

commitments towards society of achieving predefined targets. This evolution is prevalent at different spatial levels: global (e.g. Convention on Biological Diversity), European (e.g. Habitats and Birds Directives), national and sub-national (e.g. the Flemish MINA-plan, regional Natura 2000 conservation goals), and site level (e.g. management plans, Natura 2000 site-specific conservation objectives). In order to reach biodiversity conservation targets, data are needed. This includes both baseline data as well as a monitoring of changes taking place. In the European Union (EU) for instance, the Habitats Directive, obliges all member states to survey and evaluate the conservation status of protected habitat types and species, and to report this to the European Commission on a six-yearly basis. For habitats, this requires a.o. monitoring and reporting the status and trends of distribution, range, areal extent, habitat quality (structure and functions), and future prospects.

In the recently finished, BELSPO-funded HABISTAT project (2007-2011; <http://habistat.vgt.vito.be/>), a conceptual framework was developed for an operation-oriented methodology to map, monitor and evaluate vegetation and habitat types and their degree of development. The developed methodology consists of a consecutive three-step approach, where each component builds on the outcomes of the previous one(s). In each of the three steps, the input from both ecological and remote sensing knowledge proved crucial for its success. For the first time in Flanders, Natura 2000 habitats in two pilot sites have been successfully mapped and their conservation status assessed using remote sensing. The project has shown that with an integrated ecological and remote sensing knowledge approach, it is possible to meet the highly detailed requirements for NATURA 2000 monitoring. As such, the project has laid the necessary fundamentals and identified the remaining key research issues, to evolve from exemplary study and showcases to a Natura 2000 monitoring system that is operationally supported by remote sensing services. A final report on the project and a multitude of publications are available on request with the corresponding author.

The recently started EC FP7-SPACE project MS.MONINA (2010-2013; <http://www.ms-monina.eu/>) intends to set the basis for and demonstrate such a service, complying with pan-European efforts for data harmonization and exchange (GMES, INSPIRE, SEIS), and relying on a strong user involvement

### **The HeathReCover project: Remote sensing support to assist ecological restoration management after heathland fires**

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Heathland and peat bogs are highly valued as habitats for biodiversity conservation and as landscapes of common European cultural heritage. In the past decades, a lot of efforts and resources have been invested to protect the remaining areas, and to properly manage them in order to conserve their intrinsic value. Nevertheless, in Belgium, continuing external pressures on heathlands and peat-bogs, such as nitrogen deposition and desiccation, remain high, endangering the long-term positive outcome of these investments. The recent catastrophic wildfires of 2011 in the nature reserves of the *Kalmthoutse Heide* (Flanders) and the *Hautes Fagnes* (Wallonia) have raised a lot of public concern regarding the vulnerability of these unique heathland ecosystems to uncontrolled fires. Remote sensing (RS) has been shown to be useful to clarify the complex interaction between fires and ecosystems. A variety of methodologies can be applied to delineate burn scars, assess the short-term fire severity and monitor the long-term vegetation recovery. Available methodologies range from hyperspectral post-fire data analysis to multi-temporal analysis of vegetation indices derived from multispectral data. These approaches showed the complementarities of hyperspectral and multi-temporal (VNIR-SWIR) data sets, with hyperspectral imagery representing the specific surface cover conditions over large areas and multi-temporal imagery revealing the intra- and inter-

annual changes. The recent and historical *Kalmthoutse Heide* and *Hautes Fagnes* fire events provide an excellent opportunity to study post-fire vegetation regeneration as the areas have served as a study area in several (RS and non-RS) projects over the past years. As a result, the pre-fire vegetation of both areas is very well documented with a multitude of image and field data already acquired. The BELSPO-funded HeathReCover project (2012-2013) will exploit this opportunity to push forward advancements and crucial insights into heathland ecosystems and their (post-)fire susceptibility and management.

### Events organized in 2011

- The annual Belgian Earth Observation day organised by the Belgian Science Policy Office took place in Oudenburg in **May 2011**. The invited keynote speaker was Dr. Jadu Dash, lecturer at the school of geography of the Southampton University (UK). You can find all the presentations of this meeting on our website in the following page:  
<http://eo.belspo.be/Directory/Resources/Presentations.aspx>
- In **May**, In the frame of the AGRISAR workshop organised by ESA at ESA-ESTEC in Noordwijk (The Netherlands) a complete session focussed on the results of the GLOBAM project (Global Agricultural Monitoring systems by integration of earth observation and modelling techniques) funded by BELSPO in the frame of the STEREO II programme.  
<http://eo.belspo.be/Directory/Projects.aspx>
- In the frame of the Belcouleur2 and the Quest4d projects both supported by the Belgian Science Policy Office a symposium called "Human footprint on the seafloor, keys from the past, doors to the future" was organised in Brussels on Friday September 2nd 2011.  
<http://www.mumm.ac.be/BELCOLOUR/EN/index.php>

### Events scheduled in 2012

- **May 7-11**: Organisation by the University of Liège (Belgium) of the 44th International Liege Colloquium on Ocean Dynamics with the title: "Remote sensing of colour, temperature and salinity – new challenges and opportunities". More information available on the website:  
<http://modb.oce.ulg.ac.be/colloquium/>
- **May 21-24**: In the frame of 32nd EARSeL Symposium organised in Mykonos Island (Greece) a complete session will be dedicated to the PROBA-V preparatory programme. Website  
<http://www.earsel.org/symposia/2012-symposium-Mykonos>
- **September 4 and 5** a joint event will be organised in Bruges (Belgium) by the Belgian Science Policy. The **4 September** a workshop dedicated to the results of the hyperspectral flight campaigns organised in Belgium and Europe with the APEX sensor is planned. The **5 September** will be dedicated to the annual Belgian Earth Observation day. Don't hesitate to consult the following website for more information: <http://eo.belspo.be/News/News.aspx>
- **September 19-22**: 3rd Workshop on Remote Sensing for Archaeology and Cultural Heritage Management. Ghent, Belgium.