

Resources, regions and habitats
Energy and climate Sustainable development
Risk prevention Infrastructure, transport and the sea

Present for the future

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RAMSAR AND WETLAND MANAGEMENT IN FRANCE



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RAMSAR AND WETLAND MANAGEMENT IN FRANCE

Wetlands, transition areas between land and water, represent an exceptional natural heritage by virtue of their biological wealth and of the natural functions that they fulfil. Most wetlands are amongst the world's richest natural environments. They represent a source of water and food to countless plant and animal species, including Man.

It is generally estimated that, in France, wetlands cover 1.8 million hectares (3% of the metropolitan landmass), 50% of birds depend upon them; they are essential for the reproduction of amphibians and the majority of fish species; 30% of French remarkable and endangered plant species are contained therein.

The coral reefs, mangroves, water plant communities and peaty environments of France's overseas departments and territories also represent an invaluable capital. France possesses 10% of the world's coral reefs, i.e. more than 55,000 km². These reefs play a central role in coastal protection and, through fishing, provide a food resource for hundreds of millions of the world's poorest individuals; they also contribute to tourist development. Their sustainable management by neighbouring populations is essential.

Wetlands, irreplaceable "natural infrastructures", participate in water purification, contribute to attenuating the effects of flooding, maintain low water levels and perform a number of other activities and functions essential for society (livestock farming, tourism, leisure activities, salt production, etc.).

Climate disasters have confirmed the need to preserve remaining wetlands and to rehabilitate those that are deteriorating, in order to instil new life in marshes, peat bogs, wet meadows, alluvial forests, mud flats, salt marshes, lagoons, coral reefs, mangroves and plant communities.

The preservation of this natural asset, under particular threat from global change, represents a significant economic challenge.

A signatory of the 1971 Ramsar Convention, France ratified this treaty in 1986. It then made an international commitment to preserve the wetlands within its territory. In 2007, it had designated 24 sites of international significance. In 2008, 12 new sites were added to this network. Currently, some 3,309,00 hectares, in Metropolitan France and its overseas territories and departments, are included.

This international commitment to wetland preservation has also found a more operational expression through the creation of structures adapted to integrated water and wetland management, the publication of statutory instruments, the creation of numerous conservation areas and the implementation of contractual or regulatory systems for sustainable wetland management, along with a number of original approaches involving local stakeholders in water and nature conservation area management.

The aim of this brochure is to present them to you.

GOAL 1:

Towards wise use of wetlands

GOAL 2:

An international network of wetlands

GOAL 3:

International wetland cooperation

GOAL 4:

Institutional capacity and effectiveness



GOAL 1 : TOWARDS WISE USE OF WETLANDS

Wetland inventories and assessment

In the context of the National biodiversity strategy, a Nature and Landscape Information System (SINP - Système d'Information sur la Nature et les Paysages) has been implemented. Its purpose is to promote a synergy between stakeholders for the production, management and valorisation of nature and landscape data (www.naturefrance.fr).

One of the products of this information system is the Natural Heritage of France Inventory (INPN - inventaire national du patrimoine naturel), managed by the French Natural History Museum (<http://inpn.mnhn.fr/isb/index.jsp>). Though not specific to wetlands, the site contains much relevant information, in particular concerning; plant and animal species, taxonomic repositories and biodiversity-related legal documents, habitats and environments, the results of national inventories, areas covered by European directives, along with the national reference database of protected areas or areas covered by international conventions. Furthermore, actions more specific to wetlands have been initiated both at the national and local levels. These must now be merged.

- **National Wetlands Observatory**

The National Wetlands Observatory (ONZH - Observatoire national des zones humides) was created in 1995 in the context of the national wetlands action plan. M.E.E.D.D.A.T. (Ministry of Ecology, Energy, Sustainable Development and Territorial Development) (IFEN - French Environment Institute) operates the observatory with the specific support of the French Natural History Museum. The aim is to monitor the evolution (indicators, expert investigations) of 152 wetlands of major importance (Atlantic, English Channel and North Sea coast; Mediterranean coast; alluvial valleys; inland plains), to which are added 52 peat bog ranges. These sites, covering an observation perimeter of 2.4 million hectares, are representative of the various types of ecosystems present in Metropolitan France, both in terms of the ecological diversity of environments and of socioeconomic contexts (www.ifen.fr) zones humides (wetlands) section.

- **Mapping wetland environments**

A map of wetland environments was jointly drawn up, in 2001, by the IFEN and the French Natural History Museum based on the processing and summary of geographic layers available at the national level. The method is available at the following address: www.ifen.fr zones humides (wetlands) section. Though not exhaustive, this map serves as a source of basic information.

- **Information systems**

The French Water Information System (SIE - Système d'Information sur l'Eau), managed by the National Water and Aquatic Environment Agency (ONEMA - Office national de l'eau et des milieux aquatiques) is intended for the distribution and sharing of data and information concerning all water compartments www.eaufrance.fr SIE (WIS) section). Furthermore, a large number of partners have developed GISs at scales suited to their needs (catchment basin, region, nature reserve, etc.) or according to wetland types (peat bogs, ponds, etc.)

- **Wetland inventories**

Wetland inventories are drawn up at the inter-communal, departmental or catchment basin scale, with the collaboration of the water agencies present in each of France's six major catchment areas. A wetland inventory software application has been developed by the IFEN and the SANDRE (Service d'Administration Nationale des Données et Référentiels sur l'Eau - National Water Data Repository Management Service) to help stakeholders in the field to characterize wetlands. It is available for free download from: <http://sandre.eaufrance.fr>, section outils du SIE, inventaire des zones humides (WIS tools, wetland inventory).





Wetland policies, legislation and institutions

Wetland incentive measures

Wetland incentive measures are organised around four main lines:

- **An “Integrated catchment basin management” line.** The main aspects of this policy are as follows:
 - A consistent administrative and technical organisation at the scale of the major catchment areas (6 basins in Metropolitan France);
 - Integrated planning tools (Water Development and Management diagrams);
 - Genuine supervision of water management activities, in particular through the creation of basin committees bringing together the different water users;
 - Application of the principle of repairing damages caused to the environment by taxing the operators that caused the damage to the aquatic ecosystems and water resource (pollution, withdrawal, obstacles, etc.);
 - Technical and financial support for water management agencies (redistribution of fees collected for damages to water resource and aquatic environment rehabilitation or integrated management initiatives).

- **A “Protection of sensitive natural areas and landscapes” line.** Many protected area networks include wetlands. The method of protection may either be contractual (regional nature parks), statutory (nature reserves, areas listed for their landscape significance, etc.), in the form of purchase (regional protection agency and coastal protection agency, foundations, departments, etc.), or mixed (network of Natura 2000 areas). Within these protected areas, various protection tools are used (statutory or incentive [release from certain taxes, subsidies, etc.]).

- **A “Protection of natural species” line,** based mainly on a strict protection system and supported by rehabilitation plans receiving, in particular, European funds: Bittern, Eel and Otter Life Programmes, etc. A national rehabilitation plan, for example, has followed on from the Aquatic warbler Life programme supported by the Bretagne Vivante – SEPNEB association [<http://www.life-phragmite-aquatique.org>]

- **A transverse support line entrusted to the “Wetland poles relay”** (see below in Communication)



Wetland legislation

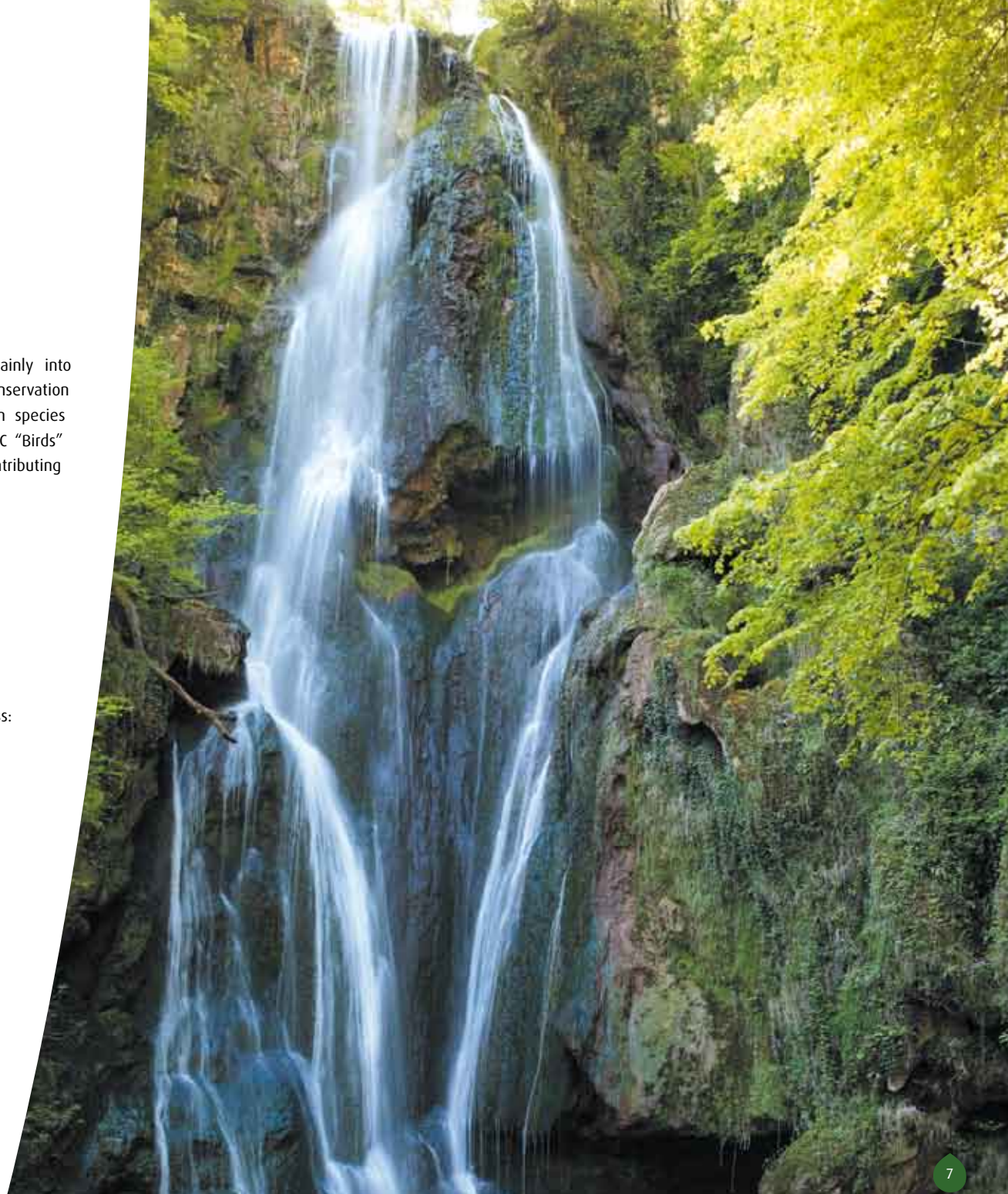
The conservation and sustainable management of wetlands currently comes mainly into the context of European natural resource sustainable management and biodiversity conservation policies (Water framework directive 2000/60/EC, strict protection rules for certain species and "Natura 2000" network arising from the 92/43/EEC "Habitats" and 79/409/EEC "Birds" directives. Other sector-based policies, in particular agricultural, provide tools contributing to wetland conservation.

The main statutory orientations in favour of wetlands pertain to:

- 1 Acknowledgment of the general interest represented by the conservation and sustainable management of wetlands
- 2 The need for consistency of related public policies;
- 3 The protection of species and natural areas;
- 4 The maintenance and implementation of nest agricultural practices.

A "Wetlands, laws and jurisprudence" newsletter is available from the following address:

www.ifen.fr/zoneshumides/pages/textes.htm





Wetland protection partner institutions

Beyond the State and territorial authority services:



- **Water agencies**

The six water agencies are public establishments. Their area of expertise is focused on France's six major catchment areas. Their goals are to facilitate the various public interest initiatives in each catchment basin:

- water resource conservation and improvement
- pollution control
- environment knowledge

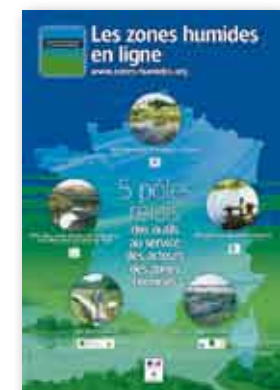
Portal: www.lesagencesdeleau.fr



- **National Water and Aquatic Environment Agency (ONEMA)**

The ONEMA is France's reference technical organisation for the study and surveillance of water condition and for the ecological operation of aquatic environments www.onema.fr

Amongst other things, the ONEMA coordinates the "**wetland poles relay**", whose role is to provide knowledge, promote sustainable management and to facilitate links between stakeholders www.zones-humides.org



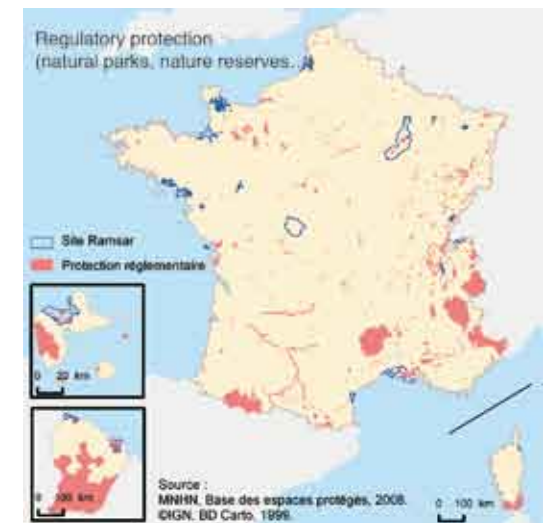
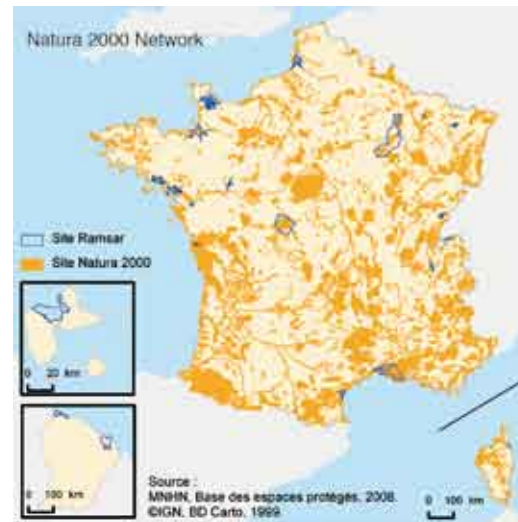
- **Protected areas**

Protected areas actively contribute to the conservation of wetlands. They find their origin in international, European, national and regional legislation. National protections may be the result of an administrative decision (Marine nature park, Nature reserve, National park, Listed site, Biotope order, Protection forest), a land ruling (acquisition by the coastal protection agency, regional protection agencies, councils or NGOs), or of an agreement with local stakeholders (Biological reserve, Regional nature park).

For further information:

<http://inpn.mnhn.fr/inpn/fr/conservation/espprot/index.htm>

Finally, there are a large number of centres, foundations and NGOs specialized in wetlands.





Environmental assessment

There is also a consistent group of tools and procedures intended to avoid or reduce the effects of project or programmes on particularly sensitive environments or habitats, in particular wetlands.

- The project environmental impact study was introduced in France in July 1976;
- A procedure for the assessment of the effects on water of projects or work potentially hazardous to aquatic environments has been planned since 1992;
- From 2004, all plans and programmes likely to have a significant environmental impact must be assessed; a specific impact analysis procedure has been implemented for Natura 2000 sites.

The office of the Secretary of State for Ecology has published a number of guides, in collaboration with scientists and socioprofessional organisations concerned, in one way or another, with wetlands and in particular the following:

- “Methodology guide for assessing the impact of infrastructure and development projects on Natura 2000 sites” (2004),
- “Methodology guide for assessing the impact of quarry projects on Natura 2000 sites” (2007)

www.natura2000.fr/spip.php?article135

- “Aquatic environments, initial status and impact forecast in impact documents”, Mise au point collection, CSP, Baril D (2008).





Cross-sectoral recognition of wetland services

Ecosystem services

Economic assessment, in the context of wetland protection, has developed over the past years. Under legal impetus, economic tools (cost-benefit analysis, monetary analysis of environmental damage and benefits) are increasingly used: identification of the economic benefits of flood protection, assessment of benefits arising from a change in water status (case of the Loire), cost-benefit analysis of river rehabilitation; case of the Gardon.

Work intended to define methods for assessing wetland functions has been conducted by certain water agencies (Seine-Normandie, Rhône-Méditerranée-Corse). They serve to qualify the hydrological and biogeochemical functions performed by these environments.

Study of the socioeconomic contribution of coral reefs

The IFRECOR's 2006-2010 action plan includes the assessment of the socioeconomic contribution of coral ecosystems to French overseas departmental and territorial communities. The aim of this approach is to highlight the benefits that these environments provide to man and to determine their socioeconomic value. It takes into account not only marketable goods and services, such as fishing and tourism, but also certain services such as coastal protection, water purification or landscape beauty, not covered by commercial exchanges, but which serve to improve human well-being.

Work on the social and cultural value of wetlands

French wetlands and more specifically the RAMSAR sites, are areas of high cultural value and of great importance for populations living in or of these areas.

A "Wetland History Group" was created in 2002. It brings together geographers, archaeologists and historians wishing to exchange information concerning a broad range of topics: European wetlands, productive areas past and present (2005), marshes, the military and war (2006), history of peat and peat bogs (2007), wetlands and climate (2007), wetlands and Health (2008) <http://ghzh.free.fr/>.



Integrated water resources management

Integrated management is implemented at various levels, thanks to three main tools.

- **The Water Development and Management Master Plan** (Schéma Directeur d'Aménagement et de Gestion des Eaux - **SDAGE**) defines the orientations required for the balanced management of water resources, including wetland protection and valorisation. Applied at the level of each of the six French catchment basins, it is defined collaboratively by a Basin Committee.
- **The Water Development and Management Plan** (Schéma d'Aménagement et de Gestion des Eaux - **SAGE**) is a planning document produced in a collective manner, aimed at more local hydrographical units (river catchment basin, aquiferous system, etc.). It defines the general water resource usage, development, along with the quantitative and qualitative protection goals. A Local Water Commission representing the territory's various stakeholders draws up the SAGE. Furthermore, the town planning documents must be compatible with the goals defined by the SAGE.
- **The River contract** (or lake, bay or groundwater contract) is an intervention instrument at the catchment basin scale. Like the SAGE, it defines for this river a number of water quality, aquatic environment development and balanced water resource management goals and provides a programme of concrete actions over a 5-year period. For further information: www.gesteau.eaufrance.fr.

Wetlands and climate change

The role of wetlands in reducing the impact of climate change, along with the assessment of the impact of climate change on wetlands, are topics that remain to be studied. Created by the act of February 19th 2001, the national observatory of the global warming effects (observatoire national sur les effets du réchauffement climatique - ONERC) expresses the parliament's and government's will to take into account issues pertaining to the effects of climate change www.onerc.gouv.fr. Its main missions are to:

- Collect and disseminate the information, studies and research on the risks associated with global warming and with extreme climate phenomena;
- Formulate recommendations concerning the prevention and adaptation measures considered to limit risks related to climate change;
- The ONERC contributes to climate change discussions with developing countries.

The National Research Agency (Agence nationale de la recherche - ANR) has supported programmes on the following topics: "Vulnerability: Environments and Climate" (2007) and "Global environmental changes" (2008), including projects pertaining to water resource management, environmental dynamics and biodiversity changes. www.agence-nationale-recherche.fr/Accueil

The research programme Climate change management and impacts (Gestion et impacts du changement climatique - GICC, 1999) intends to assess the risks incurred and the potential for avoiding or managing them. It comprises a component specific to the interactions between biodiversity dynamics and global change. Several projects pertain to the impact of climate change on water systems, the water cycle and on related cycles (biogeochemical processes in water courses, flow system changes, aquatic biocenoses). <http://medias.obs-mip.fr/gicc/>.





Wetland restoration

Wetlands requiring restoration are identified by the water agencies, protected areas, or by the regions or departments. Satisfactory results have been achieved in several restoration projects. As an example, in the Rhine Meuse basin, more than 15 wetland rehabilitation operations are in progress. The two links below give an idea of projects initiated throughout France:

www.cren-rhonealpes.fr/part2/grands_prog.htm

www.bassevalleedelain.com/life/fr/index.php

A large number of guides have been published, such as, for example: "Plant engineering, a technical manual for the development and rehabilitation of aquatic environments", French documentation (2008)

Example: Restoration of the Palavas ponds

The Palavas ponds, located between Sète and Montpellier, form a string of lagoons where one can encounter bird flights, salt marshes and traditional fishing activities. Over 250 bird species, 3/4 of which are protected, have been observed during migration or wintering on the 4,000 hectares of lagoon and 2,000 hectares of wetland.

To improve water quality and to prevent these lagoons from filling, the Coastal ponds joint union decided, in 1999, to implement a wetland conservation policy, in consultation with the local stakeholders. In 2007, it launched a programme for the restoration of existing hydraulic connections between ponds and between the Rhône to Sète canal and the ponds.

The goals of the initiative were as follows:

- To improve the water quality in the lagoons, by enhancing water exchanges between rivers, the ponds and the sea, thus avoiding the confinement of large bodies of water.
- To limit pond filling by restoring sediment exchanges between the ponds and the sea.

www.siel-lagune.org/pdf/bulletin.pdf



Invasive alien species

The situation of invasive allochthonous, or proliferative autochthonous species was drawn up in 2000 by the Ifen, the MNHN and the ONCFS, within the Maritime wetlands sample1 (152 wetlands) www.ifen.fr/uploads/media/de122.pdf.

The French environment code provides for the possibility of prohibiting the introduction, into the natural environment, of this type of species, along with their transport or sale.

With prevention remaining the best tactic, a number of wetland-specific warning and control networks have been set up in relation to invasive plants (Central region, Loire-Brittany basin, Artois-Picardie), invasive animals (Adour-Garonne) or particular species undergoing expansion (*Rana castesbeiana*, *Threskiornis aethiopicus*, *Trachemys scripta*, etc.).

A number of research programmes, such as the INVABIO (2000-2006) programme, are attempting to better understand invasive phenomena. Half of the 30 projects funded concern plant or animal species found in fresh or salt water wetland systems. www.ecologie.gouv.fr/-InvaBio-.html.

Moreover, several environmentally respectful eradication programmes are in progress.

Example: Ludwigia in the Poitevin Marsh

Initially, a map of plant communities was drawn up. To act, three techniques were used, either in isolation or in combination, and tested at three different scales: application of weed killer, mechanical removal and manual removal. This test phase led to the definition of a management plan at the site scale (15,000 hectares). Regular efforts allowed this plant's development to be regulated.

www.sevre-nantaise.com



Private sector involvement

At each available opportunity, the private sector is associated with wetland protection actions. Individuals are invited to take part in the various consultations and thus to involve themselves in the preparation for wetland management. Companies are also invited to take these environments into account for their activities. For example, in the industrial sector, an improvement has been observed in gravel extraction techniques and quarry rehabilitation, along with the publication of guides created in partnership with the National Union of Quarry and Construction Material Industries: Wetlands and quarries: a wetland environmental heritage arising from quarry operation/ UNICEM, MNHN, CNRS, 5 volumes.

Danone partnership - Evian in favour of Ramsar

In 1998, the Danone Group decided to support the Ramsar Convention. This was the first time that a major private group supported an International Inter-government Convention. In 2008, on the tenth anniversary of the partnership, Danone and Ramsar decided to continue their action by launching a new programme called “water schools”, funded by Evian mineral water. One of the goals of this new partnership is to promote innovative integrated management experiments through pilot projects in favour of local sustainable development. Three water school locations have already been selected: Beung Khong Long lake in Thailand, the Jagadishpur reservoir in Nepal and the Jaaukanigas wetland in Argentina. The specific goals of the water schools are to involve local communities in the site’s management, the acquisition of integrated management know-how; the added economic value, along with the social and cultural values provided by these projects. This initiative by a major French private group, beyond its symbolic aspect, is of great importance as it reinforces the Convention and the role of France within this Convention.



Incentive measures in favour of wetlands

A large number of incentive measures have been launched in favour of wetlands:

- European structural funds;
- Agri-environmental measures;
- Water agency aids;
- Aids from the Ministry in charge of Ecology, for the implementation of the Natura 2000 network;
- Territorial authority (regions and departments) aids.
- Exemption from certain taxes on land located in wetlands

Several of these measures may be combined within a given wetland.



Example: The Natura 2000 charter

For wetlands included in the Natural 2000 network of European sites, a simple mechanism has been added to legislation to allow the involvement of all stakeholders around protected areas. The Natura 2000 charter allows the owners and users of the protected area to conform to the good management goals. It recommends the upholding of good routine and sustainable land management practices, respectful for natural habitats and species and with no financial compensation. Charter support, for periods of 5 to 10 years, does not involve the payment of any financial compensation. It does, however, give rise to certain tax exemptions. It also gives access to certain public aids.



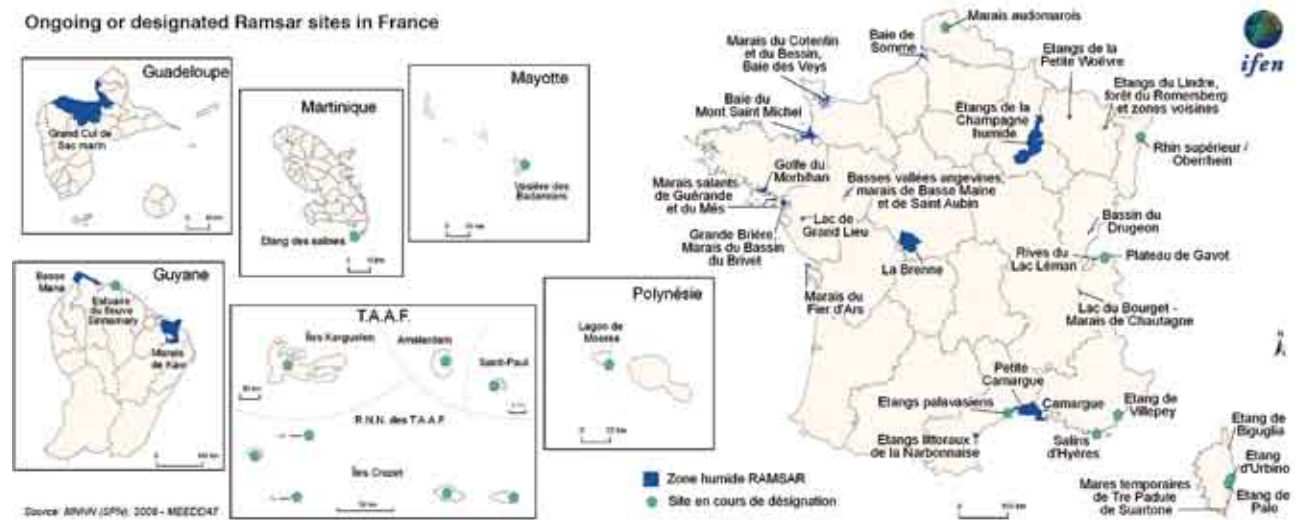
GOAL 2: AN INTERNATIONAL NETWORK OF WETLANDS

Ramsar site designation

French sites

In 2007, France had the responsibility of 24 sites. In 2008, 12 new sites are under designation process. These sites are distributed over the entire national territory and cover a broad variety of wetlands.

Ongoing or designated Ramsar sites in France



Definition of designation priorities

Past inventory work has led to the creation of a list of potential national Ramsar sites (Wetland proposals in view of their designation under the terms of the Ramsar convention, Lethier, H., MNHN, 1998).

Furthermore, an analysis is under way to identify synergies with national protected areas, or those protected under the terms of the "Birds" and "Habitats" European directives. This analysis has already led to the proposal of the Upper Rhine site (22,400 hectares), which was considered as soon as 1990, along with several mangrove and coral reef sites in France's overseas territories and departments.



Ramsar site management planning

Management documents have been drafted for all French Ramsar sites, concerning all or part of their surface area. The following table, drawn up in 2007, presents the overlap of Ramsar sites and other wetland protection measures. It highlights the need, for certain sites, to reinforce the consistency amongst the various management plans.

	Surface area (hectares)	Nature reserve	Biotope protection order	Listed site	Registered site	Game reserve	Coastal protection agency property	Coastal protection law	Natura 2 000	Regional nature park	Major site	Biosphere reserve	National heritage
Baie de Somme	17 000												
Baie du Mont Saint-Michel	45 800												
Basse Mana	59 000												
Bassin du Drugon	5 906												
Basses vallées angevines	6 735												
Brenne	140 000												
Camargue	85 000												
Etangs de Biguglia	1 450												
Etangs de la Champagne humide	255 800												
Etangs de la Narbonnaise	12 334												
Etangs de la Petite Woëvre	5 993												
Etangs du Lindre	5 308												
Golfe du Morbihan	23 000												
Grande Bière	19 000												
Grand Cul-de-Sac Marin	24 150												
Lac de Grand Lieu	6 300												
Lac du Bourget	5 486												
Marais de Kaw	137 000												
Mares de Tre Padule de Suartone	218												
Marais du Cotentin	32 500												
Marais du Fier d'Ars	4 452												
Marais salants de Guérande	5 200												
Petite Camargue	37 000												
Rives du lac Léman	1 915												



Ramsar site ecological character

The vast majority of French Ramsar sites have been created in areas already totally or partially protected by other statutes (Regional nature parks, game reserves, Coastal protection agency sites, Natura 2000 sites, etc.), or with integrated management already in place. The conservation and management actions developed for these protected areas serve to maintain the ecological character of the Ramsar sites.

Work with local stakeholders

Committees are already in place for other protection categories (Nature reserves, Regional nature parks, Natura 2000 sites, etc.), bringing together all interested parties and promoting an inter-sector approach in conformity with the Ramsar goals.

Example: the Opale park, cape and marsh and Audomarois

In 2002, the Opale capes and marshes Regional nature park wished to create a workgroup specific to the Audomarois marsh, its largest wetland. An initial programme of actions, intended to protect this particular area, with all of its component elements, was defined. Over a period of five years, the results served to sensitise the marsh population and political representatives of the need for wetland conservation. The administrators of the future site were able to visit other Ramsar sites (Camargue, Brenne, Poitevin marsh) and to discuss with their counterparts the merits of this label for their wetland. In order to guarantee successful collaboration, the Nature park requested the opinions of the municipalities, the Saint-Omer township committee, the Departments and the Region, requesting that they deliberate on the project and submit the Regional nature park as the local administrator. Twinning with the Le Parc ayant lui-même délibéré pour demander le label et en être l'animateur local. Des contacts étroits avec les gestionnaire du Blankaart Ramsar site in Belgium is also being considered.

Zoning

Example: Case of the Somme Bay

The nomination of a site to the Ramsar Convention is frequently, in France, the fruit of significant protection and sustainable development efforts. There are therefore frequently several statutory measures that do not always cover exactly the same zone. Ramsar's integration logic serves to sensitise local stakeholders to the ecosystemic dimension of nature protection. The Somme Bay site is a case in hand. The following series of maps shows the diversity of measures applied to a given territory.

Ramsar site management effectiveness

Examination of the management plans corresponding to the other protection statuses (Nature reserve, Regional nature park, etc.), conducted during their renewal, serves to assess wetland management efficiency within the sites. These assessments may be completed by the analysis of the terms specific to the Ramsar Convention.

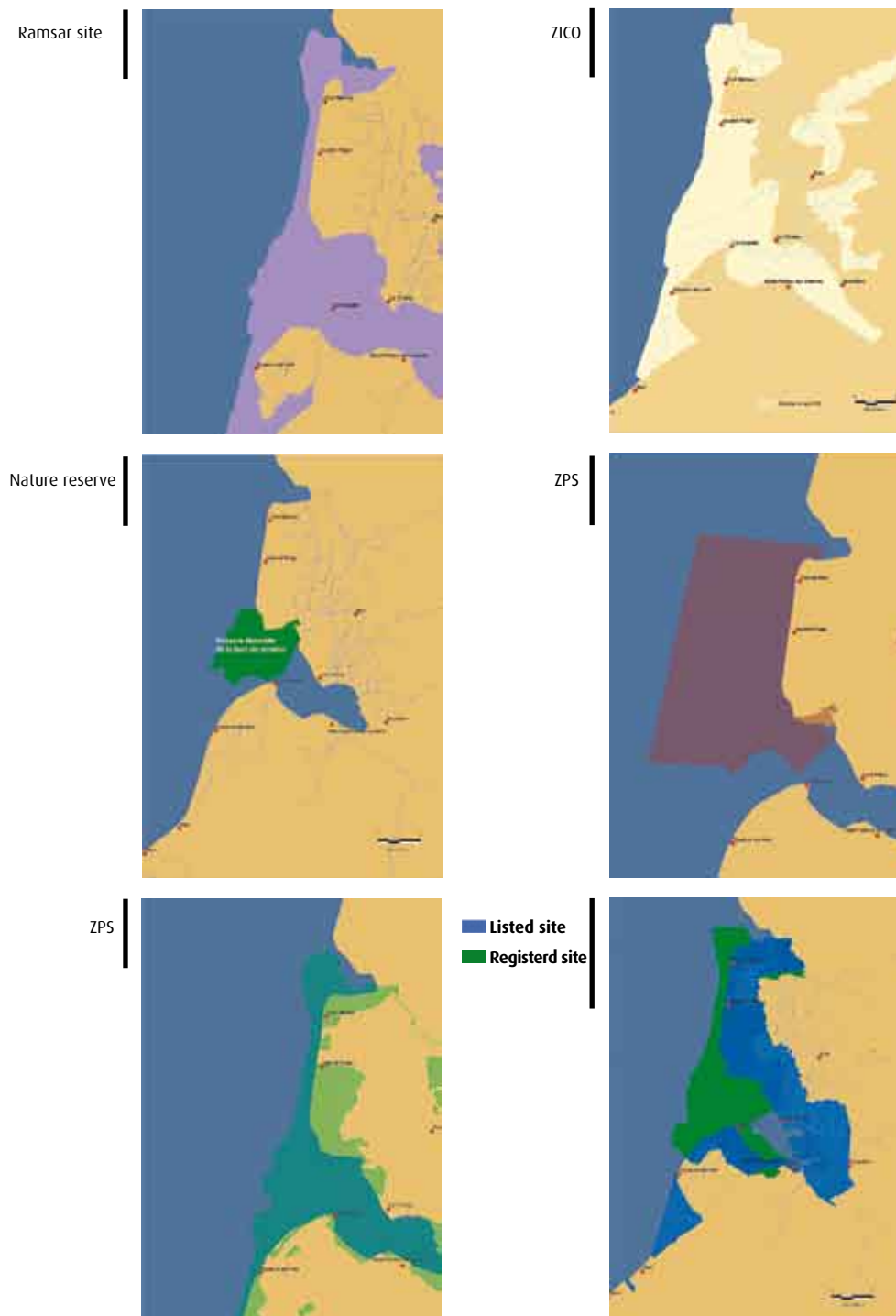
Example: the Narbonnaise pond observatory

At the Narbonnaise ponds Ramsar site, an annual road map is organised around the five topics covered by the pond contract:

- Water quality improvement,
- Improvement of hydraulic function,
- Peripheral marsh management,
- Maintenance of fishing activity,
- Visit management.

Each indicator refers to one of the contract's action sheets. This regular assessment allows the early detection and rapid resolution of any problems

www.parc-naturel-narbonnaise.fr



Wetland status

Assessment of wetlands in Metropolitan France

The assessment of wetland status, initiated in 1990, was renewed in 2000. It consists in collecting expert opinions concerning a sample of 152 wetlands of major significance (ZHIM), representative of wetland ecological and socioeconomic diversity. The same questions were asked after a period of 10 years. In brief, the diagnosis of trends over the 1990-2000 period is nuanced:

- ZHIM surface area has remained globally stable;
- Despite an increase in conservation and rehabilitation actions, site degradation is increasing overall. Peat bogs, meadows and wet heaths are regressing and deteriorating, while the situation of salt-water environments and mud flats is improving.
- The highest degree of human pressure is exerted on alluvial valleys and the Mediterranean coast and the lowest on the Atlantic coast. Globally, they have increased a little over the period, but are focused in certain alluvial valleys, inland plains and the Atlantic coast, in particular the estuaries;
- Some 60% of wetlands have been affected by problems related to eutrophication or anoxia, 50% of them being disrupted by water level management modifications, by natural siltation or unnatural drying, 30% by work (creation of bodies of water, calibration, filling);
- The expansion of invasive species, stimulated by hydrological disruptions and by the scope of human activities, has affected virtually all wetlands observed in 2000, the Mediterranean coast and inland plain wetlands being the most seriously affected.
- According to 10% of experts, the future of these wetlands appears unfavourable, uncertain for one third, stable or favourable for nearly one half of experts.

For further information, see www.ifen.fr/uploads/media/de122.pdf



GOAL 3: INTERNATIONAL WETLAND COOPERATION

Synergy and partnership with the other major international conventions

The Ramsar administrative authority in France (office of the Secretary of State for Ecology) also hosts the focal points of the various other multilateral environment agreements. Regular coordination is provided by the Directorate for European and international affairs (direction des affaires européennes et internationales - DAEI), which possesses a biodiversity specialist unit. This unit provides a contact with all multilateral agreement focal points in the different technical departments, thus ensuring consistent positions.

The following multilateral agreement focal points, in particular, are concerned by this coordination:

- **Convention on Biological Diversity**
- **Convention to Combat Desertification**
- **Convention on migratory species**
- **Bern convention on wildlife in Europe**
- **Regional sea conventions** (OSPAR, Barcelona, Carthage, etc.)
- **Framework convention on climate change**

Example: Links between the Ramsar Convention and the Conference on Biological Diversity

When preparing the COP of the Convention on biological diversity, the specialists involved in monitoring the Ramsar Convention examine the recommendations concerning the diversity of freshwater ecosystem diversity, along with marine and coastal biological diversity.





Regional initiatives

MedWet was the first regional initiative for the conservation and rational use of wetlands. It was acknowledged as model of regional collaboration in the context of the Ramsar Convention.

France, through its office of the Secretary of State for Ecology and the Tour du Valat (centre for Mediterranean wetland conservation research) were actively involved in the drafting and implementation of the MedWet initiative from its inception. A large number of actions served to structure the initiative and to meet the challenges of the Mediterranean basin:

- Development of methods and tools,
- Reinforcement of Mediterranean wetland stakeholders' capacities,
- Drafting and management of projects benefiting local stakeholders.



Recently, the Tour du Valat has been strongly involved in the reform of MedWet governance and in the drafting of MedWet's "strategic vision" and of the 2009-2011-work plan. www.medwet.org/medwetnew/en/index.asp

Observatory of Mediterranean wetlands

The available information concerning the status and trends of Mediterranean basin wetlands is rich but fragmented. It is consequently impossible to obtain a reliable image of the evolution of these environments, to identify major problems and hence to direct collective action at key priorities. This is the ambition of the National Observatory of Mediterranean wetlands, that the Tour du Valat is developing with the support of the office of the Secretary of State for Ecology. The aim is to act as the catalyst for a vast technical and scientific partnership serving to select the main relevant indicators and to provide them with regularly updated data. This observatory is intended to be a dynamic tool, able to deliver synthetic information used to drive and direct public wetland policies.

for further information: www.tourduvalat.org (see "Programme", then "Observatory of Mediterranean wetlands").



International assistance

The French Global Environment Fund (FFEM) was created in 1994 to support environmental protection actions in developing and transition countries www.ffem.fr. The intervention topics are the same as those of the Global Environment Fund (GEF) (biodiversity, international waters, greenhouse effect). Its doctrine is distinct, however, as environmental protection is promoted in development projects. The FFEM funds many wetland and aquatic environment protection and sustainable management support projects, as demonstrated by the list of past and present projects shown below.

- **Maghreb (Lebanon, Morocco, Tunisia):** conservation of coastal natural areas in the Mediterranean basin MEDWET
- **Mauritania:** Support to the protection of biodiversity in the lower Mauritanian delta
- **Mediterranean (Morocco, Tunisia, Algeria, Lebanon):** Support for the implementation of the strategic action programme in the Mediterranean (PAS-MED, - PNUE/PAM)
 - Diagnosis of land-borne pollution.
- **Zambia/Zimbabwe:** Pollution control and contribution to the management of the Zambezi river
- **Guinea:** Observatory of maritime Guinea
- **Tunisia:** Marine and coastal protected areas
- **Estonia and Russia:** Implementation of a management plan for the Narva river catchment basin
- **Argentina & Uruguay:** Environmental protection support for the Rio de la Plata and its maritime front
- **Cuba:** Reinforcement of the national system for protected areas (including protected coastal areas)
- **Costa Rica:** Protection of the biodiversity at the Coco Island marine conservation area
- **Tanzania:** Mnazi Bay marine park
- **Hungary/Romania:** Cross-border management of the Korös/Crisuri basin - a sub-basin of the Tisza
- **Colombia:** Management of the Rio Magdalena river-lake ecosystems
- **Seychelles :** Rehabilitation of island ecosystems
- **East Caribbean:** Protected areas and benefit sharing in East Caribbean states
- **Mozambique :** Quirimbas national park (coastal park) development programme
- **South Pacific:** Contribution to the Coral Reef Initiative for the South Pacific (CRISP)
- **Africa/Regional:** Network of protected marine areas in Indian Ocean countries
- **Guatemala/Honduras:** Conservation and sustainable use of coral reefs in the mesoamerican eco-region
- **Algeria:** Support for the development of the National Commissariat for the Algerian coastline
- **Thailand:** Network of protected marine areas and sustainable tourism on the Andaman coast
- **Benin:** Mangrove conservation in the South Benin lagoon (Ramsar site)
- **Gabon:** Sustainable and concerted conservation of the Akanda mangrove (Ramsar site)
- **Uruguay:** National system of Uruguayan protected areas
- **Mediterranean:** Strategic partnership for the great Mediterranean marine ecosystem (Network of Mediterranean marine areas)



Sharing information and expertise

In addition to exchanges between territorial authorities (regions, department, municipalities) or between protected areas, the commitment of French stakeholders, in terms of international information distribution and expertise, takes on several foreground forms. As an example:

- **The Tour du Valat** plays a major role in the wetlands of the whole Mediterranean rim. Over many years, its teams have developed research and integrated management programmes promoting exchanges between wetland users and scientists.
 - **The observatory of coastal waders** fits into a more global debate, in connection with Wetlands International www.wetlands.org and the International Wader Study Group <http://web.uct.ac.za/depts/stats/adu/wsg>.
 - **The ATEN** continues its commitment to reinforcing the capacities of French-speaking Africa's wetland administrators through the preparation of a programme for the support of bodies in charge of implementing the Convention at the national level.
- French stakeholders have also organised international conferences on the protection and rational use of peat bogs.



Transboundary wetlands, basins and species



In Metropolitan France, all of the cross-border aquatic systems have been identified, in particular in the context of the water framework directive that plans, by 2009, to implement common management frameworks for international hydrographical districts. France is also a member of the International commission for the protection of the Rhine: www.iksr.org/index.php?id=137 and of the International Commission for the Protection of Lake Geneva www.cipel.org/sp/article11.html.

Furthermore, concerning migratory species, a number of actions, studies and projects are under way to rehabilitate environments, establish practices in favour of the concerned species (*Botaurus stellaris*, *Crex crex*, *Acrocephalus paludicola*, etc.), or to better understand migratory flows and their geography. Certain actions or projects are conducted in collaboration with other countries and international data exchanges are systematically organised.

Cooperation for a cross-border wetland on the Rhine

The Rhine's wetlands are part of a cross-border complex that has long been covered by international cooperation:

- The biotopes have been mapped for the whole of the Rhine's course
- A number of cross-border studies are under way for re-dynamising the Old-Rhine. The company Electricité de France, that holds a number of hydroelectric concessions on the Rhine, has already committed to perform measurements to allow the managed erosion of the banks along this section of the Rhine (improvement of aquatic environments and redd rehabilitation) and to rehabilitate old arms.
- To improve the movements of highly migratory species, fishways have been created at two hydroelectric plants and others are planned upstream.
- Rehabilitation of Rhine wetlands thanks to the Living Rhine 2002-2006 LIFE project- www.rhinvivant.com.

Migratory routes

For water birds, two migratory routes schematically cross France, one along the North Sea, English Channel and the Atlantic, the other along the Rhine and Rhône valleys, down to the Mediterranean coast. The limits of these migratory routes, however, are not always clearly identified. Indeed, a recent analysis showed that 20% of green-winged teals (*Anas crecca*) ringed in Camargue and hence located in the Mediterranean migration route (blue on the map), were in fact found in the "North-western Europe" route (red on the map). It would appear necessary to study the notion of migratory routes in more depth and to define the limits, particularly as the size of the populations of each species within the route serves as a reference for identifying sites of international significance. This refers to criterion 6 pertaining to the presence of 1% of individuals of a population of water bird species or sub-species.



GOAL 4: INSTITUTIONAL CAPACITY AND EFFECTIVENESS

Communication, education, participation and sensitisation

The four aspects are indissociable from any programme in favour of wetlands.

World wetlands days

The world wetlands days are an excellent opportunity to present wetlands and their riches. A considerable number of initiatives are implemented during this event, throughout France, organised in particular by the various protected area networks (e.g.: more than 200 events in Regional nature parks).

A specific periodical - Zones humides Infos (Wetlands News)

The quarterly "Zones humides Infos" (Wetlands News) newsletter, launched in 1993, contributes to forming opinions concerning doctrine points and to a better flow of information and knowledge. Since the first photocopied issue in 1993, "Zones humides Infos" has evolved into a high quality wetlands product (legal, political, agricultural and real estate aspects, economic assessment, pond fisheries, cultural heritage, water resource management, per catchment basin planning, etc.): www.snppn.com/static/ZHI.html.

"Zones humides Infos" is hosted by the National society for the protection of nature (Société nationale pour la protection de la nature): www.snppn.com. The "Wetlands group", a national group of wetland experts, provides the Zones humides Infos editorial board. ,



Poles relay

One of the missions of the poles relay is to collate available knowledge and make it available. They publish many studies and documents, design exhibitions and workshops, promote exchanges between wetland administrators and, more globally, between all wetland stakeholders: socio-professional, institutional, scientific, environmental education associations, etc. Each pole relay has its own web site and publishes a newsletter or bulletin.

- Atlantic, English Channel and North Sea coastal marshes: Forum: la Lettre des Marais Atlantiques www.forum-marais-atl.com
- Mediterranean lagoons: Lettres des lagunes www.pole-lagunes.org
- Peat bogs: Tourbières-Infos; L'Écho des Tourbières www.pole-tourbieres.org
- Ponds and springs: "Au fil des mares..." www.pole-mares.org
- Inland wetlands: A fleur d'eau http://zones-humides.parcs-naturels-regionaux.fr/zones_humides/

Manuals and methodology guides

Stakeholders working on wetlands have published a large number of methodology guides. A quarterly inventory of these documents is available from the "Selection of recent publications" section on the French Environment Institute's web site: www.ifen.fr/zoneshumides/pages/dossiers.htm.





Training plans and organisations

Nearly 20 national bodies or universities dispense wetland-related training, both basic and ongoing, on a regular basis, some of which is online. In addition to university syllabi, the bodies most closely concerned with wetland-related training are as follows:

- The office of the Secretary of State for Ecology's Environmental Training Institute (Institut de Formation de l'Environnement - IFORE): www.ifoecologie.gouv.fr.
- The Natural Areas Technical Workshop (Atelier Technique des Espaces Naturels - ATEN) offering courses for natural area personnel, including Natura 2000: <http://formation.espaces-naturels.fr/catalogue2008>
- The National Water and Aquatic Environment Agency (Office National de l'Eau et des Milieux aquatiques - ONEMA) which possesses a training centre: www.onema.fr/-FORMATION
- The poles relay also organise a large number of training courses in relation with various partners (National Forestry Commission, National centre for the management of territorial service, protected area networks, etc.)

Ramsar site education centres

Sensitisation to the importance and fragility of wetlands is performed at virtually all Ramsar sites and protected wetlands. Two sites have developed an active teaching approach directed at schoolchildren.

The Scamandre en Camargue gardoise Discovery Centre welcomes some 3,000 schoolchildren each year (primary and secondary mainly, high school and vocational training more rarely), along with 10,000 visitors. The Centre also organises topical events (the beautiful Scamandre evenings) intended for the local public, along with guided tours of the Gard Camargue www.camarguegardoise.com

At the other side of France, in the Somme, the first Ramsar House was opened in 2002, dispensing training to the future wetland technicians. Work is conducted in close collaboration with the Marquenterre Ornithological Park and the Somme Bay House in view of sensitising schoolchildren and visitors. In all, nearly 180,000 visit these two facilities each year. www.baiedesomme.org



Working with NGOs

Cooper with the major NGOs provides a useful complement to the action of the public institutions.

- **The Worldwide Fund for Nature (WWF)** is, amongst other things, the owner of the Orx Marsh (1,548 hectares) and the Brenne Marsh (18 hectares), as a tenant of the Poitevin wet meadows (1,600 hectares) and as an administrator in Camargue (11,500 hectares) via a lease in perpetuity www.wwf.fr.
- **The League for the Protection of Birds (LPO)**, administered in 2008 some 19,650 hectares of wetland, distributed over more than 130 sites, in particular 9 nature reserves www.lpo.fr.
- The National society for the protection of nature manages the Wetlands expert group and publishes ZH Infos (Wetlands News). Furthermore, it manages two prestigious reserves: that of Camargue (13,000 hectares) and Grand-Lieu (2,700 hectares).



Example: The Migration Mission

France is an inescapable stage for tens of millions of migratory birds. To meet these challenges, the Migration Mission is the result of the determination of several ornithological associations. The purpose of this programme is to network all structures and individuals interested in bird migrations. The pooling of knowledge, resources and actions should allow a better understanding of migration mechanisms in France, along with the initiation of suitable protection programmes. The Migration Mission is coordinated by the League for the protection of birds and financially supported by the office of the Secretary of State for Ecology.

www.migration.net.

ATTACHED

Further partner institutions for the implementation of the Ramsar Convention in France



- **French Institute for Environment (IFEN)**

The IFEN is in charge of producing and disseminating environmental information in France. It is part of the statistics department of the office of the Secretary of State for Ecology and, as such, is in charge of the National wetlands observatory. www.ifen.fr/acces-thematique/territoire/zones-humides



MUSÉUM NATIONAL
D'HISTOIRE NATURELLE

- **French Natural History Museum**

Both a scientific establishment and a public service, turned towards research and the dissemination of knowledge, the Museum performs five main founding missions that govern and fuel all of its activities: fundamental and applied research, collection management and conservation, teaching and instruction, dissemination of knowledge, expert assessment. The Museum manages, in particular, the National inventory of natural heritage (INPN): www.mnhn.fr

L'ATELIER
technique des espaces naturels

- **Natural Areas Technical Workshop (ATEN)**

The mission of the Natural Areas Technical Workshop (ATEN) is to contribute to safeguarding natural areas and heritage by encouraging the networking and professionalisation of stakeholders. The Natural Areas Technical Workshop brings nature professionals together: a public interest group enables public and private stakeholders to coordinate a common project: www.espaces-naturels.fr/presentation



- **National Society for the Protection of Nature (SNPN)**

The SNPN is involved in coordinating the "Wetlands" expert group brought together by the office of the Secretary of State for Ecology. Within this framework, it publishes the quarterly bulletin Zones Humides Infos. The SNPN is a public utility association whose purpose is to implement education and nature protection actions in France, but also worldwide. It also conducts a general reflection concerning the major conservation issues for natural environments and endangered species. The SNPN is the oldest of the Nature Conservation associations and this at the worldwide level. www.snpn.com



Protected natural areas

- **Protected marine areas**

The underlying principle of the protected marine areas is to involve both territorial authorities and users in State decisions concerning the sea, based on a protection and sustainable management goal, in the context of integrated activity management. www.aires-marines.fr



- **National parks**

France's 9 national parks cover a total surface area of 370,000 hectares of protected central areas and 900,000 hectares of adhesion areas.

www.parcnationaux.org/accueil

- **Coastal protection agency (Conservatoire de l'espace littoral et des rivages lacustres)**

The Agency protects more than 117,000 hectares covering more than 1,000 km of coastline. Its aim is to conduct a property management policy in favour of natural coastal and large lake environments. www.conservatoire-du-littoral.fr

- **Nature reserves**

Nature reserves serve to protect the endangered natural heritage. In 2008, there were 159 National and Corsican reserves (540,700 hectares) and 170 Regional reserves (21,000 hectares). www.reserves-naturelles.org/accueil/accueil.asp

- **Regional nature parks**

The 45 regional nature parks cover a total of 7,129,000 hectares. Their purpose is to protect and valorise large inhabited rural areas whose natural and cultural heritage is of great quality, but whose balance may be threatened.

www.parc-naturels-regionaux.tm.fr/fr/accueil

- **Natural area protection agencies**

The 30 natural area protection agencies are NGOs that manage 1,900 sites covering 81,000 hectares, of which 35,000 are in Nature reserves. They are involved with the owners, tenants or parties to natural areas. www.enf-conservatoires.org

- **Tour du Valat**

A public utility foundation, the Tour du Valat is a research centre whose mission is the conservation and rational use of Mediterranean basin wetlands. www.tourduvalat.org

Other foundations

The Foundation for the protection of wildlife habitats, created in 1979 by the National union of departmental hunters' associations, owns 6,500 hectares distributed over nearly 150 sites, particularly in wetlands and including a number of Ramsar sites (Brenne, Grand-lieu). The recent Pierre Vérots foundation has dedicated 150 hectares to wetland research and conservation programmes in the Dombes. Several corporate foundations (Danone-Evian, Procter & Gamble, EDF, Total, Nature et Découverte, etc.) support wetlands-related achievements, in France and abroad and work in partnership with the above-mentioned organisations.



Projects and initiatives in favour of wetlands

Next to the various policies in favour of wetlands and the different institutions involved, there are in France a number of programmes and initiatives whose topical interests pertain to one or other of these environments. They focus their resources on current and specific issues, or on transverse topics.

LOIRE LARGE AS LIFE PLAN (PLAN LOIRE GRANDEUR NATURE)

The Loire is France's longest river and drains, along with its tributaries, one fifth of national territory. Over its 1,015 km course, it crosses 6 regions and 11 departments. Frequently stated as "France's last wild river", it represents an exceptional European natural and landscape heritage. Its integrated management is therefore essential. Faced with this challenge, the Government, in partnership with the Water Agency and all municipalities bordering the Loire, launched in 1994 the "Loire Large as Life Plan". This plan was designed to be a "framework for going beyond any conflicts and engaging partnership actions combining State, municipalities and environmental protection associations and to resume sustainable river development". www.plan-loire.fr



IFRECOR

France possesses coral reefs in all three oceans, covering a total surface area of approximately 55,000 km², i.e. 10% of the world's coral reefs, including the world's second largest barrier reef (1,600 km developed length). The purpose of IFRECOR (Initiative Française pour les RECifs COralliens - French Coral Reef Initiative), launched in 1998, is to coordinate the action of the various French actors for the sustainable development and protection of coral reefs and their associated ecosystems (mangroves and plant communities). Supported by the Ministry of the Interior and the office of the Secretary of State for Ecology, IFRECOR coordinates a network of correspondents in France's eight overseas departments and territories. It brings together researchers and representatives of the socioprofessional world of State and local government and develops common scientific research, communication and correct coral reef management development actions. www.ecologie.gouv.fr/-Recifs-coralliens-IFRECOR-.html



LITEAU

Launched in 1998 and funded by the office of the Secretary of State for Ecology, the research programme called LITEAU is intended to meet the needs of coastline stakeholders, administrators and users. Though its cross-curricular approaches, it attempts to develop the scientific methods and tools required for sustainable coastline development. In 2007, the five lines of work concern the rehabilitation of damaged environments and ecological engineering; protected marine areas; coastal risks; ongoing work on the definition of “good ecological status” criteria; integrated management of coastal areas. A number of the selected projects pertain to Ramsar sites (Camargue, Mont-Saint-Michel Bay, Gulf of Morbihan, etc.), but also to the co-management of New-Caledonian reefs and lagoons: www.liteau.ecologie.gouv.fr



WATER AND TERRITORIES

Initiated by the office of the Secretary of State for Ecology in 2007, the Water & Territories programme is intended to shed light on current or future water management policies. The aim is to decompartmentalise sectoral, national and European policies and to propose transverse approaches and management methods. The approaches are systemic, cross-curricular and anchored in issues related to the *sensu lato* governance of water. Amongst the 12 projects launched in 2008, three are directly related to the management of the Camargue, High-Rhône and Seine estuary wetlands management:

www.ecologie.gouv.fr/-Eaux-et-Territoires-.html

ERA-NET European projects

The office of the Secretary of State for Ecology is a partner to a large number of European programmes

www.ecologie.gouv.fr/-Recherche-europeenne-.html and in particular the following:

- ERA-NET FLOOD of the 6th EU Framework Programme (2005-2008), designed and developed by 11 European countries to consolidate flood research, to promote best practices and to stimulate collaboration. The aim is to provide a scientific basis for managing flood risks at the national policy and funding levels in Europe;
- ERA-NET IWRM (Integrated Water Resource Management) is a European exchange network for improving the dissemination of Integrated Water Resource Management research results;
- ERA-NET CIRCLE. This programme consists in coordinating research on Wider European climate impact, with as driving topic water-related adaptation strategies and tactics in coastal areas, along with new equilibria between integrated water resource management and coastal resources.





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