

# #PROUDTOSHARE

BEST PRACTICES  
IN FRENCH  
BIOSPHERE  
RESERVES

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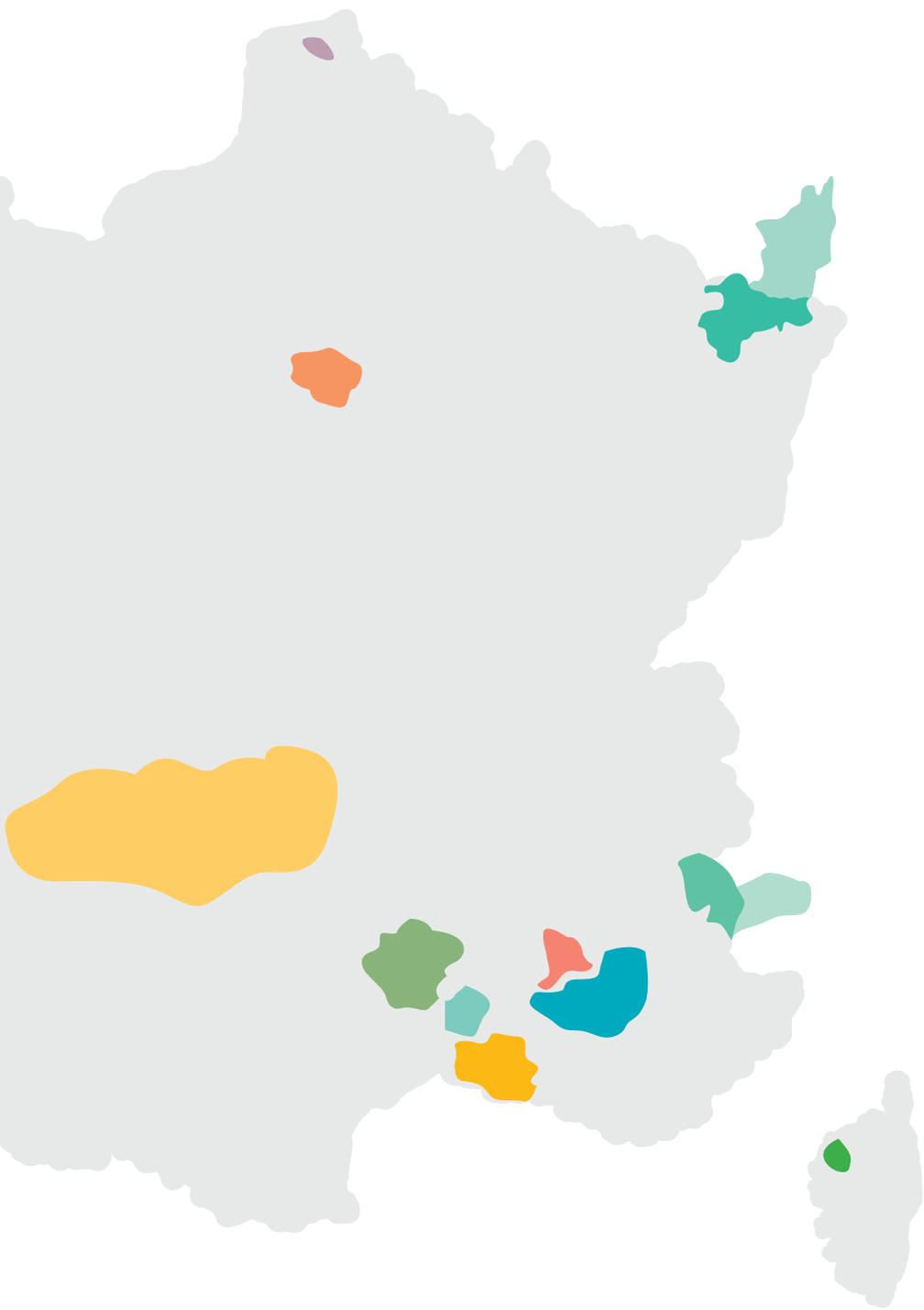
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- Luberon-Lure Biosphere Reserve
- Mont Ventoux Biosphere Reserve
- Mont Viso Biosphere Reserve
- Vallée du Fango Biosphere Reserve
- Commune de Fakarava Biosphere Reserve

# BIOSPHERE RESERVES MAP



# INTRODUCTION

FRANCE'S BIOSPHERE RESERVES ARE PROUD TO SHARE WITH YOU SOME FLAGSHIP PROJECTS BEING UNDERTAKEN ON THEIR SITES. THESE EXAMPLES ALIGN PERFECTLY WITH THE IDEALS OF THE SUSTAINABLE DEVELOPMENT GOALS ADOPTED BY THE UNITED NATIONS AND OFFER CONCRETE ACTIONS TO ACHIEVE THEM.

Since its launch in 1971, UNESCO's scientific programme Man and the Biosphere (MAB) has held a positive outlook, seeing a shared future where women and men live in harmony with Nature. Twenty years before the 1992 Rio Earth Summit, it already contained the seeds of a sustainable development that was diversity-friendly. In Seville 1995, the programme's member countries developed and negotiated a common strategy that was later reviewed and strengthened in Paris 2015. This strategy is a happy medium between social and natural dynamics and is applicable in a wide range of political and economic contexts. Its action plans are implemented within the framework of international negotiations. The most recent action plan – adopted in Lima for 2016-2025 – is based on the 2030 Agenda and the Sustainable Development Goals adopted

by the United Nations General Assembly. Both strategy and action plan encourage fruitful discussions with all local stakeholders – scientists, manufacturers, politicians, NGOs and citizens alike. They convey a message of peace that accords with UNESCO's values. The MAB programme is carried out through a network of specific sites: the biosphere reserves. As of 2017, there are 669 of these reserves in 120 countries. Biosphere reserves trial any potential pathways to sustainable development that encourage conservation of a dynamic, ever-changing biodiversity and at the same time the development of responsible human activities and participatory management and governance approaches with ties to research and education. At MAB, we believe that cooperation, innovation, interaction and an interdisciplinary approach are essential

if we are to build a new future together – within our own reserves and in collaboration with neighbouring reserves – in a shared, international perspective. Involving civil society, including both the local and business communities, is the key to embracing and sharing MAB values.

As of 2017, the 14 French biosphere reserves cover nearly 10 % of metropolitan France; they are also present overseas in Polynesia and Guadeloupe and across borders with Germany and Italy. The national MAB France network is a platform for dialogue, inspiration and innovation between reserves, regularly co-developing new projects (e.g. Biosphere Reserve Trophies, the eco-player network, etc.) and teaming up with the regional and international MAB networks (EuroMAB). One of MAB's strengths lies in its involvement at every level.

In France, the MAB programme is implemented in its biosphere reserves within the framework of national regulations. These draw on existing schemes relating to biodiversity conservation, ecosystem conservation and sustainable development in particular areas (e.g. national parks, regional natural parks, public-private entities, etc.). Collaborating with the managers of these areas is essential to achieving their objectives. While always remaining consistent with operations in the areas in question, the planning and designation of a “biosphere reserve” inject a dose of inspiration and innovation in keeping with

UNESCO and MAB values. It encourages designated sites to strive for excellence and set an example to be followed, with long-term action at all levels and across all sectors.

There are so many examples that show how living or working in a biosphere reserve can be a source of pride. Our stories of conservation, sustainable development, research, education and partnership have the potential to inspire beyond our borders and communities. What with climate change, worrying changes to biodiversity and humanity's ever increasing impact on nature, the confines of our biosphere reserves are becoming more than transition zones. They are now places of communication and exchange – places to share solutions and expand our areas of influence for the benefit of current and future generations, as well as our planet.



**Didier Babin**

President of MAB France  
President of the International  
Coordination Board for  
UNESCO's MAB programme



**Anne-Caroline Prévot**

Vice president of MAB France

**TO BREATHE LIFE INTO THEIR PROJECTS, OUR BIOSPHERE RESERVES CAN RELY ON THE TECHNICAL AND FINANCIAL SUPPORT OF THE FRENCH AGENCY FOR BIODIVERSITY, THROUGH ITS NETWORK OF PUBLIC INSTITUTIONS.**

**F**inally! On 1 January 2017, the French Agency for Biodiversity was born. It is ready to put its broad spectrum of areas of expertise to work providing support to public policies implemented by the Ministry of the Environment, including knowledge, research, technical support, financial support, management of protected areas and monitoring, etc. But the challenges of biodiversity loss call for society's involvement too. The agency will thus act as a facilitator, an energy catalyst, a collaborative agency and the core of our networks.

To achieve this, we will be relying on our technical expertise, but I also make a utopian claim, of contributing to the emergence of a different model of society. Biodiversity is the foundation on which we have always built our development and well-being, a foundation we are currently jeopardising without measuring the consequences for our future if we are not careful. There is clearly still time to act – with strength and determination – by changing habits, processes, organisational methods, etc.

The agency will cultivate this utopia. But isn't it already underway in many places, especially in biosphere reserves? Once I heard Robert Barbault quote Paul Valéry, glad that 'the time of the finite world'

had begun\*, because for him it meant the time for sharing and solidarity was here. A fine thought!

\* As Robert Barbault was alluding, Paul Valéry was not talking about the finiteness of biospheres in an ecological sense, but rather the fact that people now travel all over the world. Robert found however, quite rightly, that the phrase applied equally well to the finiteness of our planet.



**Christophe Aubel**

Director General

French Agency for Biodiversity

# THE SUSTAINABLE DEVELOPMENT GOALS







**THE MAB FRANCE  
NETWORK,  
SIGNIFICANT  
SUPPORT FOR THE  
MANAGEMENT  
OF BIOSPHERE  
RESERVES**



# MAB MASTER'S DEGREE

## AT THE UNIVERSITY OF TOULOUSE

**B**iosphere reserves are great places for learning sustainable development. It is for this reason that Paul Sabatier University in Toulouse has worked in partnership with MAB France to come up

with the MAB Master's degree. It trains future managers of protected areas and reserves, who can go on to work in biosphere reserves amongst others. Its biodiversity management students

are taught the importance of working together with local stakeholders. Over four months of coursework at the university, lecturers – the majority of whom are actively involved in MAB France – and professors teach students participatory methods that promote the involvement of local people in the management of protected areas and reserves. The course also provides them with tools to carry out regional assessments (inventories, cartography, surveys, etc.). All teaching is based on a concrete project offered by stakeholders of a biosphere reserve that will punctuate the four months spent at university.

Guided by the coordinator of the biosphere reserve and the programme's lecturers, students are encouraged to try to apply the knowledge learned in class, as a group (see inset and example of the 2013-2014 project in the Cévennes Biosphere Reserve).

On completion of these four months of coursework, each student undertakes their own six-month internship to put their skills into practice and acquire some initial professional experience.

The course is taught in French and is open to students in their fifth year of university or through continuing education.

## THE FIELD PROJECT UNDERTAKEN IN THE CÉVENNES BR

Students in the 2013-2014 academic year undertook their group project in the Cévennes Biosphere Reserve, where they needed to find a solution to mitigate usage conflicts in the Chassezac Gorges. Every summer, tourists flock to practise water sports in the river, especially canyoning. This activity is not compatible with the river's hydroelectric scheme, it worries naturalists and inconveniences residents when overcrowding occurs. The students' role was thus to conduct surveys with all the stakeholders involved to find potential solutions to allow the cohabitation of all river users. The main objective was to turn the negative aspects of tourist overcrowding into a positive point for the region's economic development.

## THE MAB PROGRAMME AT A GLANCE

- 1 In Toulouse (France)
- 2 One year course (from September to September)
- 3 Master's degree level
- 4 Maximum 16 students



THE NETWORK'S

# WORKING GROUPS

In the interests of true collaboration between biosphere reserves, coordinators meet regularly for seminars to discuss topical issues and work on

joint projects. This cooperation between biosphere reserves means pooling efforts to motivate partners and obtain funding, while providing an efficient network

for consultation that covers a range of situations. Several working groups have been established to address various aspects, such as forests or educational efforts in the biosphere reserves.

### FOCUS ON THE RESEARCH GROUP

A “research” group was created to encourage collaborative research efforts across the Biosphere Reserve network. It comprises reserve coordinators who want to tackle issues on their sites scientifically. Other managers and researchers also attend the seminars to offer insight and avenues for reflection on a given issue.



Seminars with managers and researchers are held when a topic emerges that is common to several sites or when a new approach is advocated by the texts that guide and regulate biosphere reserve activities.

An emerging field of study may also be the focus of presentations and discussions with coordinators so as to understand its relevance in managing biosphere reserves.

To give an example, since 2015, the Research Group has been working on the relevance of the concept of ecosystem services for biosphere reserves. The first avenues for reflection were proposed by MAB students of 2015-2016 as part of their fieldwork (*see page 14 to find out more about this course*).

As a group, the students looked into using the concept of ecosystem services to manage and assess biosphere reserves.



Using a common methodology in different contexts, they tested assessment tools that could be used by coordinators for management and communication purposes on their sites. The results were compared and discussed at a workshop attended by biosphere reserve coordinators, researchers from various fields of study, managers and students.

A wealth of feedback was received and led to discussions on where to go from here, including proposals for testing on other sites.

Since then, three biosphere reserves have volunteered to host interns and look into the matter further as applied to their local area.

This is how the Fontainebleau-Gâtinais Biosphere Reserve, Marais Audomarois Biosphere Reserve and Gorges du Gardon Biosphere Reserve became laboratories for three second-year masters students. Over six months, they surveyed residents, managers, farmers and tourists to document views about the concept held by those in contact with the ecosystems.

## WHY WORK IN A NETWORK?

- 1 Greater capacity for reflection and suggestion.
- 2 Easier to find funding.
- 3 More stimulating exchange of ideas between managers and researchers.
- 4 Variations of a single issue in different contexts.



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## BIOSPHERE RESERVE

# TROPHIÉS

**E**ach year, French biosphere reserves reward projects undertaken by local stakeholders. Awarding Biosphere Reserve Trophies helps showcase original initiatives in the field of sustainable development that reflect the values of the MAB programme. To take part, organisations and individuals need to present projects that reflect the challenges faced by biosphere reserves and fit into the five following themes:

- Maintaining diversity in and the quality of natural habitats
- Promoting local responsible agriculture
- Improving mobility for people
- Developing “green citizenship”
- Innovations in waste recycling and clean energy



## 2016 TROPHY WINNERS FOR THE GORGES DU GARDON RB: THE NOT-FOR-PROFIT CITRE

CITRE (Citoyens pour la Transition et la Reconversion Énergétique, or Citizens for Energy Transition and Conversion) is a not-for-profit organisation that aims to unite the reserve's stakeholders in a groundbreaking project: the installation of a solar power unit on the roof of a village school in the Uzège. To do this, a local participatory organisation is to be established to fund the renewable energy generator. Citizens, public authorities, companies and not-for-profit organisations alike will be able to contribute to the company's capital. The school chosen to host this project is already involved in a sustainable development initiative, and CITRE wants to extend these efforts through regular lessons on environmental topics. The organisation's objective is also to unite all the local stakeholders through this project by organising gatherings, training sessions and public meetings to encourage residents, elected representatives and entrepreneurs to become involved.

## OTHER WINNERS

OF BIOSPHERE RESERVE TROPHIES:

- 1 **Nature cachée d'Haut-Arques** in the Marais Audomarois Biosphere Reserve (see page 68)
- 2 **Association Radooo in the Iles et Mer d'Iroise** Biosphere Reserve (see page 64)

EACH YEAR,  
FRENCH BIOSPHERE  
RESERVES  
REWARD PROJECTS  
UNDERTAKEN  
BY LOCAL  
STAKEHOLDERS





WHEN STAKEHOLDERS  
GET INVOLVED IN

# SUSTAINABLE MANAGEMENT

**T**o accelerate and enhance their ecological transition, several French biosphere reserves are drawing on networks of eco-players and encouraging them in their continuous

improvement initiatives. Eco-players are motivated socio-economic stakeholders who are committed to addressing environmental and sustainable development issues.

These companies and not-for-profit organisations are recognised by the biosphere reserve and benefit from the positive image of both UNESCO and the biosphere reserve. To qualify, they sign a charter showing they share the values upheld by the reserve and make concrete, measurable commitments for their organisation in the areas of sustainable development and biodiversity conservation.

All types of stakeholders from a wide variety of sectors are entitled to be eco-players, which shows that sustainable development is everybody's business. Each stakeholder's milestones are discussed by a committee comprising local stakeholders (eco-players and potential future eco-players), representatives of economic sectors, as well as stakeholders in environmental, cultural, social, educational and scientific issues. All these people are chosen to represent the diversity of perspectives within the biosphere reserve and ensure the commitments made are valid and carried out.

Each signatory of the charter determines the objectives they want to set depending on their line of business and how much room there is for improvement. They then need to renew their network membership every two years by publicly presenting their efforts, the outcome and any difficulties encountered. Failure to honour commitments may lead to eco-players being excluded from the network. Enriched by their diversity and

shared values, eco-players collectively break down barriers between fields of activities and promote interaction throughout the region.

## KEY FACTORS OF SUCCESS

- 1 Creation of a network of stakeholders in the site who share the same values.
- 2 A multitude of illustrations showcasing the biosphere reserve.
- 3 A membership-based continuous improvement initiative.
- 4 A positive way of regulating the use of the "biosphere reserve" image.



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# THE EXAMPLE OF THE ECO-ACTORS CHARTER

OF THE MONT VENTOUX  
BIOSPHERE RESERVE



The Mont Ventoux Biosphere Reserve was the first to build a close relationship with its local stakeholders through a charter of commitment. By signing the charter, businesses affirm their commitment to the values of the MAB programme and become biosphere reserve members.

In this document, eco-players are given a number of pointers to help them move towards more sustainable practices and express their commitments.

The suggestions are organised into major themes, such as:

The suggestions are organised into major themes, such as:

### WATER

Conserving wetlands, developing aquatic habitats as sites of biological diversity, regulating water use, preserving water quality, etc.

### TRANSPORT

Raising awareness of eco-mobility.

### WASTE

Preserving air, land and landscape quality, reducing ecological footprints, reducing degradation factors for natural habitats, etc.

### ENERGY

Using local resources.

### HERITAGE

Leveraging and sharing skills and knowledge, maintaining traditions, raising awareness amongst various target groups by improving their knowledge of these sites and how to protect them, conserving and promoting biological diversity, etc.

### NETWORK

Supporting and promoting the biosphere reserve, contributing to and interacting with the network, capitalising on experiences, passing on knowledge to the network, etc.

Through dynamic outreach work, the network should allow eco-players to meet regularly to share their experience, difficulties and ambitions, and discuss common issues. The objective is to build ties to encourage them to work together.

### TO GET MORE DETAILS

about eco-players charters:  
<http://www.mab-france.org/>



© Syndicat Mixte des Gorges du Gardon

# INSPIRING EXAMPLE OF DIALOGUE

## FROM THE LATEST ADDITION TO THE NETWORK

THE MAB FRANCE COMMITTEE PROVIDES VALUABLE SUPPORT IN GUIDING FUTURE BIOSPHERE RESERVES THROUGH THE APPLICATION PROCESS. THE GORGES DU GARDON BIOSPHERE RESERVE BENEFITED FROM THIS GUIDANCE AND WORKED CLOSELY WITH THE COMMITTEE FROM THE PROJECT'S LAUNCH RIGHT UP TO ITS DESIGNATION AS A BIOSPHERE RESERVE BY UNESCO.

The Syndicat Mixte des Gorges du Gardon (SMGG) wanted to involve all the site's stakeholders as soon as possible in the plan to create the biosphere reserve. The objective was to encourage stakeholders to become involved in the implementation of the objectives and actions set out in the application. To achieve this, a framework for dialogue was carefully worked out so that everyone would be aware of their own role in the reserve.

The SMGG was assisted by researchers from the MAB France committee throughout this process. Initially, five information meetings were held, to which every household located in the proposed area for the future reserve received a letter of invitation. The purpose of these meetings, which were jointly run by the president of the SMGG and a member of the MAB France committee, was to present the biosphere reserve project to citizens and answer their questions. In total, 300 people attended these talks that encouraged open discussion.

Subsequently, twelve local residents volunteered to host "Tupperware meetings" in their homes, inspired by the home party sales technique. Each host received a dozen people (chosen from their circle of friends or family) to initiate discussion and hear citizens' views about their local area. These meetings, where people were freer to express themselves than in a large group, confirmed the analysis of the feasibility study.

They were also an opportunity to sit down with citizens and set out the major themes to be addressed in the future biosphere reserve's action plans.





approach, the boundaries initially proposed were completely revised and 14 new communes (in addition to the 12 already included within the perimeter) were incorporated into the project.

The SMGG has been a part of the MAB France network since the launch of the application process for the Gorges du Gardon Biosphere Reserve. It thus qualified for guidance from its counterparts in the other French BRs, including through site visits. MAB France also provided logistical and technical support, in particular during implementation of the workshop.

<sup>(1)</sup> SMGG = The administrative authority of the Gorges du Gardon Biosphere Reserve

To further discussion about issues of the future reserve, a “town hall meeting”-style day of dialogue was held. The 80 people in attendance were invited to propose actions to be taken over the next 10 years in the interests of sustainable development of the site. Two themes in particular (agriculture and urban planning) emerged during the day of dialogue. Each of these was the focus of an ARDI workshop (which stands for stakeholders - resources - dynamics - interactions in French) to allow anyone affected by these issues to share their views and suggest concrete actions.

A final workshop was then held for stakeholders already involved in the previous stages to discuss zoning of the future reserve. Using this participatory

## KEY FACTORS OF SUCCESS

- 1 Motivating local stakeholders from the very launch of the application process.
- 2 Support from the MAB France network, which offers its experience to candidate Biosphere Reserves.







# BIOSPHERE RESERVES IN ACTION

# MANAGING

THE REGION AT  
THE HEART OF  
CONSERVATION  
ACTIONS

MANA-  
-GING

MONT VENTOUX



## MONT VENTOUX

# GOES GREEN... AND BLUE!

THE MONT VENTOUX BIOSPHERE RESERVE HAS IDENTIFIED AND MAPPED ITS TRAME VERTE ET BLEUE TO HELP COMMUNES ACHIEVE SUSTAINABLE LAND-USE PLANNING THROUGH BETTER UNDERSTANDING OF HOW THE SITE FUNCTIONS ECOLOGICALLY.

To help communes fulfil their obligations towards balanced regional development using methods that are biodiversity-friendly, the Mont Ventoux Biosphere Reserve produced a kit called “Trame Verte et Bleue du Mont Ventoux” that was sent to them free of charge. Consequently, all communes now have a unique, detailed map of ecological networks, which means they can work together towards sustainable land-use planning. The main places frequented by fauna and the major routes they take were identified for a large number of species. Areas with remarkable ecological quality were mapped, like certain ancient forest patches, waterways protected from anthropic pressures and scree slopes towards the top of the massif. The intention is not to wrap these areas in cotton wool, but to be able to make informed land-use planning decisions, based on sound knowledge about their ecological functioning. Defining the Trame Verte et Bleue of the Mont Ventoux Biosphere Reserve was a major task, involving all stakeholders in the site working together. In addition to the information provided by scientists, working groups made up of representatives of hunters, farmers, environmental associations and government departments were formed to identify and approve the biodiversity areas.

## WHAT IS THE TRAME VERTE ET BLEUE?

The Trame Verte et Bleue is the French version of green and blue infrastructure, which is seen as a tool that helps determine ecological functions at several levels. It is more in-depth than the ad hoc approaches to protecting biodiversity used to date and takes into account species' changing spatial and temporal needs. In defining the Trame Verte et Bleue, two elements need to be identified: reservoirs of biodiversity, where species spend all or part of their life cycles, and ecological corridors, which connect the reservoirs and allow the movement of species. The list of these ecologically important areas is not exhaustive, but should be representative of the majority of species.



## ECOLOGICAL NETWORKS DEFINED IN CONSULTATION WITH LOCAL STAKEHOLDERS, **THE KEY TO SUSTAINABLE MANAGEMENT**

As agricultural activities are a significant part of the biosphere reserve, the Chamber of Agriculture was consulted to ensure interactions between agriculture and the conservation of biodiversity received particular attention in the TVB. Meetings with local farmers made it possible to review the current state of agricultural operations, seek their views on the TVB zoning and understand what kinds of tools they might need to put it into practice.

### **KEY FACTORS OF SUCCESS**

- 1** Making a “turnkey” kit available to communes, as well as advice on how best to use it.
- 2** Pooling financial and human resources to produce a unified tool on a large scale.
- 3** Consulting all relevant stakeholders in the site to incorporate the diverse range of activities and issues.



# A BREATH OF FRESH AIR

## FOR INMATES

TO ALLEVIATE THE DIFFICULT LIVING CONDITIONS FOR INMATES AT THE SHORT-STAY PRISON IN THE CITY OF NÎMES, THE GORGES DU GARDON BIOSPHERE RESERVE HAS ESTABLISHED A PARTNERSHIP WITH THE PRISON. THE RESERVE ORGANISES NATURAL HABITAT MAINTENANCE PROJECTS FOR INMATES, GIVING THEM THE OPPORTUNITY TO GET AWAY FROM THE PRISON ENVIRONMENT FOR A DAY.

**N**îmes Maison d'Arrêt is France's most overcrowded short-stay prison, which significantly affects prisoners' detention and rehabilitation conditions. To help alleviate these difficult living conditions, the Gorges du Gardon Biosphere Reserve offers inmates outreach activities aimed at protecting natural habitats. It gives them the chance to help clean up garrigue scrubland and riverbanks for a day. Prisoners pick up litter and clear undergrowth on these protected sites and in exchange receive a guided tour of the natural habitats. These days out give them a chance to escape the prison environment for a while and help the biosphere reserve's management authority maintain the protected areas for which it is responsible.

These activity days are held four to five times a year thanks to a written agreement between the Gorges du Gardon Biosphere Reserve and Nîmes Maison d'Arrêt. Each time, six prisoners who are nearing the end of their sentences are allowed out under the supervision of correctional officers and a specialist guide from the biosphere reserve.

In parallel, the Gorges du Gardon Biosphere Reserve runs an awareness campaign for mayors and encourages their communes to offer community service opportunities. These are alternatives to detention for those with lighter sentences and offer better prospects for rehabilitation.

## ESCAPING THE PRISON ENVIRONMENT FOR A DAY **AND** **PREPARING FOR** **REHABILITATION**

### KEY FACTORS OF SUCCESS

- 1 Outings with great community service value for inmates
- 2 Opportunity for the biosphere reserve to have necessary work done.
- 3 Raising awareness about environmental protection amongst those who do not have access to nature.



**BASSIN DE  
LA DORDOGNE**  
BIOSPHERE  
RESERVE

# GETTING BACK TO NATURE

IN PARTNERSHIP WITH EDF<sup>(1)</sup>, THE BASSIN DE LA DORDOGNE BIOSPHERE RESERVE HAS INITIATED SEVERAL ACTIONS TO IMPROVE THE OVERALL QUALITY OF NATURAL AQUATIC HABITATS AND RECLAIM DAMAGED HABITATS. IN PARTICULAR, RENATURATION WORK HAS BEEN CARRIED OUT IN A FORMER GRAVEL PIT TO RESTORE ITS BIODIVERSITY POTENTIAL AFTER HAVING SUFFERED THE EFFECTS OF MINING.

The Bassin de la Dordogne Biosphere Reserve is characterised by a major hydroelectric scheme on the Dordogne River and its tributaries. To reduce the impact of its numerous structures on aquatic habitats and water uses, a not-for-profit organisation was founded in 2013 by EDF and EPIDOR. Initiative Biosphère Dordogne (IBD, or Dordogne Biosphere Initiative) is active throughout the biosphere reserve, providing support for studies, ecological monitoring, research efforts and operations and acquisitions on the water. The action plan includes restoring oxbow lakes and associated ecosystems, reclaiming natural habitats to restore ecological continuity, removing barriers to fish migration and carrying out cultural and educational activities. Through this organisation, EDF has provided considerable support to the improvement in quality of aquatic habitats, as the company has pledged a financial contribution of 2.6 million euros over three years. In parallel, EPIDOR has lent its technical expertise and knowledge of the site in selecting which projects to prioritise and providing support to project owners.

### FEEDBACK: ECOLOGICAL RESTORATION OF THE FORMER GRAVEL PIT IN VEYRIGNAC

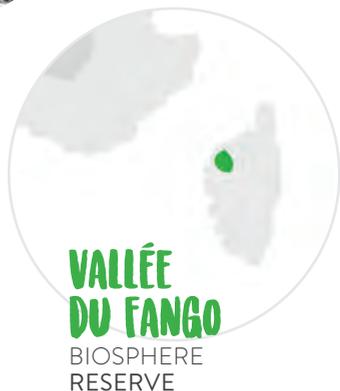
Work to rehabilitate a former gravel pit was undertaken, over 20 years after mining operations ceased. Renaturation of this 16-hectare alluvial area is one of the flagship projects of the IBD programme. The appraisal completed beforehand showed that the extraction of gravel

over several decades had caused long-term disruption to the river, in particular by deepening the riverbed. The natural habitats experienced degradation processes, in particular with vegetation closing in. After the machinery and equipment had been removed, the site's topography was completely redesigned so it could once again express its biological potential. This work included the creation of a two-hectare oxbow lake. To limit the amount of invasive species taking hold, the land was also replanted. The renaturation project was made possible through the acquisition of the former gravel pit in Veyrignac by the Communauté de Communes du Pays de Fénélon, with the help of IBD and the water agency.

- (1) EDF= Électricité de France, the number one producer and supplier of electricity in France  
(2) EPIDOR= Regional public institution of the Dordogne basin, the BR's administrative authority

## KEY FACTORS OF SUCCESS

- 1 Sustainability of a partnership enabling the implementation of actions to improve environmental quality.
- 2 Better integration of the hydroelectric scheme in the Dordogne Basin.



A CONTRACT TO

# BREATHE LIFE BACK INTO THE RIVER

TO BEST MANAGE WATER RESOURCES IN THE FANGO VALLEY CATCHMENT AREA, THE BIOSPHERE RESERVE HAS LAUNCHED A JOINT MANAGEMENT INITIATIVE BY DRAWING UP A RIVER CONTRACT. IT BRINGS TOGETHER USERS, GOVERNMENT DEPARTMENTS, NOT-FOR-PROFIT ORGANISATIONS AND FUNDERS TO DECIDE ON CONCRETE ACTIONS TO BE TAKEN IN ORDER TO CONSERVE WATER RESOURCES.

**M**anaging the water of the Fango is a key issue of the biosphere reserve. This great Mediterranean river has exceptional water quality and is home to unique biodiversity and several endemic species. However, during periods of low flow, it experiences a high volume of bathers and increased domestic water abstraction due to visitor numbers. Seeking sustainable measures to manage and protect water resources, the biosphere reserve needed to limit usage conflicts and reduce the various pressures on the Fango River. To this end, a river contract was drawn up, clarifying objectives with the stakeholders involved (i.e. representatives of government departments, public institutions, funders, not-for-profit organisations and users) and scheduling actions to be taken over five years. The biosphere reserve was a pioneer in implementing such an initiative in Corsica, and other initiatives have been undertaken since.

The actions set out in the river contract include anti-pollution measures (for domestic sewage), improvements in knowledge and protection of biodiversity, management of the risks associated with rises in water level, conservation of water resources and awareness campaigns for local stakeholders. A dedicated facilitator directly ensures these are implemented, while providing support to project owners. Water management has significantly improved, particularly in summer when pressures from human

activities and abstraction are greatest. The success has been so great that it is to be awarded “Rivière Sauvage” (wild river) certification. The river has thus become a pilot site in the search for balance between human activities and conserving biodiversity in Corsica. To continue to meet contract objectives, the priority actions aim to conserve water resources through more efficient practices and by finding alternatives to river abstraction to supply communes with water. A hydrobiological study will also be carried out.

## KEY FACTORS OF SUCCESS

- 1 Dialogue with funders and stakeholders in the site to address the water issue together, identify challenges and set objectives.
- 2 A renewable five-year action plan, in the interests of sustainably managing water resources.
- 3 A pioneering project whose results have inspired other initiatives.

**COMMUNE  
DE FAKAVARA**BIOSPHERE  
RESERVE

# TE PUKE ORA NO FAKARAVA\*

SINCE ITS DESIGNATION FOR CONSERVATION PURPOSES IN 1977, TAIARO ATOLL'S BIOSPHERE RESERVE HAS BEEN EXTENDED TO ENCOMPASS THE ENTIRE COMMUNE OF FAKARAVA AND IS NOW A SUSTAINABLE DEVELOPMENT SITE. RESIDENTS ARE FULLY INVOLVED IN THE MANAGEMENT OF THE RESERVE.

**W**hen it was first designated in 1977, Fakarava Biosphere Reserve only covered a single French Polynesian atoll: Taiaro. The atoll's lagoon is fully enclosed and only comes into contact with the sea when there are heavy swells. This characteristic leads to remarkable, totally unique biodiversity. Taiaro is however completely uninhabited.

Following the adoption of the Seville Strategy and the Statutory Framework in 1995, MAB France examined the possibilities of expanding the biosphere reserve together with French Polynesian authorities and the help of scientists. It needed to be brought into line with new criteria in order to remain part of the global network. The Biosphere Reserve was thus extended in 2006 to encompass the entire commune of Fakarava. Its seven atolls (including Taiaro) now comprise the Biosphere Reserve. Many efforts have been made to involve local people in the sustainable management of natural resources and to ensure the expansion of the Biosphere Reserve was approved by all the stakeholders. The management committee is chaired by the mayor of the commune of Fakarava.

Thanks to this new boundary definition, the diversity of Polynesian atolls is now accounted for in the biosphere reserve, with atolls of different surface areas, shapes and number of passes. Some are uninhabited or inhabited only transiently. Fakarava Atoll has become

the most popular with tourists, due in part to its reputation stemming from the designation by UNESCO. In 2016, a further modification of the BR was decided on after a long consultation process with the 1,581 residents of the commune. The new surface area of the Biosphere Reserve is 19,867.35 km<sup>2</sup> and the vast ocean section located between the atolls, classified as a buffer zone, now has a special status under Polynesian law.

\*Commune de Fakarava Biosphere Reserve in Tahitian (Puke Ora means to preserve life)

## KEY FACTORS OF SUCCESS

- 1 Involvement of all residents in the consultation process.
- 2 Successful collaboration between French Polynesian authorities and MAB France to implement this ambitious project.

# TRIALLING

TOWARDS  
SUSTAINABLE  
DEVELOPMENT

TRIALLING



© Laurent Bélier / Parc national des Cévennes



# WOOL IS SPINNING BACK

## INTO FASHION

CÉVENNES NATIONAL PARK, THE BIOSPHERE RESERVE'S MANAGEMENT AUTHORITY, PROVIDES SUPPORT TO SHEEP FARMERS, ARTISANS AND THE REGION'S ECONOMIC STAKEHOLDERS AS THEY CONSIDER THEIR OPTIONS AND FOR INITIATIVES RELATING TO WOOL. THIS COULD ALLOW FARMERS TO DIVERSIFY THEIR PRODUCTION AND THUS FREE THEM FROM THEIR RELIANCE ON EUROPEAN SUBSIDIES. IT COULD ALSO CREATE A REGIONAL DYNAMIC FOCUSING ON THE INDUSTRY'S VARIOUS ACTIVITIES.



© Patrick Mayet

In the Cévennes, discussion to find ways to enhance the value of the wool produced by sheep farmers is ongoing. This animal fibre is a raw material for a number of sectors such as clothing and furniture, and is also a very good insulator that could be used in housing. Developing wool in the region to help it increase its added value is an attractive opportunity for local economic development. Sheep shearing currently costs farmers more than any profits from selling fleeces. Leveraging this resource could generate supplementary income for farmers, thus helping them live off their wool production and become less reliant on European subsidies.

A working group has been established to come up with proposals and find opportunities for wool produced in

the Cévennes. It is made up of fifteen or so farmers, artisans, facilitators and project initiators. Several avenues have been explored for potential added value: sale of fleeces, sale of semi-processed products and sale of finished products. Industry expectations and needs have also been examined. For example, it appears there is local demand for wool, provided it has been sorted and graded. Following discussions, a number of initiatives have started to be launched. A day of workshops was organised and run by the biosphere reserve as an introduction to wool sorting.

## PROCESSING WOOL LOCALLY TO GIVE IT ADDED VALUE



with economic development, they also help recreate the social bond that had been lost between the various stakeholders in the wool industry. To assist them in their endeavours, farmers can turn to the biosphere reserve, through the national park, which provides support for actions aimed at redeveloping the industry, wool-related communications and in the search for innovations to leverage this resource. A resource centre (for organising training sessions, access to information, etc.) is also to be established.

## KEY FACTORS OF SUCCESS

- 1 Re-establishing ties between local stakeholders to redevelop the industry.
- 2 Dialogue with industry stakeholders to understand the needs of professionals and expectations of consumers.
- 3 Technical support for projects.

Other proposals for actions have also been put forward, like pooling equipment, establishing shared shearing and sorting facilities, holding knitting sessions and creating a community shop. The initiatives chosen by farmers and stakeholders wanting to be involved in their projects are not only synonymous



# SEEING THE FOREST

## THROUGH THE TREES

A FOREST CHARTER HAS BEEN DEVELOPED IN THE LUBERON-LURE BIOSPHERE RESERVE, UNITING PRIVATE OWNERS THROUGH SUSTAINABLE MANAGEMENT OF THE FOREST. THIS HAS LED TO THE FOUNDATION OF FOREST MANAGEMENT SYNDICATES, WHOSE MEMBERS CAN NOW MANAGE THE FOREST JOINTLY AND COMPREHENSIVELY.

In the Luberon-Lure Biosphere Reserve, most of the forest is privately owned. Land fragmentation and a large number of small property owners is not conducive to joint sustainable forest management. The Luberon-Lure forest charter was designed to address this problem. It is there to support forest owners, who do not always have the time and knowledge needed to run their land, and encourage them to establish a long-term management plan for forested areas. Landholders voluntarily join forces in free forest management syndicates and can decide on projects they want to implement throughout their plots as a group. With technical and financial support, a management plan is then drafted. The plan lasts at least 10 years and includes a section describing the site in question and the management measures chosen by the syndicate.

## THE CHARTER PROVIDES AN OPPORTUNITY FOR DIALOGUE BETWEEN ALL STAKEHOLDERS INVOLVED IN FOREST PLANNING

It needs to be approved by each landholder. When the management plan is being drafted, each syndicate can address a vast number of issues and focus on a particular objective, depending on how that syndicate's members feel. Any role played by forests can thus feature in the management plans, whether it involves enhancing local woods, protecting the environment or providing access to the general public.

The Luberon-Lure forest charter provides a framework for establishing dialogue between all stakeholders involved in forest planning. It includes a diagnostic tool that helps determine issues to be addressed in managing the site and target places of interest to achieve the set objectives. The information sheets give private forest owners keys to help them understand the issues involved in forest management and choose the direction they would like to take with their own management plan.



## KEY FACTORS OF SUCCESS

- 1 Assessment of the site in question to determine objectives and develop a group dynamic.
- 2 Education of private landholders to get them interested in forest management.
- 3 Joint management that reflects the multiple roles of forested areas.

In addition, action sheets offer and explain practical measures that can be implemented by all managers to meet the site's objectives.

Thanks to the forest charter and site development initiatives, more than 200 private landholders have chosen to join forces in forest management syndicates in the Luberon-Lure Biosphere Reserve.

This means the measures initiated in public forests can be applied to a larger area.

The syndicates also give local stakeholders the authority to make decisions, while promoting discussion and the creation of social cohesion.





**CAMARGUE  
(DELTA DU RHÔNE)**

BIOSPHERE  
RESERVE

# FARMERS ASPIRATIONS BLOSSOM

EACH YEAR, THE COMPETITION “PRAIRIES FLEURIES\*” AWARDS FARMERS WHO WORK TOWARDS MAINTAINING THE AGRO-ECOLOGICAL BALANCE ON THEIR HAY AND GRAZING MEADOWS. IN THE CAMARGUE, THE BIOSPHERE RESERVE’S TWO MANAGEMENT AUTHORITIES JOINTLY ORGANISE THIS COMPETITION ACROSS THE RHÔNE DELTA.



remarkable species diversity. It thus contributes to the conservation of biodiversity by providing a haven for local wildlife.

This competition is a great opportunity to affirm and promote the Camargue's agricultural identity. Maintaining meadows, especially those featuring short grass, is a key issue in the area, following the loss of a large number of them in the 20th century to make way for rice cultivation. Unique biodiversity is totally dependent on these habitats, which need to be protected.

Holding the competition in the Camargue Biosphere Reserve is also an opportunity for its two management authorities to jointly organise this practical initiative for its ecological transition. The Biosphere Reserve encompasses two regions with different activities and habitats, and it is not always easy to address issues globally.

Competing plots of land are inspected by a multidisciplinary jury made up of experts in botany and agronomy, wildlife specialists, an apiculturist and representatives from the Chamber of Agriculture. The jury assesses the meadows' quality, but also gives farmers advice on how to improve the agro-ecological balance on their land. The jury bases their evaluation on a scorecard that details the method and inspection criteria.

The winner of the Camargue Prairies Fleuries competition is chosen to go on to compete at the national level.

**T**he Camargue Biosphere Reserve is one of the organisations that run this competition at a local level. Farmers who have permanent meadows on their land can apply and submit them to compete for an excellence award. The award recognises the meadow that demonstrates the best agro-ecological balance, thereby promoting farmers' expertise and practices. To be eligible, the land in question must not be sown or ploughed, but rather a hay meadow or one grazed by cattle, which possesses

© DR



© DR

The various categories of hay and grazing meadows are assessed by another jury made up of specialists and winners from previous years. The best plots of land receive an agro-ecological excellence award at the International Agriculture Show in Paris, but the most important thing for farmers is the pride they feel having their skills and knowledge recognised by experts.

\* “literally : meadows in bloom”

## KEY FACTORS OF SUCCESS

- 1 Promoting the expertise of farmers, whose work is essential to preserving biodiversity in certain habitats.
- 2 Positive dynamic created by the competition that encourages farmers to continually improve their practices.
- 3 Joint management of the project by the BR’s two management authorities.



**MONT VISO**  
TRANSBOUNDARY  
BIOSPHERE  
RESERVE

CITIZENS DRIVING

# THE ENERGY TRANSITION

TO URGE MONT VISO BIOSPHERE RESERVE TOWARDS ENERGY INDEPENDENCE, ENER'GUIL IS GIVING CITIZENS THE OPPORTUNITY TO CONTRIBUTE TO THE INSTALLATION OF SOLAR PANELS. THANKS TO ITS MANY SHAREHOLDERS, AN INITIAL PROJECT HAS BEEN ESTABLISHED TO PRODUCE RENEWABLE ENERGY LOCALLY.

**E**ner'guil is a collective interest cooperative society (SCIC) financed by subscriptions from citizens, businesses and public authorities of the Mont Viso Biosphere Reserve. The capital raised in this way – supplemented by regional subsidies and a bank loan – is invested in solar panels. These are installed on the roofs of public and private buildings, after obtaining owners' approval and in exchange for a nominal amount of rent. The electricity produced by these solar panels is sold to EDF at a 20-year fixed price. The proceeds from the sale of electricity are used to repay the loans, and any profits are set aside for financing new projects.

Citizens can become involved in this initiative in two ways. The first is by buying shares in the company. Each share is worth 50 euros, and shareholders can buy as many of these as they want. To raise enough capital to launch a project, 200 shares are needed. Anyone who cannot or does not want to make a financial commitment can make the roof of their house available to Ener'guil. If the roof meets certain criteria regarding slope, orientation, layout and exposure to the sun, it can accommodate 50 m<sup>2</sup> of solar panels for the cooperative society. The biosphere reserve provided support to the project through a project manager, who placed their skills and time at Ener'guil's disposal.

Thanks to the participation of around 200 members and the support of the biosphere reserve, ten roofs have already

been equipped with solar panels by Ener'guil as part of its initial project. The renewable energy produced makes it possible to meet the electricity needs of 40 households (excluding hot water and heating).

The number of initiatives aiming to improve energy independence in biosphere reserves is growing, and a similar initiative has been launched in the Gorges du Gardon Biosphere Reserve (see page 26).

## KEY FACTORS OF SUCCESS

- 1 A citizens' initiative in which everyone can become involved.
- 2 Logistic support from the biosphere reserve.



© Sébastien Brégon / Agences des aires marines protégées



# AN AQUACULTURE

# FARM

WHERE  
NOTHING  
GOES TO WASTE

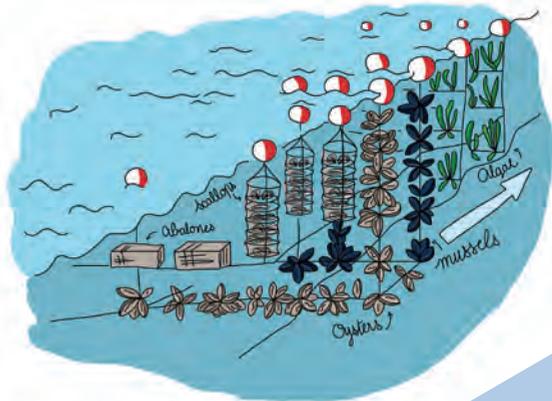
A PARTNERSHIP HAS BEEN ESTABLISHED BETWEEN THE COMITÉ RÉGIONAL DE CONCHYLICULTURE (CRC, OR REGIONAL SHELLFISH FARMING COMMITTEE) AND THE ÎLES ET MER D'IROISE BIOSPHERE RESERVE TO SET UP AN AQUACULTURE FARM IN THE MOLÈNE ARCHIPELAGO IN BRITTANY. THE FARM WILL CONTRIBUTE TO THE BIOSPHERE RESERVE'S ECONOMIC AND SUSTAINABLE DEVELOPMENT.

The Îles et Mer d'Iroise Biosphere Reserve has decided to support a plan to set up an integrated multi-trophic aquaculture farm off the coast of Molène. In line with the species already present locally, it was decided that five cultivations could be set up in the farm: mussels, oysters, scallops, abalone and algae. Using the principle of the food chain, cultivating this combination of species reduces the amount of waste dumped in the sea. This innovative approach is sustainable and environmentally friendly.

The small business will create jobs in an area that is struggling to maintain its population year round. By supporting this initiative, the Biosphere Reserve is giving itself the chance to supervise operations from the outset. It is responsible for the environmental aspects of implementing the project. For example, it has already researched potential sites for the aquaculture farm. The site chosen needs to meet certain environmental criteria so the project does not negatively impact either residents or protected species. It also needs to be accepted by the people. Following open discussions with residents, the project gained their support and Molène city council approved the setup of this aquaculture farm.

Alongside the Biosphere Reserve, the CRC handles the project's technical aspects and ensures it is economically viable. For example, it is responsible

for recruiting the team that will run the farm. The team leader will necessarily be one of Molène's fishermen, who once chosen will be trained by an aquaculturist from the mainland.



## KEY FACTORS OF SUCCESS

- 1 Reasoned decisions from the outset to ensure the farm has minimal environmental impact.
- 2 Consulting local people and specific involvement of the island's fishermen.
- 3 A showcase for shellfish farming through exemplary practices.



# MARKETS WITHOUT BORDERS

EVERY YEAR, FRANCO-GERMAN FARMERS' MARKETS ARE HELD IN THE VOSGES DU NORD-PFÄLZERWALD BIOSPHERE RESERVE. ALTERNATELY HOSTED BY FRENCH AND GERMAN CITIES, THEY SHOWCASE LOCAL FARMERS, EXPERTISE AND PRODUCE, WHICH ALL SHARE THE VALUES OF THE MAB PROGRAMME.

The cross-border farmers' markets held in the Vosges du Nord-Pfälzerwald transboundary Biosphere Reserve involve forty or so French and German farmers selling their produce directly to consumers. For them, it is an opportunity to promote authentic regional produce that has been produced locally using traditional methods. It is also a key opportunity to raise awareness of the area's communes and heritage. The markets encourage integrated farming, which is environmentally friendly and oriented towards a sustainable development approach.

## THE MARKETS ENCOURAGE INTEGRATED FARMING, WHICH IS ENVIRONMENTALLY FRIENDLY

By promoting local trade, they help build social cohesion and maintain and create jobs. Farmers who are already stallholders annually elect six representatives to form a committee. With the support of technicians from the biosphere reserve, this committee chooses the next producers to join the initiative and determines preferred dates and locations for the markets. Potential stallholder applications are reviewed carefully to ensure candidates

share the values promoted by the farmers' markets. No specific criteria have been determined to inform the selection process.

However, an assessment based on a farm visit is automatically done by a technician then discussed with elected representatives from the TBR's administrative authorities and representatives of the farmers.

The farmers' markets are held twice a year in France (including one border town) and three times a year in Germany.





## CROSS-BORDER FARMERS' MARKETS, ENJOYING FRESH PRODUCE BEYOND BORDERS

### KEY FACTORS OF SUCCESS

- 1 Involvement and support of farmers committed to environmental protection.
- 2 Promotion of direct sales and local production since 1999.
- 3 Complementary relationship between French and German farmers, who do not offer the same products
- 4 Complementary relationship between French and German visitors, who do not have the same consumer habits.

The biosphere reserve organises dialogue with the host commune, provides technical support for the layout and installation of the market and is responsible for communications for the event, with the help of local intermediaries. At the end of the season, an annual evaluation is performed to coordinate the organisation of future markets in partnership with all stakeholders, to keep the event going and improve it year by year.

# RAISING AWARENESS

EDUCATING  
AND INVOLVING  
THE GENERAL PUBLIC

RAISING  
AWARENESS



## BUDDING REPORTERS

# EXPLORE THEIR ISLAND

DURING SCHOOL PRESS WEEK, GUADELOUPE BIOSPHERE RESERVE HOLDS A COMPETITION TO MAKE ENVIRONMENTAL ISSUES THE FOCUS OF SECONDARY SCHOOL PUPILS' PROJECTS. PUPILS ARE INVITED TO WRITE ABOUT THEIR REGION'S NATURAL RESOURCES AND WAYS OF PROTECTING THEM.

School Press Week, introduced by the French Ministry of Education, takes place each year in all French schools. In Guadeloupe, the event is used to raise awareness in children about nature and environmental protection.

Younger collège-level pupils are invited to make short videos on Guadeloupe's ecosystem, threats to natural resources and ways of protecting them. Their reports are produced using information collected from national park educators who coordinate the biosphere reserve, as well as on websites with the help of their teachers. With new technologies, which they are very comfortable using, they can express themselves freely on environmental topics. Older lycée-level pupils participate in the competition through creative writing, stories, playlets or comic strips.

In each category, winners are awarded a field trip to one of the region's biosphere reserves, like in Cuba or the Dominican Republic. Awards are presented at the Terra Festival, a competition for documentaries on environmental and sustainable development issues.

Children are a priority target of Guadeloupe Biosphere Reserve awareness campaigns and this competition allows secondary school pupils to become involved in communications about environmental conservation. It is also a great initiative for raising awareness of the biosphere reserve and its work.



## KEY FACTORS OF SUCCESS

- 1 Support of teachers to guide students in their research and creative pieces.
- 2 Raising awareness in children, who have every opportunity to educate any adults interested in environmental conservation.



© Réserve de biosphère des îles et de la mer d'Iroise



# THE ART OF HELPING NATURE

THANKS TO PROCEEDS FROM THE SALE OF ARTWORKS, THE ASSOCIATION RADOOO CARRIES OUT ENVIRONMENTAL CONSERVATION ACTIONS IN THE ÎLES ET MER D'IROISE BIOSPHERE RESERVE. IT HAS THUS CREATED A NUMBER OF TRAILS TO INTRODUCE TOURISTS AND RESIDENTS TO THE ISLAND'S NATURAL AND CULTURAL RESOURCES.

**O**n the Île de Sein, in the Îles et Mer d'Iroise Biosphere Reserve, the association Radooo has found an original way to finance environmental protection projects. It has joined forces with local artists, who produce works and donate a portion of the proceeds to the association. So when the owner of an artwork decides to part with it, a percentage of its sale price is donated to Radooo.

## ARTISTS TAKE ACTION FOR THE ENVIRONMENT ON THEIR ISLAND

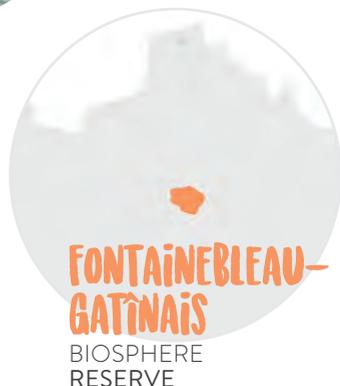
The island's main challenge is limiting the impact of high tourist numbers in the summer months and spreading visits more evenly throughout the year. To be able to provide an alternative to the traditional accommodation already available on the island, the association intends to set up an eco-campsite, which will feature comfortable, energy self-sufficient tents. The project is part of a sustainable development initiative and will contribute to the island's economic development.

Taking the idea further, to raise awareness of biodiversity conservation issues on the Ile de Sein amongst residents and tourists, Radooo has

come up with a series of discovery trails. Booklets have been published in French, English and Breton to reveal the island's natural and cultural resources to visitors. They present the natural habitats and cover a variety of themes like geology, flora and fauna. They also include the island's history and heritage. A number of itineraries are proposed, including variations to account for the seasons and tides. In addition to these brochures, the association is going to incorporate these explanations into a mobile application to encourage visitors to explore the island while being respectful of their surrounds.

## KEY FACTORS OF SUCCESS

- 1** Involvement of a wide range of stakeholders from the local community, especially for data collection and illustrations.
- 2** Development of sustainable tourism with the potential to boost the island's economy.
- 3** A project supported by the BR through the Biosphere Reserve Trophies (2015 winner).



FONTAINEBLEAU-  
GÂTINAIS  
BIOSPHERE  
RESERVE

PEST CONTROL  
AFFECTS MORE THAN

# PESTS IN A FOREST

THE FONTAINEBLEAU-GÂTINAIS BIOSPHERE RESERVE HAS RECENTLY CONDUCTED RESEARCH TO ASSESS THE IMPACT OF PEST CONTROL TREATMENTS FOR HORSES ON THE FOREST'S COPROPHAGIC INSECT POPULATIONS. THIS RESEARCH WILL LEAD TO THE PUBLICATION OF A PUBLIC AWARENESS LEAFLET FOR RIDING SCHOOLS, RIDERS AND VETERINARIANS, ENCOURAGING THEM TO REFLECT ON THEIR USE OF TREATMENTS ON HORSES, WITH A VIEW TO REDUCING THE EFFECTS ON NON-TARGETED WILDLIFE.

**F**ontainebleau Forest is frequented by thousands of horses, and for several years now managers and naturalists have been alarmed at the potential effects of horse worming on biodiversity in the forest ecosystem. To guide riders towards sustainable riding practices and conserving forest biodiversity, the Fontainebleau-Gâtinais Biosphere Reserve first of all launched a multidisciplinary study. In addition to ecotoxicological tests on worming treatments, coprophagic insects were also monitored to compare their abundance in places frequented by horses with protected areas to which riders do not have access. Even though horses provide forests with an important nutritional resource, this study showed a possible negative effect of pest control treatments on the size of coprophagic beetles, and larger populations of insects were found in areas not frequented by horses.

## A STUDY TO GUIDE RIDERS TOWARDS SUSTAINABLE RIDING PRACTICES

Surveys conducted with equestrian centres and veterinarians in the region showed that horses are generally treated automatically and more frequently than necessary. They also revealed that the vast majority of horses are treated without consulting a veterinarian. An

information leaflet for riders and horse owners alerts them to the toxicity of pest control treatments and the issue of resistance. One of the proposed alternatives is to perform a faecal examination before any treatment to ensure it is actually necessary and suitable. Regular consultation of a veterinarian is also advised. The leaflet is automatically included with forest riding permits issued to equestrian centres by the French National Forestry Office (ONF). In this way, the Fontainebleau-Gâtinais Biosphere Reserve hopes to give riders a sense of responsibility and change the way they see the role of horses in the ecosystem.

## KEY FACTORS OF SUCCESS

- 1 Approaching scientists to confirm managers' theories.
- 2 Field survey to gather details about actual uses.
- 3 Partnership with the manager (ONF) to reach a wider, targeted audience.
- 4 Continued discussion with professionals in the equine sector to offer suitable alternatives.



© École Jules Ferry / Maud Kilhofer



# LITTLE GREEN OASIS

## FOR SCHOOL GROUNDS

JUST LIKE MELISSA, RAPHAEL AND CELESTIN, THE CHILDREN OF A PRIMARY SCHOOL IN THE MARAIS AUDOMAROIS BIOSPHERE RESERVE PARTICIPATED IN THE CREATION OF AN EDUCATIONAL GARDEN, WORKING WITH PARKS AND GARDENS EMPLOYEES OF THE COMMUNE. THIS UNIQUE PARTNERSHIP CAME INTO BEING AS PART OF THE BIOSPHERE RESERVE TROPHIES.

**A**lready quite actively involved in integrated management of green spaces, the commune of Arques contacted the school to suggest involving pupils in the design and creation of a nature area on communal land located behind the playground. Delighted with and motivated by this idea, the principal and a teacher decided to become involved in this project with their class.

## INVOLVING PUPILS IN THE CREATION OF A NATURE AREA BEHIND THE PLAYGROUND

The work involved in converting the area was determined by the commune's head of parks and gardens in consultation with the Biosphere Reserve's landscape department. The BR's ornithologist also participated in the design stage. The objective was to promote local biodiversity, but also provide children and teachers with somewhere they could go for walks and watch birds. The undergrowth was cleared to make way for a mixed native hedge, which the children planted themselves. The children also helped make and install a number of other features, including planters, bird feeders and compost bins.

Several educators came to the classroom to talk to the children about environmental protection.

The children were thus involved in planning the project with professionals from the outset and helped design accessible, functional features for their little green oasis. They familiarised themselves with the birds they would be likely to see and learned about the role of insects in pollination. They also learned the rules of recycling and composting, so they would know how to use the compost bins in the playground correctly and could teach their fellow pupils and parents. For the workshops, two classes from different years were combined to encourage older children to mentor the younger ones.

The Biosphere Reserve mobilised technical and human resources in implementing this project. It also received a financial contribution of €1,000 by winning the 2015 Biosphere Reserve Trophy (*for further information, see page 19*).

## KEY FACTORS OF SUCCESS

- 1 Partnership between the commune, the school and the Biosphere Reserve.
- 2 The children become ambassadors for nature protection and recycling amongst their fellow pupils and parents.



© Parc Naturel Régional du Queyras



## THE SECRET LIFE OF

# LANZA'S SALAMANDER

THE BIOSPHERE RESERVE HAS LAUNCHED A GENETIC STUDY AND ECOLOGICAL MONITORING OF LANZA'S ALPINE SALAMANDER TO LEARN MORE ABOUT THIS EMBLEMATIC SPECIES. ENDEMIC TO MONT VISO, OR MONVISO, IT HAS BEEN VERY LITTLE STUDIED UNTIL NOW.

**T**his scientific programme should help better understand the distribution and habitat of this species that is endemic to Monviso, so that suitable conservation measures can be implemented. First described in 1988, this species has not been the focus of much research, and its biology remains little known. The project was proposed by the biosphere reserve's French management authority and has been well received on the Italian side.

The study includes a genetic component to help understand the connections between subpopulations of salamanders. It is being run jointly by the École Pratique des Hautes Études and scientists from the Biosphere Reserve. The general public is invited to contribute to distribution data by reporting sightings of the amphibian. To this end, observation forms are available in refuges, from tourist offices and accommodation providers. Completed forms provide valuable information like sighting location, altitude, weather conditions and characteristics of the surroundings. Lanza's alpine salamander is a very unobtrusive animal and each sighting of an individual is invaluable. This small amphibian that lives at an altitude of over 1,800 metres actually spends much of its life in its underground burrow. Special conditions must be met for the salamander to venture into the outside world, i.e. clement temperatures and quite high ambient humidity. The information provided by the general public supplements the data collected

by experts. Preliminary monitoring has shown that Lanza's alpine salamander can live for up to 20 years. But with a gestation period of two to five years, and as sexual maturity is only reached after eight years, its reproduction is slow and contributes to the species' fragility.



## KEY FACTORS OF SUCCESS

- 1 Cooperation between the two countries to conduct joint scientific research.
- 2 Public awareness raised through the study and participatory scientific methods.



# AN INNOVATIVE MUSEUM

## IN THE SERVICE OF REGIONAL DEVELOPMENT

A 25-YEAR-OLD LOCAL DYNAMIC IS THE DRIVING FORCE BEHIND THE INTERACTIVE MUSEUM OF THE GALEIZON VALLEY, AN EXPERIMENTAL SITE IN THE CÉVENNES BIOSPHERE RESERVE. IT DEPICTS THE EVOLUTION OF THE RELATIONSHIP BETWEEN HUMANS AND NATURE OVER TIME, AND VISITORS CAN FIND OUT ALL ABOUT THE SITE'S CULTURAL AND NATURAL RESOURCES.

In addition to a temporary exhibition space and conference room, Biosphera has several themed spaces full of multimedia tools to help raise visitors' awareness of their place in the ecosystem and their role in the management and future of the site. In the interactive museum, visitors can watch videos projected onto a model of the valley, or play on digital tables to improve their knowledge. Throughout the visit, explanations on display panels are supplemented by information accessible on smartphones and tablets. These devices can even be borrowed from the museum. Various activities are organised for school groups and the general public and may be followed by tours of the site.

## A MUSEUM TO SHOWCASE SUSTAINABLE INITIATIVES IMPLEMENTED IN THE REGION

Biosphera is an important stage in the momentum of projects undertaken by the Syndicat des Hautes Vallées Cévenoles (SHVC), with links to Cévennes National Park, the BR's management authority. Via a space referred to as a "sustainable development laboratory", the museum depicts what this experimental site has done to implement initiatives and carry out full-scale tests as part of the

MAB programme. Areas addressed by the SHVC in ongoing consultation with residents include: water management and managing the capricious River Galeizon, development of sustainable agriculture whose produce is consumed locally, improved sustainable development of the forest, integrated tourism benefiting the region, restoration of historical and housing heritage, landscape protection, energy savings and fighting climate change. A number of concrete initiatives have been launched, such as the creation of a community goat cheese farm, a shared fruit processing plant, a participative regional observatory and support for public authorities to help reduce their ecological footprints.

## KEY FACTORS OF SUCCESS

- 1 A joint venture established to trial and implement MAB principles.
- 2 Long-term perspective and actions.
- 3 A participatory approach, encouraging residents' involvement in managing the site.
- 4 Scalable digital tools to help leverage and pass on knowledge.



# A LYNX-EYED APPROACH TO RAISING ENVIRONMENTAL AWARENESS IN SCHOOLS

IN THE VOSGES DU NORD-PFÄLZERWALD TRANSBOUNDARY BIOSPHERE RESERVE, THE ECOLOGICAL TRANSITION ALSO TOUCHES ON EDUCATION. THANKS TO A PARTNERSHIP BETWEEN THE RESERVE AND THE FRENCH MINISTRY OF EDUCATION, CHILDREN ARE TAUGHT ABOUT ENVIRONMENTAL PROTECTION FROM AN EARLY AGE.

Many years ago, the Vosges du Nord-Pfälzerwald Biosphere Reserve formed a partnership with the two school districts located within the French sector of the site. A history-geography teacher and a science teacher were appointed by the Ministry of Education to work with the reserve.

## ŒIL DE LYNX PIQUES CHILDREN'S CURIOSITY AND ENCOURAGES FRANCO-GERMAN INTERACTIONS

They are responsible for training local teachers on issues like the heritage, nature and culture of the TBR, and produce resources that the teachers can use immediately for their classes. In addition, they provide support to not-for-profit organisations of the Biosphere Reserve in creating educational projects and tools and train their educators to help them modify their talks to fit in with school curriculum for example. As the biosphere reserve does not employ educators, this network of partner organisations is particularly valuable for public awareness and education in the reserve.

### FOCUS ON THE EDUCATIONAL PROJECT ŒIL DE LYNX

Through the work of the Vosges du Nord-Pfälzerwald TBR, a LIFE programme has been launched to reintroduce the lynx into the Palatinate Forest in Germany. In France, actions were mainly focused on communications, to improve acceptance of the lynx in the reserve and raise public awareness about the threats facing this species.



**A** similar initiative has been established in the Bassin de la Dordogne Biosphere Reserve, where teachers are being provided with educational resources. These were developed to raise pupils' awareness of the river, its biological diversity and its interactions with people.

### FURTHER INFO:

<http://biosphere-bassin-dordogne.fr/outil-pedagogique-2016/>

Two not-for-profit organisations dedicated to environmental education – one French and the other German – decided to work together to establish an educational outreach programme and introduce this emblematic animal to children. Each year, 20 classes – 10 in France and 10 in Germany – participate

in the Œil de Lynx project. The programme includes a training session for teachers then four sessions with the children, during which an educator talks to them about protection of the lynx and guides them through putting an action into practice to help the species. Once the series of talks has come to an end, all the classes come together to present their work in front of lynx specialists. Interactions between French and German children are also arranged throughout the project.

## KEY FACTORS OF SUCCESS

- 1 Raising awareness in children, who then become “nature ambassadors”.
- 2 Educational projects approved by the Ministry of Education, which lends the content great credibility.
- 3 Collaboration between French and German organisations so the children participate in the same talks and can discuss a topic that brings them together.



# CONCLUSION

IN 2013, CANADA HOSTED THE EUROMAB BIENNIAL CONFERENCE GATHERING TOGETHER ALL THE COORDINATORS AND PARTNERS OF THE EUROMAB NETWORK. A BOOKLET OF BEST PRACTICES FOR CANADIAN BIOSPHERE RESERVES WAS PUBLISHED FOR THE EVENT. THESE GREAT STORIES INSPIRED US TO PAUSE AND TAKE STOCK OF THE PROJECTS THAT HAVE CONTRIBUTED TO THE SUCCESS OF FRENCH BIOSPHERE RESERVES.

*“The relevance of biosphere reserves undoubtedly lies in the fact that we are part of an extensive network of diverse practices. The unprecedented networking opportunities provided by the EuroMAB network serve as inspiration to translate sustainability ideals into concrete actions.*”

*In 2013, Canada hosted the biennial EuroMAB meeting, and we are particularly proud of our publication of a collection of best Canadian practices entitled “Learning from Each Other: Proven Good Practices in Canadian Biosphere Reserves”; the product of several partnerships. Delighted to find the publication has provided inspiration beyond our borders, the Canadian network of biosphere reserves would like to highlight*

*the hard work, commitment and vision of the host countries of EuroMAB events. Whether in Slovakia, Sweden, Canada, Estonia, France in 2017 or Ireland in 2019, host countries work in a spirit of continuity and continuous improvement.*

*I would like to sincerely thank all our colleagues, partners and volunteers, who make it possible for us to develop our expertise in sustainable development and promote knowledge sharing at multiple levels.”*



**JEAN-PHILIPPE MESSIER**

Chair

Canadian Biosphere Reserves  
Association



TWO YEARS LATER, IT WAS ESTONIA'S TURN TO HOST THESE EVENTS THAT ARE KEY IN STIMULATING THE VITALITY OF BIOSPHERE RESERVES. BY ENABLING BRS IN PARTICULAR TO LEARN FROM THEIR EXPERIENCES, THE EVENTS GIVE MEANING TO THE EUROMAB NETWORK.

*"I strongly believe that the concept of biosphere reserves is first and foremost about people and their relationship with the natural environment, and thus about the culture and economy of places inhabited by people. Models of sustainable development, as we call biosphere reserves, are a replication of cultural patterns of human society in a given natural environment. By studying these patterns, we can glean information to help develop future sustainable solutions.*

*One example of this can be found in a biosphere reserve in Estonia, where a successful, large-scale project aimed to change attitudes in the community so they would choose locally sourced and environmentally friendly food. Efforts began by raising awareness amongst cooks in schools and kindergartens about the true meaning of 'healthy' and 'local' and encourage them to incorporate these concepts into their menus. At the same time, schoolchildren learned how to cook using old local recipes and shared this knowledge with their parents at home.*

*Another topic of interest is governance: how to incorporate the findings of biosphere reserves into local policies and administration. For example on the island of Hiiumaa, the regional development strategy states the MAB Programme as its basic principle. Consequently, several financial support schemes for local entrepreneurs and NGOs presuppose compatibility with the biosphere reserve concept.*

*For the biosphere reserves in Estonia, EuroMAB is a window to the international scene. EuroMAB covers the extensive, continuous belt of large ecosystems in the Northern hemisphere, comprising most developed and powerful countries, which makes the EuroMAB network particularly representative – as well as particularly responsible – for the global future."*



**TOOMAS KOKOVKIN**

Member of the advisory board

Estonian National Commission for UNESCO



IN 2019, IRELAND AND THE DUBLIN BAY BIOSPHERE RESERVE WILL HAVE THE CHANCE TO HOST THIS GREAT EVENT AND CONTINUE THE MOMENTUM CREATED BY THEIR PREDECESSORS.

*“A key strength of the MAB Programme is the international scope and collaborative nature of the World Network of Biosphere Reserves. EuroMAB conferences are an invaluable opportunity to network, share information on good practice, keep up to date with new developments in the MAB Programme and experience other biospheres first-hand.*

*As a relatively new member of the World Network of Biosphere Reserves, EuroMAB Conferences have been critical in helping us at Dublin Bay Biosphere to obtain and manage our designation. While attending EuroMAB 2013, Leslie Moore, now the Chair of Dublin Bay Biosphere Partnership, was inspired to initiate Dublin Bay Biosphere. At EuroMAB 2015, we received practical advice and support*

*from other members of the network. Our designation was awarded in June 2015, and we are #ProudToShare some of the projects we have undertaken so far at EuroMAB 2017. We will host EuroMAB 2019, and we look forward to welcoming you to Dublin, Ireland.”*

*Céad míle fáilte!*



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**EUROMAB,  
A BIOSPHERE RESERVE  
FAMILY REUNION**

The EuroMAB network is the largest and oldest of the MAB Programme's regional networks. As of 2017, it comprises 302 biosphere reserves from 36 countries: Canada, United States, Israel, Russia and all the European countries.

EuroMAB's national committees have been meeting every two years since 1987, the year the network was established in Berchtesgaden, Germany. The biosphere reserve managers and coordinators of this region have been doing so as well since 1994, when they met for the first time in Florac, in the Cévennes Biosphere Reserve in France. In 2000 in Cambridge, United Kingdom, these two meetings were merged. The idea being to build bridges between biosphere reserve managers, those involved in the concrete implementation of the MAB Programme and the work of the MAB committees. These aim to bring stakeholders closer together, promote a balanced approach between ecology and economy, set up research programmes and long-term ecological monitoring to keep track of changes, as well as help reduce disparities between countries.

These conferences are an opportunity for discussion, an opportunity to share experiences, build cooperation, develop training courses and projects, and establish joint initiatives aimed at achieving the ecological transition together. The strength of the network lies in the multilateral nature of these discussions, in their regularity, which allows for long-term, trusting

collaboration in an intercultural context, and in the fact they share a common model for managing land and biodiversity: the biosphere reserve.

In 2017, France is proud to once again host the EuroMAB conference in the Bassin de la Dordogne Biosphere Reserve.

***We extend a warm welcome to all our guests and hope you enjoy the conference!***



The *Good Practices in Biosphere Reserves* booklet was produced for the occasion of the EuroMAB 2017 conference. It presents projects the biosphere reserves are particularly proud of, and which illustrate their role in the ecological transition. EuroMAB 2017 has been organised with the support of the French Agency for Biodiversity (AFB) and the French Ministry of the Environment, Energy and the Sea

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