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**STEERING COMMITTEE FOR THE CONSERVATION AND MANAGEMENT
OF THE ENVIRONMENT AND NATURAL HABITATS (CDPE)**

Committee of Experts - Protected Areas

**REPORT ON THE ON-THE-SPOT APPRAISAL OF THE
SCANDOLA NATURE RESERVE, CORSICAN REGIONAL NATURE PARK,
FRANCE**

23-36 August 1988

by J-P Reitz, Switzerland

with comments by the Secretariat representative

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Forty years
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SUMMARY

At the request of the Secretariat of the Council of Europe I made an appraisal on 24 and 25 August 1988 of the Scandola Nature Reserve, Corsican Regional Nature Park, France. This reserve, access to which is difficult and which includes both a land area and a marine area, is remarkable in every way. It forms a representative example of Mediterranean natural environments. The nature reserve fully satisfies the appraisal criteria for renewal of the European Diploma.

A. TERMS OF REFERENCE

The author of this report was asked to make an appraisal of the Scandola Nature Reserve according to the criteria laid down for the renewal of the European Diploma by the Committee of Ministers of the Council of Europe.

Special task:

1. To ascertain whether the conditions obtaining when the European Diploma was awarded (23 September 1985) as described in Document SN-ZP (83) 27 still hold good (see in particular section 5 of Document SN-ZP (84) 23);
2. Remarks made by the Committee of Experts on Protected Areas at its June 1988 meeting:
 - i. report too brief; the committee would like to have more substantial information about osprey nesting, the nature of infringements of the regulations etc;
 - ii. with regard to visitors to the reserve, an effort should be made to provide a better information service in order to improve visitors' impressions of the reserve.

B. EXECUTION OF THE TERMS OF REFERENCE

23.08.1988 Arrived in Nice. Contact Mr H HACOURT, of the Environment Conservation and Management Division of the Council of Europe.

Was met at Campo dell'Oro Airport, Ajaccio, by Mr Paul LENCK, Director of the Heritage Department of the Corsican Regional Nature Park (PNRC), who took us to where accommodation had been provided. As the D81 road had been temporarily cut off west of Sagone by fire in the maquis and olive groves, our first discussions began immediately in Sagone.

Visted the "Maison de la Mer" (1) at Galeria; met Mr Charles-Henri BIANCONI, the Head Warden of the reserve and a television team who were there to film underwater sequences for the programme "Thalassa".

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- (1) Residential fieldwork centre comprising kitchen, six-berth dormitory, an office and a small "laboratory" for packaging samples. On the ground floor there is a garage containing the diving equipment and the compressor for inflating the rubber dinghy and filling the bottles. In the future this building will become the information centre.

24.08.1988

Together with Mr Jean-Claude THIBAUT, ornithologist and scientific adviser to the PNRC, who joined us for the duration of the appraisal, visited the spectacular coastline of the Scandola Nature Reserve south-west of Galeria in the "Armeria" (1), a powered whaling boat skippered by the Head Warden. The boat's manoeuvrability and the skill of the helmsman were much appreciated.

On the return journey skirted cliffs, small islands, rock stacks and breakers. Inspected a few sea caves. Observed the erosion platform, probably the widest in the whole Mediterranean.

In the afternoon, visited the "Maison d'écologie de l'Association de protection et d'études du maquis" (APM), the former forester's house at Pirio (2) in the lower Fango valley. Walked around the national forest in the upper Fango valley. Magnificent holm oak grove. Much information received during the walk. Inspected the "Casa Marine" (3) in the village of Galeria, currently undergoing improvement and conversion. Also shown the future site (near the Gendarmerie headquarters) of the Head Warden's residence (4).

25.08.1988

At the beginning of morning, briefly viewed, at the "Maison de la Mer", part of the working copy of the underwater sequences filmed for television by Claude RIVE, the IVS producer and his assistant, in collaboration with the Head Warden of the nature reserve. Again visited Scandola, with a landing at the well-sheltered Marine d'Elbo. At the helm of the "Armeria" was Frank FINELLI, an official warden, accompanied by David ROSSI, an auxiliary warden (seasonal). Rough sea, wind force 6-7, troughs (impressive). Able to appreciate the skipper's perfect control at the helm and later his sharp eyesight and devotion to duty.

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- (1) New high performance vessel brought into service in 1988: 27 ft Boston-Whylee, two 150 hp Evinrude engines, equipped with sonar effective to 500 metres, VHF radio, speed at full power 26 knots +.
 - (2) If necessary this building can accommodate scientists for whom there is no room at the "Maison de la Mer".
 - (3) Construction Permit No 82026. Excellently situated building comprising dormitory for school parties (in summer, when there are no children, accommodation will be available for scientists), ground-floor reception room, projection room, kitchen, laundry, boiler room, etc.
 - (4) The building will be of modular type so that a second flat can be added to the first at a later date.

Toured the maquis, passing two "exclosures", with halts at "la Bergerie" and a former grain threshing floor, an open and well-ventilated space. Ascended the old Genoese tower at Elbo, perfectly restored in 1976. Magnificent view over part of the nature reserve, including ospreys' nests.

On the return journey, the crew rescued two people on board a rubber dinghy with engine failure. In the afternoon, inspected the "protected natural site" of Ricinicia, near Galeria, consisting of 80 hectares bought by the Conservatoire du Littoral (shoreline conservancy). Had talks in the shade of the holm oak trees.

Returned to the "Maison de la Mer" for the last discussions.

26.08.1988

Last questions. Drove through very varied scenery towards Northern Corsica via Ile-Rousse and the coast, then towards the south along the new section of the D8, the road through the centre of the island via Corte and the N193 for Ajaccio - Campo dell'Oro. Returned to Switzerland.

ACKNOWLEDGEMENTS

I would like to convey my sincere thanks to those mentioned above for all the help they gave me in my work, particularly Mr Paul LENCK, who put himself to a great deal of trouble to provide transport and all the information we requested, while drawing our attention to the architectural, cultural, ethnological and gastronomical heritage of Corsica.

I would also like to thank Mr Charles-Henri BIANCONI, the staff of the nature reserve and Jean-Claude THIBAUT for the warmth of their welcome, the information they provided and their readiness to assist us.

Lastly, it is a pleasure for me to express my gratitude to Mr Hector HACOURT for the impeccable preparation of the visit, which was a perfect exercise in co-operation, thanks to his imperturbability.

C. EXAMINATION OF THE QUESTIONS RAISED IN THE TERMS OF REFERENCE

1. Introduction

During nine visits to Corsica I have gradually been able to discover the diversity of Corsican landscapes and natural environments, from the coast to the high mountains.

In 1966 the concept of nature conservation was still in its infancy and, apart from national hunting reserves, there was no nature reserve.

So far, 33 remarkable sections of coastline have been acquired in Corsica by the Conservatoire du Littoral (shoreline conservancy). Their total area is 9,220 hectares and the total length of shoreline is 105 km. There are several first class nature reserves. The Corsican regional nature park (PNRC) in the centre of the island forms both a spatial planning framework and an instrument of concerted action. Groups of naturalists led by keen ornithologists belonging to the ornithological club of the Friends of the PNRC are making a considerable contribution to the circulation of information on protection of birds and their biotopes and hence of the Corsican heritage in general.

In other words, in less than 15 years the concept of nature conservation has become a reality. (1)

This preamble gives me the opportunity to state from the outset that, after visiting the reserve and making the required on-the-spot appraisal, and having heard the explanations given by the reserve's staff, I can confirm that the documents submitted by the French Government in support of the application for the renewal of the European Diploma are accurate and truthful.

I will therefore refrain from repeating all the arguments about the biological and landscape value of Scandola, which have in any case been amply described in the background documents.

2. On-the-spot appraisal provided for in Resolution (73) 4 (conducted in accordance with the Regulations for the European Diploma Situation)

The Scandola Nature Reserve occupies a steep-sided headland jutting out into the Mediterranean in the north-west of the department of Southern Corsica, 50 km as the crow flies to the north-north-west of Ajaccio.

On both sides of the reserve the coast is uninhabited and difficult, if not impossible, to gain access to, as the mountains plunge into the sea. 12 km of indented coastline separate the reserve from the village of Galeria to the north-east. To the east the hamlet of Girolata, completely isolated at the head of its bay, is only 3 km away. However, 12 km of "wild" coastline separate the few above-mentioned houses from road access via the D424, which ends at the beach of Grattelle.

(1) The PNRC's Charter included among its priority objectives the protection of nature and natural sites, particularly through the establishment of nature reserves.

1.5.4 a. Effectiveness of the system of protectionSpatial planning

The distance of the reserve from all inhabited places and lines of communication, and the lack of urban facilities such as streets, electricity etc guarantee the integrity of the site.

The reserve and its approaches are also protected by the following arrangements:

- there is a land-use plan for Girolata, but it needs to be reviewed;
- the coast is listed in the Inventaire des sites inscrits ou classés. Nothing can be done without the PNRG being informed;
- "Shoreline" Act;
- European network of biogenetic reserves (coastal area - Scandola NR. 1669 ha);
- United Nations list of national parks and protected areas, No 2.17.06 (Scandola NR), category IV;
- United Nations list, No 2.17.06 (Corsican Regional Nature Park), Category V (protected landscape or seascape);
- World Heritage List, 1983 (Scandola NR) - "exceptional universal value";
- European Diploma awarded in 1985 (Resolution (85) 11).

Ownership

The reserve comprises a land area of 919 ha, partly municipally owned and partly privately owned, and a marine area of approximately 1,000 ha.

In view of the difficulty of reaching the site, due to changeable conditions at sea, and the fact that encroachment by the maquis is being allowed to block paths providing overland access, the number of visitors to the reserve remains very low, and in fact only a tiny area on the eastern edge is affected. The route up to the Elbo Tower by the direct footpath is outside the boundary of the protected area.

Staff

The permanent staff, which is responsible for supervision, observation, the information service and any necessary "tidying up", consists of the Head Warden and a highly qualified assistant warden, both sworn officials. From June to September a student whose family came from Galeria works for the reserve on a seasonal basis. (1) All the staff are highly motivated.

(1) He, too, would like to be an official warden.

Camping, bivouacking, hunting, scuba diving and underwater fishing are all prohibited.

Fishing is prohibited for all in the north-west part of the reserve in the Ile de Gargalu - Punta Palazzo sector (high-level protection) and for all except local professional fishermen in the other sectors.

Sports: rock-climbing remains a very marginal activity. No facilities.

Light civil aircraft

This is not a problem. A few cases of overflying by jets from the airbase at Solenzara or by helicopter (particularly customs helicopters). The Prefect has been asked to ensure that such cases are not repeated. In response to this request, the Government Commissioner ordered all breaches of the regulations involving aircraft to be reported to him.

No land-based military manoeuvres are held on the coast or its approaches.

There have been no agricultural activities since 1981 (1), and even the grapevines have disappeared.

The development of mass tourism is not a matter of concern to the reserve's staff at present. Scandola is difficult to reach, either by land or by sea; indeed, the prospect become frankly daunting when there is a heavy swell. Moreover, the area is visited by pleasure boats only between June and September.

The sea cruise vessels and the "charter boat" which visit the reserve (2) have not so far imposed an unreasonable burden on the environment. (3).

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- (1) The "Bergerie de Baptiste" in the Lower Elbo Valley was last used in about 1940 by a shepherd who used to live there during the summer grazing. A man from Girolata used to come on foot through the maquis to look after the small vineyard, and the stone building, with its adjacent bread oven, was used until 1981.
 - (2) It is estimated that 30,000 visitors per annum are brought by two boats from Calvi (the "Super Revellata III" and the "Christophe Colomb") and one from Portu (the "Alpana"). These have been joined this year by the "Ville d' Ajaccio", run on a charter basis (Sunday excursions). Thanks to the limiting effect of the frequently unfavourable conditions at sea, the number of tourists remains stable.
 - (3) However, the management intend to ask the scientific committee to look into problems raised by regular visits by launches taking parties of tourists inside the sea caves, and possible damage to the erosion platform and the natural environment of the marine fault. It has not been proved that visits by launches have a harmful effect on the reproduction of ospreys (Pandion haliaetus).

There are no plans for any residential or industrial development.

1.5.4 b. Scientific studies

Numerous studies have been carried out (more than 35 publications), both on the offshore part of the reserve and on dry land. These provide evidence of great intellectual vitality and the exceptional value of Scandola as the repository of a small portion of the Corsican natural heritage (1).

The subjects covered relate to multidisciplinary activities in the fields of geology, fauna and flora or the human sciences.

Two valuable "management tools" have recently been published:

- a 1:10,000 scale geological map;
- a 1:10,000 scale phytosociological map (1983) with a description of the vegetation.

Ongoing activities:

- . monitoring of the "permanent grill" in the Posidonia bed (Posidonia oceanica) and long-term studies on the marine environment (particularly various cartography exercises)
- . monitoring of maquis vegetation with the help of the "exclosures" erected at two places (2) in the Elbo "plain"
- . phytosociological analyses
- . ecology and population dynamics of the osprey (Pandion haliaetus) colony. (3)

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- (1) In Galeria planning permission has been sought for the construction of a 4 million Franc scientific centre on a protected site. The Commission des Sites has still to announce its decision.
 - (2) We noted that material for the construction of a third "observation square" had been placed in position.
 - (3) For example: "Ospreys in Corsica. Reproduction season 1988", Thibault J-C and Patrimoine O, September 1988, 12 pages, PNRC (work not intended for publication).

Other work:

- . "Unofficial" study of mosses (Gamisans mission)
- . Geological thesis. Comparison of volcanic activity in Scandola with that of a mainland area.

Research undertaken or continued in 1988

- The CANARD Inventory of Spiders (the report is due to be submitted to the PNRC in October/November 1988);
- Inventory of internal parasites of the yellow-legged herring gull (*Larus cachinnans* *Michaelis*);
- Bat inventory;
- Continuation of the visitor survey begun in 1987 (target group in 1988: pleasure craft visitors);
- Marine area: parasite infestation in fish;
- Inventory of benthic fauna living at depths of up to 10 metres;
- Updating of the 1976 seaweed inventory;
- Study of sea urchins;
- Study of the "Taffoni", at the interface between sea and mountains.

Research projects planned

These are chosen by the scientific committee. However, one of the future priorities for the PNRC authorities is a soil survey of the reserve.

Mapping of the "erosion platform" will be resumed in five to ten years' time, in order to reveal what changes have taken place.

The park authorities would also like to secure the services of an ecologist to study the micro-landscape of Elbo (ethno-biology); however, a suitably qualified person has not yet been found.

1.5.4 c. Improvements made or foreseen

No improvement work has been carried out, as the reserve is still bound by very strict regulations. The vegetation around the wall in the Elbo "plain" has been cleared away.

Cleaning-up operations (collection of rubbish) in the Bay of Elbo are regularly conducted either by the offenders themselves or by the wardens or volunteers.

- Lower Elbo Valley: in 1989, clearance of vegetation from the north-east section of an enclosing wall buried in the maquis.
- Demolition and removal of the ruins of a breeze-block hut built a few years ago by fishermen.

1.5.4 d. Means of public access

- Overland from the village of Galeria, or the hamlet of Girolata; the footpaths are not maintained and are gradually becoming obstructed by the maquis. This has made access practically impossible, and in places paths have been completely blocked by thorns, since the park authorities are anxious to preserve the reserve's integrity.
- 30,000 visitors per annum come by sea specially to observe the Scandola Nature Reserve from close quarters. This figure has remained stable, according to the Head Warden. Moreover, conditions at sea (frequently unfavourable to boat trips) make regular services impossible. For example, the Alpana (a boat capable of carrying 70 passengers) comes to the reserve only in calm weather.

This year no tourists at all were landed on the beach at Elbo owing to the risk of accidents (no landing stage).

1.5.4 e. Ownership title

Unchanged. Under Ministerial Decree No 751.128 of 9 December 1975, 56 plots with a total area of 919 ha. (privately or municipally owned) and 1,000 ha. offshore are covered by the nature reserve's regulations.

As the land is in a very isolated position there is no need to apply for any compulsory purchase orders, nor is there any likelihood of future development.

1.5.4 f. Management

Objectives:

"To preserve representative natural environments and thus act as a repository.

To provide a field laboratory for the study of these environments, the way they function and the way they develop."

As a conservation institution, the Scandola Nature Reserve affords almost total protection, at least in the land area. Apart from the occasional visits of scientists to the maquis and landings of fishing vessels or sometimes pleasure craft on the beach, almost the whole peninsula is now free from human pressure and interventionist management.

On the other hand, the constant supervision, the public education and information services and the scientific studies constitute a type of long-term management which leads to better knowledge of the area and hence provides incentives for preserving heavily threatened natural resources in the Mediterranean.

With this objective in mind, contacts have been established between the Italian managing authorities of the nature reserves of the Tyrrhenian, Sardinian and Ligurian islands and French administrators in order to exchange information and pool experience.

Special task

1. Section 5 of document SN-ZP (84) 23:

Settlement

This does not represent a threat; the two or three small buildings in the Lower Elbo Valley are unoccupied or abandoned. It is not intended to restore them, nor will there be any resumption of agricultural activities or wine production.

Hunting and fishing

Hunting is prohibited in the reserve. No cases of poaching have been discovered. Hunting is conducted on a small scale near Girolata, but there is no encroachment on the reserve.

Supervision of the professional fishermen takes place at sea. Unmarked nets are hauled out of the water. The staff know which fishermen have exemptions and the PNRC has a list. Night patrols are made by boat.

When the Interministerial Decree came into force there were 17 exemptions permitting fishing in the Scandola Reserve. In 1988 there were only 10. The same small group of 4 to 5 fishermen appears in the list of exemptions each year. However, an annual meeting is held with the Prud'homie maritime (maritime arbitration board) at which these exemptions and problems arising in the Scandola Reserve are discussed.

Fishermen from Ajaccio no longer visit the area, since it is not worth their while.

Nevertheless, when the director of the heritage department of the PNRC suggested a ban on fishing in the Bay of Elbo, the proposal was vigorously opposed by the professional fishermen.

However, because the fishermen are worried by the prospect of what will happen in 1992, the situation is beginning to change. The local fishermen would be in favour of a total ban on fishing in a reserve to be established at Elbo, because it would lead to higher stocks of fish and marine organisms in adjacent waters.

In addition, the establishment of a "buffer zone" could be obtained without too many difficulties being raised by the Department of Maritime Affairs. It would be a question of obtaining an administrative decision ordering a ban on underwater fishing, line fishing and trawling at sea in a 100-metre-wide strip outside the limits of the reserve.

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- (1) Extension of the heavily protected sector towards the east, ie the Bay of Elbo. This area would therefore act as a "reservoir of potential resources" and a natural spawning ground.

Tourism

As already stated in Section 1.5.4 a., the number of visitors remains stable and commercial boat trips do not raise any problems in themselves; on the contrary, they are useful because they keep visitors in groups. They even provide an opportunity to enlighten and inform (1) tourists who are presumably well-disposed towards nature conservation.

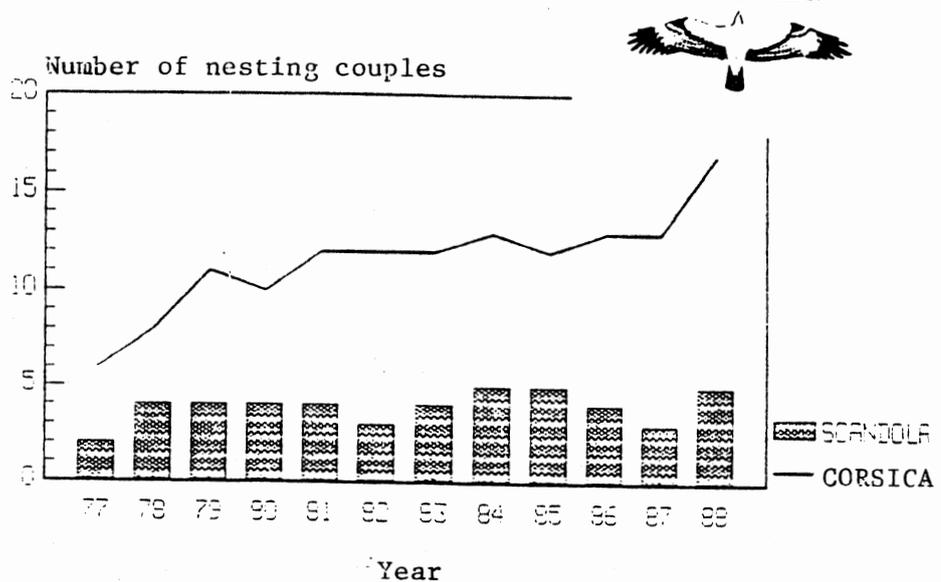
On the other hand, the situation with regard to the mooring of pleasure craft is less clear cut. The PNRC authorities suspect that this practice may harm the environment. The result of the 1988 survey of pleasure craft visitors conducted by G. Richez should provide more information about this question.

2. Replies to the remarks of the Committee of Experts on Protected Areas

i. Nesting habits of the osprey (Pandion haliaetus)

The table below shows the beneficial effects on the osprey population of conservation and protection measures resulting from the establishment of the PNRC and the Scandola Nature Reserve.

Comparative table showing changes in the number of nesting birds in the Scandola Nature Reserve and in Corsica



Source : PNRC - J.-Cl. Thibault

(1) We have personal experience of the excellent way the captain of the Alpana passes on scientific information to his passengers.

3 to 5 couples may nest at Elpa Nera, Scandola, Cala di Ponte, Passe des Malheurs and the Bay of Elbo. The species is in a very satisfactory position, because there is a balance between the level of fish stocks and the number of predators.

Moreover, the number of nests has never been so high. For example, a couple may use two nests, rebuilding them in alternate years. A female ringed as a nestling came back four to five years later to nest in the same site.

The osprey (*Pandion haliaetus*) is spreading along the coastline of the PNRC, a particularly favourable biotope which provides shelter for 17 couples. Reproduction in 1988 was satisfactory and 30 nestlings, 14 of them ringed, are known to have taken wing.

Nature of breaches of the regulations

With regard to fishing, there have been cases of underwater fishing with harpoon guns. In order to deter offenders the weapon, wetsuit, bottles and lead belt are all confiscated until the trial. Nevertheless, most breaches of the regulations involved line fishing (a minor offence) or underwater fishing. There have been a few exceptional cases involving divers. 70% of these visitors come from Italy, where fishing with the aid of aqualung equipment was legal until quite recently. During the first year of the nature reserve's existence the wardens came across offences of this type. The current trend is towards a reduction in the incidence of fishing by aqualung divers (one offence a year).

Offences on land include the dumping of sacks of rubbish, the collection of a bunch of thrift and the lighting of a fire in the hut at Elbo (1).

Professional fishing:

No further offences.

ii. Visitors to the Reserve

The following clarifications need to be given. Unlike the position in many nature reserves, Scandola can be visited only from the sea. In addition, the harbours from which visitors set out (Portu, Calvi and even Ajaccio) are outside the jurisdiction of the wardens.

This explains their concern not to attract more people through untargeted information distributed "here, there and everywhere", given that the reserve is not intended for tourists.

(1) The greatest danger for Scandola is fire; this would destroy everything, since firefighters would not be able to reach the area by land.

Nevertheless, information services for tourists include surveys conducted in summer 1987 (boat trips) and summer 1988 (pleasure craft), publications, handouts - particularly on the spot - of leaflets and booklets (7 different), and free slide lectures given in summer by scientists at the school in Galeria, at the campsite and in Calvi - a great success. The Head Warden intends to use specialised Italian publications to inform and enlighten a wider public (1). A leaflet including a map showing areas subject to fishing restrictions and the nature reserves of Scandola and the Lavezzi islands is distributed on request in offices of the Department of Maritime Affairs. The reserve is clearly shown on 1:25,000 scale maps and marine charts. In addition, the PNRC intends to publish a bilingual leaflet in French and Italian, since there now seems to be a demand for this as a result of the "tourist pressure" from Italy. It is intended to redesign the leaflet on Scandola with new pictures and graphics. Another leaflet, on the marine environment in general, is soon to be produced to complete the collection of PNRC publications.

Harbourmaster's notices (2) showing a map of the reserve and containing a list of "does and don'ts", have been ordered but have not yet arrived. These will be placed in Calvi, Portu, Galeria and possibly Girolata.

In addition, the PNRC intends to set up an information service in Girolata, either in existing premises or perhaps in a new building.

Thus it can be seen that much has been done to make a better impression on visitors to the reserve, as requested, and these efforts will continue. (3)

Additional questions:

- Do you plan to reintroduce the monk seal (Monachus monachus)?

Apart from one isolated sighting, this species has not been seen in its former biotope. There are plans for a reintroduction programme based on breeding in captivity at Marineland in Antibes. After a period of acclimatisation in a "wild" marine environment, the young would be released at Porquerolles.

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- (1) An article on Corsica in Italian is soon to be written for the magazine "SUB".
 - (2) Mr Hacourt, of the Council of Europe, requested that the nature reserve's notices should include the words "European Diploma of the Council of Europe".
 - (3) Most newsagents in Corsica display in their windows the PNRC's publications, such as "Découverte de la Nature", Birds, Mammals, etc. The Park's publications are on sale, for example, at tobacconist's in Galeria.

The PRNC would be opposed to a project of this type in Scandola, since monk seal numbers in the Mediterranean are too low and the risks of failure disproportionate. Moreover, they would be constantly disturbed by pleasure craft.

- How many feral goats and cows are there in the reserve?

There are about 10 wild goats and more than 30 wild cows. The cows perform a very useful function in keeping open tracks though the maquis, these tracks being wider than those made by the goats.

- Has the tower on the island of Gargalu been restored?
The building has been made safe, but that is all (the coping is missing).
- Why does the "Maison de la Mer" not have a sign to draw the attention of the public?

At the moment is it not thought advisable to attract visitors, since this would mean constant disturbance in the summer. The reserve staff may be busy or have an urgent job to attend to, and contacts with the public would not always be helpful. It would be better to give this task to a student who would have plenty of time to provide information to tourists and yachtsmen.

- Has the operating budget been increased since 1980?

Yes, in 1988 the sums allocated to running costs, equipment and scientific studies were increased.

- Would you like the reserve to be extended to the Elpa Nera area?

No, not really. If we were to enlarge the nature reserve it would be in the Focolara area (to the north east).

- Are there any plans for a study of the climate?

No, but the director of the heritage department supports this suggestion.

- Will the disused watering holes at present hidden in the maquis be cleared?

This work is not a priority. On the other hand, vegetation has been cleared around some of the walls in the lower Elbo valley. This work will continue in 1988.

With regard to research, it is a fact that, because of the considerable interest of the sea bed, more research has been done in the marine area. However, all underwater work calls for a proportionally greater expenditure of energy and time than work on the surface. Nevertheless, it is intended to give a fresh impetus to scientific activity in the land part of the reserve.

- In the marine area, the study on Posidonia (Posidonia oceanica) showed that in some places the Posidonia bed is becoming depleted. Is this worrying?

The depletion is by no means spectacular and could be a cyclical phenomenon. One possible explanation is that there has been a reduction in deposits of the terrigenous sediments which once used to help fill any gaps (the maquis is no longer used for grazing and sections are no longer burned off; the fine soil particles which once used to end up in the sea have been held back by vegetation).

D. CONCLUSIONS

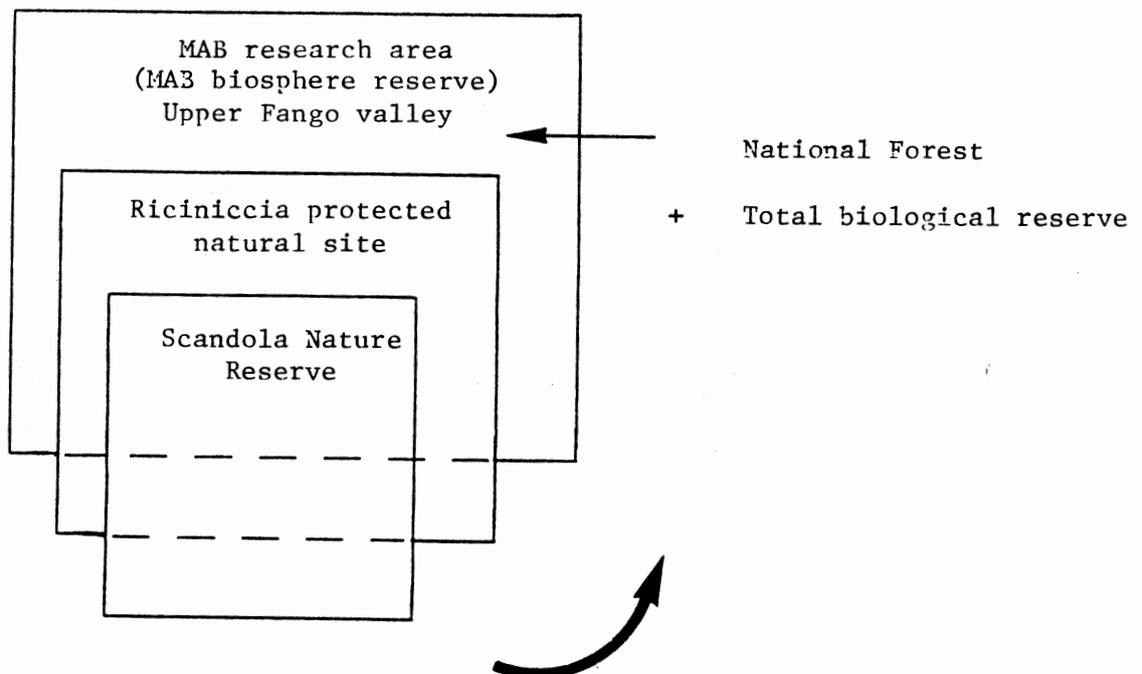
1. The PNRC, which was given responsibility for managing the Scandola Nature Reserve by the Ministry of the Environment, has discharged this responsibility satisfactorily since December 1975.

Throughout this period the PNRC has not spared its efforts to emphasise the work of informing and educating the public with regard to the protection of fauna and flora. In particular, its intensive efforts to protect the osprey (Pandion haliaetus) population are bearing fruit, and the figures for 1988 are encouraging (see page 15, section 2i).

Moreover, the PNRC has initiated and supported a number of scientific research projects of great interest, particularly with a view to informing its policy decisions.

2. Consequently, the Scandola Nature Reserve satisfies the assessment criteria for renewal of the European Diploma, according to Section 4 of Resolution (73) 4. Renewal for five years therefore seems justified.

The reserve is used for research, it is managed with vigilant stewardship and it is securely protected. Neighbouring areas are protected by measures compatible with the regulations governing Scandola, and it is even intended to raise them to the level of "MAB biosphere reserve" or more simply "MAB research area". (See diagram below).



3. To conclude this report, I would like to make the following suggestions:

- investigations, on-the-spot appraisals and discussions with fishermen should be continued with a view to the imposition by the government of a total fishing ban in the Bay of Elbo;
- with this objective in mind, the surveys conducted by G. Richez should be continued for one or two years;
- the Department of Maritime Affairs should be asked to establish a buffer zone around the perimeter of the marine reserve;
- a study of the reserve's climate should be promoted;
- scientists should be in certain cases urged to draw attention in their work to information likely to assist the PNRC authorities in their decision-making;
- the nature reserve's signs (visible to the public from a short distance) should indicate that the reserve has been awarded the Council of Europe Diploma.

J.P. Reitz,
Nature Conservation Officer

Lausanne (Switzerland)
22 September 1988

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COMMENTS BY H. HACOURT (Secretariat)

I would like to thank Mr Paul Lenck and all his colleagues, who enabled Mr Reitz, the expert appointed by the Secretary General of the Council of Europe, and myself to carry out the terms of reference given to us in connection with the renewal of the European Diploma awarded to the Scandola Nature Reserve (Corsica, France).

The problems facing this nature reserve have been fully documented by the expert, and I can only support his conclusions.

However, I would like to supply some further information on certain points:

i. The regional nature park has played and still plays a dominant role in Corsican spatial planning; the regional and local authorities are becoming increasingly aware of their responsibilities. This positive attitude means that the park, which is responsible for management of the Scandola Reserve, is developing an excellent management policy, as the expert pointed out. In the context of the European Diploma, this provides reassurance about the future.

ii. Much has been said about the danger of tourism for the Scandola Reserve. As mentioned above, it is practically impossible to reach the reserve overland. There remains the question of access by sea. It is necessary to examine this problem with a proper sense of proportion: there are very few possible landing sites (I personally counted four), and landing is impossible in bad weather. Moreover, not a single landing was observed this year by the Head Warden, who puts out to sea every day in the tourist season. Consequently, if the present level of supervision is maintained, I think there will not be any serious problems from this source. There also remains the question of pleasure craft: boats are not permitted to remain in the coves for more than 24 hours (often in order to take shelter there). Here again it is a question of maintaining the same level of supervision. In addition, such supervision would be facilitated if a marine buffer zone could be created, particularly in the Bay of Elbo.

iii. Both Mr Reitz and I were struck by the effort made to develop scientific studies. As the Head Warden said, there are often financial resources available but it is difficult to find people with the necessary knowledge who are prepared to remain for some time in the reserve, which is fairly isolated.

iv. With regard to public information, I agree completely with Mr Reitz that it is necessary to be very cautious. Everyone has the right to information, but on the other hand people should not be encouraged to visit this area, which is very fragile biologically. In any case, although the management policy is very cautious, a number of public information services have been provided. I raised the problem of the notices which make no reference to the European Diploma. I did not insist, however, as this problem will be discussed by the Committee of Experts when they choose a common emblem for all 30 Diploma areas.

Like the expert, after our instructive visit, I am convinced that the European Diploma should be renewed, but the renewal resolution should be accompanied by a number of recommendations.

Appendix I contains a draft resolution.

A P P E N D I X IDRAFT RESOLUTION ON THE RENEWAL OF THE EUROPEAN DIPLOMA
AWARDED TO THE SCANDOLA NATURE RESERVE (France)

The Committee of Ministers, under the terms of Article 15a of the Statute of the Council of Europe,

Having regard to Resolution 65 (6) instituting the European Diploma,

Having regard to Resolution 85 (11) awarding the European Diploma to the Scandola Nature Reserve,

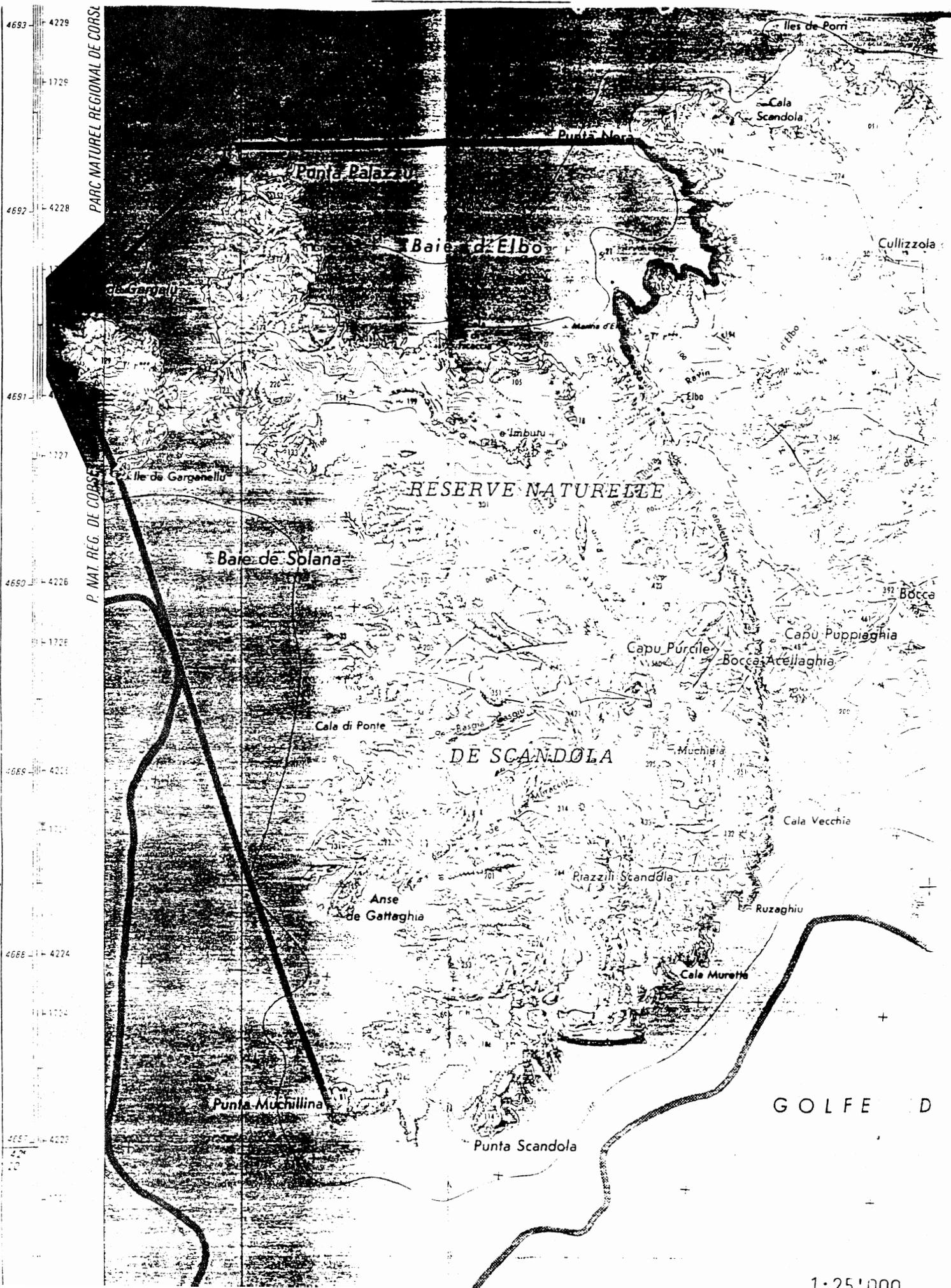
Having regard to the proposals of the Steering Committee for the Conservation and Management of the Environment and Natural Habitats,

Renews the European Diploma awarded to the Scandola Nature Reserve in Category A until,

Attaches to the renewal the following recommendations:

1. the survey of visitors to the reserve, begun by G. Richer in 1987, should be continued;
2. the Department of Maritime Affairs should be asked to establish a buffer zone around the perimeter of the marine area of the reserve;
3. investigations, on-the-spot appraisals and discussions with fishermen should be continued with a view to the imposition by the Government of a total fishing ban in the Bay of Elbo;
4. a study of the reserve's climate should be promoted;
5. scientists should in certain cases be urged to draw attention in their work to any information likely to assist the PNRG authorities in their decision-making;
6. the planned improvements to the "Maison de la Mer" should be implemented as quickly as possible in order to provide a suitable public information service.

APPENDIX II



A P P E N D I X VUNIVERSITE D'AIX-MARSEILLE II

ET

RESERVE NATURELLE DE SCANDOLA

Date :

Lieu :

Type de Bateau :

Météo :

 CONNAISSANCE DE LA FREQUENTATION PAR LES PLAISANCIERS
 DE LA RESERVE NATURELLE DE SCANDOLA (ETE 1988)

Afin de mieux connaître les besoins des visiteurs de la Réserve Naturelle de Scandola, nous avons recours à vous au moyen de ce questionnaire. Merci d'y répondre. Ainsi, sans doute, pourrons-nous davantage vous être agréable.

-
- | | | | | Combien de fois ? |
|--|---------------|-----|----------------|-------------------|
| 1) Etiez-vous déjà venu en Corse | Oui | Non | | |
| à Scandola | Oui | Non | | |
| 2) Savez-vous que Scandola est une Réserve naturelle ? | Oui | Non | | |
| 3) Connaissez-vous l'existence des interdictions qu'une Réserve naturelle entraîne : | | | en mer | Oui Non |
| | | | sur terre | Oui Non |
| 4) Si oui, lesquelles ? | | | | |
| en mer : | | | | |
| sur terre : | | | | |
| 5) Avez-vous des propositions à faire pour une meilleure information des visiteurs de la Réserve ? Si Oui, lesquelles ? | | | | |
| 6) Quelle serait votre réaction si le mouillage était interdit, dans le fond de la baie d'Elbo, pour des raisons scientifiques ? | | | | |
| - favorable | | | - sans opinion | |
| - défavorable | | | - autre | |
| 7) A qui appartient le bateau sur lequel vous naviguez ? | | | | |
| 8) Quel est le lieu d'hivernage du bateau ? | | | | |
| 9) Votre lieu de résidence habituel : | | | | |
| Ville : | Département : | | Pays | |
| 10) Vos souhaits et remarques générales concernant les relations entre la navigation de plaisance et la Réserve naturelle de Scandola. | | | | |

A P P E N D I X VI

MISSION SCIENTIFIQUE

" S C A N D O L A X X X I X "

(FAÇADE MARINE DU PARC NATUREL REGIONAL DE CORSE)

DU 6 AU 18 JUIN 1988

PREMIER COMPTE RENDU SCIENTIFIQUE

Participants: Marc VERLAQUE (Faculté des Sciences de Luminy, Marseille), Charles-Henri BIANCONI et Franck FINELLI (Parc Naturel Régional de Corse).

La mission avait quatre objectifs principaux:

- 1°. Le contrôle de la population de Paracentrotus lividus de la baie de Galeria (Transect permanent).
- 2°. L'étude préliminaire de la petite faune vagile des grottes sous-marines obscures de la région de Galeria.
- 3°. Le suivi de l'expérience de régénération du peuplement à Cystoseira balearica de la station de Calancone.
- 4°. La poursuite de l'inventaire des algues marines benthiques.

DEROULEMENT DE LA MISSION

- = Lundi 6 juin, mer très agitée
Installation à la Maison de la Mer et préparation du matériel.
- = Mardi 7 juin, mer agitée
Plongée, baie de Galeria: rebalisateur du transect permanent.
- = Mercredi 8 juin, mer agitée
 - 1°. Plongée, baie de Galeria: dénombrement des oursins sur le transect permanent, tronçon: 0 - 40 m.
 - 2°. Plongée, baie de Galeria: poursuite du dénombrement, tronçon 40 - 70 m.
- = Jeudi 9 juin
 - 1°. Plongée, station de Calancone: réalisation de deux relevés phytosociologiques sur la zone expérimentale de régénération et

COMPTE RENDU PRELIMINAIRE DES OBSERVATIONS

Le programme que nous nous étions fixé, a pu être réalisé dans son ensemble. Grâce aux larges possibilités du nouveau bateau du Parc, plusieurs plongées d'inventaire se sont déroulées dans la Réserve de Scandola. La grande expérience de plongeur de C.H. BIANCONI a permis l'exploration des biotopes circalittoraux en toute sécurité.

I. Population de Paracentrotus lividus de la baie de Galeria

Sur le transect permanent, le dénombrement des P. lividus met en évidence une augmentation sensible de la population par rapport aux contrôles précédents (Fig. 1, Tab. I).

Tableau I. Evolution du nombre de Paracentrotus lividus recensés le long du transect permanent de la baie de Galeria.

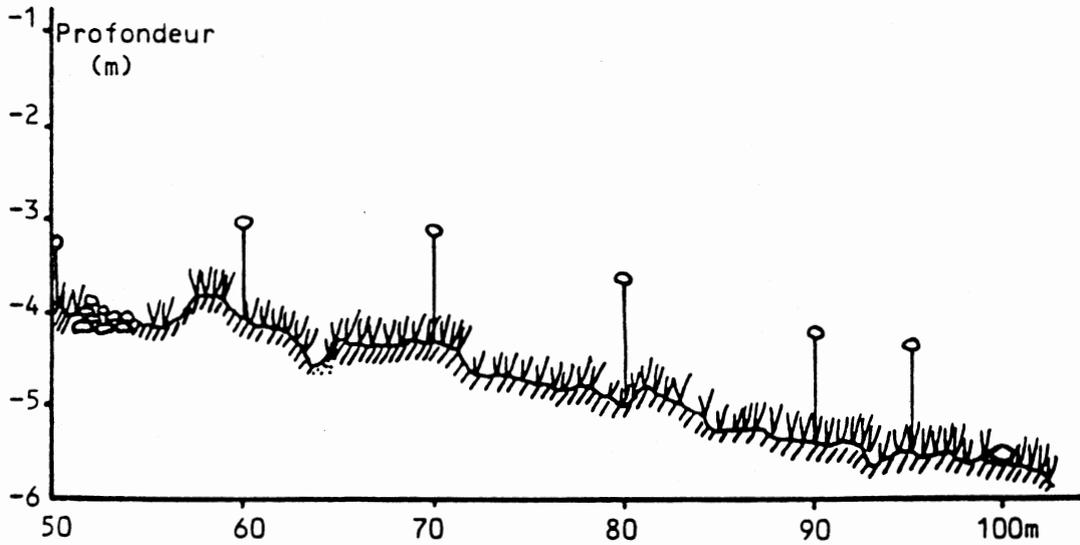
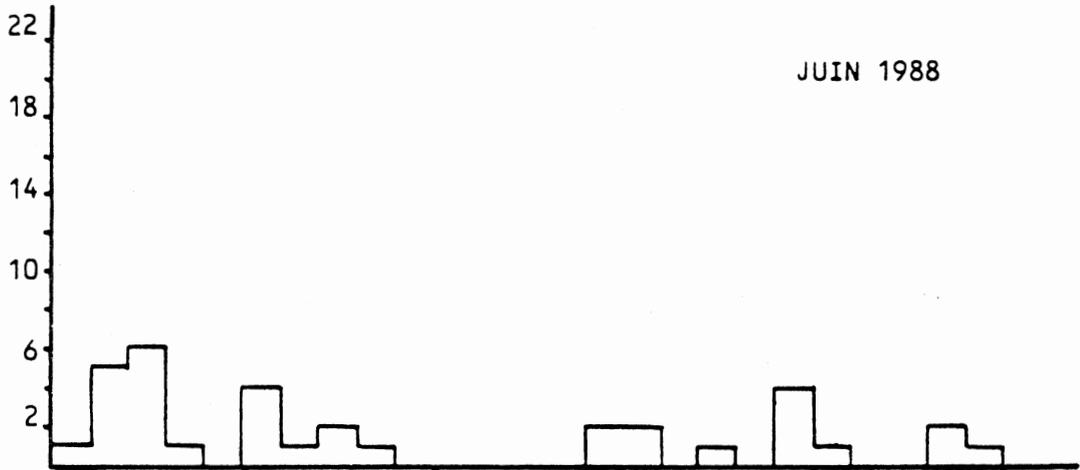
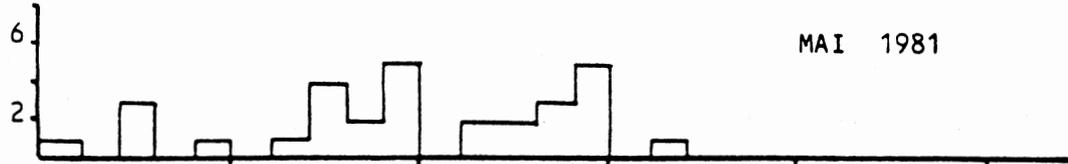
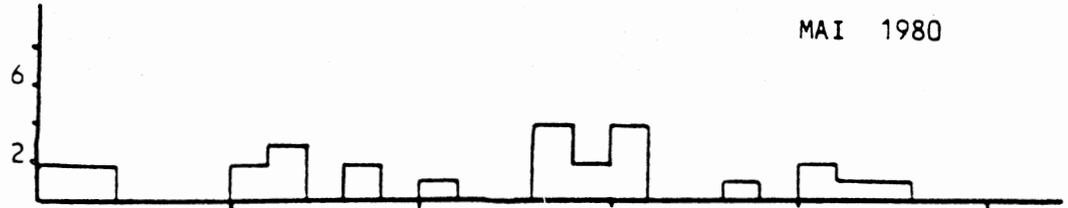
Tronçons :	0 - 50 m	51 - 100 m	Total
Mai 1980 :	47	27	74
Mai 1981 :	37	30	67
Juin 1983 :	49	non recensés	--
Juin 1988 :	107	34	141

Les effectifs ont plus que doublé sur la première moitié du transect (0 - 50 m), c'est-à-dire dans la zone occupée par les cumulus de pierres. Sur les cinquante derniers mètres, l'herbier de posidonies domine et l'accroissement du nombre d'individus reste faible. Cette tendance s'observe aussi chez Arbacia lixula (Tab. II).

Tableau II. Evolution du nombre d'Arbacia lixula recensés le long du transect permanent de la baie de Galeria.

Tronçons :	0 - 50 m	51 - 100 m	Total
Mai 1980 :	4	0	4
Juin 1983 :	4	non recensés	-
Juin 1988 :	16	1	17

Si nous considérons la distribution des fréquences relatives de P. lividus en fonction du diamètre horizontal du test (Tab. III, Fig. 2), nous constatons que l'accroissement de l'effectif de la population concerne les oursins de taille moyenne ($2.5 < \text{diamètre du test} < 5.5$ cm) ce qui dénote un recrutement régulier pour les années 1983 à 1986. Les recrutements de 1987 et de 1988 ne peuvent pas être pris en compte car beaucoup d'individus de moins de 2.5 cm de diamètre, localisés sous des pierres ou dans l'herbier, échappent au recensement. Le long du transect, les oursins ne se distribuent pas de façon homogène. Une grande partie des individus se localise sur les cumulus de pierres situés entre 34 et 50 m du rivage. Ces structures, riches en



- | | | | | | |
|---|---------------|---|---------------------------|---|--------|
|  | Sable |  | <u>Posidonia oceanica</u> |  | Balise |
|  | Blocs rocheux |  | Matte morte | | |

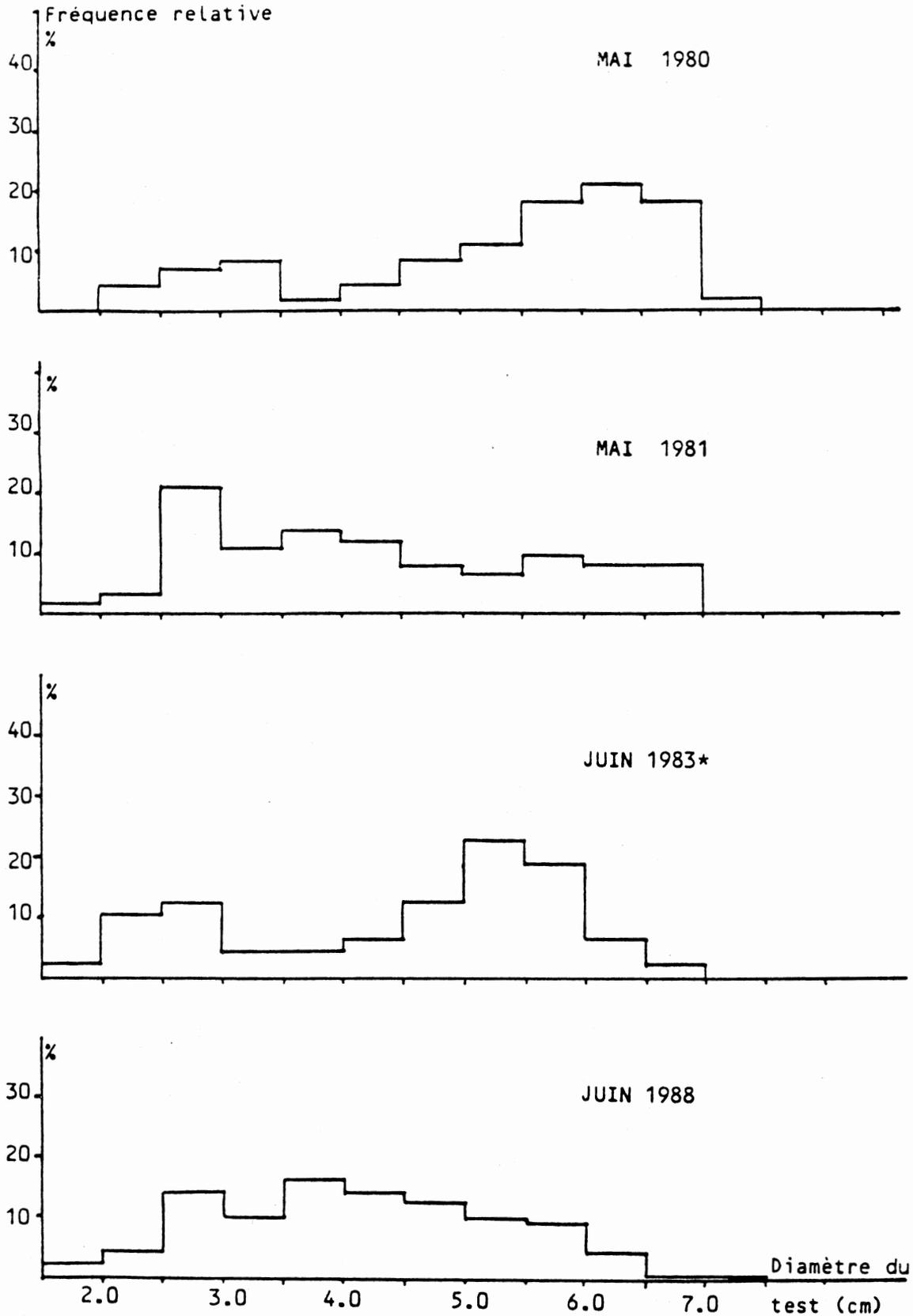


Figure 2. Fréquences relatives en fonction du diamètre horizontal du test des *Paracentrotus lividus* recensés sur le transect de la baie de Galeria (* recensement sur le tronçon 0 - 50 m seulement).