

## BIO2CARE – A project that cares for the environment

### A Few Words for our Project

“Reinforcing protected areas capacity through an innovative methodology for sustainability” (BIO2CARE) is a project approved for funding under the *Interreg V-A “Greece-Bulgaria 2014-2020” Cooperation Programme*. BIO2CARE falls under the Priority Axis “2. A Sustainable and Climate adaptable Cross-Border area”, Thematic Objective “6. Preserving and protecting the environment and promoting resource efficiency”, Investment Priority “6d. Protecting and restoring biodiversity, soil protection and restoration and promoting ecosystem services including NATURA 2000 and green infrastructures”.

In full compliance with the objectives of the Programme, the overall goal of BIO2CARE is **to reinforce Protected Areas’ Management Bodies (PA MBs) efficiency and effectiveness in an innovative and integrated approach**, promoting territorial cooperation in a very concrete and well-defined approach. BIO2CARE’s main objective is to enhance PA MBs administrative capacities on the benefit of biodiversity as of local communities. This is in full compliance with the programme’s specific objective “To enhance the effectiveness of biodiversity protection activities”.

### In this issue

#### BIO2CARE – A project that cares for the environment

- ▶ A Few Words for our Project
- ▶ Expected Results of BIO2CARE project
- ▶ Our Partnership

#### Implementation of BIO2CARE project

#### Activities of BIO2CARE project beneficiaries

*The Project is co-funded by the European Regional Development Fund (ERDF) and national funds of the participating countries*

The BIO2CARE proposed decision-making platform could become a valuable tool for understanding the activities and quantifying their respective impacts on biodiversity (e.g. measuring ecological footprint, carbon footprint and water footprint). The monitoring activities proposed will give a competitive advantage in managing bodies to enhance their capabilities of protecting the areas of interest and mitigating illegal activities. Small infrastructures like pathways accessible by disabled people will make PAs more attractive to new audience never been attracted so far, while will attract new target groups for neighboring businesses. At the same time this will be PAs contribution to social coherence. To further support entrepreneurship on surrounding areas, BIO2CARE will establish the process of awarding an ecolabel, a quality scheme that will help local businesses to show a qualitative distinction, surpassing competitors.

BIO2CARE applies an integrated approach responding to PAs entire environmental systems. It will deliver a wide range of differentiated outputs. Its main deliverables are:

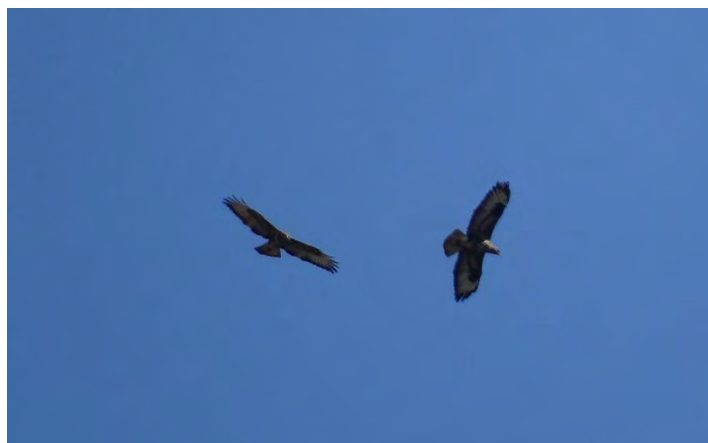
- D.1: A set of studies
- D.2: One set of monitoring equipment fully operational per country
- D.3: Two sets of ICT applications and e-tools for valorizing, studies and data produced from monitoring systems per country
- D.4: Two small infrastructures certified for access and use by persons with disability
- D.5: One common labeling scheme
- D.6: Training sessions
- D.7: A Policy Recommendations Report

D.1, D.2, D.3 will form the essential components of one integrated Decision Support system (DSS) per country, that could operate separately or jointly on the cross-border area. D.4, D.5, D.6 will feedback DSS. Lessons learned during BIO2CARE implementation and scientific results from studies will form the D.7 output, to be discussed during last quarter of project with local, regional and national authorities.



The seven Rila lakes

*Credits: Rila National Park*



### **Biodiversity along Nestos river: Buteo buteo and Circaetus gallicus**

*Credits: Managing Authority for Nestos Delta – Vistonis & Ismaris lakes*

### **Expected Results of BIO2CARE project**

BIO2CARE project intervention logic was developed based on the theory of change, taking into account the attempted changes as the basis for a result orientated project. It will succeed so by:

- (1) Producing new knowledge (WP3)
- (2) Applying to PA MBs new procedures and tools (WP3&4)
- (3) Setting the first solid foundations for one common or two commonly operating cross-border Decision Support system (-s) (WP4)
- (4) Setting in operation two jointly designed sets of monitoring equipment and exchanging information produced by them (WP4)
- (5) Setting in force an eco-labeling award scheme to help local businesses to overcome possible disadvantages emerge from protection status that apply (WP4)
- (6) Making PAs accessible to disable and aged persons (WP4 & 5)
- (7) Training specific target groups with training sessions and workshops (WP5)
- (8) Increasing awareness among target groups and wide audience (WP2)
- (9) Contributing to policies through Policy Recommendations Report (WP5)

As BIO2CARE project is devoted to change, at the end of its implementation major positive impacts will be identified on PA MBs capacities and on local business communities.

The development of the two e-tools will increase the managerial capacity of the PA MBs in order to improve the management of the PAs as systems, define and prioritize the necessary improvements. The combination with high-tech monitoring systems (both for fauna/flora and for illegal activities) will furthermore contribute to the improvement of PAs environmental status. Small technical works (pathways), will provide a steady groundwork for the promotion of green tourism without discrimination, for every disabled and/or aged



person to enjoy the natural beauty of the PAs. This social approach of green tourism that is coupled with the promotion of the silver economy approach is expected to be a starting point for the establishment of similar activities in both countries.



Chamaespartium sagittale



Dianthus microlepis



Cicerbita alpina



Gentiana lutea

## Biodiversity in Rila National Park

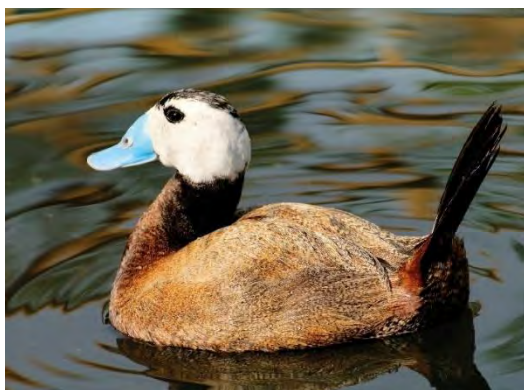
Credits: Rila National Park

### Our Partnership

We Cooperate! We Act Jointly and We All Win!

**BIO2CARE project** consists of the following partners:

- **Democritus University of Thrace (DUTH)**, represented in the Project by the *Laboratory of Environmental Management and Industrial Ecology (LEMIE)*. <https://lemie.pme.duth.gr>
- **Municipality of Nestos**. [www.nestos.gr](http://www.nestos.gr)
- **Greek Biotope/Wetland Centre (EKBY)**. [www.ekby.gr](http://www.ekby.gr)
- **National Confederation of Disabled People (NCDP)**. [www.esamea.gr](http://www.esamea.gr)
- **Regional Inspectorate of Environment and Waters – Blagoevgrad (RIEW – Blagoevgrad)**.
- **Rila National Park Directorate (RNPd)**.
- **The South-West University of Neofit Rilski in Blagoevgrad (SWU)**.
- **Pirin Tourism Forum (PTF)**.



**Biodiversity at National Park of Nestos Delta and lakes Vistonida-Ismarida: White-headed Duck (*Oxyura leucocephala*) and Little Egret (*Egretta garzetta*)**

*Credits: Managing Authority for Nestos Delta – Vistonis & Ismaris lakes*

## Implementation of BIO2CARE project

### 5<sup>th</sup> BIO2CARE Project Joint Steering Committee Meeting

On October 14 - 15, 2019, the fifth meeting of the BIO2CARE project "Reinforcing protected areas capacity through an innovative methodology for sustainability" (5th meeting of the Project Steering Committee) took place at Xanthi, home of the Engineering School of Democritus University of Thrace.

During the meeting, issues related to the work in progress were discussed. The project aims to the development of effective procedures for the management and the protection of biodiversity of the National Park of Eastern Macedonia and Thrace in Greece and of the National Park of Rila in Bulgaria.



**5<sup>th</sup> BIO2CARE Project Joint Steering Committee Meeting, in Xanthi, Greece**

*Credits: BIO2CARE project photo archive*

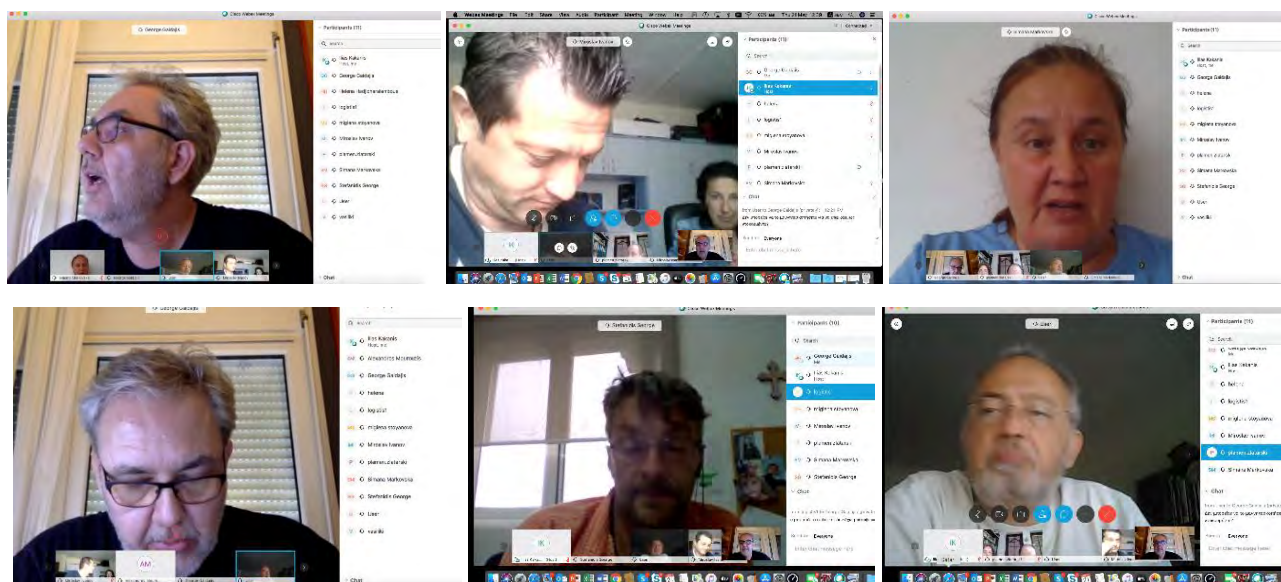


## 6<sup>th</sup> BIO2CARE Project Joint Steering Committee Meeting with teleconference

The Sixth Meeting of the Joint Steering Committee of the project BIO2CARE was held on 21 May 2020. It has been organized as an on-line meeting implemented with a teleconference, due to restrictions set by COVID-19 pandemia. The meeting was hosted by the Democritus University (LP). Its goal was to report the project progress up to this point, as well as the results achieved and problems encountered; to set steps necessary till the end of the project. Prof. Gaidajis initiated the discussion regarding the remaining obligations until the end of the BIO2CARE project.

An overview was made of the implementation of project activities for achieving better results. Participants discussed issues as the 6th (Final) Progress Report, the Evaluation Report of the project (D.1.4), the last two Newsletters, future presentations in scientific conferences/external events (D.2.5), the completion of the construction work in Municipality of Nestos and Rila National Park (D.4.2), the completion of the two smart applications (D.4.4), as also the implementation of training sessions and workshops regarding BIO2CARE e-tools (D.5.1), BIO2CARE Sustainability labelling scheme (D.5.3) and biodiversity preservation, circular economy and symbiotic activities (D.5.2).

Two last issues for discussion were concerning the PB5 visits on site of finished pathways (D.5.4) and the Final Report with Results and policy recommendations. The 6<sup>th</sup> BIO2CARE Project Joint Steering Committee Meeting, has been recorded for documentation purposes and will be archived appropriately.



**6<sup>th</sup> BIO2CARE Project Joint Steering Committee Meeting (teleconference)**

*Credits: BIO2CARE project photo archive*

## Extension of BIO2CARE project has been approved

After a long discussion among project partners resulting to a request for a project duration extension, on 9 of June 2020, the Managing Authority of GREECE-BULGARIA 20014-2020, has approved this request setting a new deadline for project closure on 19/10/2020. This decision will facilitate partners to overcome unexpected obstacles emerged after COVID-19 pandemic, and effectively deliver project deliverables.

## The New Accessible Information and Visitor Centre constructed by Rila National Park Directorate in Blagoevgrad, is now a tangible deliverable of BIO2CARE project

The new Information and Visitor Center of Rila NPD in Blagoevgrad opened its doors for the guests and friends of the biggest national park in Bulgaria. The official ceremony was held on the 24th of February 2020. The Center was opened by the Minister of Environment and Waters Emil Dimitrov and the director of the park Krasimir Andonov. "This is a huge asset for Blagoevgrad and it is normal for the largest city around Rila to have such a center", the minister said. He wished the employees success.

The Director of the park said that this is the 3rd Information and Visitor Center managed by the Park. The Center, funded by the BIO2CARE Project, has the main function of informing the visitors about the natural values of the Park (flora, fauna, forests, special sites) and the tourist rails, the rest areas and the behavior rules within the protected territory. The first floor will feature a multi-functional hall with a capacity of 40 people, for handling educational and interpretation programmes, making presentations, showing films and multimedia. The hall will serve tourists, students and pupils, partners; it will be accessible for people with reduced mobility and special needs. For the ones with vision limitations, there will be publications in Braille, special lectures and expositions showing the Rila National Park in an innovative way. The second floor will serve the administrative needs of the Rila NP Directorate in relation to the future maintenance of the Information and Visitor Center, the Director said.

For more information, please see [HERE](#), [HERE](#) and [HERE](#).





**Official ceremony for opening of the Information and Visitor Center of Rila National Park**

*Credits: Rila National Park Directorate*

Deliverable "Best practice examples for designing eco-friendly pathways, accessible by people with disabilities" (D.4.4.2) has been delivered by the Greek Biotope Wetland Centre

Best practice examples from Greece and abroad, regarding the design and development of nature pathways for disabled people, are highlighted in a special edition by MGFI-EKBY, in the framework of the Bio2Care project.

In particular, this edition presents (a) the pathway for people with vision problems in the wetland of Vravrona, Attica, designed by the Hellenic Ornithological Society, (b) the routes for disabled people groups and the relevant information material of the Cairngorms National Park in Scotland and (c) the respective actions and works for people with disabilities at Hoge Kempen National Park in Belgium.

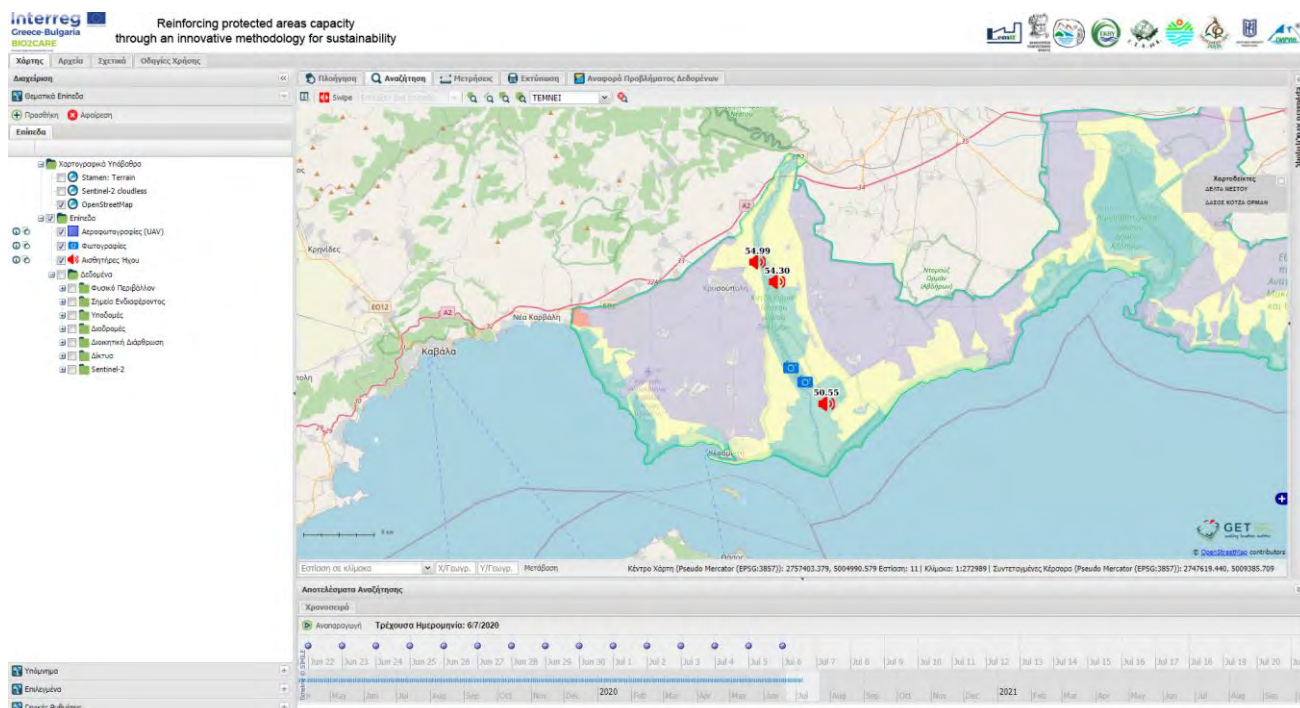




The message of the Cairngorms National Park, addressed to its visitors: “It doesn’t matter how old you are, how fit you are or where you come from, the Park is for everyone to access and enjoy”, is indicative of its policy committed to facilitate and ensure the safe movement of visitors, regardless of their age, ability or background, as well as to provide opportunities for everyone to exercise and play sports (if they wish), to get to know the Park, its diverse and rich nature and culture. For more information, please see [HERE](#).

## DUTH/LEMIE (LB) delivery of WP 3 and WP 4 tools and software

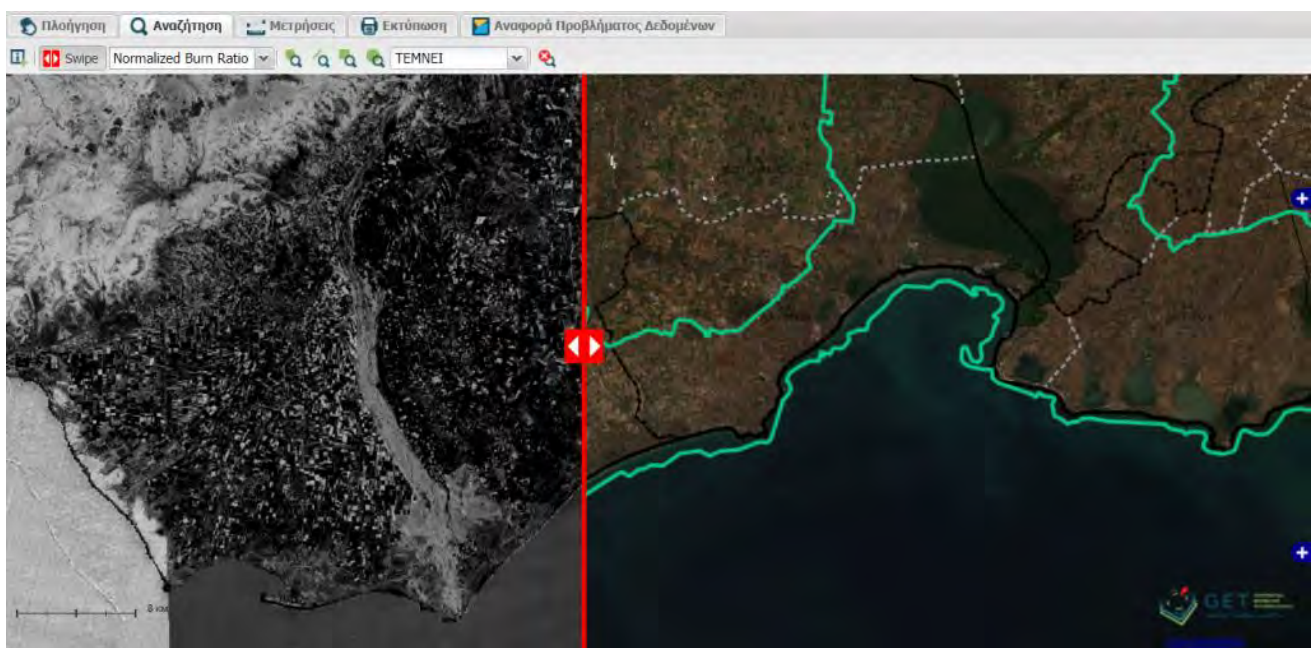
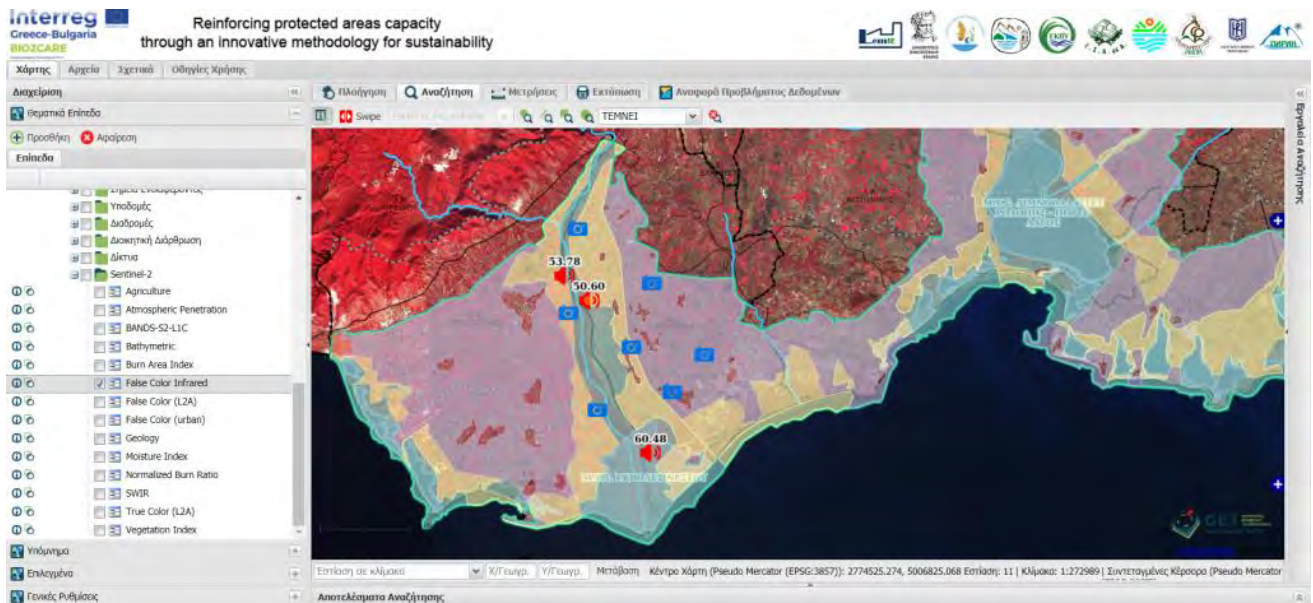
During last year, one of the most important tasks for DUTH/LEMIE (LB), was the finalization of Work Package 3 and Work Package 4, as all related Deliverables within those WPs. DUTH/LEMIE, has contributed a lot on developing BIO2CARE ICT tools, by planning, procuring and delivering the “**BIO2CARE Monitoring/Decision Making software**”, which is an online cartographic application that integrates all available data for the area of interest, being collected by a wide range of various type of sensors. Based on the level of authorization, the user has the possibility to select and view data from trail cameras and sound sensors/sonars installed in the area of interest.



A screenshot from BIO2CARE Monitoring/Decision Making software

Credits: DUTH/LEMIE (LB)

The application also integrates Sentinel-2 satellite multispectral data from the Copernicus program. The application has the ability to select data for a specific observation day as well as to calculate indexes such as NDVI vegetation index, NDWI humidity index and the Burn Area Index. This enables the overtime monitoring of the natural environment and the identification of changes.



**Access to Sentinel 2 images for overtime monitoring of land use and land use change**

*Credits: DUTH/LEMIE (LB)*

For more information, please see [HERE](#) and [HERE](#). You can access the application [HERE](#).



Regarding WP3, LEMIE has effectively, delivered a set of two (2) e-tools/software. Specifically, the **“Bio2Care Calc Tool”**, is an online application that provides the opportunity to the user to calculate the Carrying Capacity, the Ecological Footprint, the Biocapacity and the Carbon Footprint of a protected area. The application has a simple and friendly work interface and integrates all the complicated calculations of the methodology included in the Delivered 3.2.



The development of the application contributes to the reduction of the complexity and the expertise needed for the implementation of the aforementioned methodology. For more information, please see [HERE](#). You can access the application [HERE](#).

The second tool, the **“Bio2care Symbiosis Tool”** is an online cartographic/mapping application that allows users to search for potential symbiotic activities, using as data the inputs and outputs of their own production activity, but also the production activities of other users.



The application has a simple and friendly work interface and it was based upon the case study developed in the Deliverable 3.4.



The development of the application contributes to the implementation of circular economy/industrial symbiosis principles at local scale.

For more information, please see [HERE](#). You can access the application [HERE](#).

Regarding WP4, LEMIE has delivered a “**High-tech monitoring system in the areas of interest**” (D.4.1), focusing on monitoring fauna/flora and detecting illegal activities on study areas. This system collects data from sensors like cameras and Ultrasound detectors, from sound detectors and from drones.

For the monitoring of fauna in Nestos Delta Natura 2000 site two different monitoring systems were purchased. A set of five (5) trail cameras and an ultrasound recording unit have been selected for monitoring of mammals. For the monitoring of illegal activities three (3) sets of high-tech monitoring systems, with the use of sound level meters, have been purchased and settled in the field. Each set is consisted by one (1) sound level meter, one (1) logger, two (2) solar panels connected to two (2) rechargeable batteries.

Finally, a UAV model (fixed wing, ebeeX) and satellites’ data will be used for this task.



For more information, please see [HERE](#).

## RIEW – Blagoevgrad with improved managerial capacities as a result of BIO2CARE activities

The Regional Inspectorate of Environment and Waters – Blagoevgrad (PB6 of BIO2CARE Project) acquired specialized monitoring equipment as one of project activities. That equipment has been put to use immediately, helping the collection of various data, among which the locating of a centuries-old tree for which RIEW – Blagoevgrad carried out the administratively set procedure for designation as a protected phenomenon. In the meantime, as a result of the monitoring activities, data is being collected and analysed about any illegal types of use of natural resources and other illegal activities such as poaching, illegal fishing, illegal tree felling, illegal trade with wild flora and fauna species, etc. This is related to the seasonal resources use, the impact

of motor vehicles and/or other activities of seasonal, temporary or conflict character, plus any alterations in the factors and components of the environment caused by natural disasters.



**New equipment for RIEW – Blagoevgrad**

### Bulgarian partners organize first workshop for presenting project results

Rila National Park Directorate, in cooperation with other Bulgarian BIO2CARE partners, organized a workshop on biodiversity preservation, circular economy and symbiotic activities in four modules. These were targeted at pupils from the Language and Maths High Schools in Blagoevgrad, as well as students from the South-west University of Neofit Rilski. The sessions were held in the period February 25 – March 05 and three of them were hosted in the newly opened Visitor Center of Rila NPD while the fourth was taken out to the adjacent areas of the National Park in South Rila Mountains. The participants were introduced to some of the BIO2CARE project results through presentations and interactive activities.



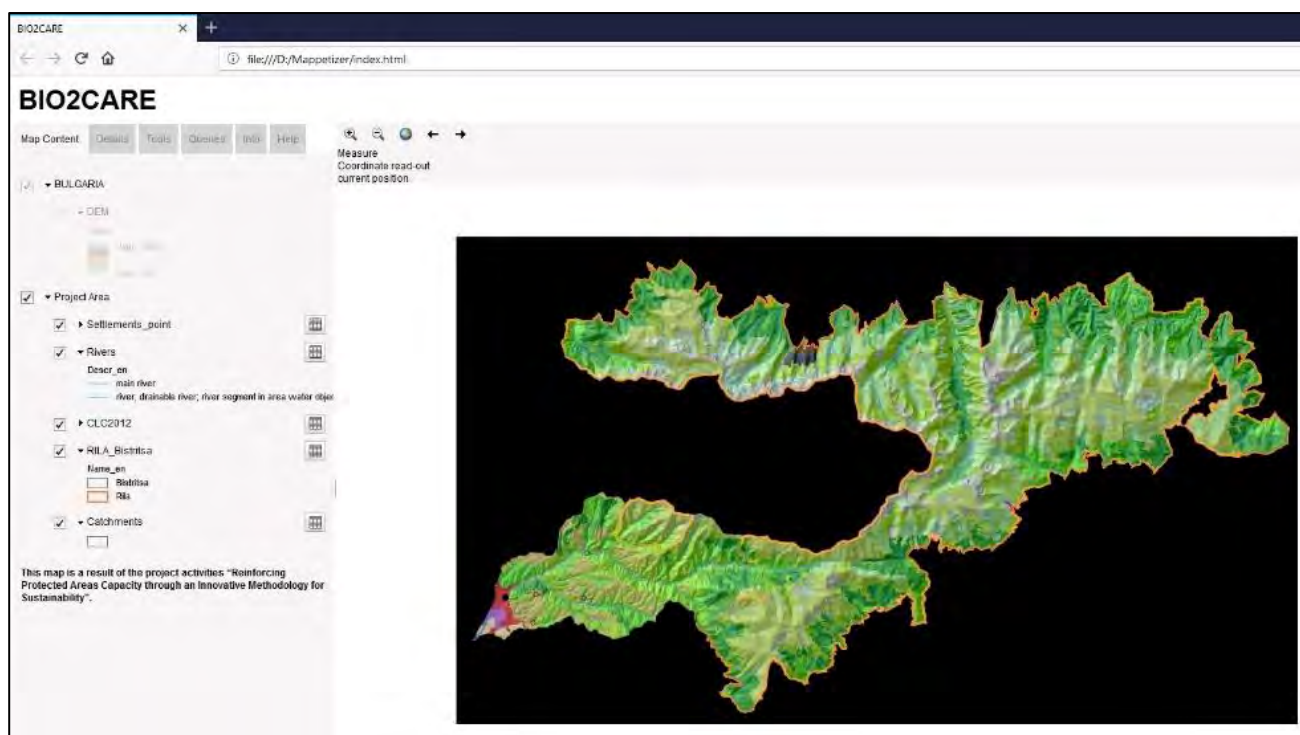




**Bulgarian partners organize first workshop for presenting project results addressing pupils and students**

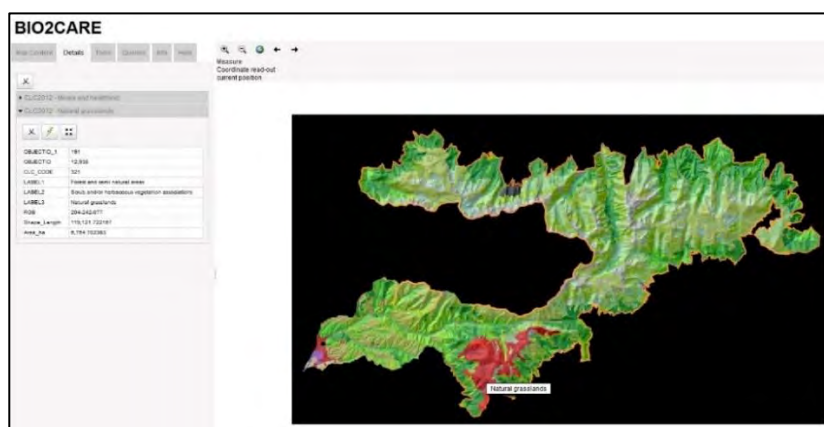
## Interactive map of BIO2CARE Project territory in Bulgaria available from the SWU of Neofit Rilski

During the second half of 2019, the South-West University of Neofit Rilski (Partner 8), developed an interactive map of parts of Rila National Park that fall within the project scope, and the catchment area of Blagoevgradska Bistritsa River. The map reflects data acquired under the project, using the equipment bought with the help of the project. It is a useful web tool that can be integrated in the project web site in order to visualize the estimated carrying capacity results as well as the different types of canopy in the area of interest.

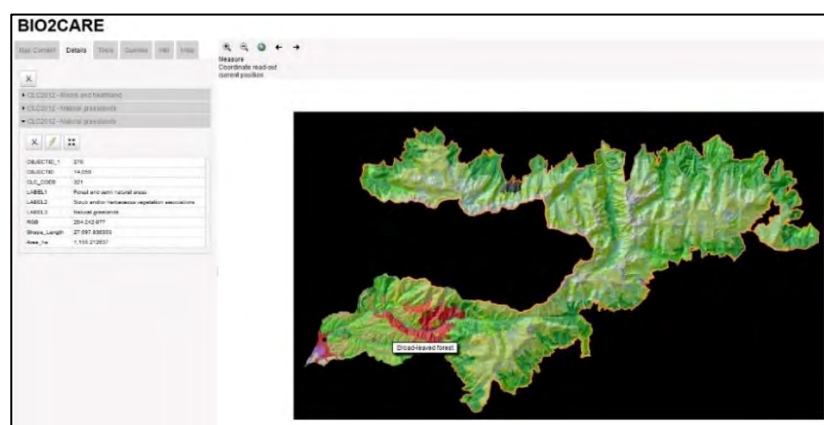


**Project study area in Bulgaria**

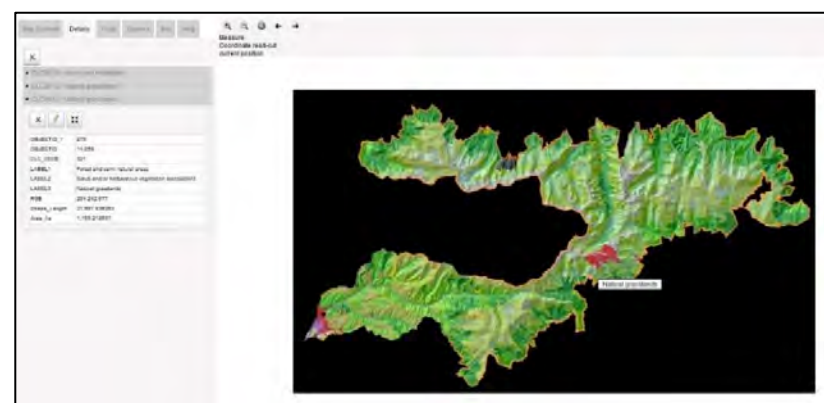




**Various land cover types in the project area**



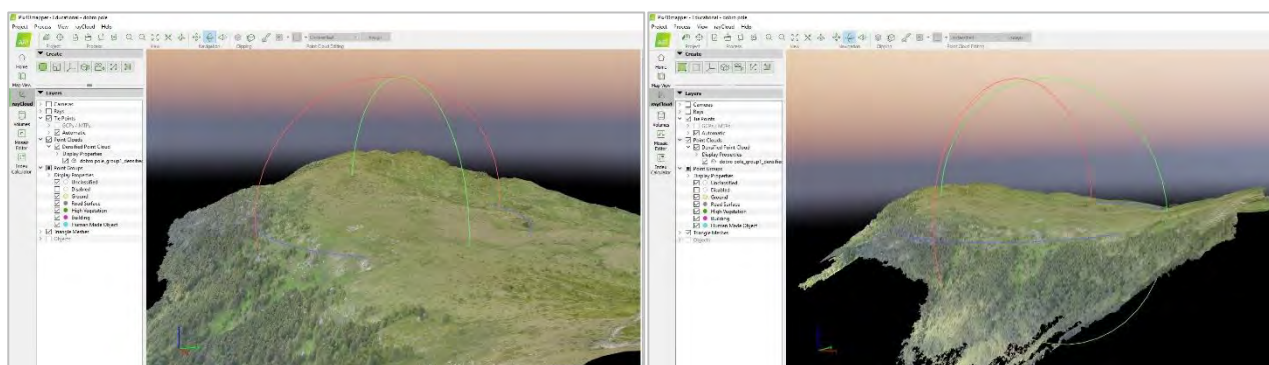
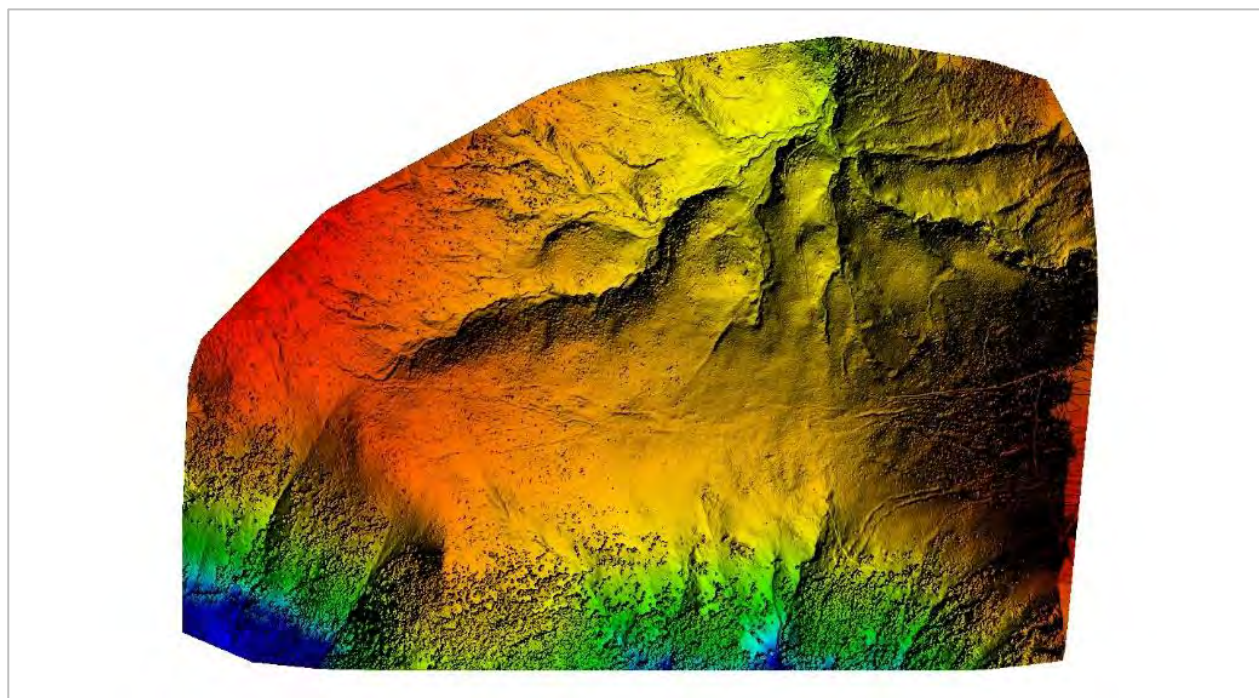
**Broad leaf forest in the area of interest**



**Natural grass lands in the area of interest**

## SWU Neofit Rilski continues the piling of monitoring data

During the last 6 months the South-West University Neofit Rilski continued the activities associated with the observation of flora and fauna in the Bulgarian parts of the project area. Monitoring data is being acquired with the help of equipment bought within the project and is processed in the specialized scientific project 'laboratory' at the Nature and Maths Faculty. Further analysis of this data will allow the detecting and monitoring of changes in the status of flora and fauna on the territory, providing reliable basis for managerial decision-making.



**SWU Neofit Rilski: Use of new equipment for monitoring flora and fauna in project study area**

## Activities of BIO2CARE project beneficiaries

### Scientific papers prepared from LEMIE laboratory (DUTH)

During last year, scientific staff of LEMIE laboratory (DUTH), has issued three (3) articles on various scientific magazines, presenting BIO2CARE results. participated in external events promoting the activities of BIO2CARE project, and trying to disseminate results of the studies.

- Aktsoglou D. and Gaidajis G., "Environmental Sustainability Assessment of Spatial Entities with Anthropogenic Activities-Evaluation of Existing Methods", Sustainability 12, 2680, 2020.
- Aktsoglou D. and Gaidajis G., "A Case Study on Environmental Sustainability Assessment of Spatial Entities with Anthropogenic Activities: The National Park of Eastern Macedonia and Thrace, Greece", Sustainability 12, 4486, 2020.

## Trainings for the employees of the Rila National Park Directorate

On 12<sup>th</sup> of June 2020, Rila National Park Directorate has concluded two administrative contracts for the provision of grants with the Managing Authority of the Operational Program "Good Governance" for training of its employees. The approved projects are "Competent and motivated employees of the Rila National Park Directorate" and "Improvement of the knowledge and skills of the employees of Rila National Park under priority axis №2 "Effective and professional management in partnership with civil society and business", through selection of project proposals entitled "Specialized trainings for the territorial administration". The implementation period is 12 months.

For more information, please see [HERE](#).

## Balkan Mediterranean Wetlands Living Lab

The Greek Biotope Wetland Centre (EKBY, by its Greek initials) recently organized a Webinar entitled "Balkan Mediterranean Wetlands Living Lab" with the aim to present the results of the project "Improving the conservation effectiveness of wetlands – WetMainAreas" to representatives of ministries and other competent authorities, to explore possibilities for further use of these results in the context of their competences, as well as in the context of transnational cooperation. The WetMainAreas project, in line with the Specific objective 2.1 of the INTERREG Balkan-Mediterranean 2014-2020 Transnational Cooperation Programme, aims to improve ecological connectivity and transnational ecosystems' integration. During the project, a coordinated inventory and mapping of the high-resolution wetland ecosystems (0.5 acres) was carried out and their role in the connectivity of the protected areas was assessed. More information about the project and the webinar at the link:

<https://wetmainareas.com/2020/05/12/wetmainareas-living-lab-webinar/>.

## PTF successfully finalizing a project for protected areas in Bulgaria

At the end of 2019, the Pirin Tourism Forum finalized its project entitled Tour Guides for Protected Territories in Bulgaria. The project ran for almost two years and was implemented in partnership with two German organizations who secured the funding from the German Federal Environmental Foundation, DBU. Employees of five pilot protected areas in Bulgaria were selected and trained to operate as nature guides in their parks. Their first themed tours are promoted via the site [www.nature-experiencebulgaria.com](http://www.nature-experiencebulgaria.com) and printed materials including a Travel Guidebook.





**Pirin Tourism Forum: Tour Guides for Protected Territories in Bulgaria**

*Credits: Pirin Tourism Forum*

Follow us on our social media and enjoy BIO2CARE project protected areas beauties, like a video from [The seven Rila lakes and Rila monastery](#), the [Nestos Straits](#), as also hundreds of amazing photos.

## Contact Us

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For more information please visit our webpage:

[www.bio2care.eu/en](http://www.bio2care.eu/en)

Also, you can regularly visit our social media

[www.facebook.com/Bio2care-2287116031559364/](https://www.facebook.com/Bio2care-2287116031559364/)

[www.instagram.com/project\\_bio2care/](https://www.instagram.com/project_bio2care/)

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The Newsletter of the BIO2CARE project has been transcribed in multiple accessible formats by the National Confederation of Disabled People, Greece (Project Beneficiary PB5).



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