Project Title: BIO_SOS Biodiversity Multisource Monitoring System: from Space TO Species

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Instrument: Collaborative project
Thematic Priority: 
Start of project: 1 December 2010
Duration: 36 months

Deliverable No: 4.2
Connection to on-going projects

Due date of deliverable: 30-09-2011
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Version: 2nd version of D4.2
Main Authors: Marion Bogers, Sander Mucher, Rob Jongman
## D4.2 Connection to on-going projects

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<th>Project ref. number</th>
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<td>Project title</td>
<td>BIO_SOS: Biodiversity Multisource Monitoring System: from Space to Species</td>
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<td>Contractual date of delivery</td>
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<td>Actual date of delivery</td>
<td>6 November 2011</td>
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<td>PU = Public,</td>
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<td>Workpackage</td>
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<td>Partner responsible</td>
<td>Alterra</td>
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<td>Marion Bogers, Sander Mucher, Rob Jongman</td>
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<td>Rob Jongman</td>
</tr>
<tr>
<td>EC Project Officer</td>
<td>Florence Beroud</td>
</tr>
</tbody>
</table>

### Abstract
Overview of finished and on-going projects related to BIO_SOS at global, European and national level. At national level only projects have been included in the countries involved in BIO_SOS.

### Keywords
Biodiversity, monitoring, projects, methodologies
## Signatures

<table>
<thead>
<tr>
<th>Written by</th>
<th>Responsibility- Company</th>
<th>Date</th>
<th>Signature</th>
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<tr>
<td>Rob Jongman</td>
<td>Editor, Alterra WageningenUR</td>
<td>04-11-2011</td>
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<td>Dimopoulos Panayotis</td>
<td>WP4 Leader, UOI</td>
<td>09-11-2011</td>
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<td>Palma Blonda</td>
<td>Coordinator, CNR</td>
<td>09-11-2011</td>
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<td>Maria Petrou</td>
<td>Quality Manager, CERTH</td>
<td>07-11-2011</td>
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</tbody>
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Executive summary

There are many differences in national and regional policies and in cooperation within and between countries and regions (Strand et al 2009). The 2009 summary report on Article 17 of the Habitats Directive concludes that data on species and especially habitats are collected in different ways, are unavailable or are insufficient in their spatial coverage (ETC-Biodiversity, 2009).

BIO_SOS is aware of this and it is considered important to link with previous projects and to make use of knowledge and data developed there. This Deliverable presents a short overview and access points to these project to make possible the sharing of data and experience gained, and monitoring methodologies in other projects on biodiversity monitoring. This will ensure the best use of the existing knowledge.

There are not only projects but also initiatives that might be overarching, such as GEO BON and GMES. Projects and initiatives are organised in three chapters, global, European and national. They include FP6 and FP7 projects such as BIOPRESS and EBONE, but also nationally funded projects such as HABISTAT and projects at CIBIO and UNIMIB.
1. Introduction

This report lists the knowledge and experiences gained in other on-going and previous project and initiatives. Information is available on description and sharing of data and development of monitoring methodologies for comparison.

There are many differences in national and regional policies and in cooperation within and between countries and regions (Strand et al 2009). The 2009 summary report on Article 17 of the Habitats Directive concludes that data on species and especially habitats are collected in different ways, are unavailable or are insufficient in their spatial coverage (ETC-Biodiversity, 2009).

BIO_SOS is aware of this and it is considered important to link with previous projects and to make use of knowledge and data developed there. This Deliverable presents a short overview and access points to these project to make possible the sharing of data and experience gained, and monitoring methodologies in other projects on biodiversity monitoring. This will ensure the best use of the existing knowledge.

That previous projects are considered for linking is not a guarantee that data really can be used. That is depending on data access, permission to use the data, accuracy of the data, the detail in the data and metadata on the location of these data. Geographical land understanding appears somewhat inadequate. Images from medium (10-30 m) spatial resolution satellites already used in previous FP6 and on-going FP7 projects are often too coarse for habitat and related pressures definition. However, all will be considered for inclusion.

There are not only projects but also initiatives that might be overarching, such as GEO BON and GMES. Projects and initiatives are organised in three chapters, global, European and national. At the global level, they include the global initiatives as GEO BON to which this project might deliver input. They also include FP6 and FP7 project such as BIOPRESS and EBONE (European Biodiversity Observation Network, Bunce et al 2008) that have knowledge and data developed for direct use. They also include nationally funded projects such as HABISTAT (A classification framework for habitat status reporting with remote sensing methods, Vanden Borre et al. 2011) and projects at CIBIO (mapping biodiversity in Northern Portugal), UNIMIB, mapping Italian Landscape. The in situ and RS data and methodologies are considered as basic data for further use.

This document will remain open throughout the project as new projects might be starting and they might be willing to use results from BIO_SOS. These projects will be registered in this document as users of the BIO_SOS/GMES results.
2. On-going and previous initiatives and projects on biodiversity monitoring

2.1 Global initiatives

<table>
<thead>
<tr>
<th>Title</th>
<th>Group on Earth Observations Biodiversity Observation Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>GEO BON</td>
</tr>
<tr>
<td>Website/Contact</td>
<td><a href="http://www.earthobservations.org/geobon.shtml">http://www.earthobservations.org/geobon.shtml</a></td>
</tr>
<tr>
<td>Duration</td>
<td>2009 - ongoing</td>
</tr>
<tr>
<td>Main Goals</td>
<td>By collaborating through GEO BON organisations make their biodiversity data, information and forecasts more readily accessible to policymakers, managers, experts and other users.</td>
</tr>
<tr>
<td>Outputs useful for BIO_SOS</td>
<td>- Exchange of protocols between countries and continents - Sharing principles between countries, NGOs and institutions</td>
</tr>
<tr>
<td>Outputs BIO_SOS, useful for GEO BON</td>
<td>- The results of the testing in BIO_SOS can be shared through GEO BON with other organisations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Title</th>
<th>Intergovernmental Panel on Biodiversity and ecosystem Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>IPBES</td>
</tr>
<tr>
<td>Website/Contact</td>
<td><a href="http://ipbes.net/">http://ipbes.net/</a></td>
</tr>
<tr>
<td>Duration</td>
<td>2012 – ongoing</td>
</tr>
<tr>
<td>Main Goals</td>
<td>The &quot;Intergovernmental Platform on Biodiversity and Ecosystem Services&quot; is a mechanism proposed to further strengthen the science-policy interface on biodiversity and ecosystem services, and add to the contribution of existing processes that aim at ensuring that decisions are made on the basis of the best available scientific information on conservation and sustainable use of biodiversity and ecosystem services. IPBES is proposed as a broadly similar mechanism to the Intergovernmental Panel on Climate Change (IPCC).</td>
</tr>
<tr>
<td>Outputs useful for BIO_SOS</td>
<td>- Not yet available, starting phase</td>
</tr>
<tr>
<td>Outputs BIO_SOS, useful for IPBES</td>
<td>- If the pre-operational phase can be followed by operational work then the global application may help the inputs for IPBES assessments</td>
</tr>
</tbody>
</table>

| Project title | Global Observation of Forest and Land Cover Dynamics |
| Short Name | GEOFC-GOLD |
| Duration | 1997 – 2017 |
| Main Goals | - Providing a forum for users of satellite data to discuss their needs and for producers to respond through improvements to their programs; - Providing regional and global datasets containing information on: - Location of different forest types; - Major changes in forest cover; - Biological functioning of forests (this will help quantify the
D4.2 Connection to on-going projects

<table>
<thead>
<tr>
<th>Outputs useful for BIO_SOS</th>
<th>methods and implementation of RS systems that provide both research and operational information on a regular sustained basis.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs BIO_SOS useful for this project</td>
<td>BIO_SOS chain of observations can contribute to access of local data</td>
</tr>
</tbody>
</table>
## 2.2 Europe-wide initiatives and projects

<table>
<thead>
<tr>
<th>Title</th>
<th>European Topic Centre Spatial Information and Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>ETC-SIA</td>
</tr>
</tbody>
</table>
Co-ordinator Andreas Littkopf, email: andreas.littkopf@uma.es |
| Duration | 2011-2013 |
| Main Goals | The European Topic Centre for Spatial information and Analysis, ETC/SIA, is supporting the European Environment Agency (EEA) in developing seamless European wide spatial reference data. ETC/SIA's main working area is the analysis of Land use and land cover. This includes monitoring temporal changes of land use and land cover in addition to analysing the environmental consequences. The work is structured in five working areas as shown below. |
| Outputs useful for BIO_SOS | Land monitoring in Europe, and more specific analysis of Land use and land cover, and seamless European wide spatial reference data. |
| Outputs BIO_SOS, useful for this project | A link should be made with ETC-SIA as BIO_SOS has to deliver GMES outputs that have to be integrated (like MS.MONINA). |

<table>
<thead>
<tr>
<th>Title</th>
<th>European Topic Centre – Biodiversity</th>
</tr>
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<tbody>
<tr>
<td>Short Name</td>
<td>ETC-BD</td>
</tr>
<tr>
<td>Duration</td>
<td>1995 – present</td>
</tr>
</tbody>
</table>
| Main Goals | The ETC/BD is an international consortium working with the European Environment Agency under a framework partnership agreement. The main tasks of the topic centre are:  
• Assist the European Environment Agency in its task of reporting on Europe's environment by addressing state and trends of biodiversity in Europe  
• Provide the relevant information to support the implementation of environmental and sustainable development policies in Europe in particular for EU nature and biodiversity policies (DG Environment: Nature and Biodiversity)  
• Build capacity for reporting on biodiversity in Europe, mainly through the European Information and Observation Network (Eionet) |
| Outputs useful for BIO_SOS | Biodiversity monitoring results from the reporting and basic data to be used as historic reference |
| Outputs BIO_SOS, useful for ETC-SIA | The methods developed here should be integrated in EIONET Biodiversity observation system |

<table>
<thead>
<tr>
<th>Title</th>
<th>Global Monitoring for Environment and Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>GMES</td>
</tr>
<tr>
<td>Website/Contact</td>
<td><a href="http://www.gmes.info/">http://www.gmes.info/</a></td>
</tr>
<tr>
<td>Duration</td>
<td>1998 - ?</td>
</tr>
</tbody>
</table>
### D4.2 Connection to on-going projects

<table>
<thead>
<tr>
<th>Main Goals</th>
<th>GMES consists in a complex set of systems which collects data from multiple sources (earth observation satellites and in situ sensors such as ground stations, airborne and sea-borne sensors), processes these data and provides users with reliable and up-to-date information.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs useful for BIO_SOS</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Outputs BIO_SOS, useful for this project</td>
<td>BIO_SOS should deliver its results to GMES to let it be integrated with other products.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initiative title</th>
<th>European Long-Term Ecosystem Research Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>LTER</td>
</tr>
<tr>
<td>Website/Contact</td>
<td><a href="http://www.lter-europe.net/">http://www.lter-europe.net/</a></td>
</tr>
<tr>
<td>Duration</td>
<td>2004 – ongoing</td>
</tr>
</tbody>
</table>
| Main Goals | • to track and understand the effects of global, regional and local changes on socio-ecological systems and their feedbacks to environment and society  
• to provide recommendations and support for solving current and future environmental problems. |
| Outputs useful for BIO_SOS | No outputs yet |
| Outputs BIO_SOS, useful for LTER | The approach and tools to developed in BIO_SOS could be used in the LTER sites as a common approach for monitoring |

<table>
<thead>
<tr>
<th>Project title</th>
<th>Supporting the Monitoring, Protection and Sustainable Management of our Environment</th>
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<tbody>
<tr>
<td>Short Name</td>
<td>GEOLAND-II</td>
</tr>
<tr>
<td>Website/Contact</td>
<td><a href="http://www.gmes-geoland.info/">http://www.gmes-geoland.info/</a></td>
</tr>
<tr>
<td>Duration</td>
<td>2008 – 2012</td>
</tr>
<tr>
<td>Main Goals</td>
<td>Geoland2 is carried out in the context of GMES, a joint initiative of European Commission (EC) and European Space Agency (ESA), which aims to build up a European capacity for Global Monitoring of Environment and Security. The ambition of the geoland2 consortium is to develop and demonstrate a range of reliable, affordable and cost efficient European geo-information services, supporting the implementation of European directives and their national implementation, as well as European and International policies. Thus, the GMES initiative is considered a unique opportunity to integrate existing technology with innovative and scientifically sound elements into sustainable services.</td>
</tr>
</tbody>
</table>
| Outputs useful for BIO_SOS | • Land monitoring  
• Biophysical parameters  
• Seasonal change detection |
| Outputs BIO_SOS, useful for this project | • The results of BIO_SOS should be integrated linked to GEOLAND data streams as it is focussing on operational monitoring. |
### D4.2 Connection to on-going projects

<table>
<thead>
<tr>
<th>Project title</th>
<th>Harmonised European Land Monitoring</th>
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</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>HELM</td>
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<tr>
<td>Website/Contact</td>
<td><a href="http://www.fp7helm.eu/">http://www.fp7helm.eu/</a></td>
</tr>
<tr>
<td>Duration</td>
<td>2011 - 2013</td>
</tr>
<tr>
<td>Main Goals</td>
<td>HELM initiates a move that will make European land monitoring (LULC) more productive by increasing the alignment of national and sub-national land monitoring endeavours and by enabling their integration to a coherent European data system.</td>
</tr>
<tr>
<td>Outputs useful for BIO_SOS</td>
<td>National and sub-national monitoring activities</td>
</tr>
<tr>
<td>Outputs BIO_SOS, useful for this project</td>
<td>As HELM is developing a common data model for land use and land cover at the national and sub-national level, the tools developed in BIO_SOS might be a valuable input for the local component.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project title</th>
<th>European Biodiversity Observation Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>EBONE</td>
</tr>
<tr>
<td>Website/Contact</td>
<td><a href="http://www.ebone.wur.nl">www.ebone.wur.nl</a></td>
</tr>
<tr>
<td>Duration</td>
<td>2008 – 2012</td>
</tr>
</tbody>
</table>
| Main Goals    | • The development of a cost effective system of biodiversity data collection at regional, national and European levels.  
                 • To develop a coherent system for data collection that can be used for international comparable assessments |
| Outputs useful for BIO_SOS | The General Habitat Categories can be used for mapping consistently in situ data for BIO_SOS. The methodology is actually applied. |
| Outputs BIO_SOS, useful for this project | Not applicable |

<table>
<thead>
<tr>
<th>Project title</th>
<th>A classification framework for habitat status reporting with remote sensing methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>HABISTAT</td>
</tr>
<tr>
<td>Website/Contact</td>
<td><a href="http://habistat.vgt.vito.be/">http://habistat.vgt.vito.be/</a></td>
</tr>
<tr>
<td>Duration</td>
<td>2007-2010</td>
</tr>
</tbody>
</table>
| Main Goals    | • To enhance the state-of-the-art classification framework.  
                 • To create a transferable platform which integrates novel and advanced remote sensing methodologies that are developed specifically for operational habitat reportage. |
| Outputs useful for BIO_SOS | Inclusion of the Habistat conclusions in the project (see VandenBorre et al 2011) |
| Outputs BIO_SOS, useful for this project | Not applicable |
### Project title
Multiscale Service for monitoring NATURA 2000 habitats of European community interest

### Short Name
MS.MONINA

### Website/Contact
http://www.ms-monina.eu

### Duration
2011-2013

### Main Goals
Supporting the GEO Biodiversity strategic target
- State and change monitoring in key sensitive habitats (link to SBA ecosystems)
- Harmonizing the various approaches of data collection, data integration, information provision and service
- Conditioning of geospatial information for effective support of monitoring, management and reporting tasks
- Dedicated translation of user needs into technical developments
- Capacity building and training to utilize new technologies

### Outputs useful for BIO_SOS
Outputs are being developed; as a sister project of BIO_SOS there will be exchanges and joint workshops

### Outputs BIO_SOS, useful for this project
Outputs are being developed; as a sister project of MS.MONINA there will be exchanges and joint workshops

---

### Project title
Linking pan-European land cover changes to pressures on biodiversity

### Short Name
BIOPRESS

### Website/Contact
http://www.biopress.ceh.ac.uk/
http://www.creaf.uab.es/biopress/studyareas.htm

### Duration
2003-2005

### Main Goals
The European Commission funded ‘Global Monitoring for Environment and Security’ project produced land cover change information (1950–1990-2000) from aerial photographs and tested the suitability of this for monitoring habitats and biodiversity in and around Natura 2000 sites in Europe. Changes in land cover were established through 73 window and 59 transect samples distributed across Europe. Although the sample size was too small and biased to fully represent the spatial variability observed in Europe, the work highlighted the importance of method consistency, the choice of nomenclature and spatial scale.

### Outputs useful for BIO_SOS
BIOPRESS database of land cover changes in and around Natura 2000 sites in Europe (1950-1990-2000). Scale 1:100,000 for 73 windows and scale 1:20,000 for 59 transects. Methods for hindcasting. Project demonstrated that land cover flows inside Natura 2000 sites are different from outside.

### Outputs BIO_SOS, useful for this project
Not applicable

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### Project title
Challenges in assessing and forecasting biodiversity and ecosystem changes in Europe

### Short Name
ECOCHANGE

### Website/Contact
http://www.ecochange-project.eu/
## D4.2 Connection to on-going projects

<table>
<thead>
<tr>
<th>Duration</th>
<th>2007-2012</th>
</tr>
</thead>
</table>
| **Main Goals** | ECOCHANGE has clear objectives relevant to the call: to assess and forecast changes in terrestrial biodiversity and ecosystems and changes in the ability of biodiversity and ecosystems to supply goods and services and to buffer against climate and land use change. This will be made possible by concentrating on improvements in three major areas, namely:  
• the ability to predict biodiversity and species distribution patterns at a range of spatial scales sensitive to climate, land use and landscape structure  
• the simulation of ecosystem processes and responses to a range of scenarios enabling  
• the forecasting of expected changes in the biome distribution and its functioning, and  
• the assessment of consequences of global change for ecosystems and plant species to provide goods and services to the population of the European Community. |
| **Outputs useful for BIO_SOS** |  
• Fragmentation and other landscape metrics at European Scales.  
• Tested new environmental predictors from analyses of remote sensing data.  
• Scenario maps for present (1961-90) and future (2070-99) climates at 10' resolution.  
• EU-wide and downscaled land use change scenario maps, as predicted from advanced socio-economic models of land use evolution  
• Results of tests of how the new remote-sensing based predictors improve the modelling of pecies and biodiversity.  
• A hierarchical modelling tool for simulating plant spread at various spatial and temporal scales, parameterized for a selected set of species and implemented into a niche-based species-distribution model and a DGVM  
• Assessment of the potential impacts of projected environmental changes on European terrestrial fauna and flora, with particular emphasis on the NATURA 2000 network |
| **Outputs BIO_SOS, useful for this project** | - Not applicable |

### Project title
Fire Detection and Management through a Multi-Sensor Network for the Protection of Cultural Heritage Areas from the Risk of Fire and Extreme Weather Conditions.

### Short Name
FIRESENSE

### Website/Contact
http://www.firesense.eu/

<table>
<thead>
<tr>
<th>Duration</th>
<th>2009 – 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main Goals</strong></td>
<td></td>
</tr>
</tbody>
</table>
• To develop an automatic early warning system to remotely monitor areas of archaeological and cultural interest from the risk of fire and extreme weather conditions. These areas are usually surrounded by old and valuable vegetation or situated close to protected areas (e.g. Natura 2000), forest regions, which exposes them to an increased risk of fire  
• To develop fuel models on the basis of accurate vegetation maps from satellite data and on-site data (wind speed, slope, and aspect of the ground surface) to estimate the propagation of fire. |
| **Outputs useful for BIO_SOS** | A methodology for fire prevention within Natura 2000 sites and their surroundings to prevent biodiversity loss due to fires |
| **Outputs** | Automatic technics for vegetation mapping from HR and VHR satellite |
### 2.3 National monitoring initiatives and projects

<table>
<thead>
<tr>
<th>Title</th>
<th>European Network of Heads of Nature Conservation Agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>ENCA,</td>
</tr>
<tr>
<td>Website/Contact</td>
<td><a href="http://encanet.eu/home/">http://encanet.eu/home/</a></td>
</tr>
<tr>
<td>Duration</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Main Goals</td>
<td>Cooperation and knowledge exchange between Nature Conservation Agencies in Europe on different interest fields, among other on biodiversity monitoring. On this theme the aims are:</td>
</tr>
<tr>
<td></td>
<td>• Knowledge exchange between ENCA members from different agencies interested in linking remote sensing and traditional biodiversity monitoring</td>
</tr>
<tr>
<td></td>
<td>• Identification of key problems/opportunities relating to the conservation agencies current and future use of remote sensing.</td>
</tr>
<tr>
<td></td>
<td>• Identification of examples of ‘best practice’ in the joint development of field methods and remote sensing</td>
</tr>
<tr>
<td>Outputs useful for BIO_SOS</td>
<td>Exchange with the ENCA members in countries that are member (Wales, the Netherlands, Italy)</td>
</tr>
<tr>
<td>Outputs BIO_SOS, useful for ENCA</td>
<td>Exchange of the knowledge developed in BIO_SOS to the agencies in ENCA</td>
</tr>
</tbody>
</table>

| Project title | Sistema para el Seguimiento de los PAisajes Rurales ESpañoles |
| Short Name | SISPARES |
| Website/Contact | [www.sispares.com](http://www.sispares.com) |
| Duration | 1997 – 2009 |
| Main Goals | • Identification and characterization of the elements and processes that compose the landscape structure and organisation throughout the country, making use of the present state of the art of knowledge on the subject. |
| | • Spatiotemporal analysis of the elements and processes identified between 1956 and today, and its interpretation in light of changes in Land Use and policies that have influenced them. |
| | • Identification of landscape patterns and dynamics of the landscape that best explain the territorial diversity and its background causes, in order to formulate recommendations for planning and land management, from the perspective of nature conservation. |
| Outputs useful for BIO_SOS | Information on the background methodologies and analysis |
| Outputs BIO_SOS, useful for this project | Not applicable |

| Project title | Sistema de Informação e Monitorização da Biodiversidade do Norte de Portugal (Biodiversity Information and Monitoring System for the North of Portugal) |
### D4.2 Connection to on-going projects

<table>
<thead>
<tr>
<th>Project title</th>
<th>Indicators, methods and protocols for reporting and monitoring the conditions of biodiversity and ecosystems in changing rural landscapes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>EcoSensing</td>
</tr>
<tr>
<td>Website/Contact</td>
<td>Joao Honrado at CIBIO <a href="http://cibio.up.pt">http://cibio.up.pt</a>; <a href="mailto:jhonrado@fc.up.pt">jhonrado@fc.up.pt</a></td>
</tr>
<tr>
<td>Duration</td>
<td>2010 – 2013</td>
</tr>
<tr>
<td>Main Goals</td>
<td>To propose and test methodological improvements in several key components of biodiversity monitoring programs towards cost-efficiency and improved capacity to detect ecological change.</td>
</tr>
<tr>
<td>Outputs useful for BIO_SOS</td>
<td>Methodological improvements in sampling and data collection for in situ campaigns; Field data on the distribution of habitats and biodiversity at regional and local scales; Models relating landscape attributes and biodiversity indicators.</td>
</tr>
<tr>
<td>Outputs BIO_SOS, useful for this project</td>
<td>Integration of remote sensing with field data for detailed habitat and biodiversity monitoring in small scale (fine grain) landscapes; Opportunities to test methodological improvements across a range of environmental conditions and pressures.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Project title</th>
<th>Analysis of biodiversity in Mediterranean islands and Invasive Species in North Italy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td></td>
</tr>
<tr>
<td>Website/Contact</td>
<td></td>
</tr>
<tr>
<td>Duration</td>
<td>2008 - 2012</td>
</tr>
<tr>
<td>Main Goals</td>
<td>Analysis of distribution of some invasive species (American slider turtle, <em>Trachemys scripta</em>; American bullfrog <em>Rana catesbeiana</em>, crayfish, <em>Procambarus clarkia</em>);</td>
</tr>
<tr>
<td>Outputs useful for BIO_SOS</td>
<td>Analysis of anthropic pressure on biodiversity distribution Criteria for ecological niche modelling (i.e. use of maximum entropy</td>
</tr>
<tr>
<td>Outputs BIO_SOS, useful for this project</td>
<td></td>
</tr>
</tbody>
</table>
### D4.2 Connection to on-going projects

<table>
<thead>
<tr>
<th>Outputs useful for this project</th>
<th>Linkage between habitat / GHC and biodiversity</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Project title</strong></th>
<th>Surveillance and Conservation Status Assessment for Species and Habitat types of Community Interest in Greece</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Short Name</strong></td>
<td>Not yet available</td>
</tr>
<tr>
<td><strong>Website/Contact</strong></td>
<td>Not yet available</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>Expected to start in March of 2012-2015</td>
</tr>
</tbody>
</table>
| **Main Goals**    | - To undertake surveillance of habitat types and species of Community Interest (listed in Annexes I, II, IV & V).  
                      - To prepare the National Report required to be sent to the European Commission every 6 years (in 2013), according to Article 17 of the Habitats Directive inside and outside the Natura 2000 network depending on the distribution of the habitats and species  
                      - To establish a long-term monitoring system; the field monitoring data and the field data on conservation status assessment of habitat types and species will be the input for the compilation of the 6-years Report. |
| **Outputs useful for BIO_SOS** | - Field data on the distribution of habitats and biodiversity at regional and local scales;  
                              - Ground truth data for fine scale habitat mapping;  
                              - Institutional framework for species (plants, vertebrates, birds, invertebrates) and habitat types (of European and National Importance) monitoring at regional and national levels. |
| **Outputs useful for this project** | Integration of remote sensing with field data for detailed habitat and biodiversity monitoring in small scale landscapes. |

<table>
<thead>
<tr>
<th><strong>Project title</strong></th>
<th>Development of large scale (1:5000) Spatial Data infrastructure for the terrestrial Natura 2000 sites in Greece</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Short Name</strong></td>
<td>Not yet available</td>
</tr>
<tr>
<td><strong>Website/Contact</strong></td>
<td>Not yet available</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>Expected to start in March of 2012-2015</td>
</tr>
</tbody>
</table>
| **Main Goals**    | - The accurate delineation of the outer boundaries of the terrestrial Natura 2000 Sites (SCI & SPA)  
                      - Update, description, delineation and evaluation of the habitat types in the terrestrial SCIs and SPAs of the Natura 2000 network in Greece, based on colored ortho-photos of high accuract (LSO) in scale 1:5,000 and in field work. |
| **Outputs useful** | - Habitat types maps for the SCIs and SPAs of the Natura 2000                                              |
### D4.2 Connection to on-going projects

<table>
<thead>
<tr>
<th>for BIO_SOS</th>
<th>network</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Field data on the distribution patterns of habitat types at local scales;</td>
<td></td>
</tr>
<tr>
<td>- Ground truth data for fine scale habitat types mapping;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outputs</th>
<th>Integration of remote sensing with field data for detailed habitat types monitoring in small scale landscapes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>for BIO_SOS, useful for this project</td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Project title</th>
<th>National Inventory of Landscapes in Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>NILS</td>
</tr>
<tr>
<td>Website/Contact</td>
<td><a href="http://www.slu.se/nils">http://www.slu.se/nils</a></td>
</tr>
<tr>
<td>Duration</td>
<td>2003 – ongoing</td>
</tr>
<tr>
<td>Main Goals</td>
<td>NILS is a nation-wide environmental protection programme that monitors the conditions and changes in the Swedish landscape. It collects data and performs analyses of natural landscape changes, degree of anthropogenic impact, prerequisites for natural biological diversity and ecological processes at landscape scale.</td>
</tr>
<tr>
<td>Outputs useful for BIO_SOS</td>
<td>The knowledge that has been gained on the use of false colour photographs, RS and in situ data</td>
</tr>
<tr>
<td>Outputs BIO_SOS, useful for this project</td>
<td>BIO_SOS results might help NILS to more efficient monitor especially remote areas and at intervals between the in situ observations.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Project title</th>
<th>Great Britain Countryside Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>GB-CS</td>
</tr>
<tr>
<td>Website/Contact</td>
<td><a href="http://www.countrysidesurvey.org.uk/">http://www.countrysidesurvey.org.uk/</a></td>
</tr>
<tr>
<td>Duration</td>
<td>1978-2007 and ongoing</td>
</tr>
<tr>
<td>Main Goals</td>
<td>The countryside is sampled and studied using rigorous scientific methods, allowing us to compare new results with those from previous surveys. In this way we can detect the gradual and subtle changes that occur in the UK's countryside over time and inform policy makers</td>
</tr>
<tr>
<td>Outputs useful for BIO_SOS</td>
<td>The in situ knowledge can be used in BIO_SOS. GB-CS has extensive experience in data handling, quality control, the use of statistics and reporting.</td>
</tr>
<tr>
<td>Outputs BIO_SOS, useful for this project</td>
<td>The methods to be developed in BIO_SOS can help to continue GB-CS monitoring as continuity is under pressure due to budget problems. It is the intention of DEFRA to make more use of RS information.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Project title</th>
<th>Northern Ireland Countryside Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>NICS</td>
</tr>
<tr>
<td>Duration</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Main Goals</td>
<td>NICS assesses the distribution and condition of land habitat types and provides reliable estimates of how land cover changes over time. This is</td>
</tr>
</tbody>
</table>
D4.2 Connection to on-going projects

<table>
<thead>
<tr>
<th>Outputs useful for BIO_SOS</th>
<th>The in situ knowledge can be used in BIO_SOS as NICS has extensive experience in data handling, quality control, the use of statistics and reporting.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs BIO_SOS, useful for this project</td>
<td>The methods to be developed in BIO_SOS can help to continue GB-CS monitoring.</td>
</tr>
<tr>
<td>Project title</td>
<td>Nationwide Monitoring and Assessment Programme for the Aquatic and Terrestrial Environments</td>
</tr>
<tr>
<td>Short Name</td>
<td>NOVANA</td>
</tr>
<tr>
<td>Website/Contact</td>
<td><a href="http://www.dmu.dk/en/monitoring/novana/">http://www.dmu.dk/en/monitoring/novana/</a></td>
</tr>
<tr>
<td>Duration</td>
<td>2004-2006</td>
</tr>
<tr>
<td>Main Goals</td>
<td>With NOVANA, Denmark aims to carry out integrated systematic monitoring of the aquatic and terrestrial nature and environment.</td>
</tr>
<tr>
<td></td>
<td>• Monitoring of terrestrial natural habitats is focused mainly on international obligations with the main emphasis on the EU Habitats Directive.</td>
</tr>
<tr>
<td></td>
<td>• NOVANA species monitoring comprised in 2006 a total of seven species of vascular plants, mosses, insects and mammals listed in Annex II and IV of the Habitats Directive.</td>
</tr>
<tr>
<td></td>
<td>• For most species, the monitoring results of 2006 and 2004-2005 will serve as the baseline with which the future monitoring results will be compared with regard to assessment of the trend in their population size and range.</td>
</tr>
<tr>
<td>Outputs useful for BIO_SOS</td>
<td>There is no expected output from NOVANA that is at present use for BIO_SOS</td>
</tr>
<tr>
<td>Outputs BIO_SOS, useful for this project</td>
<td>The methods to be developed in BIO_SOS can help to continue NOVANA monitoring as there is at present no continuity.</td>
</tr>
</tbody>
</table>

| Project title | Spatial Indices for Land Use Sustainability |
| Short Name | SINUS and follow-up projects |
| Website/Contact | Thomas Wrbka at University of Vienna |
| Duration | 1996-2005 |
| Main Goals | To elaborate spatially explicit indicators for mapping ecological sustainability in Austria |
| Outputs useful for BIO_SOS | No outputs as there is no case study in Austria |
| Outputs BIO_SOS, useful for this project | The methods to be developed in BIO_SOS can help to continue approaches as started with SINUS |
### D4.2 Connection to on-going projects

<table>
<thead>
<tr>
<th>Project title</th>
<th>Monitoring system Dutch National Forestry Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>SBB monitoring</td>
</tr>
<tr>
<td>Website/Contact</td>
<td></td>
</tr>
<tr>
<td>Duration</td>
<td>Every terrain is being monitored once every 10 years</td>
</tr>
<tr>
<td>Main Goals</td>
<td>Monitoring of progress in terms of nature conservation, wood production, recreation &amp; cultural history</td>
</tr>
<tr>
<td>Outputs useful for BIO_SOS</td>
<td>SBB has a very systematic approach for monitoring with good protocols.</td>
</tr>
<tr>
<td>Outputs BIO_SOS, useful for this project</td>
<td>Land cover and habitat maps</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project title</th>
<th>Monitoring system Natuurmonumenten (Nature Foundation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>Monitoring Natuurmonumenten</td>
</tr>
<tr>
<td>Website/Contact</td>
<td></td>
</tr>
<tr>
<td>Duration</td>
<td>Monitoring at least once in 18 years of their terrains</td>
</tr>
<tr>
<td>Main Goals</td>
<td>Monitoring target species, abiotic conditions, etc.</td>
</tr>
<tr>
<td>Outputs useful for BIO_SOS</td>
<td>Limited use since it seems that most of the activities are not done in a very structural way, but BIO-SOS could feed Natuurmonumenten with information</td>
</tr>
<tr>
<td>Outputs BIO_SOS, useful for this project</td>
<td>Land cover and habitat maps</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project title</th>
<th>Landelijke Vegetatie Database (LVD) / SynBioSys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>LVD</td>
</tr>
<tr>
<td>Duration</td>
<td>Collection of vegetation releves since 1930</td>
</tr>
<tr>
<td>Main Goals</td>
<td>To collect vegetation releves, that can feed the knowledge system SynBioSys and helps to describe Dutch plant communities, their succession and their distribution</td>
</tr>
<tr>
<td>Outputs useful for BIO_SOS</td>
<td>Vegetation releves are useful as in-situ component</td>
</tr>
<tr>
<td>Outputs BIO_SOS, useful for this project</td>
<td>Not clear yet</td>
</tr>
</tbody>
</table>
3. References


