



COMMISSIONED REPORT

Annex to Commissioned Report No. 271

A review of relevant experience of coastal and marine national parks

Case studies (1 & 2)

**Parc Naturel Régional d'Armorique & Parc Naturel
Marin d'Iroise - Brittany, France**



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Sketch profiles

Parc Naturel Régional d'Armorique (PNRA)

Location and size

Includes four geographically defined areas of Finistere, northern Brittany: Ouessant-Molene archipelago (Ushant Islands); Crozon peninsula; Monts d'Arree; and estuary of the River Aulne. Total area 172,000 ha.

Scope

Primarily terrestrial, but includes 60,000 ha of marine water to 30 m depth (the marine area also falls within the proposed Parc Naturel Marin d'Iroise); other protected areas lie within its boundaries including the Reserve Biosphere d'Iroise and several terrestrial nature reserves.

Objectives

- Contribute to the economic and social development of the sub-region;
- Understand, protect, enhance and encourage an appreciation of the natural environment;
- Understand, protect, enhance and encourage an appreciation of the cultural heritage;
- Encourage further support for the park and its goals both locally and further afield.

Status

Established since 1969; currently undergoing the fourth 10-year revision of its *Charte* (management agreement); managed using collaborative approach between communes and Regional government (i.e. not national level).

Issues and initiatives

The PNRA is considered to have contributed to rural regeneration and sustainable development, and has introduced *ecomusees* on a wide range of themes which promote the natural and traditional heritage, as well as provide education facilities and tourism attractions. The complexity of protected area designations both within and adjacent to PNRA has caused some difficulties in communication and collaboration. Although marine waters are included, the PNRA has no competence over these.



Parc Naturel Marin d'Iroise, Brittany, France

Location and size

Iroise Sea, off the westernmost point of Finistere; total area c. 321,000 ha.

Scope

Entirely marine apart from emergent rocks and uninhabited islets; extends from territorial sea limit to high water mark, excluding the Rade de Brest.

Objectives

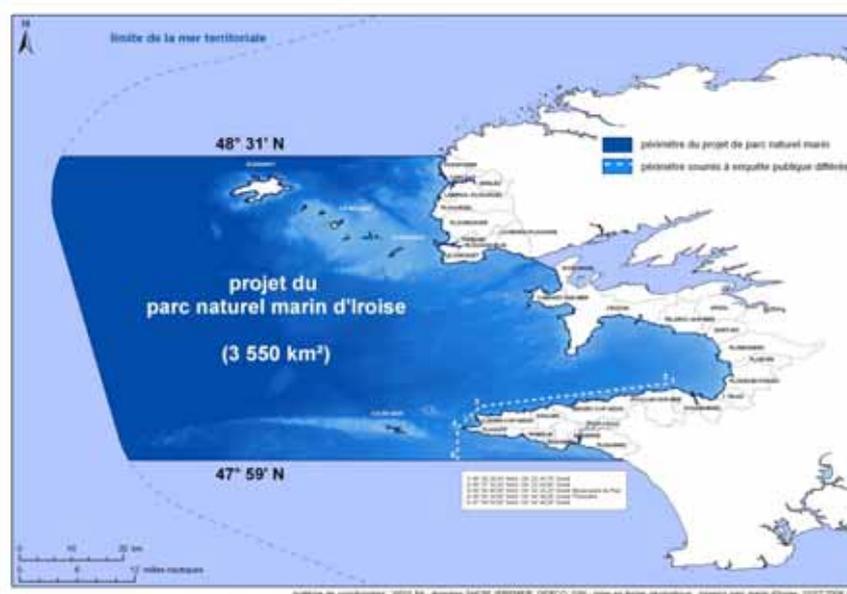
- Promotion of knowledge and understanding of the marine environment;
- Protection of designated marine sites of importance;
- Sustainable development of economic activities dependent on the sea.

Status

Approved and gazetted in July 2007 as France's largest MPA and first protected area under a new designation *Parc Naturel Marin*. Includes components of other protected areas (e.g. subtidal parts of PNRA and RBI).

Issues and initiatives

Primary issues to address are fisheries and water-based recreation and tourism (sailing, water-sports); the issue of overlapping protected area designations and management bodies have yet to be resolved; specific role of PNMI over and above that of other protected areas and existing fisheries management mechanisms not entirely clear; well supported by tourism industry and professional fishermen but a strong recreational fisheries lobby is opposed to the concept; the PNMI has potential as a new, comparatively well-funded initiative to bring all the interests together and develop new mechanisms; will be a pilot for development of future PNMs.



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Acronyms

BV-SEPNB	Bretagne Vivante - Société pour l'Etude et la Protection de la Nature en Bretagne
CLE	Commission Locale de l'Eau
CLPM	Comités Local des Pêches Maritimes
CMPA	Coastal and marine protected area
CRPM	Comités Regional des Pêches Maritimes
IFREMER	Institut Français de Recherche pour l'Exploitation de la Mer
LEL	Limited Entry Licensing
PNMI	Parc Naturel Marin d'Iroise
PNR	Parc Naturel Régional
PNRA	Parc Naturel Régional d'Armorique
RNN	Reserve Naturelle Nationale
RBI	Reserve Biosphere d'Iroise
SAGE	Schéma d'Aménagement et de Gestion de l'Eau
UBO	Universite de Bretagne Occidentale
ZICO	Zone Importante pour le Conservation des Oiseaux
ZNIEFF	Zone Naturelle d'Intéret Ecologique Faunistique et Floristique

Note

Several legal and administrative terms cannot be directly translated into English as they are specific to the French legal and governance systems. They have therefore been left in French, and an explanation of the meaning is given in the text or in a footnote.

Key findings and lessons learned

Key findings

1. There has been intense debate about protected areas throughout the last 20-30 years. The national park designation has been particularly controversial (the main issue being the legal requirement for a strictly protected core zone) and establishing and managing these state-run and state funded bodies has been very difficult. Most of the seven have involved either conflict or long debate; communities have tended to be insufficiently involved; in some cases communes have been included within the boundaries against their will; and elected representatives (*elus*) have been in the minority or side-lined. As a consequence, until the recent designation of Parc Naturel Marin d'Iroise, there had been no new national parks since 1989. This concern led to a parliamentary report (Giran, 2003) and subsequent revision in April 2006 of the 1960 National Parks Law to allow for more participation and the inclusion of sustainable development as an objective.
2. In contrast, the Parc Naturel Régional (PNR) have a collaborative, participatory approach to management, and function at regional, rather than national level. Parc naturel régional are of interest as the supporting legislation was passed 40 years ago before the concept on which they are based - co-management and community participation - was globally accepted. They have no executive powers, and no competence over the marine environment although the Parc Naturel Régional d'Armorique (PNRA) has a large subtidal area down to 30 m depth. The terrestrial boundaries of a PNR are not considered fixed; the PNRA started with 28 participating communes, currently involves 39, and potentially may include others that have already been identified and are to some extent already participating in park activities. Nearby communes that are not formally part of the park can also be associated on a more temporary basis, through annual agreements. Although there have reportedly been occasional management problems with the PNRA, PNR have in general been more successful than national parks and are more widely accepted, as demonstrated by the fact that 45 have been established compared with seven national parks.
3. The basic management tool for the parc naturel régional is the *Charte* and its associated *Plan*. These are developed with the stakeholders and form the basic agreement. This is similar to a strategic management plan, and is described in more detail in later sections.
4. Until recently, protected area legislation did not cater well for Marine Protected Areas (MPAs). The earliest MPA, Port Cros National Park, established in 1963, is seen by some as an extension of a terrestrial protected area, and was set up relatively easily although it has a strictly protected marine core area. The park was small (initially 700ha. terrestrial, 1288ha. marine) and its *gazettement* in 1963 was at a time well before the anti-protected area lobby was fully established¹. In 1976, legislation for Réserve Naturelle Nationale (RNN) was amended to allow for inclusion of marine habitat. The largest marine RNN, Bouches de Bonifacio in Corsica, was also established relatively easily (in 1999) even though it has strictly protected areas, perhaps because these were agreed with fishermen and gazetted as *zone de cantonnement* through fisheries legislation (see below). However, other projects to establish MPAs ran into major difficulties on account of the requirement for strictly protected core zones. As a result, the 2006 legislation on protected areas established a new designation - the *Parc Naturel*

¹ In addition, the terrestrial component had been in private hands for 40 years beforehand; the owners donated it to the state on condition it was made a national park.

Marin (PNM). This concept uses lessons learned from the success of the parc naturel régional, to promote a more integrated form of management involving all stakeholders.

5. PNMs have no regulatory powers but can bring partners together, interpret regulations and undertake monitoring, and the management plan that is a requisite under the legislation will help to co-ordinate activities. They will also bring in human and financial resources for conservation activities. PNMs cover marine/subtidal areas only and have no direct competence on fishery management, although advice and support can be provided and an important objective is to promote sustainable fisheries.
6. Relationships between the different types of protected areas, many of which are adjacent to, or lie within, or overlap with the boundaries of larger designated sites, are not always clear and the roles and responsibilities of the various management agencies are not always clearly defined. In Brittany, the mechanisms for ensuring harmonisation and good collaboration seem to be in place for the PNRA for the terrestrial environment, but are poorly evolved for the marine environment. In particular, the way in which the PNRA, the Biosphere Reserve Iroise (BRI), the Natura 2000 network and Parc Naturel Marin d'Iroise (PNMI) will work together still has to be fully determined. Biosphere reserves have a very similar remit to parc naturel regional (as well as the new parc naturel marin), in that they put benefit to and involvement of local communities and stakeholders on a par with biodiversity protection and state control. In Brittany, the BRI was established after the PNRA and before the PNMI, but its role in relation to these two entities still needs clarification. According to one interviewee, the PNRA and RBI co-existed well together until the PNMI became a reality. The Natura 2000 process is also underway and ZNIEFFs (SACs) and ZPS/ZICOs (SPAs) have been identified, but it is unclear how this will be integrated with the other initiatives underway. According to at least one observer, the Natura 2000 process has fuelled the anti-protected area lobby and increased opposition.
7. A national MPA agency is being established this year in Brest that will co-ordinate the work of all MPAs, whether designated as national parks, PNMs or other. It is too early to say what impact this will have, but there is general optimism that it will improve co-ordination between all those involved in MPA establishment and management, and help France meet its MPA targets and international obligations.
8. Inshore fisheries management is based on a co-management arrangement involving committees that represent the commercial or professional fishermen at regional and local level, and the local government. The committees have substantial input into the planning of regulations and spatial use of a fishery. They are also aware of the need for limits on exploitation if fisheries are to be made sustainable, partly because of concerns about proposed reforms to the CFP. With a few exceptions, they have been in favour of the PNMI, seeing potential benefit through diversification of livelihood activities (it has been suggested that commercial fishing could be combined with providing sea-tours for visitors) and a possible eco-label for produce sourced from the PNMI.
9. Water quality/water shed management also involves a collaborative approach. A *Contrat de Baie* is a scheme that can be applied to bays and their associated watersheds that involves stakeholders working together to co-ordinate management interventions relating to improving and maintaining water quality.
10. Web-based national discussion fora on protected areas that allow exchange of technical information between scientists and practitioners, including one specifically for MPAs, have made important contributions to the recent development of new thinking on MPAs and new legislation and approaches to management.

Lessons learned

1. *The length of time to develop an MPA* - it is nearly 20 years since the PNMI was first proposed and it has only just been designated. This is perhaps unusually long, but in most cases around the world MPA establishment is a slow process for a range of reasons due to: resolving conflicting interests of biodiversity protection and socio-economic development; gaining support of fishermen and others dependent on marine resources which are considered to be public access; inadequate legislation for the marine context etc. In Brittany, additional delays arose from changes in approaches to MPA establishment and management, pressures from stakeholders, political issues including new European and international obligations which led to the perception that the government was not clear about what was needed, inadequate and/or poorly organised consultations, and (inevitable given the long time span involved) changes in personnel both within the project and within the government agencies involved. A long gestation-period can be a disadvantage if, as in the case of the PNMI, it allows positions both for and against the initiative to develop very strongly.
2. *The need to try and harmonise individual initiatives in an area to make a 'single project' with agreed goals and objectives* - the existence of several protected area initiatives in the same area in Brittany (notably PNRA, RBI and PNMI) with their own '*raison d'être*', personnel, objectives and problems has created a difficult situation, and on occasions these natural partners have been unwilling to work fully together (this point was acknowledged by the director of PNMI project). The profusion of *gazettement* types in the Breton case study is recognized as a source of confusion for local communities and other stakeholders. It is hoped that the PMNI will provide a co-ordination mechanism for marine designations.
3. A first step (not fully achieved in the Brittany situation) is to *determine the structure for management of marine (subtidal) waters*, given that local authorities do not have competence over these. This problem is seen clearly in the inshore waters that are part of the PNRA (which has no jurisdiction over them), that will also lie within the PNMI, and that are already managed through a range of fisheries regulations.
4. *High visibility* - the PNRA has a very visible presence due to the numerous *ecomusees* and sites of interest, combined with good signage (in Breton as well as French). It also plays a major role in management of the botanic garden in Brest which gives a presence in the main urban centre of the region. The Director of Mission PNMI was aware of the need for improved visibility of the PNMI project and developed appropriate activities (restoration of the semaphore on Molene in association with the PNRA; research on marine mammals with IFREMER) while waiting for designation. *Photograph*: signs in Breton and French on the road identify each commune that is part of the PNRA - this photo also shows the Aulne estuary, one of the focal areas of the PNRA.
5. *Branding* - the PNRA seems to have been fairly successful at this, and its logo is highly visible throughout the area; it seems this is typical of parc naturel regional, in contrast to national parks; the Giran parliamentary report on the problems with national parks identified improved branding as an urgent need. The PNRA's association with a range of

recreational activities is thought to have had a positive impact on tourism development in the region, as well as on perceptions about the park. It is actively involved in several programmes (Voyages Naturels, Gites Panda and Hotels au Naturel - see later), as well as with sailing, walking and horse riding activities and training initiatives. In the case of the PNMI, fishermen have expressed interest in having a label for produce harvested in the protected area.

6. *Keeping stakeholders adequately informed* - even after 40 years, lack of clear information on what PNRA is doing is one of main complaints of those living within its boundaries.
7. The proposed PNMI is trying to use a participatory approach and so does not want to dictate structures and plans in advance; but stakeholders complain about lack of information and direction. It is very difficult to avoid a top-down approach if a national agency is determining the overall process.
8. *Developing a good scientific knowledge base and documenting the process* - the PNMI is backed up by substantial documentation on both ecological and socio-economic issues as well as the inter-relationships between the two, the importance of this being realised part way through the process. The PNMI is fortunate in having good technical expertise immediately at hand through Universite de Bretagne Occidentale (UBO) and IFREMER, and good studies on fisheries, sailing and wider recreational industries have been undertaken. The need to start monitoring and data collection programmes from the beginning so that trends can be observed and information passed back to stakeholders was emphasised.
9. *Stakeholders in well-organised groups* - commercial fishers are well organised in associations and committees and are broadly in favour of the PNMI, seeing an opportunity for management leading to more sustainable fisheries as well as economic opportunities in the form of tourism and a potential ecolabel. In contrast, recreational fishers are not organised in groups and are the most vociferous stakeholders against the PMNI, their large numbers have represented a formidable problem.
10. *Funding* - the PNRA and the PNMI both emphasised the importance of a secure funding base; the PNRA suffers insufficient funding, attributed to its regional status; the nationally run PNMI has a more secure budget.
11. *The ecomusees and activity centres* - created by the PNRA these have proved valuable tourist attractions, educational tools and have created employment opportunity; they are widely regarded as having helped with rural regeneration.
12. *Learning lessons from and sharing experience with related protected area initiatives* - the importance of this is emphasised by both the PNRA and the PNMI. The former has on-going initiatives with Pembrokeshire Coastal National Park in Wales, the HEATH project in Cornwall, and a relationship with organisations in China. The PNMI initiative has participated in a number of meetings and workshops to learn from other MPAs both within France and overseas; and a study visit was made to Reserve Nationale Bouches de Bonificacio in the Mediterranean.

French policy, legislation and practice relating to coastal and marine protected areas

France has an extensive body of legislation covering spatial protection of the natural environment (Table 1) and management of activities both on land and sea. Two issues have been the subject of much debate over the 10-20 years:

- Despite the many forms of designation available for protection of the natural environment and its flora and fauna, none have proved adequate for the marine environment, to the extent that France now considers itself to be behind other countries in meeting its commitments under European and international agreements; and
- the designation of 'national parks' (whether marine or terrestrial) became increasingly unacceptable on account of the top-down process involved; consequent opposition has meant that no new national parks have been established since 1989.

These issues culminated in 2003 in a parliamentary report - the Giran report, the recommendations of which led to new legislation in March 2006 (*La loi relative aux Parcs nationaux, aux Parcs naturel marins, et aux Parcs naturels regionaux*). This modified both national parks and parc naturel regional, and also created a new MPA designation - the *Parc Naturel Marin* (PNM). The 2006 legislation also allowed for the establishment of new bodies to manage national parks and PNMs.

The decree for establishment of the national Marine Protected Areas agency (*Agence des aires marins*) was passed in December 2006. This is under the Ministry of Environment but will work closely with the Ministries of Fisheries and of Overseas Territories. Unusually for a national agency, it is in Brest, rather than Paris. It will have a co-ordinating and advisory, rather than executive, role, and its main functions will be to promote and co-ordinate the establishment of all types of MPAs (i.e. Natura 2000 sites, Conservatoire du littoral, and parcs naturel marins) and to ensure collaboration with other protected areas with marine habitat. The government is aiming to have 10 MPAs in place by 2015.

The national association of professionals, 'Espaces Naturels' (www.espaces-naturel.fr) (ATEN - Atelier Technique des Espaces Naturels), set up to discuss and help develop policy on protected areas, has been a useful initiative. Its consultative groups organise workshops on specific topics. In 2001, the ATEN established a forum for those involved in the MPA debate, allowing informal exchange on technical issues, which was formalised with an agreement (*charte*) in October 2006, and which will be an important resource for the new MPA agency. It organises annual meetings (Brest 2002, Bonifacio (Corsica) 2003, Banyuls 2004, Chausey 2005, Port Cros 2006) that have made a major contribution to development of current thinking. The 2006 meeting also included participants from other countries to ensure that a wide range of experiences were shared.

Brittany is becoming a national focus for MPA policy and thinking, with Brest hosting the new national MPA agency, and the first PNM likely to be in the Iroise Sea. It is already a major centre for marine and coastal science through the presence of several institutes such as the Universite de Bretagne Occidentale (UBO) and the Institut Français de Recherche pour l'Exploitation de la Mer (IFREMER). These bodies undertake research on and for protected areas, contribute financial and human resources, provide information, and organise seminars bringing in other experience from France and elsewhere in world.

The following section describes:

- The main gazettelement types relevant to the case study;
- the general approach to fisheries management in France; and
- the *Contrat de Baie* - a collaborative approach to the management of land-based activities that affect the marine environment.

Types of spatial designation

Table 1 Types of protected area in France

Les espaces « naturels » protégés en France en 2005 (Outre-mer inclus)

Types de protection d'espaces naturels	Nombre	Surface (km ²)
Sites classés	2600	35300
Parcs nationaux (zone centrale)	7	3682
Réserves naturelles	150	5365
Réserves naturelles volontaires (Réserves « régionales »)	153	192
Arrêtés préfectoraux de protection de biotopes	516	1043
Réserves biologiques forestières	150	180
Réserves nationales de chasse et de faune sauvage	10	320
Conservatoire du littoral	435	600
Conservatoires régionaux d'espaces naturels	1200	360
Parcs naturels régionaux (PNR)	40	65000
Sites Natura 2000	1130	39550
Sites RAMSAR	15	5790
Réserves de Biosphère	8	7000

*Source : Ministère de l'écologie et du développement durable, 2004
Réalisation : L. Laslaz*

The Reserve Naturelle Nationale (RNN), Parcs Nationaux (PN - National Parks) and Parc Naturel Régional (PNR) are the three main gazettelement types, and reflect increasing strict levels of protection², as shown in Table 2. The Parc Naturel Marin (PNM) is a new designation specifically designed for marine waters; and several other designations exist for specific purposes (nature protection, protection of coastal areas of importance etc.).

Reserve Naturelle Nationale (RNN)

This designation is aimed at sites of high value for their biodiversity, geology or other natural features and for fragile, rare and threatened ecosystems, whether terrestrial or marine; there is no sustainable development objective. They tend to be smaller areas than national parks and parc naturel régional, and often form the core zone of national parks. They can be managed by a public body, local authority or NGO, and are required to have a management plan. Following amending legislation in 1976, marine waters can be included. The Iroise Reserve Naturelle Nationale is one of 23 RNNs with marine habitat and was established in 1992. It comprises 3 of the islets (Balanec, Bannec and Trielen) and surrounding waters in the Ouessant-Molene archipelago, covering just over 39 ha. It lies within both the PNRA and the Iroise Biosphere Reserve, and management is delegated to an NGO, Bretagne Vivante (SENB). The most successful RNN is considered to be the Bouches du Bonifacio RN in Corsica (recently redesignated under Corsican regional legislation).

² There is no direct correlation with the IUCN protected area categories, although parc naturel régional are usually Category IV or V, and RNs and the central zone of PNs are II.

Table 2 Comparison of regulations for RNNs, national parks and parc naturel regional

La loi et le droit : principes de la réglementation dans les espaces « naturels » français

Structures	Réserve naturelle	Parc national (zone centrale uniquement)	Parc naturel régional
Possibilités et réglementation			
Agriculture	Dépend des statuts	OUI, peut être réglementée	OUI
Libre pâture	NON	contrôlée	OUI
Exploitation forestière	NON	NON	OUI
Modification de l'aspect paysager	NON, demande d'autorisation de travaux	NON, demande d'autorisation de travaux	OUI
Chasse	NON	NON	OUI
Pêche	NON	Autorisée dans certains	OUI
Pratiques touristiques diverses	OUI, mais peuvent être limitées	OUI, mais peuvent être limitées	OUI
Randonnée pédestre	OUI	OUI	OUI
Camping, feux...	NON	NON	OUI
Survol	NON, dépend des statuts	NON	OUI
Recherche scientifique	OUI	OUI	OUI
Conservatoire génétique d'espèces sauvages	OUI	OUI	OUI
Conservatoire génétique d'espèces domestiques	NON	NON	OUI
Préservation d'espèces rares, protégées (nation. ou inter.)	OUI	OUI	OUI
Préservation des sites et paysages	OUI	OUI	OUI

© L. Laslaz, 2003. Sources : Ramade, 1981 ; lois de création ; divers.

Parcs Nationaux (PN) - National Parks

Established through legislation of 1960, national parks are created, managed and funded by the state alone, and have regulatory powers. Their primary objective is biodiversity protection. They have a strictly protected central zone, a reserve naturelle zone and a buffer zone. National parks are considered '*établissement public à caractère administratif*', and are required to have a *schema d'aménagement* or strategic action plan. Seven NPs were established between 1963 and 1989 (none in the area of the case study). The increasing opposition to new PN initiatives led to a parliamentary report (Giran, 2003) that, although approving the concept of national parks, criticised the ways in which they have been implemented and managed. In particular there has been insufficient involvement of and responsibility by stakeholders, especially the *élus (elected representatives)*. It was felt that a more formalised coordination mechanism was needed, to ensure participation by state, local communities, and associations and NGOs from the very beginning. The requirement for the strictly protected 'central' zone was usually the main blocking point. There was also urgent need for national parks to have a better image, and the idea of 'branding' or a PN 'label' was floated. The new legislation lays out an improved consultation process, and less stringent conditions for the central zone. Essentially the national parks are converging with the parc naturel regional in terms of their approach to management.

Only one of the seven national parks is marine (Port Cros National Park), with the Iroise MPA originally planned as the second. However, under the new 2006 legislation, the Iroise project is now been gazetted as a PNM (see below).

Parcs Naturels Régionaux (Regional Nature Parks) (PNR)

Parc naturel regional are established under a decree of 1967 and are designed to protect and enhance the natural and cultural heritage - *patrimoine* - and to assist in the social and economic regeneration of rural, mountain and maritime areas. Successive pieces of legislation have amended and strengthened the approach, particularly in the direction of sustainable development. The basis of management is co-management at regional and department level - shared responsibility of state and local communities - through a combination of community participation and '*democratie elective*' with the communes deciding what levels of protection are required for any particular area, except for sites which have been gazetted under other national legislation such as RNNs, sites classees etc. As will be seen with the PNRA, parc naturel regional are not able to regulate marine based activities.

The 1993 legislation on parc naturel regional laid out 5 *missions* or general aims:

- Protect the natural and cultural heritage or *patrimoine*;
- Contribute to land planning and management (*aménagement du territoire*);
- Provide education for and disseminate information to the public and promote public use of the area;
- Undertake pilot activities and models in relation to awareness raising and heritage protection and contribute to research;
- Contribute to economic, social and cultural development and to improved quality of life.

Each PNR is managed by a *Syndicat Mixte* (explained further in section on PNRA). The key management documents are:

- The *Charte* - or contract/agreement - which is drawn up between the relevant communes, departements and regions, and approved as a statutory instrument through a ministerial decree; and
- The *Plan* or map, which determines appropriate activities and land use for different areas.

The *Charte* lays out how the 5 *missions* will be achieved in a PNR, the specific objectives, the strategy designed to achieve them and a broad outline of the supporting actions, and provides an evaluation process. A PNR has no regulatory powers but in approving the *Charte*, the local communities agree to abide by certain rules and to undertake certain actions (e.g. respect building regulations/codes, appropriate management of water, waste, traffic). The PNR must be consulted for advice in any EIAs that are required, and all town planning must be compatible with the *Charte*. If the approach laid out in the *Charte* is not respected, the *Syndicat Mixte* has recourse to a tribunal. A *Charte* has a twelve-year life-span (previously 10, but recently revised), after which, it is reviewed in relation to the PNRA's achievements. New objectives are developed jointly, agreed by the authority and endorsed by the regional environment directorate (DIREN). Competence for land use and other local planning lies with the Communes, which are expected to follow the guidance given in the *Plan* and *Charte*. There is no 'zoning' in the sense normally understood for protected areas, but the *Plan* identifies different areas and the main ways in which they should be used, as well as the actions the PNRA will take to promote such appropriate use.

There are currently 45 parc naturel regional (Table 1 is out of date), covering 13% of France and involving 3 million inhabitants and 3,706 communes. They vary in size from 25,000 ha to over 300,000 ha (most are at the larger end of the scale) and the boundaries are proposed at region level, with the agreement of the communes. They include other forms of designated protected area (e.g. biosphere reserves, Ramsar sites, RNNs, Natura 2000

sites). The PNR network is co-ordinated by the Federations des Parc Naturel Regional based in Paris, and is celebrating its 40th anniversary this year with a programme of events aimed at promoting and increasing awareness of their aims and achievements, notably in the realm of sustainable development.

Parc Naturel Marin (PNM)

This protected area type was created under the new legislation of 2006 and the Mer d'Iroise is the first to be designated; other projects to establish PNM are underway in Reunion, Guyana, and the Calanques in the Mediterranean. The concept of a PNM is to a large extent inspired by experiences of parc naturel regional, as well as the work undertaken in preparation of the Iroise MPA. A PNM is aimed at ensuring full community participation in the development of the park, as well as creating benefits to the community from its designation. Three general objectives are laid out under the legislation:

- Promotion of knowledge and understanding of the marine environment;
- Protection of designated marine sites of importance;
- Sustainable development of economic activities dependant on the sea.

Management will be locally based, with the communes assuming responsibility for their own interests, although there will be a strong presence of the state to ensure that national and international obligations are met. PNM will promote integration and attempt to overcome the current sectoral approach to management particularly for fisheries.

Other designations

The following designations are found in the area covered by the case study:

Biosphere Reserve: This is an international UNESCO Man and the biosphere programme rather than a national designation. In France most biosphere reserves are found within, or as part of, national parks, parc naturel regional or RNNs. The Ouessant-Molène archipelago was designated as the Reserve Biosphere d'Iroise (RBI) in 1988, within the PNRA (map to right). A guide to management should be produced for each biosphere reserve in collaboration with the stakeholders and other management bodies involved, and this should set out relationships



between all partners, and should be evaluated every 10 years in detail, and briefly each year. Biosphere reserves may have management boards and scientific committees.

Conservatoire du littoral: This public body buys vulnerable or threatened natural sites, and delegates their management to communes or other local groups or associations. Specialists are brought in to advise on how the sites should be managed to ensure biodiversity protection. The Conservatoire is funded primarily by the government, with additional support from the relevant local communities and in some cases the EU. There are several Conservatoire du littoral sites in the PNRA.

Natura 2000 sites; Zones Naturelles d'Intérêt Ecologique, Faunistique et Floristique (ZNIEFF) (SACs); and Zones de Protection Speciale (ZPS) (SPAs): France is currently

developing its Natura 2000 network and a number of ZNIEFFs and ZPSs lie within the PNRA and proposed PNMI.

Sites classes: These are designated under a law of 1930 which allows for protection of an area by the State, and are often sites with high landscape value. There are 10 such sites in the area of the proposed PNMI, and several in the PNRA.

Espace Naturel Sensible du Département: This designation is a departmental level, rather than national one, and allows for the protection of areas of natural environment for conservation or public enjoyment. There are a number of such sites within the PNRA.



Fisheries regulations and controls

Since 1991, France has had a collaborative approach to inshore fisheries management. The commercial fishing industry is well organised with 10 Comités Regionaux des Pêches Maritimes (CRPM), uniting the more local Comités Locaux des Pêches Maritimes (CLPM). Fishmongers and processors and those involved in seaweed harvesting and scallop dredging can participate. These bodies are co-ordinated through an Organisation Interprofessionnelle des Pecheurs Maritimes and both CRPMs and CLPMs are heavily involved in management. The relevant bodies for the Iroise Sea are the CRPM de Bretagne, and four CLPMs (Nord-Finistere, Douarnenez, Audierne and Guilvinec).

Most inshore regulations are developed through close co-operation between fisheries scientists of the French Institute for Exploitation of the Sea (IFREMER), the CRPMs and the regional prefecture. The regional bodies can define their own policies for any particular area, defining activities on a spatial basis to minimize conflict. Limited entry licence (LEL) systems have been established for most fisheries, including kelp gathering and scallops, in the inshore area of Brittany, except for bottom trawling where regulation is still incomplete. The LEL systems are mainly based on a combination of spatial delimitation (local or regional) and gear and vessel restrictions, closed seasons, days-at-sea restrictions, and sometimes hours-at-sea quotas. A few fisheries are also managed by annual TACs. For scallops, a pilot restocking programme, using juveniles reared in a scallop farm, was undertaken through the *Contrat de Baie* programme (see below) and led to an increase in the catch from 80 tonnes in 1992 to 200 tonnes in 1997.

Zones de cantonnement are areas with seasonal, permanent or temporary limitations or bans on specific fisheries and are established in consultation with the fishermen and on the scientific advice of IFREMER. There is a *zone de cantonnement* for scallops in the Rade de Brest, which is managed with the involvement of the *Contrat de Baie* because of the need for good water quality. A *zone de cantonnement* for lobsters in the Chaussee de Sein (Baie de Douarnenez) is located in an area with strong currents which naturally precludes much interest in fishing.

There is no permit requirement for recreational fishing but the general fishing regulations must be respected (seasonal closures etc.). There are however restrictions on boat and engine size and on areas where recreational fishing can be undertaken.

Land-based sources of pollution

Contrat de Baie

Since the 1990s, many valleys, rivers and bays have been managed in France through what is called a '*contrat*' - or contract between stakeholders. The *contrat* is an environmental programme aimed at integrated management of an area that includes the watershed, water quality maintenance and management of its natural environment and fish resources. It has duration of 5 years, after which it is reviewed.

The *Contrat de Baie* for the Rade de Brest and its watershed was signed in 1998 by the state, the région, the département, the Agence de l'Eau (water authority), the communes and the Communauté Urbaine de Brest (Urban Municipality of Brest), which is the lead agency. The entire area has some 360,000 inhabitants in 137 communes mainly in the Département of Finistère, but some also in Côtes d'Armor and Morbihan. All the stakeholder groups are represented in a *Comité de Baie* which decides on the activities to be undertaken. The main objective is to restore the water quality to maintain scallop production, and to integrate economic activities (tourism, agriculture, fisheries, industry, defence, and port activities) with recreation. Several activities are underway to improve water quality including the promotion of organic farming, introduction of soil erosion prevention techniques, pilot aquaculture trials, improved sewage treatment, recycling of waste water from commercial glass houses etc.

The water sheds of the two main rivers involved, the Aulne and the Elorn (with the Penfeld and Daoulas), are each managed through a *Schéma d'Aménagement et de Gestion de l'Eau* (SAGE), or management plan, which is developed in a collaborative process with all stakeholders and implemented by a *Commission Locale de l'Eau* (CLE), established for each river. The CLE comprises representatives of the local communities and authorities (50%), the users, residents, and relevant technical bodies (25%) and the state (25%).

Table 3 Key dates and time line

Year	Event
1960	PN legislation passed
1963	Establishment of Port Cros PN, the first MPA
1967	PNR legislation passed
1969	Designation of PNRA
1988	Designation of RBI, and preliminary promotion by the PNRA of the idea for a marine park
1989	Idea for an MPA in the Iroise Sea formally suggested by the PNRA
1992	Creation of Iroise RNN
1995	Feasibility study for an MPA finalised by PNRA, with recommendation that it should be a PN; official procedure to create a PN initiated
1996	'Mission' for the Iroise PN established
1998	Paper proposing an Iroise PN (Le Duff <i>et al.</i> , 1998) Establishment of Contrat de Baie for Rade de Brest
1999	Full scientific study of proposed Iroise PN area undertaken
2000	Preliminary consultation for Iroise PN
2001	Decree to continue the Iroise PN process, whilst affirming economic development would continue
2003	Further consultation for an Iroise PN, with working groups; proposals for boundary and organisational structure; relaunch of consultation process to make it more transparent Release of report defining need for revision of 1960 law on national parks (Giran, 2003)
2004	Decision to amend national park legislation to take into account special requirements of MPAs
2005	Refocus of Mission away from PN concept
2006	Law no 2006-436 of 14 April - passed allowing for the establishment of a new type of MPA - <i>parc naturel marin</i> , and amending legislation for national parks and parc naturel regional Orientation document produced for proposed PNMI Legislation passed for establishment of new PN and PNM agencies Establishment of a national MPA forum
2007	National MPA agency set up

The Iroise Sea and Armorique area of Brittany

This section provides a brief description of the area within and adjacent to the boundaries of the PNRA and the proposed PNMI.

Main geographical components of the area

The area is immensely varied in terms of topography, ecology and biodiversity. It can be divided into the following broad areas:

Iroise Sea - the westernmost oceanic area of Brittany has long been recognized for its high biodiversity, in part due to the fact that the winds, swell and currents are among the strongest in Europe. Seabed topography is very varied and there are diverse habitats ranging from rocky bottoms to fine sediment. The fauna includes seals, basking shark, over 300 species of seaweed, high fish diversity (126 spp., comprising almost all the species found on the Atlantic and Channel coasts of France, including some rare species), and numerous resident and migratory birds. The entire Iroise Sea will be included in the PNMI; some of the coastal waters to 30 m depth are within the PNRA; and waters around part of the Ouessant-Molene Archipelago to 20 m depth are within the RBI. The area also has high socio-economic value, primarily for fisheries and tourism.

Offshore islands - the **Ouessant-Molène archipelago** (or Ushant Islands) lies about 20 km off the coast, and is composed of numerous low rocky islets. Ouessant Island itself is the most westerly point in France, with cliffs up to 60 m high, and a long maritime history on account of its importance for navigation (there are 5 lighthouses, including the tallest in Europe). The archipelago is internationally important for seabirds (e.g. choughs, puffin, storm petrel), mammals (seals, dolphins, otter), and has high diversity of fish, crustaceans and algae. The island of **Sein**, off the Pointe de Raz, south of Brest, is also included within the proposed PNMI area. The islands are inhabited, with some 1200 residents, and a further 3000 visitors in the tourist season (Ouessant = 850 inhabitants on 1558 ha, Molene 271 on 100 ha and Sein 246 on 58 ha).

Rade de Brest - a deeply indented, well flushed bay with a coast line of about 270 km, into which drain the Elorn, Aulne, Hyere, Daoulas rivers as well as several other smaller ones. The watershed of the Rade de Brest covers about 2800 km² and includes upland (Monts d'Arrée and Mez-Hom), urban (city of Brest) and agricultural areas. The bay is the focus of much maritime activity from the port of Brest, naval installations (including a nuclear submarine base - 90% of the French military nuclear force is concentrated here and on the Crozon peninsula), fishing and recreation. It is renowned for its scallop fishery. The bay is managed through a *Contrat de Baie* (see next section) and is not included in the PNMI, but the southern part the bay lies in the PNRA.

Baie of Douarnenez - a shallower wider bay to the south of the Crozon peninsula, subject to serious green algal blooms (*Ulva* spp.). It is included in the PNMI. The Groupement Maritime du Baie de Douarnenez was set up in 1982 by the Prefecture du Finistère to coordinate stakeholders and management activities and contribute to development, and the aim is to eventually have a *Contrat de Baie*.

Crozon peninsula - lying between the Rade de Brest and the Baie de Douarnenez: this has sheltered coves, sea caves and wide sandy beaches, and is dominated by the 330 m high heath-covered Menez-Hom. The peninsula is a key site for the Dartford warbler, several rare heath plants (Bell heather, Ling, and Le Gall gorse) and 22 species of dragonfly, some



unique to the area. It is geologically interesting for its minerals and fossils. With numerous villages and sites of historical and archaeological interest, it is now a major summer holiday destination for both French and foreign tourists, and lies within the PNRA.

Aulne River and estuary - the Aulne rises in the Monts d'Arrée and its large, deep estuary opens into the Rade de Brest. The 20 km of the Aulne near the coast are bounded by marshes, reed beds, and mud flats. The fauna includes Atlantic salmon, Fario trout and European otter.

Monts d'Arrée - this high ridge of land stretching 40-50 km inland into Finistère is pre-Cambrian and one of the oldest geological features in Europe; the hills peak at Roc'h Trédudon (387 m), and are characterised by a craggy profile. Other points of interest include Le Veneg, a rare

convex peat bed, the Yeun-Elez valley, formed by a peaty depression marked by crests of Armorican sandstone, which has the largest colony of European beaver in France and the Elorn which is one of the main salmonidae rivers in France. The Cragou Moorland Reserve Naturelle Nationale is characterised by heaths and low marshes dominated by pointed crests of schist and quartzite and is crowned by a residual forest of deciduous trees frequented by Montagu's harrier and curlew. Lies within the PNRA.



Huelgoat and Cranou forests - two main forested areas, both within the PNRA.

Fisheries

Brittany is the most important region in France for fishing, providing one third of French fishery production, and this has had a major impact on its culture and identity. Overall however, this industry has declined since the early 1990s (a 40% decline from 1990 (2,800 vessels and 12,000 fishermen) to 2003 (1,700 vessels and 7,000 fishermen). The Iroise Sea itself has been a fisheries focus since Roman times.

Commercial fisheries

In 2000, the commercial fisheries production of the Iroise Sea was estimated at 12,000 tonnes (70% fish, 30% invertebrates), and combined with seaweed (see below) had an estimated value of about 39 million Euros. About 350 commercial boats use the area each year, most of which (c 70%) are less than 12 m in length. There are an estimated 900-1000 professional fishermen involved in some 20 different fisheries, although about 12 make up 95% of the effort. Fish, scallops and other molluscs, crabs and lobsters are taken with a wide range of gears.



Seaweed

The Iroise Sea has some of the largest, densest and most diverse kelp beds in Europe, and seaweeds have been harvested for centuries, initially for use as fuel and fertiliser. This Iroise 'speciality' is now exploited on a commercial scale, mainly around the Molene archipelago, with about 50 boats - about 40,000 tonnes were taken in 2000 - and the alginates used for a range of food and cosmetic products. Brittany now accounts for 10% of the global output (Kervarec *et al.*, 1999). Seaweed gatherers have other activities in winter, such as dredging for scallops and other molluscs.

Scallops

The famous Brittany scallops are dredged in the Rade de Brest and Baie de Douarnenez, both of which in the past provided ideal conditions. However, a massive decline in production and near-collapse of the fishery in the 1970s, was attributed to overharvesting and a decline in water quality. Management measures have led to a recovery of the stocks.

Recreational fishing

Recreational fishermen outnumber professionals. There are four main categories: gathering molluscs and crustaceans on foot at low tide (c. 5,000 people a year) (photo at right); line, pot and net fishing from boats (c. 4,500 people who take on average 60 kg each a year); line fishing from shore, and spearfishing (c. 800, each taking on average 45 kg a year). Numbers are growing rapidly.



Aquaculture

There is no commercial aquaculture on account of the physical (e.g. its exposure makes the area unsuitable for mussels etc.) and ecological conditions. Trials have been undertaken on a range of species but have been essentially unsuccessful, although juvenile scallops have been successfully reared for a restocking programme in Rade de Brest.

Maerl

Maerl extraction is significant in Brittany, which has some of the largest maerl beds in Europe, and there is known over-exploitation. Maerl beds occur within the proposed PNMI area.

Tourism

Brittany is the 4th most visited region of France for domestic tourists, and the 5th most popular for foreign tourists. The Iroise Sea and surrounding communes receive an estimated one million visitors a year, including some 350,000 visitors to the offshore islands. A survey for the PNMI has shown that most visitors come to enjoy the natural environment and landscape values of the area; the second most important attraction are water sports, and the third attraction is the culture and heritage: the



area has an abundance of dolmens, stone lines and circles and other pre-historic monuments (photo on previous page). Tourism provides a livelihood for about 3,500 people, of which about 1,000 are permanently employed, the main activities being water-based, although walking and visiting inland attractions are also important.



The aquarium and ocean centre, Océanopolis, in Brest opened in 2000. Visitor numbers are already topping 100,000 each year, and this has contributed to the popularity of the area (photo to left and below). Many also visit the outer islands. The over 300,000 visitors to Ouessant in 2004 (having doubled since the 1990s) probably exceeded the carrying capacity of the 8 km x 4 km island. There are also a number of traditional holiday resorts, mainly on the Crozon peninsula.

Sailing, powerboating and watersports

Boating activity has increased dramatically in recent years and the Iroise Sea now has permanent moorings for some 10,000 recreational boats and 5,000 berths in marinas. An estimated 70,000 boats sail in the Iroise Sea each summer. This component of the tourism industry generates some 12 million Euros annually, and employs about 600 people directly. Kayaking is also increasingly popular. Training, education and safety-at-sea are important aspects of the sailing and yachting sector, promoted by the association *Nautisme en Finistère*, which was established in 1989 to bring all the operators together; it works closely with the PNRA.

SCUBA diving

SCUBA diving generated some 600,000 Euros in 2000. With less than 120,000 dives a year spread over 150 dive sites, it is thought that there is no serious pressure on the marine environment. Much emphasis has been put on promoting environmentally sound diving, with several centres awarded the 'Plongée Label Bretagne' (Breton Diving Label); these offer taster sessions, photographic and ecology courses, visits to shipwrecks etc. and work closely with the PNRA. The PNMI plans also to work with them.



Walking and horse riding

There are an estimated 480 km of coastal paths plus large areas of walking country ('right to roam') in the Monts d'Arrée outside the nature reserves. Themed routes are created, signed and maintained by the Conseil Régional. Horse riding is, along with sea angling, the most rapidly expanding activity since 2000.

Fishing

Recreational sea angling is described above. Fly-fishing for salmon and trout is also very popular.

Main pressures on the area

Over-exploitation of marine resources has been severe and for some species this may still be the case, although as described earlier, much effort has gone into fisheries management.

A more recent problem is the invasive mollusc *Crepidula fornicata* which has affected the scallop fishery in the Rade de Brest and is posing a threat to marine biodiversity in general. Some recreational activities may pose a threat, particularly the rapidly expanding number of marinas and watercraft, and the excessive seasonal visitation of the offshore islands. A preliminary study has been undertaken into the possibility of zoning around the Crozon peninsula.

One important pressure is land-based sources of pollution, with algal blooms already having a serious impact in the Baie de Douarnez; the Rade de Brest has escaped many of these probably due to its deeper waters and strong tidal flushing and the work of the Contrat de Baie.

Parc Naturel Régional d'Armorique

Designated in 1969 as the second PNR in France, the PNRA covers some 20% of the Département of Finistère on the west coast of Brittany, including coast and sea around several small islands. It has a total area of 172,000 ha, one third (60,000 ha) of which is marine water to 30 m depth. There is a large resident population (556,700 spread over 39 communes) and over 240,000 visitors a year. Promotion of the Breton culture and language is as important as protection of the biodiversity and landscape. Biodiversity conservation is addressed primarily through the organisations that manage various nature reserves and other protected areas within the larger PNRA.

The PNRA is twinned with the Pembrokeshire Coast National Park in Wales, recognising the close similarities of its Celtic culture, westerly geographical location, and ecological and socio-economic characteristics. It has also developed links with, and visited, Cornwall, through the EU-funded HEATH project.

Basis and rationale for site selection/designation

Rationale for designation

The main criteria for designation as laid out in the *Charte*, are:

- The great diversity of the landscape and the cultural heritage (islands, high moorland, rivers, coast);
- The richness and extent of natural ecosystems;
- The abundance of high quality water courses;
- The rich marine and terrestrial fauna;
- The scientific interest and uniqueness of both the marine and terrestrial environment.

Stevens *et al.* (2006) considered that two trends had triggered development of this PNR:

- Renewed interest in Breton culture (language, music, dance, art, food, customs and history) in the 1950s and 1960s, with development of a sense of regional identity and an associated demand for greater regional autonomy;
- Growing concern for the natural environment.

Brittany has long been culturally, and even linguistically, distinct from the rest of France, much as Scotland is from the rest of Britain. There is strong identification with sea and land, reinforced by Celtic tradition and history. Also similar to the westernmost parts of the British Isles, the area had for some time been marginalised and comparatively poor, the rural and maritime economy having declined in the early 20th century. These factors combined to create a strong regional leaning towards self-reliance, with recognition in Finistère that natural and cultural resources could be used to revitalise both economy and society. Local conservation groups were increasingly worried about the potential impact of agricultural change, new fishing practices, the growing demand of the tourist and leisure industry for recreation space, and major infrastructure projects. The PNR concept, aimed at promoting regeneration through the protection of indigenous resources, thus appeared a very useful tool for achieving the aim of sustainable development, using the natural and human *patrimoine* (heritage) of Brittany.

Size, scale, boundaries

The PNRA covers four broad geographical areas:

- The Ouessant-Molène archipelago;
- The Crozon peninsula which separates the Rade de Brest from the Baie de Douarnenez;

- The estuary and lower valley of the Aulne River; and
- The forests and high moorlands of the Monts d'Arree, extending inland.

The seaward boundary is defined by the 30 m deep bathymetric contour surrounding parts of the Crozon peninsula and Ouessant-Molene archipelago. Portions of the Baie de Douarnenez and of the Rade de Brest are thus included, although the PNRA has no direct jurisdiction or competence over these.

The landward boundary is defined by the administrative limits of the participating communes. It is flexible: there were 28 communes when the PNRA was first established, but in the late 1980s/early 1990s, additional communes agreed to participate to create greater coherence and there are now a total of 39. A number of adjacent communes have been identified as potential partners on account of their rich natural resources, can participate as appropriate in PNRA and may in due course be formally integrated. In addition, four nearby communes (Le Conquet, Landerneau, Chateauneuf-du-Faou, Carhaix-Plouguer) are associated through annual agreements with the PNRA which means that although they are not permanently committed to the PNR objectives, they contribute financially to its operation and receive support for conservation work; school children from those communes have free access to PNRA facilities. The city of Brest is statutorily involved although it does not lie within the boundaries of the PNRA.

Legislative framework, overall purposes and objectives

Legislative framework

The PNRA was designated in 1969. Within it, there are numerous other protected areas, gazetted under their own legislation. These include:

The Reserve Biosphere d'Iroise (RBI) - created in 1988 and covering 21,400 ha. It has a core area (*zone centrale*) of 50 ha, comprising 12 islets of importance for their seabird colonies; a buffer zone (*zone tampon*) of 950 ha covering several intertidal and subtidal areas (to a depth of 20 m), and the coastal fringe of Ouessant and Molene; and a co-operation area (*zone de transition*) comprising 21,550 ha of water and the inhabited parts of Ouessant and Molene (c. 1,300 people). The PNRA is responsible for its management, in collaboration with the national MAB committee. Little action has been taken, largely because of the lack of clarity about the outcome of the MPA project for the Iroise Sea, but the risk of loss of biosphere reserve status, combined with the new protected areas legislation and assurance that the PNMI will go ahead, has put more attention on the RBI. Improved management of the RBI will be a priority in the new *Charte*, and there is a proposal to expand it to include the Ile du Sein to the south.



Reserve Naturelle Nationale d'Iroise - three islets (Banneg, Banaleg and Trielen) in the Molene Archipelago; this area is also a *site classée* and an *espace naturel sensible du département*, as well as part of the RBI.

Natura 2000 sites - the Natura 2000 process is being put in place through a number of thematic working groups (forestry, agriculture etc.) and includes the following areas:

- Monts d'Arree, covering 12,000 ha primarily for otters; the PNRA is responsible for management, in collaboration with a steering committee comprising representatives of a large number of stakeholders. The Monts d' Arree was also designated a site classée (60,000 ha) in 1966;
- Large parts of the Iroise Sea are designated as Zones Importantes pour le Conservation des Oiseaux (ZICO) (or ZPSs) under the Birds Directive; ZNIEFFs within the PNRA include areas around Cap Sizun, some of the waters around Molene Archipelago and Ouessant Island, the Aulne estuary, the Crozon peninsula and sites in Douarnenez Bay.

Conservatoire du Littoral - The Conservatoire has four sites on the Crozon peninsula within the PNRA : Estuaire de l'Aber, Cap de la Chevre - anse de Penhir, Bois de Penzer-Pen ar Vir, Bois de Poulmic.

Reserves managed by the NGO Bretagne-Vivante (SEPNB) - Reserve des Landes de Cragou (also an *espace naturel sensible du departement*) established in 1985, Reserve Naturelle Nationale Iroise, *espace naturel sensible du departement* - Molene Archipelago, Tourbiere du Mongau.

Objectives

The *Charte* for 1997-2007 gives four strategic objectives, reflecting the general *missions* expected of all parc naturel regional:

1. Contribute to the economic and social development of the sub-region.
2. Understand, protect, enhance and encourage an appreciation of the natural environment.
3. Understand, protect, enhance and encourage an appreciation of the cultural heritage.
4. Encourage further support for the park and its goals both locally and further afield.

Each of these objectives is broken down into more detailed operational objectives and activities in the *Charte*.

Administrative arrangements

As with all parc naturel regional, the governing authority or *Syndicat Mixte*³ comprises the main groups responsible for management: the communes that are part of the PNRA, the Conseil Generale du Finistere, the Region de Bretagne, and the Ville de Brest. Management is delegated to a *Comite Syndical* which has 28 elected members:

- 6 members of the Conseil Régional de Bretagne
- 3 members of the Comité Economique et Social de la Région Bretagne
- 9 representatives of the Département du Finistère
- 9 representatives of the '*communes adherents*'
- 1 representative of the *communes exterieures*

³ A Syndicat Mixte is an *Etablissement Publique de Co-operation Intercommunale (EPCI)*, or grouping of communes that can be set up to undertake communal development projects.

The *Comite Syndical* is responsible for approving the budget and defining overall policy. Implementation is delegated to the park office and its director. There are 52 permanent staff and a further 47 seasonal workers. Staff include natural and social scientists, tourist information officers, countryside rangers, foresters, boatswains, planners including GIS workers, economic development officers, finance and administration staff.

A scientific committee (*Conseil Scientifique du Parc*) (established about 20 years after the PNRA was set up) is made up of about 15 representatives of stakeholder organisations involved in natural and social sciences. It advises the *Syndicat Mixte* and supervises the scientific staff employed by the park, many of whom are seconded from participating organisations, determines priority research areas, and evaluates and disseminates research undertaken. An annual scientific publication is produced. Historically, studies commissioned by the *Conseil Scientifique* were directed towards the biosphere reserve and the natural environment (e.g. archaeological heritage, coastline morphology and changes, birds, coastal grasslands, fisheries, seals, etc.), but recent studies have been directed at more holistic understanding of the entire area (e.g. economics of fishing in the Iroise Sea, impact of tourists and boats on islets, etc.).

In 2004 there was an annual revenue budget of about 3 million Euros and an investment budget of about 650,000 Euros. The PNRA says that it has a very small budget compared with its needs, and that state-level institutions (i.e. national parks) have much greater funding. Lack of funding was given as the reason for certain activities not being undertaken. The *Charte* lays out how funding is shared between the responsible bodies. In the 1997-2007 *Charte* it was as follows:

- Région Bretagne provides 42.5% of operational costs, and 50% capital costs.
- Département du Finistère provides 42.5% of operational costs and 50% capital costs.
- Adherent communes provide 15% of operational costs.
- Associated communes provide 3% of operational costs.

The park also receives a proportion of the annual income derived from a tax levied by the département on new buildings, and alterations and extensions within the park's boundaries (*taxe départementale des espaces naturels sensibles*). Other sources include external funding through projects, such as participation in the EU-funded Interreg HEATH for the conservation of heathlands, led by English Nature (now Natural England), which is bringing in 420,000 Euros. There are entrance tickets for the three ecomusees that are managed directly by the PNRA.

Relationships with other local or national agencies

The PNRA works closely with the wide range of other agencies involved in management of the area (NGOs and government departments for management of protected areas; fisheries committees and local authorities for fisheries issues; etc.). For example, management of the RBI is carried out in collaboration with the RBI Management Committee, and of several nature reserves with the NGO, BV-SENB. Relationships with other specific agencies are described in other sections.

Planning and management

As with all parc naturel regional, there is a '*Charte*' drawn up between the communes, départements and regions. Since its establishment, the PNRA has had 3 *Chartes* and the process is underway for the fourth revision (2008-2020), which is running about 2 years late. All members of the *Syndicat Mixte* are involved in the revision. The work is being

undertaken through working groups of stakeholders led by PNRA staff, on topics identified as priorities during the consultation: landscape, Breton language and culture, sustainable tourism, agriculture. An evaluation of work undertaken under the previous *Charte* is also underway. An initial survey, by questionnaire, was undertaken in 2006. The results are not considered 'scientific' (there is said to be no funding for a full statistical survey), but the conclusions were that there was much satisfaction and pride on the part of those living in the PNRA. The focus for the next *Charte* is likely to be the need to maintain the *paysage* - landscape - of the PNRA.

The map or *Plan* accompanying the *Charte* lays out how different areas of the park should be managed, defining the following categories:

Towns/villages and agricultural areas
Forest, shoreline and marine areas
Priority watersheds - where agriculture and forestry can be undertaken provided these do not lead to a decline in water quality
Significant natural areas - most with protected area status
Important landscapes (many designated <i>site classée</i>)
General use areas
Sites suitable for restoration
Military areas - these are to be evaluated for heritage value, develop management approach with the military
PNRA centres, such a ecomusees and activity centres
Road system - the PNRA is responsible for providing information and view points; and managing the roadsides in keeping with PNRA status

The various protected areas or other forms of management area within the PNRA have their own management plans or equivalent, prepared by their respective management authorities e.g. Conservatoire du Littoral, Office National des Forêts, Service régional de l'Archéologie, BV-SEPNB.

Performance indicators

The need for performance indicators is recognised by PNRA personnel and this will be addressed in the next *Charte*. The indicators are likely to be based on work underway by the PNR Federation. The *Syndicat Mixte* will base its initial data collection and analysis on the indicators of sustainable development of the coastal zone developed by the EU ICZM Working Group on Indicators and Data (WG-ID) and managed in France by the Institut de l'Environnement.

Involvement of local communities and other local and national stakeholders

This is largely covered in other sections. To promote involvement and ensure that all stakeholders are aware of park activities, the PNRA has an extensive communications programme, including production of an annual magazine for wide distribution, a newsletter for those directly involved in management, and the organisation of a range of events and conferences. A recently established *Centre du Documentation* is open to the public and provides an information resource and education and research centre. Lack of funding is cited as the only constraint for not doing more.

Fisheries management

Although the PNRA includes waters to 30 m depth along some parts of the coast, it has no jurisdiction over fisheries. Nevertheless, the *Charte* includes a specific objective to promote the diversification of the artisanal fishery since this activity is of critical importance to many

PNRA inhabitants (e.g. Camaret important lobster fishery centre). The PNRA thus participates in discussions on fishery management, as well as on development of associated activities such as potential aquaculture.

Examples of specific actions undertaken by the management body

To conserve, enhance and promote understanding and enjoyment and sustainable use of the natural and cultural heritage of its area

According to Stevens *et al.* (2006), data from the Conseil Général de Finistère suggested that some 4.4 million people visited the PNRA in 2004 of whom roughly one quarter were overnight visitors. Occupancy rates in July and August averaged 67%, but were otherwise 40% or less. The PNRA's first ten year plan assumed that most visitors would be fishermen, naturalists, hikers, cyclists, sailors, climbers, geologists, etc., plus those who wanted to get away from it all. There would be little need for new infrastructure or attractions, and the main approach to tourism was the offer of grants to local householders to convert unused cottages, barns and outbuildings into holiday gîtes. The second ten year plan differed in encouraging a wide range of relatively small-scale tourist initiatives such as the *ecomusees*.

The PNRA has subsequently established an impressively large network of activity centres, enterprises, and other operations that are aimed at promoting understanding, enjoyment and sustainable use of the area. It claims to be the first organisation in France to develop the concept of an 'ecomusee' or discovery center and this is now the basis of its approach to visitor management. Twenty such centres bring in around 240,000 visitors each year, as well as providing an educational resource for schools throughout Brittany. Three are managed directly by the *Syndicat Mixte*, and others are private ventures, or managed by a local authority or a statutory agency. The majority have been funded through external sources. They cover a wide range of themes and activities:

Ecomusees

- Traditional life, history and architecture: Maison Cornec (old farm); Moulins de Kerouat and Maison de Recteur (traditional village life); Monts d'Arree; Musée de l'école rurale, (history of schooling in Brittany); Maison des Vieux Métiers Vivants (old crafts and village activities); Musée de l'Abbaye de Landévennec (ancient abbey and its history) Crozon peninsula; Maisons de Niou (traditional houses); Musée des Phares et Balises (lighthouses and maritime navigation aids) - Ouessant.
- Traditional agriculture and rare breeds of domestic animals (preservation of genetic diversity); Menez-Meur (also main park center with exhibition and restaurant), Monts d'Arree.
- Heathland and Monts d'Arree: Maison de la Reserve Naturelle et des castors (beavers and plants), Musée du Loup (wolves).
- Rivers, lakes and water resources: Maison de la Rivière and Maison du Lac - on the Elorn river.
- Geology and minerals: Maison des Minéraux - Crozon peninsula.
- Conservatoire Botanique - botanical gardens in Brest, national plant collection.



Activity centres

- Modern arts and crafts: Ferme des Artisans (craftsmen from Western France).
- Activities: Breton Wrestling and Games Centre (Ti ar Gouren); Centre Permanent de Découverte, de Tourisme et d'Environnement (general activity centre for schools and groups) Monts d'Arree; Bassin de Plongée Léo Lagrange (diving, sailing and waters sports), Crozon peninsula; Centre d'Etude et de découverte du Milieu de Ouessant (seabird studies and observation).

Education and training

There are also a wide range of educational and training activities, including guided visits for school classes, exhibits, photographic competitions, public information meetings and internships. Some 20-30 exhibitions are organised each year throughout the park by the *Syndicat Mixte* or one of its constituent organisations. 'Stay and learn' courses are held in rural communes, abbayes, country houses and even lighthouses dedicated to a variety of arts including the Breton School of Painting, wayside calvaries, Breton language, regional cookery, vernacular architecture, etc. Educational materials have been provided to schools. The PNRA has also supported the lifeboat service, including restoration of a traditional lifeboat.

Image and brand

Stevens *et al.* (2006) consider the PNRA has a 'unique selling proposition' in that it can promote itself on the basis of its geographical location at the ends of the earth (fin de terre, finis terrae = finistère), and its mythical traditions (the *korrigans* (traditional spirits) are widely promoted), in its singular culture, and in the particular symbiosis when sea is added to the land/people mix.

Promotion of sustainable development

The PNRA has developed partnerships with a number of local companies and/or organisations that offer recreational activities within the park area. These include activities such as:

- Sailing trips up the Aulne and Elorn rivers, around the Ouessant archipelago, and along the coast in modern and traditional vessels. The PNRA has supported a successful campaign to enhance the standards of sailing and nautical centres by establishing minimum requirements at different levels and working with local colleges to provide appropriate training. A Comité Départemental de la Voile has been set up. Traditional seamanship is promoted, for example, sail cruises out of Brest or Douarnenez include instruction in celestial navigation. Over thirty schools (*centres nautiques*) teach sailing, wind surfing, cruising, diving, etc., with up to some 300,000 participants.
- Walking, horse riding and cycling, including excursions for disabled people. Notable is a programme called *Voyages naturels*. Initiated in 1990 as a result of a foreign tour operator looking for unusual holidays to market, this involves some 20 parc naturel regional. A range of holidays are offered through the programme, under the 'brand' of PNR. The PNRA component started in 1995, and comprises accompanied 3-, 5-, 7- or 10-day walking, cycling or boating tours dedicated to activities such as exploring spring



flowers, moorland birds, breeding waders, geological phenomenon, European beaver, fly-fishing etc.

The PNRA is also promoting sustainable tourism through two partnerships, one with hotels and one with *gites* (self-catering cottages or houses):

- *Hotels au Naturel* is an initiative of the Federation of Parc Naturel Regional whereby hotels that are located within a PNR and that meet certain criteria (calm natural surroundings, local architecture, regional cooking, healthy and local produce, environmentally sound management in terms of energy consumption etc., manager willing to promote the aims and activities of the PNR to visitors) are awarded the label 'Accueil du PNR'. The network of these hotels also provides a benefit in terms of information exchange and networking. The PNRA has two such hotels (in Crozon and in the Ouessant archipelago).
- *Gites Panda* is an initiative that involves both parc naturel regional and national parks and that was set up in collaboration with WWF, which undertakes the evaluation of the gites and chambers d'hotes for inclusion (criteria include location within natural surroundings, availability of information on and equipment for viewing wildlife, and management in an environmentally sound manner). The PNRA has about 9 Gites Panda.

The PNRA is not involved directly in management of these programmes, but provides publicity and information about the enterprises involved.⁴

Benefits and drawbacks of park status

The network of operations that is designed to educate visitors and promote understanding of the ecology and culture of the area has made a significant contribution to the development of the area. The network of PNRA ecomusees and activity centres attracts the second largest number of visitors to Finistere after Oceanopolis (the large aquarium and ocean exhibition in Brest). Tourist numbers are gradually increasing to the PNRA sites. The 200,000 visitors to the 20 main operations also contribute to the region through the other activities they undertake during their visit (accommodation, restaurants, other recreational activities, shopping, transport). Furthermore, the concept of 'ecomusee' has spawned a large number of private enterprises, not linked to the PNRA, but nevertheless contributing to revenue for the region (e.g. Maison du Miel, Maison du Cidre on the Crozon peninsula).

Key achievements and lessons learned

Achievements

The 2006 survey concluded that there was much satisfaction and pride on the part of those living in the PNRA. The PNRA is considered to have had a strong positive effect on the regeneration of the Breton economy through tourism, and has also contributed in a major way to the maintenance of local history and culture, and the development of new rural infrastructure. The 20 *ecomusees* are a particular success. The permanent population in

⁴ According to Stevens *et al.*, 2006 a Charter "seal" registered trademark has been used to market local products (buckwheat whisky, seafood, earthenware, Breton beer, textiles, vegetables, sea salt) and promote local small business. Stevens *et al.* state that the park also assisted directly in setting up 100 small businesses since 2000, together employing over 4,000 people. However, the PNRA stated in 2007 (Eric Berthou pers.com), that to date it has not developed 'branding' or 'labelling' initiatives with food producers because of the specialist task involved in identifying suitable products, with the need to take health and safety issues into account.

the remoter communes and the islands continues to fall, due to out-migration of young people. At the same time, there is a steady increase in the number of second or holiday homes in the park⁵, but overall the population is said to be stabilising.

It is more difficult to assess the impact of the PNRA on biodiversity, given that biodiversity conservation is largely the responsibility of the other organisations that manage the reserves and conservation areas within the PNRA.

The PNRA has demonstrated the potential for exploiting indigenous attributes and resources, rather than on attempting to import economic success from elsewhere. It also developed a good organisational framework with specified roles for stakeholders from the statutory, private and voluntary sectors. The Charter model used by all French PNR to set goals, draw up action plans and measure both outputs and outcomes has proved particularly useful.

Lessons learned

The PNRA was established very early in the evolution of protected areas, at a time when there was little opposition to such initiatives, and its set-up phase is probably of less relevance in terms of 'lessons learned' compared with that of the PNMI. The PNRA is widely accepted, partly because of the long time that it has been in operation. The main concern seems to be lack of information about PNRA activities.

Tourism is now seen as an area that needs more attention from the PNRA and will be addressed in the revision of the *Charte*. There is a need to ensure a careful balance between increasing visitor numbers and attractions, and ensuring that the industry is sustainable both economically and environmentally. The tourist season is short with relatively few visitors in winter, visitor numbers picking up around May, and peaking in the summer months. The communications officer at the PNRA did not see this as a problem but Stevens *et al.* (2006) state that there is interest in trying to extend the season.

Stevens *et al.* (2006) also say that there is concern about the amount of traffic on the Crozon peninsula in July and August, with debate over whether to ban private vehicles from the peninsula during the high season and if so, how to pay for public transport and where to park the cars. The PNRA communications officer did not think that carrying capacity is a problem on the mainland, although there is a need for more private sector hotels, but it is potentially a problem in the islands and UBO is studying this. Efforts are now underway to look at waste management in the park, visitor transport, organic food production and energy supplies to public sector buildings.

There is concern about the scale of development outside the park's boundaries and its potential impact on the park itself, including water pollution and oil and chemical hazards from vessels using the western approaches (Stevens *et al.*, 2006).

⁵ In non-urban Finistère, over 60 per cent of properties are second or holiday homes, the second highest figure of all French départements.

Parc Naturel Marin Iroise

This recently designated park (June 2007) illustrates the lengthy process (nearly 20 years) involved in developing an MPA, and is a valuable case study in how objectives relating to protection of the natural environment, sustainable management of marine resources and promotion of sustainable tourism can be balanced, and a structure developed that should accommodate all three.

Boncoeur *et al.* (2006) identified 5 stages in the development of the MPA and these are summarised below:

1989-1994: An MPA in the Iroise Sea was first proposed in 1989 by the President of the PNRA, during the inauguration of the RBI. By that time, numerous types of 'protected area' had already been designated in the general area (Boncoeur *et al.* (2006) refer to an 'institutional *mille-feuille*'). The PNRA therefore initiated a feasibility study in 1991; the report of this, in 1993, proposed the establishment of a marine national park in the Ouessant-Molene Archipelago with, as required by the 1960 national park legislation, a strictly protected core zone (to coincide with the core zone of the RBI), and a buffer zone (to coincide with the RBI buffer zone).

1995-1998: The official procedure to create a PN in the Iroise Sea started in October 1995; and in November 1996, the *Mission pour un parc national en Mer d'Iroise* was established to manage the project. By 1997-98, the concept of the PN had expanded to include all the waters from Ouessant Island in the north to the island of Sein in the south. The proposed expanded area was contested by several groups, but the appropriateness of the boundaries was confirmed by the detailed 4-year scientific study of the area initiated in 1999 by UBO, IFREMER and Université de Versailles-St Quentin-en-Yvelines and financed by the region and the Ministry of Environment and Sustainable Development (Boncoeur *et al.*, 2005; Sabourin *et al.*, 2003 and 2004). This also made a point of looking at inter-relationships between the ecology of the environment and socio-economic issues, unlike previous studies that had taken a sectoral approach.

1999-2001: A preliminary consultation for local communities and other stakeholders took place in 2000 which resulted in the identification of some of the key issues to be resolved: application of the 1960 PN law in the marine environment, issues of decentralisation and perceived lack of transparency on the part of the Mission. A series of debates ensued on the MPA's proposed objectives, boundaries, regulations, and on the composition and powers of the planned management committee. Although there was support for the concept, most stakeholders placed conditions on this. In September 2001, legislation was passed allowing the process to continue, provided that the MPA allowed for the continuation of fishing, tourism and economic development of the islands.

2002-2004: This period was marked by poor communication between the Mission and the stakeholders, by changes in personnel within the Mission and relevant government agencies and attempts at further consultation through thematic working groups that met with varied success. Opposition started to grow with, for example, the formation of pressure groups such as the *Association de Défense des îles et du littoral de la Mer Iroise* (ADVILI) which was formed in 2002 by recreational fishermen (and later joined by some professional fishermen). Two important documents were produced in 2003: *Le Projet de Territoire* which synthesised the results of the working groups, and a draft gazettelement document which defined the boundaries. However, in 2003, the process underwent a major change when the Minister of Ecology and Sustainable Development relaunched the consultation process to make it more open and inclusive. By 2004, the Mission had become involved in the process

to revise the 1960 PN legislation, recognising that the concept of a PN with a strictly controlled core zone could not be reconciled with the planned sustainable development objectives of the MPA.

2005-2006: The project to revise the PN legislation proposed a new form of legal structure - the *parc naturel marin* - which would be managed through a new national MPA agency. In 2005, therefore, the steering committee for the Iroise MPA agreed to re-orientate the work of the Mission to focus on the creation of such a protected area; the Mission was thus renamed *Mission Parc Marin d'Iroise*. At the same time however, opposition to an MPA of any kind was growing. In June 2005, the municipal council of Ouessant requested that the project should be terminated; in June 2006, the council of Molene similarly voted against the MPA; and there has been much graffiti, newspaper and other media publicity, and internet blogging laying out arguments against the MPA. A marketing survey of 607 people in December 2005 found 53% in favour of the MPA, and 46% against. The *Association pour la création du PNMI* - a group in support of the PNMI - was set up but has been less forceful than ADVILI. Nevertheless the project continued, and a public enquiry was held in November 2006 involving the 24 main communes (10 communes in the southernmost part of the proposed PNM may agree to a consultation in 2 years time). A separate, parallel consultation was undertaken with the local authorities and scientific and social associations.

2007: Completion of consultation documents and designation.

Basis and rationale for site selection/designation

Rationale for site selection: The Iroise Sea has been identified for many years as one of the top areas for marine biodiversity in France and is probably also of global importance. The importance of the area for an MPA was identified by the PNRA soon after its establishment. The area is representative of North Atlantic ecosystems and biodiversity; has very high fish, seabird and marine mammal diversity; and is a refuge for many rare species and others of value for educational purposes. It also has the largest kelp beds in Europe. It is of critical socio-economic importance as demonstrated by the large population dependant on its resources (photo: sailing is one of the most popular leisure activities). The PNMI has been established on the basis of relatively good scientific data compared with many earlier MPAs. In addition to the intrinsic importance of the area, political issues drove



the Iroise MPA project, as its creation has increased France's total MPA coverage by 300%, and also improved representation: 75% of protected marine habitat in France is in the Mediterranean (Bouches de Bonifacio and Port Cros) and the Atlantic coast is under-represented.

Boundaries and size: Includes marine waters only, apart from emergent rocks and uninhabited islets. Extends out to the 12 nautical mile territorial sea limit, and covers 321,000 ha, from 48° 31'N in the north to 47° 59'N in the south. The large size is intentional, to allow for a holistic and ecosystem-based approach to management and to cater for the needs of wide ranging species. The large size was supported by professional fishers who see this as being of greater potential economic benefit than a small protected area (see below).

The northern and southern boundaries are defined as straight lines for ease of enforcement, and are based on changes in fisheries management regimes according to different regional committees. The landward limit is the high water line of the mainland and various islands (the terrestrial limit of the *domaine public maritime*). The Rade de Brest is excluded, because of the large number of activities and inhabitants impacting on it, and the existence of the *Contrat de Baie* which oversees and co-ordinates management. The area along the southern coast of the Baie de Douarnenez is only provisionally included and will be subject to further consultation in 2 years time.

Legislative framework, overall purposes and objectives

The area is designated as a parc naturel marin, the first under the 2006 legislation. An orientation document was produced in 2006. As with the PNRA, there are a number of other designations within the boundaries of the PNMI, notably the RBI, the marine waters of the PNRA, and the Natura 2000/ZNIEFF network. ZNIEFFs (Types 1 and 2) are currently being identified. There is also an extensive set of fisheries legislation covering the entire area.

There are three fundamental objectives, as laid out for all PNMs under the 2006 legislation:

- Promotion of knowledge and understanding of the marine environment.
- Protection of designated marine sites of importance.
- Sustainable development of economic activities dependant on the sea.



In addition, there are 10 specific action areas for the PNRA, which will form the basis for the management plan:

- Enhancement and dissemination of knowledge on marine ecosystems - inventories and mapping, monitoring, evaluation of the impact of human activities on marine resources; publication of information; education programmes.
- Maintenance of threatened and rare species and their habitats - propose suitable zoning systems; support protected areas and their management authorities; apply the requirement of the Natura 2000 network for marine sites; encourage the participation of stakeholders in monitoring.
- Reduction of land-based sources of pollution, and minimise pollution risk from marine sources and ports - participate in mechanisms to reduce pollution (SAGEs, Contrats de Baie etc.) and manage coastal wetlands and contribute to the necessary research; support research and analysis of priorities and mechanisms for reducing other forms of pollution and assist with monitoring (e.g. undertake cost-benefit and economic valuations).
- Manage mineral extraction e.g. progressively reduce and eliminate maerl exploitation.

- Promote sustainable use of marine resources - support the collaborative management of fisheries, encourage technical solutions to reduce catch where necessary and make it more selective; encourage protection of key habitats such as nursery areas; assist with restoration of over-exploited stocks; monitor and research impacts of fishing.
- Support commercial inshore fisheries to establish sustainable livelihoods, for example by developing a label for products from the PNMI.
- Assist with sustainable management of the kelp industry - undertake research required for management, monitor the impact of harvesting etc.
- Support maritime activities on the islands that will lead to a stabilised population, in collaboration with the PNRA.
- Assist with the conservation and promotion of the maritime archaeological and architectural heritage, in association with relevant local authorities and organisations.
- Support the development of tourism, leisure and water-based activities compatible with the protection of marine ecosystems, through contributing to the establishment of education and discovery centres, and in partnership with the PNRA and other relevant organisations, the establishment of appropriate tourism 'ecolabels'.

Administrative arrangements

The PNMI has a *Conseil de Gestion* (management committee) with representatives from the government (minority), communes and local authorities including each island, professional associations (i.e. fisheries committees at local and regional level; tourism associations etc.), tourism industry, other groups that depend on the area (e.g. SCUBA divers, sailing associations, hunters), management bodies for protected areas adjacent to or within the PNMI, as well as any key experts. When required, the *Conseil de Gestion* can establish thematic 'commissions' to provide direction on specific issues. The four working groups (sustainable development for the islands, knowledge and conservation of the cultural and natural heritage, economic use of marine resources, and tourism and water-based leisure activities) that were established during the set up phase demonstrated that this is a useful mechanism and the *Conseil de Gestion* will decide whether these will be retained now that the PNMI is gazetted.

The park staff report to, and are paid by, the national MPA agency, but their appointment will be on the basis of advice and approval from the *Conseil de Gestion*. The team are responsible for implementation of the management plan, as well as monitoring and evaluation of interventions. Financing comes primarily from the state but additional resources can be raised through other means (e.g. external funding, or contributions from the communities).

Relationships with other local or national agencies

As described above, key local and national agencies will be represented on the *Conseil de Gestion*, the exact arrangements to be defined when the PNMI is gazetted.

Planning and management procedures and mechanisms

Under the new legislation, zoning is not required, and will not be discussed until the PNMI is well established, to avoid fuelling opposition. There is however a proposal for the following zones:

- A 'central' zone of about 250,000 ha covering waters around the Ouessant-Molene and Sein Islands (equivalent to the expanded RBI).

- Three buffer zones - a marine one out to the 12 nautical mile boundary; and 2 terrestrial - one covering the inhabited islands (Ouessant, Molene and Sein) and one mainland - the 31 communes that will be involved in the management structure.

Emphasis will be on integrated, rather than sectoral management. The *Conseil de Gestion* will be responsible for preparing the management plan and for developing annual work plans for implementation; it will monitor the enforcement of existing regulations and will propose amendments or new legislation where necessary.

Involvement of local communities and other local and national stakeholders

There have been several consultations (see summary at beginning of section) and the intention is that stakeholders will be extensively involved. The views of the various groups according to Bonceur *et al.* (2006) are:

- **Tourism industry** - are largely positive as they view the PNMI as being a good lever for tourism development, with the park 'label' being useful for promoting their activities and helping to attract visitors. There were some concerns about carrying capacity.
- **Professional fishers** - are well organised and united as they want to see their rights and interests protected. Following initial concerns (particularly on the part of the seaweed gatherers) about the boundaries of the proposed MPA and the impact it would have on their activities, this group is generally positive, partly because the CRPM and CLPMs have played a major role in planning in order to be part of the management structure and thus able to influence decision-making; also the CLPM had already been looking at mechanisms for sustainable management, and some members think that an MPA would be a part of this provided it is under their control. Professional fishers were largely supportive seeing a positive benefit from the possibility of a park 'label' that could be used to market fishery products; this led to support for as large an area as possible. However, some do not agree with the PNM concept and have joined ADVILI (see below); their numbers have been increasing since 2002.
- **Recreational fishers** - currently vociferously against the PNMI (have contested all suggestions of controls and regulations and founded the lobbying group ADVILI), and much more difficult to involve positively in the process as, despite their numbers and economic importance, they are not organised through any central organisation; there are several membership organisations but these are not representative of the whole sector.
- **Scientists and conservation NGOs** (BV-SEPNB is the main one) - have played a major role since the beginning of the project, promoting the concept and gathering information; numbers and their level of involvement increased once the project started and could provide funding for research. The fact that many scientists are also members of BV-SEPNB may have given them a certain bias.
- **Elected representatives** (*elus*) - their views varied according to the individual, the political situation and the stage of the process. Representatives of the island communes were generally less in favour than those on the mainland, and ultimately many island representatives (Ouessant, Molene) were strongly opposed. Opposition tended to increase as time went on because of the apparent lack of progress; and since most of the communes involved were already part of the PNRA and RBI, it was difficult to see what the added benefit of the PNMI would be. Representatives at department and regional level also provided little support, probably because the PNMI is not seen as an essential need by the people in the area and there appeared to be no strong political imperative for its establishment.

Fisheries management

Few if any fisheries within the area are unregulated and the PNMI will not play any executive role in fisheries management. However, two of its 10 action areas concern fisheries and through these a number of interventions (e.g. research, monitoring and technical advice) are being planned in collaboration with relevant organisations, including the fisheries committees, to promote and support sustainable exploitations.

Examples of specific actions undertaken by the management body

The Mission undertook a number of preparatory activities:

- Commissioning and dissemination of detailed studies of the area, particularly on socio-economic issues, especially the fisheries and recreation sectors in relation to their dependence and impact on ecosystems, the costs and benefits of an MPA, and the incentive mechanisms that could be introduced to improve compatibility of stakeholder interests with conservation objectives (Boncoeur *et al.*, 2005).
- Preparation of public awareness materials, and organisation of events. A three-volume public awareness document has been produced covering fisheries (both professional and recreational), cultural heritage (navigation, traditional economic activities such as fishing, seaweed harvesting etc.; architecture, archaeology) and natural environment.

Benefits and drawbacks

So far there have been no changes due to the PNMI itself. However, PNMI may be able to promote new activities e.g. Alban and Boncoeur (1999) propose the development of combined commercial fishing and boat chartering for recreational fishing and tourism.

Key achievements and lessons learned

The main achievement has been the designation of an MPA in as harmonious manner as possible with all stakeholders. It is one of the largest MPAs in France and in Europe and will demonstrate an integrated approach to management (essentially it will act as an integrated coastal management programme for the area concerned).

The PMN legislation reaffirms state jurisdiction over marine waters by assigning management to the new MPA agency, but will not itself have executive powers. There are already fisheries regulations covering the area concerned. It is anticipated however that the PMNI will provide a much needed co-ordinating mechanism, as well as systematic monitoring of the management interventions in place.

Although the aim has been to establish the PNMI using a participatory approach, some observers consider the process to have been largely top-down. The government often stepped in when discussions became heated, and decisions tended to be made from the top.

Given that the designation of a large protected area risks causing conflict, it is important to understand any pre-existing conflicts between social groups that could hinder the process or be used to bad effect. In the case of the PNMI, there were several such conflicts (Boncoeur *et al.*, 2005):

- Confrontation between professional fishers and scientists had occurred over the grey seal population, perceived by the fishers as competition for fish.
- NGOs had criticised seaweed gatherers about the development of modern harvesting methods and an increase in the number of species taken - this had been resolved through the production of a management plan for seaweed exploitation.
- Professional fishers frequently complained about recreational fishers who do not respect regulations.
- Conservation NGOs and inhabitants of some of the islands have disagreed on access to the uninhabited islands, the former wanting to protect them for wildlife, the latter believing they have a traditional right to use them; BV-SEPNP was in particular criticised for not taking account of the need for sustainable development for the islanders.

The length of time taken over *gazettement* has contributed to the difficulties in this project. Since the project started, there have been developments in national obligations in relation to the EU Bird and Habitats Directives (Natura 2000), in international obligations under the Convention on Biological Diversity (targets for MPA creation), and in national legislation and institutional arrangements for MPAs. Each development has required adjustments to the project, extra work to inform stakeholders and in some cases insufficient consultation, with the result that some communities lost confidence and enthusiasm.

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Port Cros National Park
www.portcrosparcnational.fr

Mission Parc Marin d'Iroise
<http://www.parc-marin-iroise.gouv.fr>

National Parks
<http://www.parcsnationaux-fr.com>

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