ECOLOGY, ENERGY,
SUSTAINABLE DEVELOPMENT
& THE SEA

June 2010

le Grenelle Environnement

The Green and Blue Infrastructure in mainland France

Challenges and experiences



GRENELLE ENVIRONNEMENT
ENTRONS DANS LE MONDE D'APRÈS

The Green and Blue Infrastructure, one of the flagship commitments of the French Environment Round Table, is an initiative aimed at maintaining and reconstituting a network of corridors within France so that animal and plant species, like humans, can communicate, circulate, find food, reproduce and rest. In other words, ensure their survival!
It is our contribution to maintaining the services that biodiversity delivers to society: water quality, pollination, flood prevention, improving our living environment, etc.

"The interests of elected representatives and their constituents are the same!"

Despite the variety of stakeholders / members involved and the scale of the task to be achieved, has a consensus been reached within the French Environment Round Table's Green and Blue Infrastructure working committee?

A consensus has developed around two key ideas: the need to look after so-called ordinary biodiversity when for some decades initiatives have been aimed at the more outstanding biodiversity (symbolic species, exceptional natural environments, etc.), and the desire to protect sufficiently large areas to limit habitat fragmentation.

What value is there for an elected representative in involving into to the Green and Blue Infrastructure initiative?

As an elected representative myself, I can see two benefits. Firstly, we are part of that biodiversity and we depend on it. Secondly, the economy relies to a large extent on what nature provides (drinking water, food, humus-rich soil, etc.) and on the services ecosystems perform for us (pollination, soil fertilisation, etc.). Our natural capital is therefore also economic capital.

What is the value for a local council and its constituents?

The interests of council members and their constituents are the same! I would add that setting up the Green and Blue Infrastructure means offering local people an attractive living environment and a favourable environment for developing tourism.

In your opinion, what resistance could elected representatives encounter when setting up the Green and Blue Infrastructure?

Firstly cultural resistance, which means we need to make people aware and to explain the environmental value. For a long time it was thought that there were no limits on our use of natural resources. Also, from a practical point of view, we need to create solidarities between different areas and communities and therefore to take a cooperative approach - something people are not necessarily used to.

What have you gained from these two years of work?

The work has been really exciting, and I think we have made progress with getting as many people as possible to take account of our natural heritage and the need to protect it for the common good. We have learned to talk to one another and, after more than two years, the various partners (NOG's, socio-economic partners) share common objectives. Now we have to achieve them.

Paul Raoult
senator and chair of the Green and Blue Infrastructure working committee

A WORKING COMMITTEE TO DEFINE THE FRENCH GREEN AND BLUE INFRASTRUCTURE'S IMPLEMENTATION

To put the Environment Round Table commitment into practice, the Government set up a Green and Blue Infrastructure working committee run by senator Paul Raoult. With a mandate to run for more than two years from late 2007 to early 2010, the committee proposed a legislative foundation and a framework for the implementation of the Green and Blue Infrastructure.

Biodiversity, an threatened capital

The Green and Blue Infrastructure is one of a number of innovative actions aimed at halting the erosion of biodiversity. But how to specify biodiversity and in what way is it threatened?

ORDINARY BIODIVERSITY?

'Ordinary' biodiversity refers to the biodiversity all around us on a daily basis, in our gardens, on small farms, along roads and footpaths, in city parks, etc. Although we often ignore it because we are so close to it, this biodiversity is as important as so-called "outstanding" biodiversity (exceptional natural ecosystems, symbolic or rare species, etc.), particularly because of the services it provides for humans directly or indirectly.

Biodiversity is a recent concept that gained importance at the Rio de Janeiro Earth Summit in 1992. It is both a complex and a simple idea. It is concerned with all the natural environments and life forms on Earth (plants, animals, fungi, bacteria, viruses, etc.) as well as all the relationships and interactions that exist between these living organisms, and between these organisms and their environments. As human beings, we belong to a species -*Homo sapiens*- which is one element of this biodiversity.

Biodiversity - a survey

Biodiversity as it currently stands is the product of a long, slow evolution of the living world all over the planet.

The first known organisms date from nearly 3.5 billion years ago. Approximately 1.8 million different species of animals and plants have been identified to date and some 15,000 new species are described each year, yet there are between 5 and 100 million on our planet. This shows what a long way we are from finishing the job of identifying them all. At the same time, experts tell us that half of all living species could disappear within the next hundred years, if their current rate of disappearance is anything to go by: this is 100 to 1000 times higher than the natural rate of extinction! The International Union for the Conservation of Nature (IUCN), which presents a *Red List of Threatened Species* each year, believes that in 2009, 36% of species studied by its experts were threatened, including 7 out of 10 plant species, 1 in 3 amphibians, 1 in 5 mammals and 1 in 8 birds. Nearly 2% of the species studied have already disappeared for good. Within Europe, France is home to the fifth largest number of globally endangered species (e.g. the hermit beetle, the European mink, etc.) after Spain, Portugal, Italy and Greece.

Natural environments are not spared. Worldwide, 60% of environments have been damaged during the last 50 years and nearly 70% are exploited beyond their capacity (e.g. forests). In France (mainland and overseas), approximately 165 hectares of natural environments and farmland (just over four football pitches) are destroyed every day to make way for roads, housing, commercial and industrial parks. This is equivalent to more than 60,000 hectares per year, or a department like Savoie every 10 years.

The causes of erosion

Natural causes can explain the disappearance of species and the loss of functionality of natural environments, but the current erosion of biodiversity is largely attributable to human activity. Internationally, five main pressures on biological diversity have been identified, which can act together:

- the fragmentation (see inset) and destruction of natural environments linked in particular to growing urbanisation, intensive farming and the development of transport infrastructure: this particularly affects grasslands, wetlands and peatlands;

In Europe, mainland France is home to the fifth largest

- the unsustainable exploitation of wild species (overfishing, deforestation, etc.) made worse by illegal trade threatening species such as bluefin tuna and elephants;
- pollution of domestic, industrial and agricultural origin;
- the introduction of invasive exotic species such as the American mink or Ludwigia species;
- climate change, which can add to or aggravate the other causes. This plays a part in changing the living conditions of species, forcing them to migrate or adapt (and not all of them are capable of doing this). Climate change could lead to the loss of 15 to 37% of living species by 2050.

IN FRANCE,

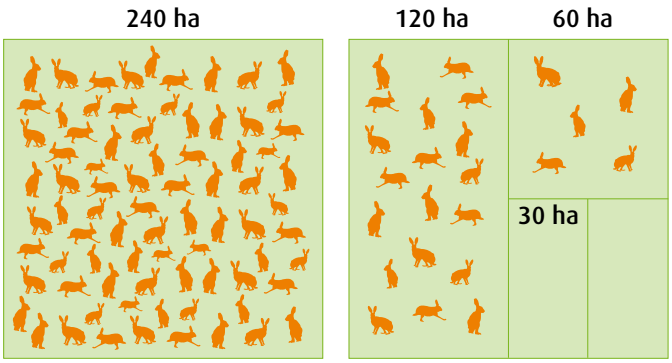
we are also witnessing biodiversity loss due to the abandonment of extensive farming activities (particularly in the Mediterranean region), which has the effect of creating a uniform rural landscape detrimental to small wild animals.

The effects of the fragmentation of natural environments (or habitats)

The common hare on the Swiss plateau

When the living space of hares is reduced, the number of hares per unit area decreases. If the area is less than 30 hectares, hares disappear altogether.

Source: according to R. Anderegg – Roads and wildlife day organised by the Office fédéral des forêts, *1984*



BIODIVERSITY AT THE HEART OF OUR LIVES: AN ECONOMIC CAPITAL

Biodiversity provides many irreplaceable goods we could not do without: oxygen, food, medicines, many raw materials (coal, natural gas, timber, fibres such as wool, cotton, hemp, etc.).
Natural environments and animal and plant species also provide many services:

- bees, butterflies, flies, etc. are responsible for pollinating plants: 70% of crops (fruit trees, vegetables, spices, coffee, cocoa, etc.) depend on them;
- species such as the earthworm help to make soil fertile;
- plants, particularly in wetland environments, help to purify water naturally by removing the elements they need to grow;
- peatlands are excellent carbon sinks (natural storage);
- wetlands in particular help to prevent floods by storing water temporarily;
- natural environments and planted areas in cities give our landscapes structure and improve our living environment, offering us places to relax, walk, experience wonder, etc.

number of globally endangered species.

One policy aimed at halting the erosion of biodiversity

Biodiversity reservoirs, natural infrastructure, socioeconomic projects, ecological corridors... These are the concepts on which the Green and Blue Infrastructure is built.

Biodiversity reservoirs: these are vital, richly biodiversified areas where individual plants and animals may conduct their entire life cycle (reproduction, feeding, shelter, etc.). Equivalent terms: centres of diversity, core areas, nodal areas, etc.

Ecological corridors: these are pathways used by flora and fauna that link biodiversity reserves together. Equivalent terms: biological corridors, biocorridors.

Ecological continuity: this is the combination of biodiversity reserves with ecological corridors.

Green and Blue Infrastructure: this is formed by all the ecological continuities.

The Green and Blue Infrastructure is an initiative with a strong structural ambition: to ensure the preservation of biodiversity is taken into account in planning decisions, particularly in territorial coherence schemes (SCoTs) and local urban planning schemes (PLUs).

A natural infrastructure

The Green and Blue Infrastructure is being set up to stop the loss of biodiversity by preserving and restoring networks of natural environments, allowing species to circulate and interact. These networks, which provide ecological continuity, are made up of biodiversity reservoirs linked together by ecological corridors.

The Green and Blue Infrastructure consists of a green component, i.e. natural and semi-natural environments on land, and a blue component, i.e. the water and wetland network (rivers, streams, canals, ponds, wetlands, etc.). These two components form an inseparable whole, which is apparent in the land-water interfaces (particularly wetlands and waterside plants). Preservation and restoration of this ecological continuity demands that we take action wherever possible: in rural areas, along waterways and in urban areas. Here are some examples.

Rural areas

Whereas intensive farming is causing different landscapes and environments to become uniform, the introduction or preservation of fixed parts of the landscape (hedges, slopes, dry-stone walls, coppices, grassed strips, etc.) encourages biological diversity by forming ecological corridors.

Motorway construction

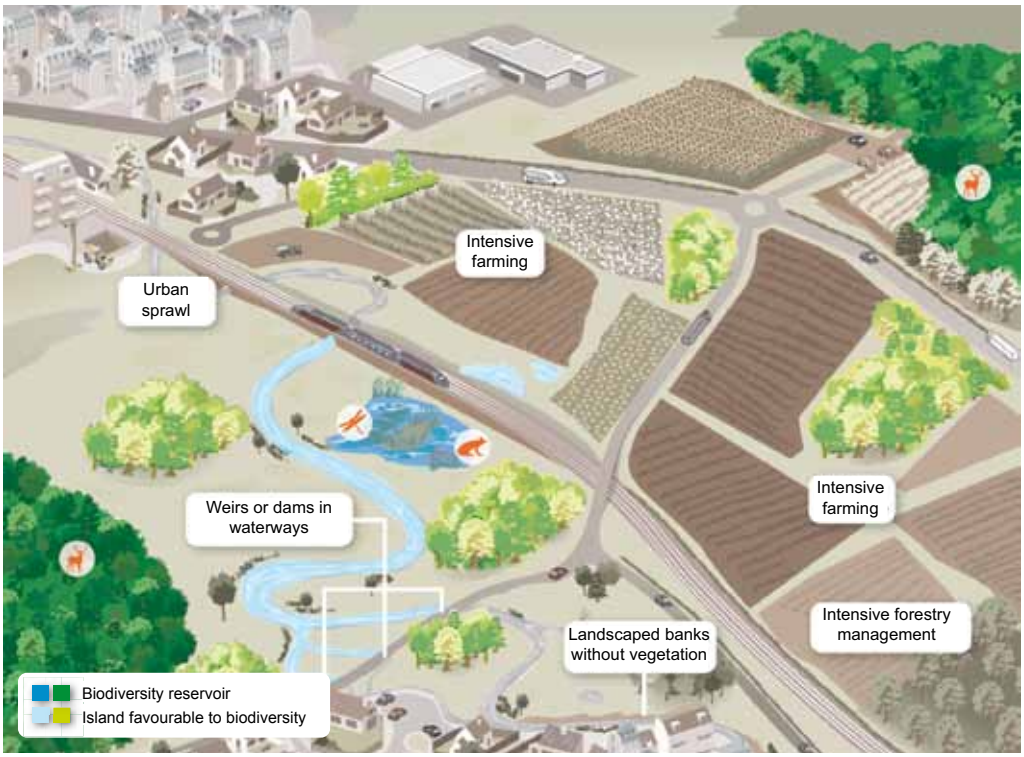
One of the consequences of building motorways is that it cuts land in two. Both animal and plant species, which until then could interact, move freely, reproduce and migrate according to the availability of food (think about pollen transportation by insects, for example), are now blocked by this obstacle. Creating wildlife crossings (plant-covered bridges, tunnels, etc.) where pre-existing corridors have been identified, can restore ecological continuity.

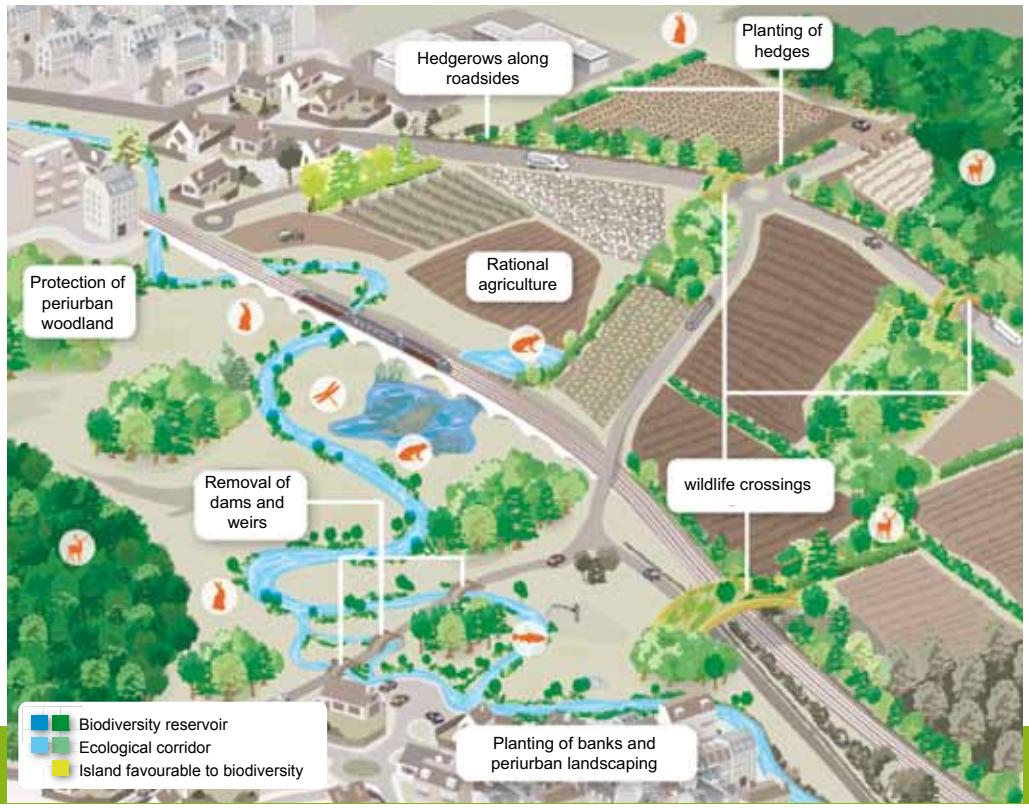
Garden fence erection

In towns or neighbourhoods, erecting fences to mark out gardens creates obstacles preventing the animals living in them from moving about and interacting. By making small openings in fences, small-scale wildlife (hedgehogs, field mice, toads, etc.) can move freely from garden to garden. Once again, this contributes to preserving or restoring ecological continuity.

Restoring ecological continuity

Top landscape: fragmented land (urban sprawl, transport infrastructure development, etc.) unfavourable to biodiversity/**Bottom landscape**: landscape designed to encourage the restoration of ecological continuity.





Dams in waterways

The presence of dams in waterways (for hydroelectric projects, to make navigation easier, etc.) can prevent the free movement of species (for example, migratory species such as salmon, eel, sturgeon, etc.). Incorporating special structures, such as fish ladders, enables species to get past these obstacles and ensures their life cycle continues.

These four examples show how the Green and Blue Infrastructure means different things depending on context, environment and situation.
Local authorities can therefore take appropriate action at their level.

A project with a socioeconomic dimension

In addition to addressing an environmental challenge, the Green and Blue Infrastructure is a socioeconomic project. It helps to maintain rural jobs by diversifying farming activities (maintenance of grazing practices, timber production for energy, etc.) and by creating new jobs in the environment and land planning sectors.

It requires change in land management practices, and has to be incorporated into urban planning documents and implemented through contractual commitments, etc. ➤➤➤

"The Blue and Green Belt Network, a big step towards preserving biodiversity"

As a flagship measure of the French Environment Round Table, how essential is the Blue and Green Belt Network to preserving biodiversity?

France has an array of tools for protecting biodiversity: national parks, nature reserves, biotope protection orders, Natura 2000, regional nature parks, national action plans for threatened species, and so on. These preservation policies, based essentially on knowledge and protection of ordinary and outstanding species, are indispensable. However, they have led to the creation of nature protection islands within areas that have become more and more artificial and fragmented. That is why the Green and Blue Infrastructure is a new step forward, taking account in land planning decisions of the way land and species function ecologically and focusing on ordinary biodiversity.

Odile Gauthier
director of water and biodiversity
at the Ministry of Sustainable Development

What is the Government's involvement in this?

The Government obviously has a role to play in guaranteeing the coherence of the Green and Blue Infrastructure nationally. But the project's success relies on the different regions and areas appropriating the challenges and coming on board. That is why decentralised government departments are keen to work closely with local authorities.

We should be concerned about keeping the living fabric

➤➤➤ Training of stokeholders is therefore very important, as is the development of project engineering suited to supporting these changes in land management.

An initiative of three interlocking levels

The Green and Blue Infrastructure concept is based on three interlocking levels:

- national guidelines adopted by decree of the Council of State (in response to the law);
- regional scheme of ecological coherence, drawn up jointly by the Regional council and the state Government before 2012, in concertation with all local stokeholders and subject to a public participation. These schemes take follow the national guidelines into account and identify the Green and Blue Infrastructure at regional level;
- planning documents and plans produced by the government and by local councils and local council groups, in particular regarding land use and urban planning (local urban planning documents (PLUs), territorial coherence schemes (SCoTs), municipal planning maps), which take the regional scheme of ecological coherence into account at local level.

A STORY OF THREADS

Let us try to understand what the Green and Blue Infrastructure is by imagining a piece of fabric.
The quality of the fabric is determined by the weft and warp threads: the weaker or missing threads there are, the more likely the fabric is to tear. Think of each thread of the fabric as part of our biodiversity: a species, environment or group of species interacting with its living environment... Beyond a certain threshold of degradation, the whole fabric (biodiversity) is at risk. You see, everything is linked together! This is why we should be concerned with maintaining and/or restoring all the threads that form the living fabric of our planet. Humans are one of these threads and our future also depends on the quality of the whole fabric.

of our planet in good condition.

Preserving and restoring ecological continui

1 – WILDLIFE CROSSINGS
Provide wildlife crossings over motorways, railways and canals, but also crossings for frogs and toads under roads and railways.

2 – TREES IN CITIES
Protect nature in cities by designing urban landscapes that include local, diversified plants: rows of trees, hedgerows, wild grasses around trees, etc.

5 – REMOVE OBSTACLES OR PROVIDE FISH LADDERS
Remove obstacles in waterways or build fish ladders if removal is impossible.

ty: taking action at different levels!

3 – OPENINGS IN FENCES
In gardens or around other land, provide openings in fences to allow small wild animals (hedgehogs, toads, etc.) to move about.

4 – HEDGEROWS
Maintain or restore hedgerows when the network is damaged or non-existent; keep old hollow trees, which provide a home for many species…

6 – STEPPING STONES
Provide ponds between areas of water a long distance apart, to allow animal and plant species from these environments to move about and/or for populations to develop.



"The Green and Blue Infrastructure, a planning tool"

To what extent is the Green and Blue Belt Network used as a planning tool?

The Green and Blue Infrastructure is a natural infrastructure linking the whole territory. It makes us see biodiversity in a new way, whether ordinary or noteworthy. Today, all public policies (and particularly planning) have to take account of biodiversity.

How is this reflected in practice?

Taking account of ecological continuity at local level (particularly within local councils and intercommunal partnerships), in planning documents and by using contractual leverage, ensures biodiversity is integrated into land use plans at various different levels. For example, integrated into a SCoT*, the Green and Blue Infrastructure contributes to reorganising land use which takes into account spatial geographical factors, as well as social, economic and cultural factors. Local councils can control their urban development by guaranteeing balance in land use, in order to preserve natural environments and the functionality of ecosystems.

** territorial coherence scheme*

Fabienne Allag-Dhuisme
Green and Blue Infrastructure project leader at the Ministry of Sustainable Development

The Green and Blue Infrastructure is formed by creati

An initiative well on its way

For a number of years, stakeholders from regions and departments to regional nature parks and local councils has been discussing and working to set up the Green and Blue Infrastructure...
Here is what they have learned.

At regional level

"We have had to move from strategy to action"

Emmanuel Cau
vice-president of the Nord - Pas-de-Calais regional council, responsible for planning, the environment and the climate plan

When did the Nord - Pas-de-Calais region first get interested in the Green and Blue Infrastructure?

The region first started to look at this issue in 1992 when a green president, Marie-Christine Blandin, was elected to lead the region. During this time, an environment directorate was set up within the regional council and the foundations were laid for the biodiversity policy we have pursued since then. It was on the basis of the experiences of Nord - Pas-de-Calais that the public services schemes identified green corridors as being strategic.

How did this policy take shape?

The first few years were spent raising awareness and providing information to local players. The aim was to achieve acceptance of the idea that biodiversity is essential to the region. Then we moved into a more strategic phase, drawing up the regional planning and development scheme (SRADT). This document, which incorporates the Green and Blue Infrastructure as one of its dimensions, was adopted in November 2006 after a long consultation period.

What has happened since the end of 2006?

We have had to move from strategy to action. Each of the 13 areas that make up the region has had to adapt the SRADT to its own area, particularly as regards the Green and Blue Infrastructure, which is one of the elements that must be implemented. To support the process, in each of the 13 areas I organised a meeting with all of the local players to explain how ecological continuity works and how vital it is for our own development that we halt climate change and restore biodiversity, and to provide practical information about how to implement it and what financial help is available.

What are the next steps?

To consolidate the project by getting a lot done fast! For this we are hoping to rely particularly on the woodland plan adopted by the regional council in May 2009, which plans to double the amount of woodland in the next 30 years. Woodland is an interesting topic because it is linked to many other issues: climate regulation, health and even economic development. Forestry is one potential route for farming to achieve greater biodiversity.

In what way does the region continue to play a pioneering role on these issues?

I can give you two examples: the 2009 launch of one of the first regional biodiversity observatories; and the forthcoming establishment of a regional land agency. The agency should ultimately allow the foundations to be laid for a principled environmental reallocation of land in Nord - Pas-de-Calais.

ng one vast ecological continuity.




At departmental level

"The 'département' has enjoyed the support of a number of partners"

Serge Revel
vice-president of the general council of Isère in charge of the environment, mayor of Pressins

How does your department stand out in terms of ecological continuity?

Isère has the same characteristics as most mountainous departments. In a mountainous landscape, most human activities are concentrated in the valleys. Urban sprawl and the development of infrastructure create barriers that gradually become impenetrable to wildlife.

What was the general council's starting point when addressing these issues?

In the early 2000s, we commissioned a study by the Econat network. This diagnosis led us to set up the Isère departmental environment network (REDI), which identified more than 500 spots in the department where the movement of wildlife was obstructed. Practical action was then agreed to reinstate some large corridors that had totally disappeared, particularly in the valley at Voreppe and at Grésivaudan.

Were you able to organise partnerships to work on these projects?

The department enjoyed the support of a number of public and private partners: Government, region, hunting and fishing enthusiasts, water agency, Rhône-Alpes motorway company (AREA), and so on. We were also the first in France to win an EU grant from the European Regional Development Fund.

How do you support the local councils in your "département"?

The general council of Isère also wants to promote smaller green corridors at local level. In addition to classifying certain areas as sensitive sites, we ensure the Green and Blue Infrastructure is always taken into account in local urban planning schemes (PLUs). Our work with local councils also involves raising awareness and holding special events for councillors and the general public.

Has the department taken other measures to protect biodiversity?

We have decided to introduce later mowing of roadsides, for example, and to ban the use of herbicides for maintaining verges. By 2012, local councils in Isère will also have to stop using herbicides for clearing verges... If they fail to do so, they can no longer claim grants from the general council.

The restoration of ecological continuity demands that w




At intercommunal level

"It was essential to manage urban sprawl"

Emmanuel Bouriau
ecologist, study coordinator at the Rennes intercommunal planning and development agency (AUDIAR)

Why promote ecological continuity in the SCoT?

The urban area around Rennes has been one of the fastest growing areas in France in the last thirty years. It was therefore essential to manage urban sprawl to prevent the city from linking up with small surrounding towns, inevitably invading the countryside. From 2000 onwards, the issue of ecological continuity began to be incorporated into local urban planning documents (PLUs) for land within the Rennes metropolitan area. The introduction of a SCoT (territorial coherence scheme) enabled us to reinforce this initiative and extend it to the other four public bodies responsible for cooperation between councils (EPCIs) in the Rennes area.

What did you want to achieve?

We particularly wanted to conduct a large-scale analysis and inventory to find out much more about our area. We were able to assess the state of ecological continuity, identify biological link areas and obstructions to wildlife, etc. We also identified more than 450 biodiversity source sites, which are now protected and cannot be built on.

On what topics did you place particular emphasis?

The network of hedges and small fields, a structural feature of the countryside in the Rennes area and in much of its green infrastructure, was a particular concern. Preserving it is a priority, and where it has deteriorated, incentives have been introduced for its restoration. The protection of the edges of woodland and of wetland areas is also one of the key points of the Green and Blue Infrastructure.

How have you supported elected representatives?

At all stages in the discussion and implementation process, we have tried to provide technical and above all educational support. That support is now taking material form, for example in the preparation of a very practical, comprehensive guide to managing the different types of natural environment that exist in the area, which is in the process of being written.

Could the SCoT be said to have united elected representatives in a common purpose and strengthened the identity of the area?

It has undoubtedly helped to do so. From my point of view, the work associated with preserving natural environments and promoting ecological continuity has ensured greater account is taken of the importance of land and of the idea that the land is a shared of heritage, in which everyone can play a part.

e take action wherever possible.




At local council level

"Various bodies assisted us technically and financially"

How did you get the work on ecological continuity started?

When we revised the local urban planning scheme (PLU) in 2002, one of our objectives was the rehabilitation and reclassification of an area once home to a now disused shipyard on the banks of the Oise. We approached the general council of Yvelines and the regional council of Île-de-France to see how we could achieve this and what financial support was available.

Joël Tissier
deputy mayor
of Maurecourt, a municipality of
4300 inhabitants in the
department of Yvelines

Did you have to perform an environmental assessment?

That was essential before we could begin. The report by the specialist company which performed the assessment showed that Maurecourt was at the meeting point of two ecological corridors, a blue corridor along the Oise and a green corridor running from the river towards the Hautil forest and the Vexin plains. The banks were also a potential groundwater catchment area.

What did you do to protect this natural asset?

We bought the land and had some sites classified as protected areas by the local council, which reduced their value. In 2008, at the local council's request, the general council classified some of the banks as sensitive sites (ENSs). The government also issued a PPRI* order for this area. Together, these measures and the grants received enabled the local council to buy the 3.5 hectare shipyard and an adjoining area of 1 hectare for €40,000.

Did any other local players provide support?

Yes, indeed. Various bodies assisted us technically and financially: the Seine Oise public/private partnership, the general council, the Yvelines architecture, planning and environment council (CAUE) and the regional council of Île-de-France, along with the countryside agency. But we also received help from the Fin d'Oise water company and the land use and rural settlement corporation (SAFER), which facilitated the purchase of certain plots of land.

Where are you now with the project?

Work will start in the autumn of 2010. Eventually the former shipyard will be returned to nature with grassland and trees for pollinating insects (bees, butterflies, etc.), an orchard of hardy species, dry fallow land, a pond for frogs and toads, etc. Aquatic plants will be reintroduced on the lower banks.

** flood risk prevention plan*

At regional nature park level

"A partnership that works on a number of levels"

Jean-Luc Hercent
natural heritage adviser to the Oise-Pays de France regional nature park

What part did ecological continuity play in the creation of the park?

It was taken into account during the writing of the charter which led to the creation of the park, in 2004. We had to think about the future of the woodland continuum in the northern Paris basin and about how to maintain the deer population in an environment subject to huge urban pressure and the presence of numerous linear infrastructures.

What action did you take?

In particular we undertook some in-depth studies to find out more about the specific nature of our area in terms of ecological networks. This very detailed work enabled us to come up with action plans suited to the different natural environments identified. From this point of view, the network of moorland and sandy grassland characteristic of our wooded areas was the subject of particularly detailed research.

What is the park's role in relation to elected representatives?

It's a partnership that works on a number of levels: raising awareness to environmental challenges and supporting the search for solutions, for example in terms of land use strategy and planning documents (zoning, regulation, etc.). We also make sure that planning projects take account of ecological networks in the area.

Didier Olivry
director of the Camargue regional nature park

"We wanted to propose a method of governance"

How did you get involved in the Green and Blue Infrastructure in the PACA region?

In response to a call for projects from the Ministry in charge of Sustainable Development, the five regional nature parks in the PACA region joined forces to test the acceptability and feasibility of the new principle of a Green and Blue Infrastructure. In other words, we wanted to propose a method of governance for the major challenge represented by biodiversity erosion.

What did you do?

As is usual for the regional nature parks, we launched a massive initiative in which all the regional players could participate (elected representatives, associations, professionals, scientists, government departments, etc.). The aim was jointly to define biodiversity and establish the types of pressure on it, using appropriate cooperation methods, to identify potential action that could be taken and the possibilities for its implementation.

What was your assessment of this experience?

This pilot project showed us the importance of governance issues for biodiversity. It demonstrated the scale of mobilisation that could be achieved by the concept of a Green and Blue Infrastructure, going beyond the purely scientific and environmental framework and entering the whole of public policy.

and socioeconomic project.

For more information

Websites of the regional directorates for the environment, planning and housing

Franche-Comté: www.franche-comte.ecologie.gouv.fr
Rhône-Alpes: www.rhone-alpes.ecologie.gouv.fr
Provence - Alpes - Côte d'Azur: www.paca.ecologie.gouv.fr

Websites of regional and general councils

Nord - Pas-de-Calais region: www.nordpasdecalais.fr/environnement/TVB/TVB.asp
Rhône-Alpes region: http://biodiversite.rhonealpes.fr/spip.php?rubrique19
Alsace region: www.region-alsace.eu/dn_biodiversite-et-paysages/politique-trame-verte.html
Department of Isère: www.corridors-isere.fr

For more information on the challenges of preserving biodiversity

Website of the International Year of Biodiversity: www.biodiversite2010.fr
Ministry website: www.developpement-durable.gouv.fr

Other websites

French Environment Round Table: www.legrenelle-environnement.fr
Atelier technique des espaces naturels (a website for nature professionals): www.espaces-naturels.fr
French natural history museum: www.mnhn.fr
French regional nature parks federation: www.parcs-naturels-regionaux.tm.fr

June 2010

Ref. Dicom-DGALN/BRO/09039

Photo credits:
MEEDDM: cover (frieze from left to right): O. Brosseau - B. Suard - L. Mignaux; **p. 3:** G. Crossay; **p. 5:** O. Brosseau (bee) - T. Degen (countryside); **p. 8:** T. Degen (bird) - A. Bouissou (portrait); **p. 9:** L. Mignaux (canal) - T. Degen (walking in a park) - L. Mignaux (countryside); **p. 12** (frieze from left to right): L. Mignaux - A. Bouissou - T. Degen; **p. 12** (portrait): G. Crossay; **p. 14** (frieze from left to right): L. Mignaux - O. Brosseau - T. Degen - D. Coutelier; **p. 15** (frieze from left to right): L. Mignaux (x2) - T. Degen - L. Mignaux; **p. 16** (frieze from left to right): A. Bouissou - L. Mignaux (x3); **p. 19**: T. Degen (river + otter) - O. Brosseau (town + grasshopper) - A. Bouissou (walker on cliff) - L. Mignaux (Mediterranean countryside);
Back cover (left to right): L. Mignaux (x2) - O. Brosseau
OTHERS: p. 2: J.-M. Gobry / DREIF; **p. 13** (portrait): J.-L. Cornu; **p. 14** (portrait): F. Pattou; **p. 15, 16, 17** (portraits): DR; **p. 19** (tractor): C. Maitre / INRA

Printed by: MEEDDM/SG/SPSSI/ATL2
Brochure printed on EU ecolabel certified paper

Ecological corridors:

pathways used by flora and fauna that link biodiversity reserves together

Ecological continuity:

biodiversity reservoirs linked together by ecological corridors

Biodiversity reservoirs:

vital, richly biodiversified areas where individual plants and animals can conduct their entire life cycle

Green and Blue Infrastructure:

network formed by all the ecological continuities

le Grenelle Environnement



Ministère de l'Écologie, de l'Énergie, du Développement durable et de la Mer,
en charge des Technologies vertes et des Négociations sur le climat
92055 La Défense Cedex
www.developpement-durable.gouv.fr

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

Ministère
de l'Écologie,
de l'Énergie,
du Développement
durable
et de la Mer