

## Location of the Natura2000 test sites

In Italy:

- SCI-IT9120007 Murgia Alta
- SPA-SCI IT9110008 Valloni e steppe pedegarganiche
- SCA-IT9150014 & SCI-IT9150032 Le Cesine
- SPA-IT911006 Saline di Margherita di Savoia

In Greece:

- SCI-GR2120001 Kalamas delta
- SCI-GR2120002 Kalodiki lake
- SCI-GR2120004 Kalamas gorge

In Portugal:

- SPA-SCI PTZPE0037 - PTCON0021 Rios Sabor e Maças
- SPA-SCI PTZPE0002 - PTCON0001 Peneda-Geres

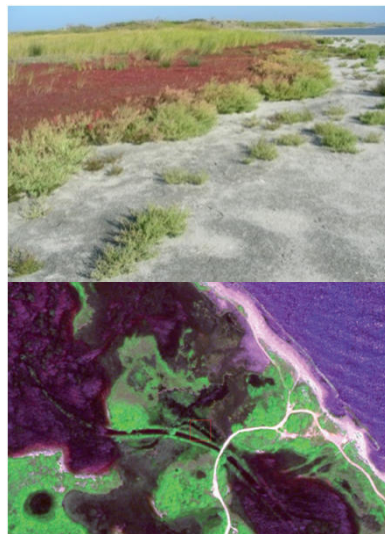
In The Netherlands:

- SCI-NL9801023-NL3009017 Ginkelse and Ederheide, Wekeromse Zand

In the UK, Wales:

- SCI-UK0014791 Cors Fochno
- SCI-UK0014790 Cors Caron

In Brasil: Amazon region, Belem



Le Cesine case study Up:  
landscape picture, Down:  
Quick bird image

**The BIO\_SOS consortium consists of 15 Partners including four SMEs, universities and research institutes in Europe, India and Brazil.**

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### BIO\_SOS outputs

- Single- date LC maps, or continuous physical variables: biomass, leaf area index, etc.
- Single- date Habitat maps
- Biodiversity Indicators
- Land Cover Change maps
- Habitat Change maps
- Biodiversity Indicator trends

# BIO\_SOS

**BIOdiversity multi-source monitoring system:  
from Space TO Species  
FP7-SPACE-2010.1 G.A. No.263435 (3 years)**



**BIO\_SOS will develop an operational ecological modelling system suitable for effective and timely multi-annual monitoring of NATURA 2000 sites and their surrounding.**



## The main outcome

BIO\_SOS is a European GMES project that aims to develop an operational ecological modelling system suitable for consistent multi-annual monitoring of NATURA 2000 sites and their surroundings according to EU obligations. Several European habitat types exposed to different and combined -anthropic pressures are included, however, the emphasis is on the Mediterranean part of Europe. For a global reference to GEO also the tropical rainforest of Brazil is included.

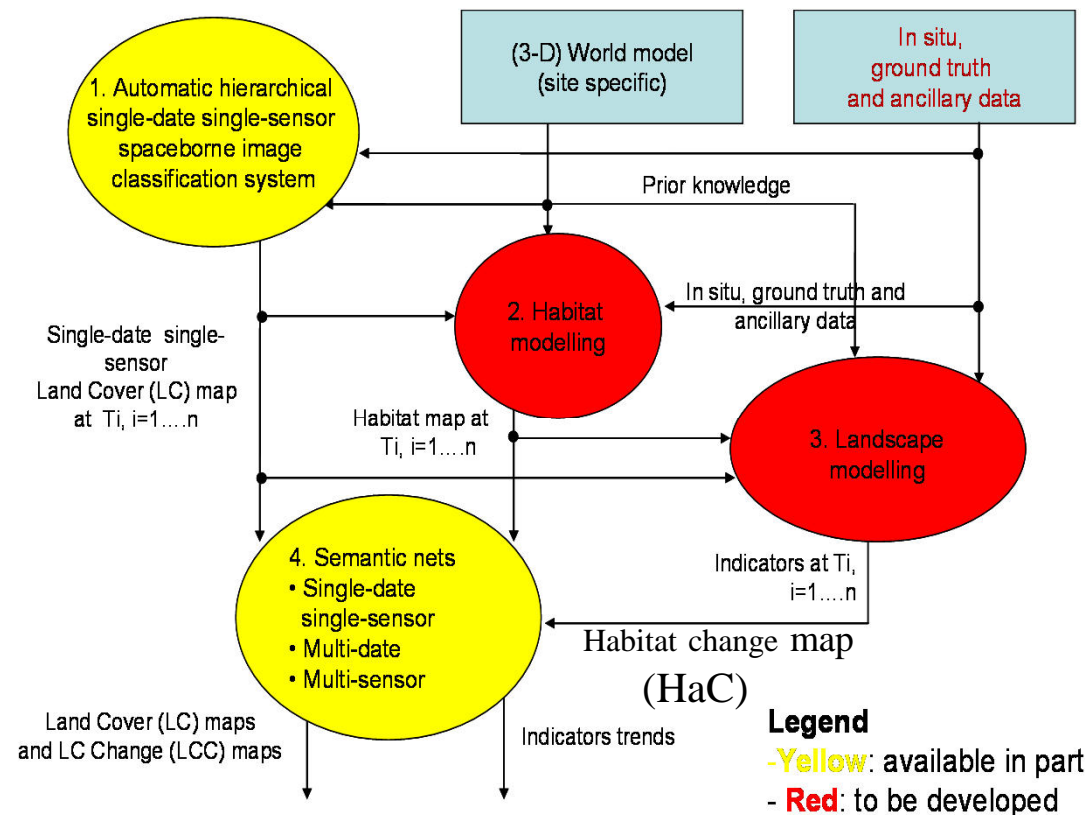
## Why the emphasis on the Mediterranean?

Land abandonment of marginal areas is a common trend in the Mediterranean areas of the EU. This results in a loss of landscape complexity and of biodiversity. High-input farming practices often degrade agricultural and semi-natural habitats. New infrastructures (e.g., roads, building) often facilitate other potentially damaging activities such as poaching, hunting, logging and fires in previously difficult-to-access areas, and brings to habitat fragmentation as well as intrinsic quality decrease. Status, trend and disturbance monitoring by using operational cost effective tools is important in all Europe but most urgent in the Mediterranean areas that typically lack long-term baseline data for assessing changes and evaluating biodiversity indicator trends. In addition climate change will make changes even more dramatic making monitoring for early warnings even more important. Moreover, some threatened vegetation types of great ecological importance do not correspond to any habitat sensu Directive 92/43 EEC.

## Which tools are being developed?

Remote Sensing (RS) can be a very good tool in monitoring stock, change and disturbance, because of the availability of a large amount of past, present and future-planned data missions. BIO\_SOS will develop methodologies beyond current state-of-the-art in Europe as novel,

operational and automated procedures based on High and Very High Spatial resolution RS data for Land Cover map and Land Cover change map generation. The procedures will sit within an ecological modelling framework for automated provision of Habitat (Ha) map and biodiversity indicators useful for a deeper understanding of the impacts of human-induced pressures. However eyes on the ground remain needed for ground truth data and for detailed information on what happens with species and habitat quality. Both remote and in-field observation systems are linked and harmonisation is an important aspect. The proposed system can make it more easy to send out warning signals to local authorities for counteracting disturbances or signalling illegal activities.



Baraldi Consultancy in Remote Sensing  
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National Research Council of Italy

