	4
MON	THU	FRI	SAT	SUN
5	8	9	10	11
MON	THU	FRI	SAT	SUN
12	15	16	17	18
MON	THU	FRI	SAT	SUN
19	22	23	24	25
MON	THU	FRI		
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This satellite image represents the whole protected area of Alta Murgia, in the extreme South East of Italy, and includes the National Park of Alta Murgia. In the close-up: rocky natural-grassland patches, in light green, are fragmented by cultivated areas appearing in brown and white colours after ploughing. Bright cultivated patches belong to fields where farmers grained rocks and stones belonging to natural grasslands in the past to increase cultivated areas and cereals production. Woodlands are represented in dark green.



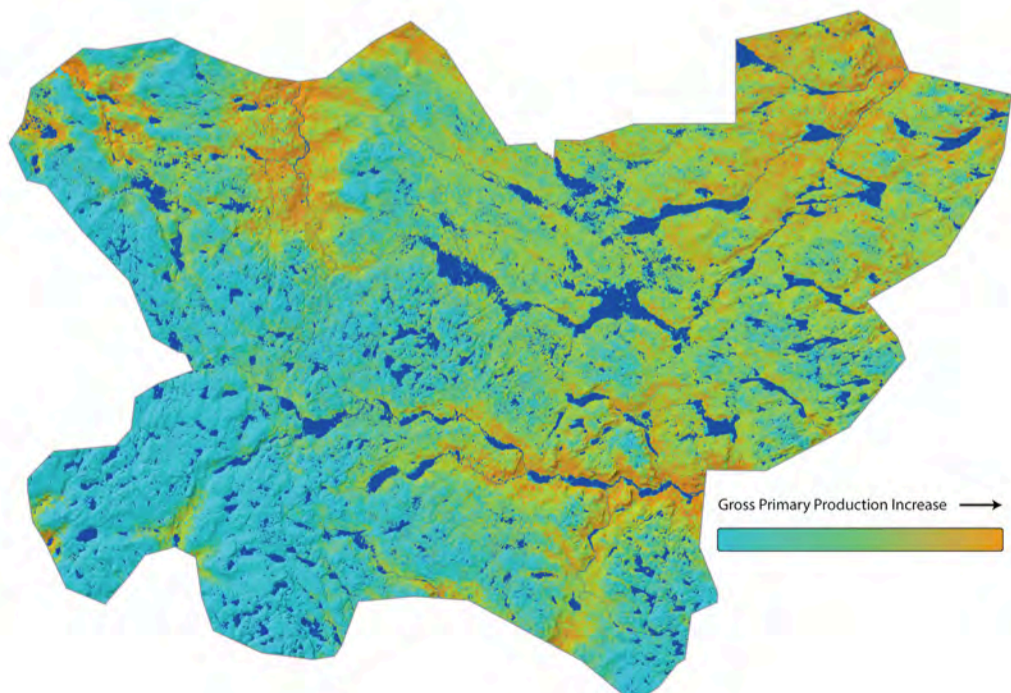
Image © Olaf Strand

Hardangervidda National Park - Norway

ECOPOTENTIAL: improving future ecosystems benefits through Earth observations



December 2018



					SAT	SUN
					1	2
MON	TUE	WED	THU	FRI	SAT	SUN
3	4	5	6	7	8	9
MON	TUE	WED	THU	FRI	SAT	SUN
10	11	12	13	14	15	16
MON	TUE	WED	THU	FRI	SAT	SUN
17	18	19	20	21	22	23
MON	TUE	WED	THU	FRI	SAT	SUN
24	25	26	27	28	29	30
MON						
31						

ECOPOTENTIAL scientists are working with Hardangervidda National Park to monitor the reindeer populations and their environment, looking at the quality of summer and winter grazing pastures and calving grounds. To this end, ECOPOTENTIAL uses satellite imagery, GPS collar data and data gathered in the field. Such data can then be used to predict changes in the reindeer population and to support their management.



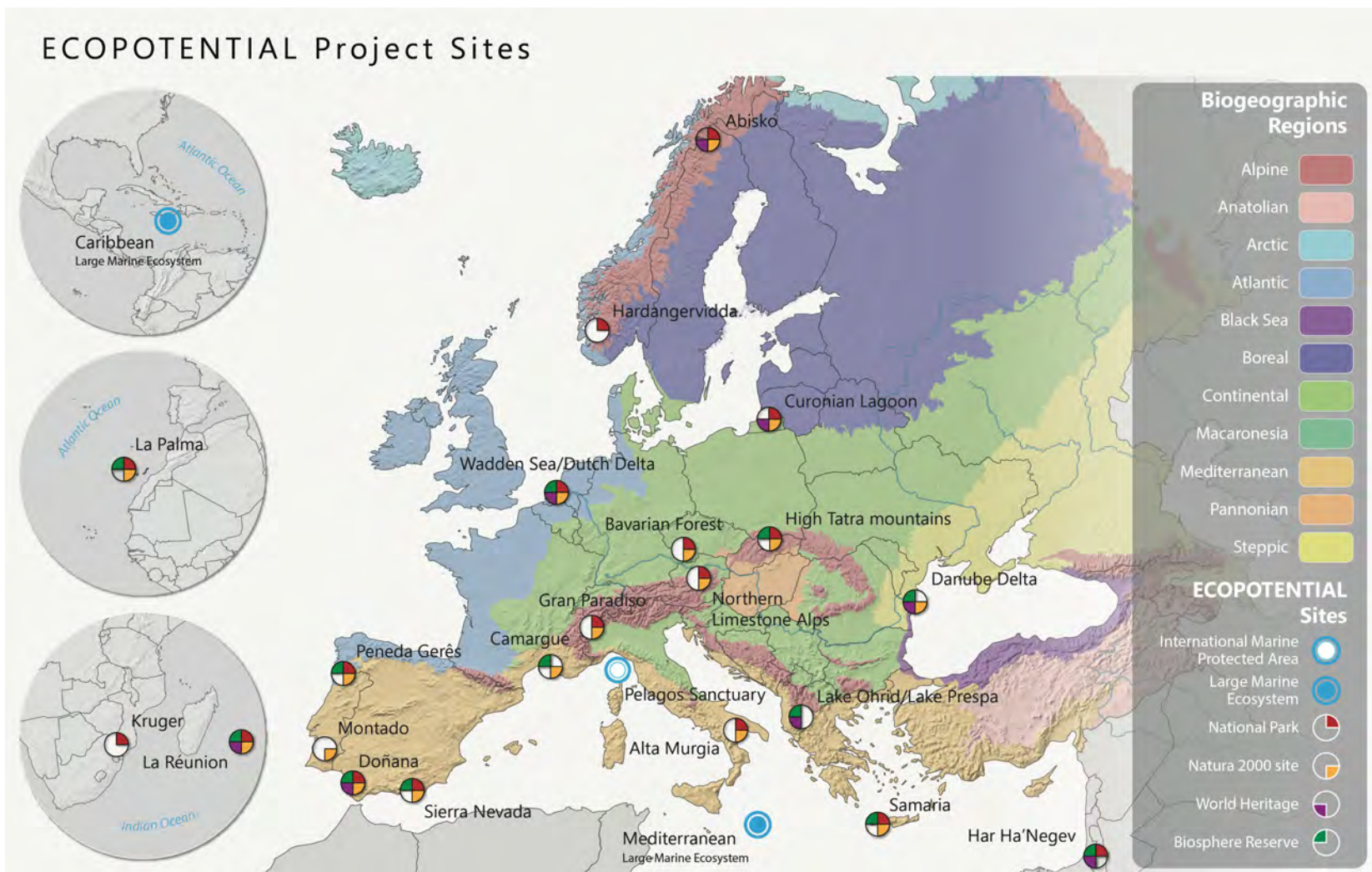
ECOPOTENTIAL



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ECOPOTENTIAL is a large European-funded H2020 research and innovation project that focuses its activities on a targeted set of internationally recognised Protected Areas, blending Earth Observations from remote sensing and field measurements, data analysis and modelling of current and future ecosystem conditions and services. ECOPOTENTIAL contributes to improving knowledge-based ecosystem conservation and management strategies and identifies the needs of future protected areas.



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