COMMISSION OF THE EUROPEAN COMMUNITIES

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Brussels, 15 November 1989

Report from the Commission to the Council

Fishing for anchovy in the Channel

EXPLANATORY MEMORANDUM

The Council, at its meeting of 9-11 December 1988, adopted a declaration for its minutes which included the following:

"The Council notes that the Commission will examine the possibility of extending to the Channel the use of a mesh size which will permit fishing for anchovy and will report to the Council by 1 July 1989 at the latest, proposing any appropriate measures." (1)

The Commission invites the Council to refer to the attached report.

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(1) Council Document N° 10269/88 (Pêche 196), 14.12.1988.

Report from the Commission to the Council

Subject: Fishing for anchovy in the Channel

1. Background

The Council, at its meeting of 9-11 December 1988, adopted a declaration which included the following:

"The Council notes that the Commission will examine the possibility of extending to the Channel the use of a mesh size which will permit fishing for anchovy and will report to the Council by 1 July 1989 at the latest, proposing any appropriate measures." (1)

2. The anchovy fishery in the Channel

Catch data were available to the Commission. Member States were requested to provide any additional data relevant to the objective of the declaration, in particular scientific papers. No relevant information was provided within the deadline specified (31 March 1989) but one contribution was received from the French authorities in mid-May (Annex I).

The official catch statistics as submitted to Eurostat (CHRONOS database) are given in Annex II. The most relevant period to be considered is that before 1983, the year in which Council Regulation (EEC) No. 171/83 laying down certain technical measures for the conservation of fishery resources (2), including minimum mesh sizes for the different fisheries for different species by zones, was adopted, because the fishery for anchovy was not restricted by mesh size regulations before this date and could have been developed.

The catch statistics show that, except for 1978, no significant catches have been reported. The data provided in Annex I also show that anchovy occur in the Channel but do not allow its abundance to be determined.

3. Scientific advice

The available information (Annexes I and II) was examined by the Scientific and Technical Committee for Fisheries (STCF) during its meeting of 25-29 September 1989 (15th Report of the STCF). It was concluded that:

> "The STCF is of the opinion that the data available were not sufficient to conclude that the biomass of anchovy in the Channel would allow a directed fishery for that species. The fisheries statistics which were also presented in the report showed only very limited catches of anchovy in Divisions VIId, e for the period 1973-87.
>
> Before giving final advice on the derogation from the mesh size regulation for vessels fishing for anchovy in the Channel, STCF recommends that experimental fishing by scientific or commercial chartered vessels should be conducted to collect evidence of the existence of commercially valuable concentrations of anchovy in the area to justify a specific derogation for anchovy."

(1) Council Document N° 10269/88 (Pêche 196), 14.12.1988.
(2) O.J. No. L 24, 27.1.1983, p. 14

4. Conclusion

It is concluded that anchovy penetrates very infrequently into the Channel. However, in the light of the scientific advice, the Commission does not consider that the data available provide a sufficient basis at this stage to propose amending Council Regulation (EEC) N° 3094/86 (1) to permit the use of a mesh size which will permit fishing for anchovy in the Channel, taking into account that the introduction of a mesh size appropriate to fishing for anchovy could have adverse consequences for the conservation of other species.

(1) O.J. N° L 288, 11.10.1986, p. 1.

ANNEX I

NOTE ON ANCHOVY IN THE CHANNEL AND SOUTHERN NORTH SEA
OFF NUCLEAR POWER STATIONS

1. Biology and distribution of Engraulis encrasicolus (L.)

A small pelagic fish (Table 1), essentially of southern European waters, anchovy is thought to be present throughout the Channel and southern North Sea but is abundant only in certain areas. It generally forms shoals off the coast in summer and in winter migrates to deeper waters (Wheeler, 1969). It is euryhaline and can enter estuaries.

Spawning occurs throughout the distribution area of the species. With the Mediterranean populations it occurs in summer during a relatively brief period. Temperature appears to play a determining role, with laying intensifying at the time when water temperature rises rapidly (Aldebert and coll., 1970 and 1971).

In the southern North Sea spawning grounds are primarily coastal with most eggs being found off the Franco-Belgian frontier (Fig. 1). This may be a local population descending from the Zuider Zee stock (Havinga, 1950), part of which spread along the Dutch and Belgian coasts when the Zuider Zee was closed off. There are also coastal populations in the Bay of Biscay (Guerault and Avrilla, 1978).

2. Studies at EDF Channel sites

(a) Location and frequency of observation

Since 1975 ISTPM and subsequently IFREMER has been charged with monitoring the zooplankton off the nuclear power stations on the North Sea and Channel coasts (Fig. 2).

During the "pilot" studies the spatial network for zooplankton sampling, with associated water readings, comprised three stations on a line perpendicular to the coast and one on either side of this.

During "1st stage" monitoring before entry into service two measuring stations were used each time, one within the potential thermal plume and one roughly three miles off the site.

After the power station became operational three measuring stations were used for "2nd stage" monitoring, in the inlet channel, in the outflow and offshore outside the influence of the latter.

Table 2 indicates the various operations at the nuclear power station sites. During preliminary and "1st stage" monitoring readings were taken approximately monthly but from the operational date of the power stations were reduced to a single period (April-July or June-September) and were directed to a number of particularly well-represented species (sole, clupeids, lobster, spider crab).

(b) Spawning of anchovy

- Period

At all the EDF sites spawning occurred from mid-May to August (Fig. 3) with a peak at the beginning of July. Santiago and Eltink (1988) observed the maximum number of eggs in the Bay of Biscay in May-June (Fig. 4). According to them the length (albeit restricted) of the spawning period arises from a time differential in the maturation process of the different age groups: adult breeding fish (2 years and older) spawn in May at the edge of the continental slope and those spawning for the first time do so in June in coastal waters.

These observations show that the species spawns late in the north of its range (difference of approximately one month between south and north).

- Intensity

Densities of anchovy eggs observed during the different years of study at the Channel sites are represented graphically in Figures 3, 5 and 6. The maximum densities always appear in July but vary substantially from one year to another (from a few to 380 per 10 m^3); sporadic at Flamanville (0.05 eggs/10 m^3 in June and July 1978), uncommon at Paluel (0.5 eggs/10 m^3) and plentiful at Gravelines (20 to 230 eggs/10 m^3), anchovy eggs attain maximum density in the Penly sector (360 to 380 eggs/10 m^3 in July 1979). These densities are markedly inferior to those observed in the Bay of Biscay: 880/10 m^3 in 1970 in the Oléron sector, 825/10 m^3 in 1972 just below the Gironde.

The work of Wallace and Pleasants (July 1968) in the Channel and southern North Sea and of Arbault and Lacroix during the same month in the Bay of Biscay showed almost similar densities, however (100 to 250 eggs/m^2 in the southern North Sea and 50 to 200 eggs/m^2 in the Bay of Biscay).

Anchovy larvae occurred very rarely in our sampling. Their numbers (1.3 to 2.4 larvae/10 m^3) were very low compared with the number of eggs found ready to hatch, which might suggest a high mortality rate or drift of the larvae into a neighbouring sector. The phenomenon may also be partly due to their being forced through the net meshes.

- Juveniles and adults

At the Gravelines site, fishing was carried out by an owner-operated trawler based at Grand Fort Philippe. Two types of trawl were used, an eel fisherman's bottom trawl (codend mesh size: 16 mm mesh side) and a "CP2" beam trawl (codend mesh size: 10 mm mesh side). Samples were also taken using a pushed beam trawl, the Riley push net, 1.50 m broad with a 5 mm (mesh side) mesh size.

The results for these trawling operations are set out in Fig. 7. In July and August 1975, 95 anchovies were taken, the great majority of which were between 17 and 19 cm, i.e. 3 to 4 years old.

Anchovies were also noted at Paluel in September 1977 and at Penly in May 1978.

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Conclusion

Spawning of the anchovy population in the English Channel and southern North Sea is observed principally from May to the beginning of August (extreme limits observed) at temperatures ranging from 11° to 20°C approximately. The principal period is May to July at temperatures of 13 to 20°C.

Maximum densities observed reached 200 to 380 eggs per 10 m^3.

Adult anchovies were taken using an eel fisherman's bottom trawl at the Gravelines site in July, August and September.

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Age (Years)	1	2	3	4	5
URIARTE (average 1974-1987)	13,84	16,26	17,39	17,88	18,1
GUERAULT and AVRILLA (1974)	9,85	14,95	17,94	19,68	
CENDERO et al. (1978)	10,44	14,34	17,15	19,17	
JUNQUERA (1986)	11,68	15,11	17,01	18,50	

Table 1: Average anchovy size (cm) for each year of age, according to authors.

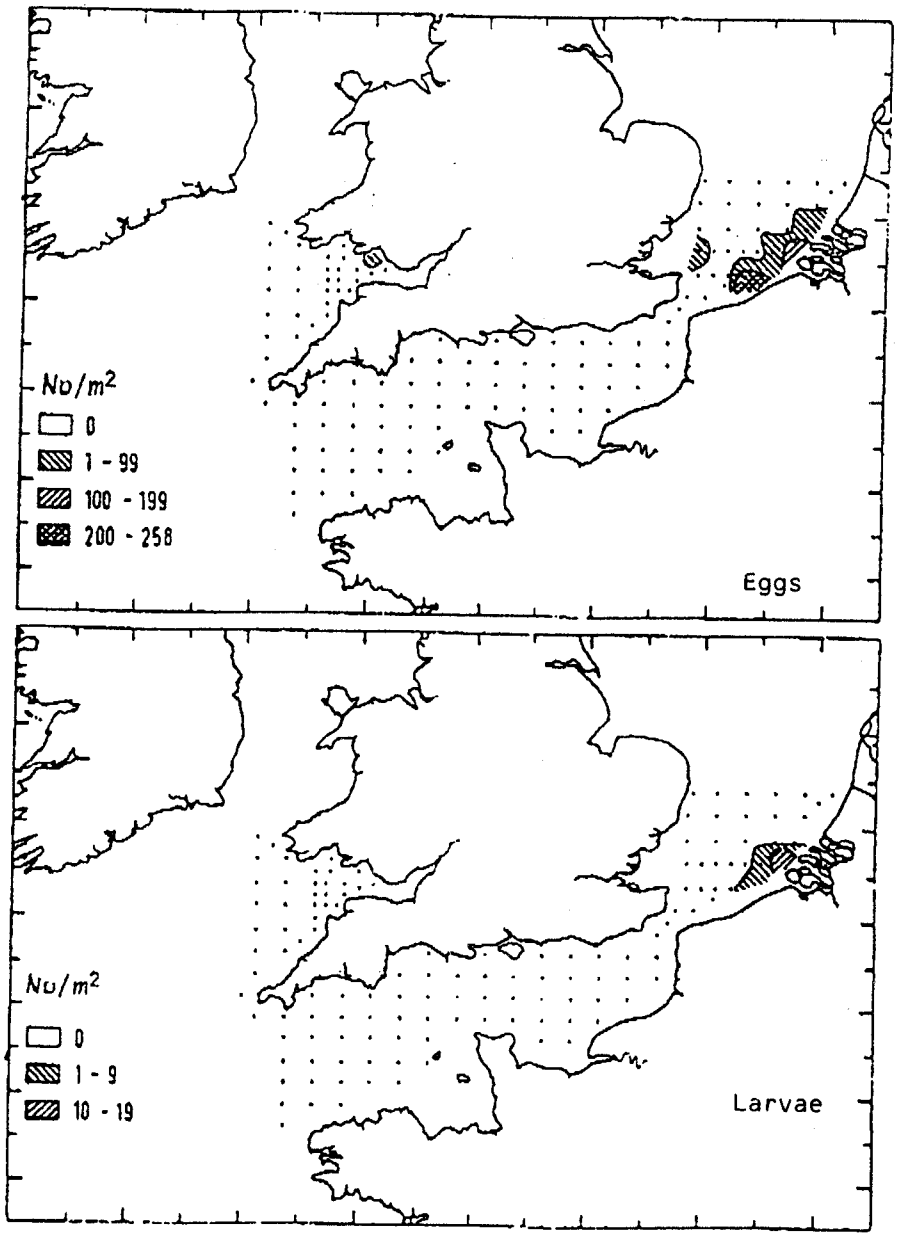


Fig. 1.- Distribution of anchovy eggs and larvae in the Channel and Southern North Sea recorded between 9 and 18 July 1968 (taken from Wallace and Pleasants, 1972).

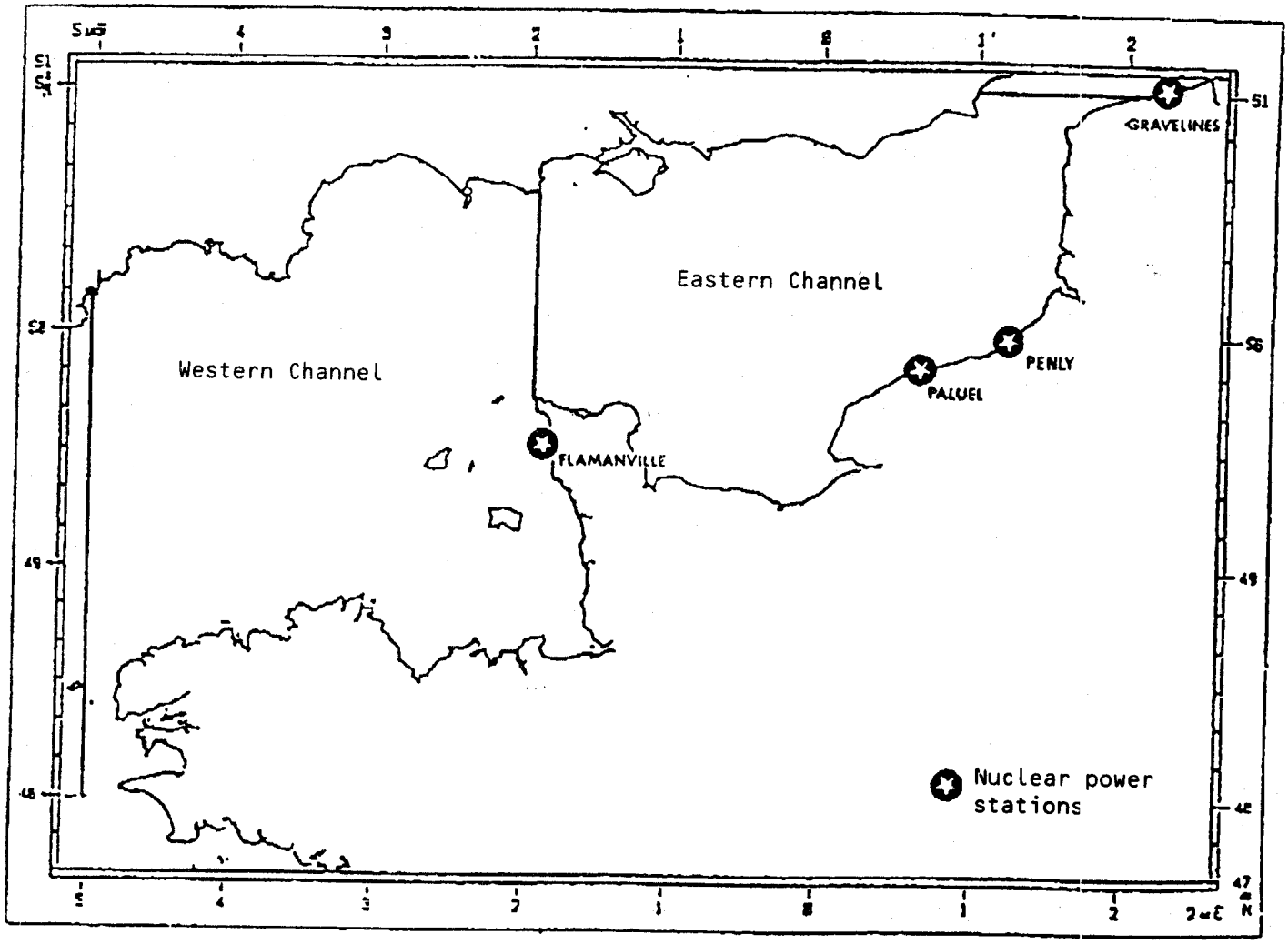
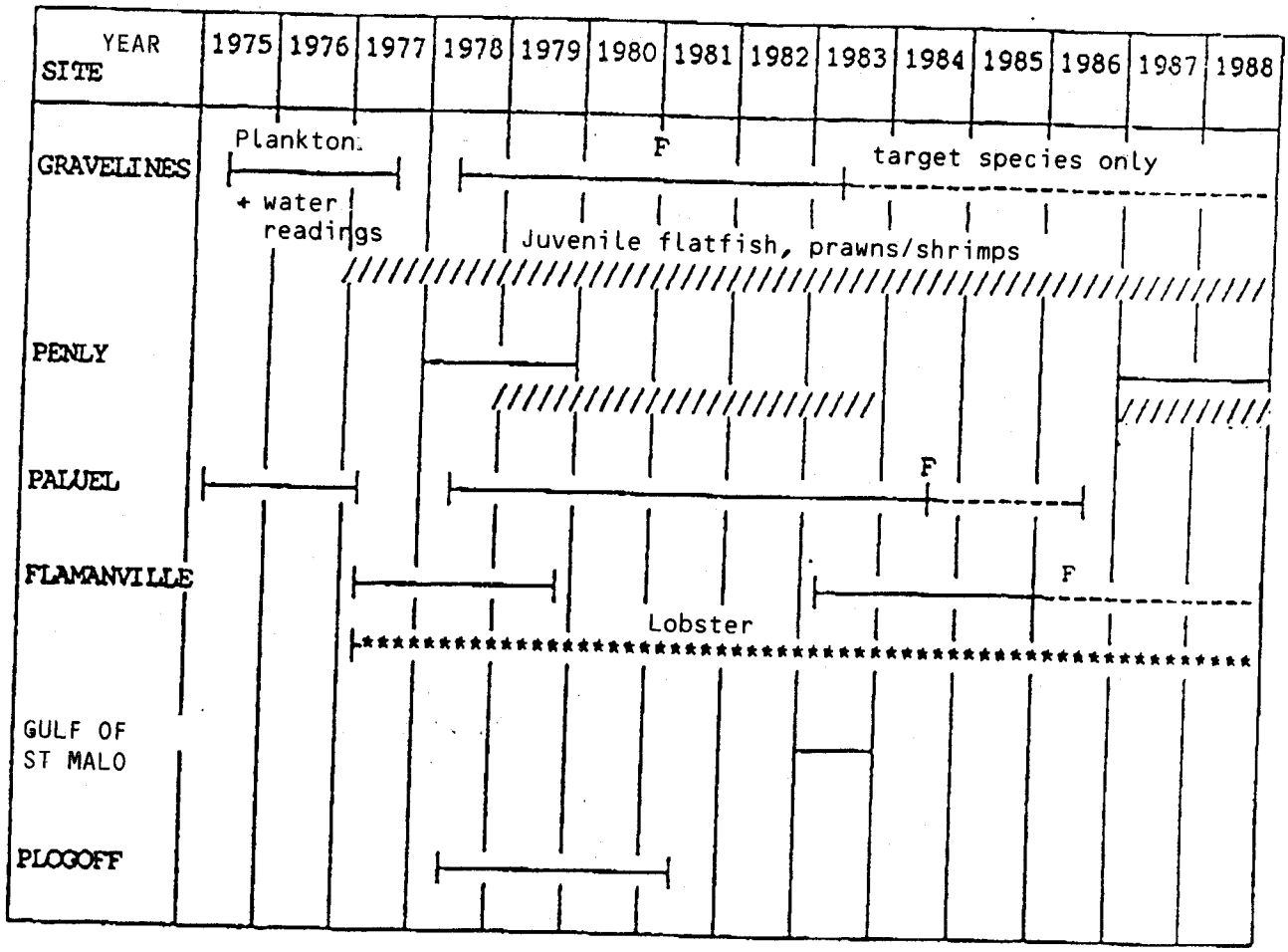


Fig. 2.- Location of EDF Channel Sites.



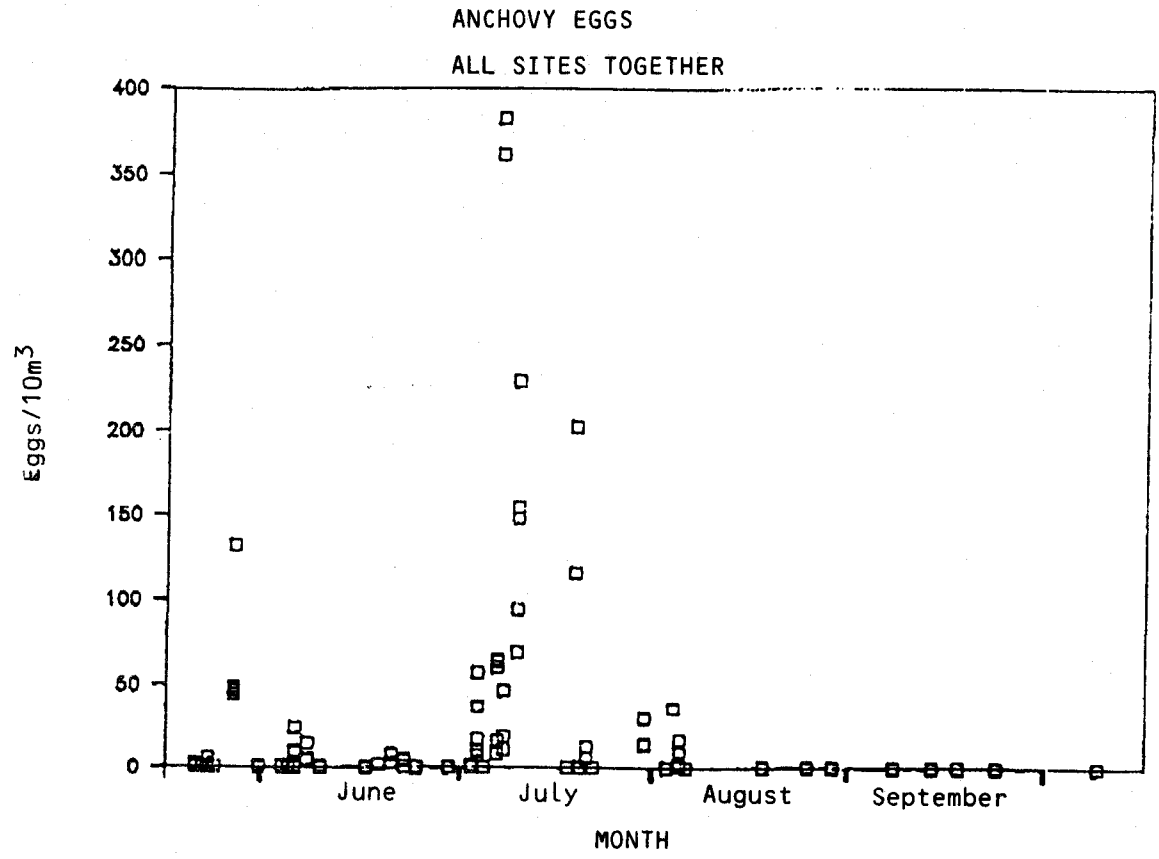
F : Year in which power station came into service

Table 2: Monitoring periods at site

: Plankton fishing and water readings

/////// : Fishing of juvenile flatfish and prawns/shrimps

****** : Experimental fishing using pots



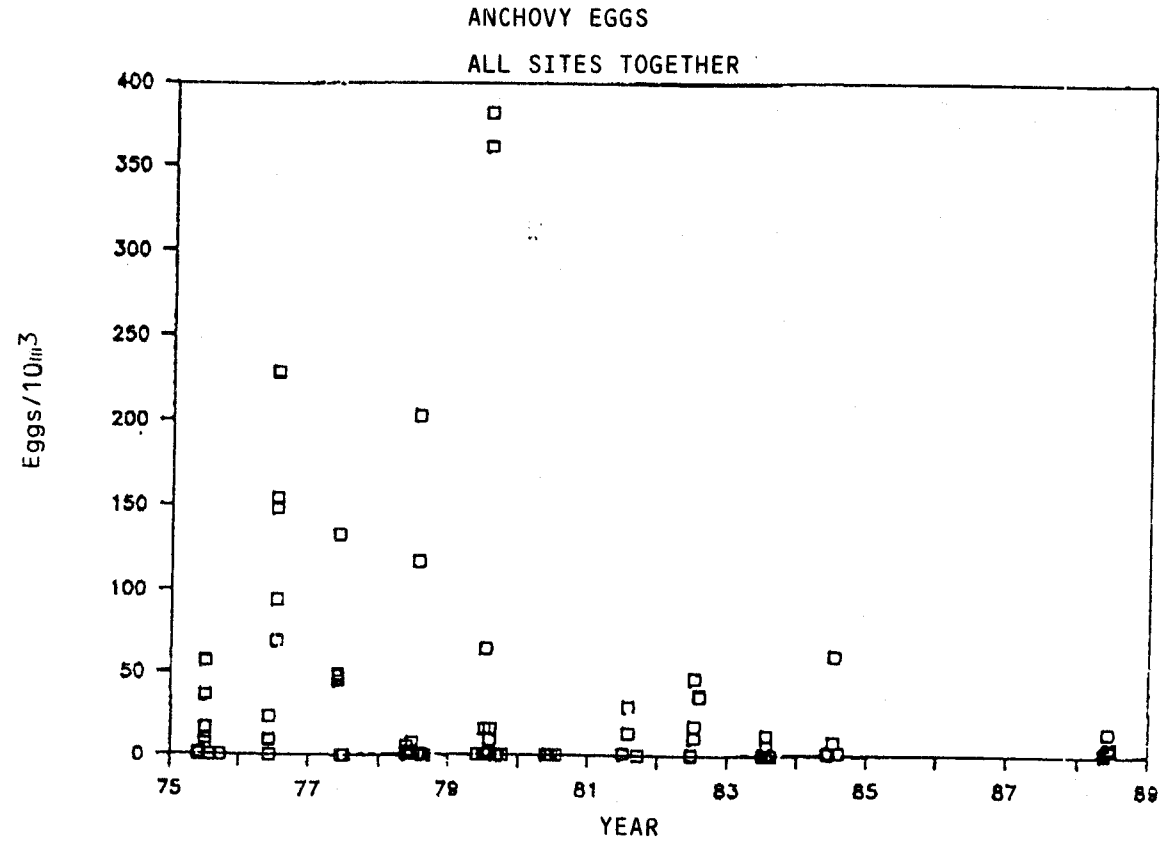


Fig. 3 - Monthly and annual variations in anchovy egg density

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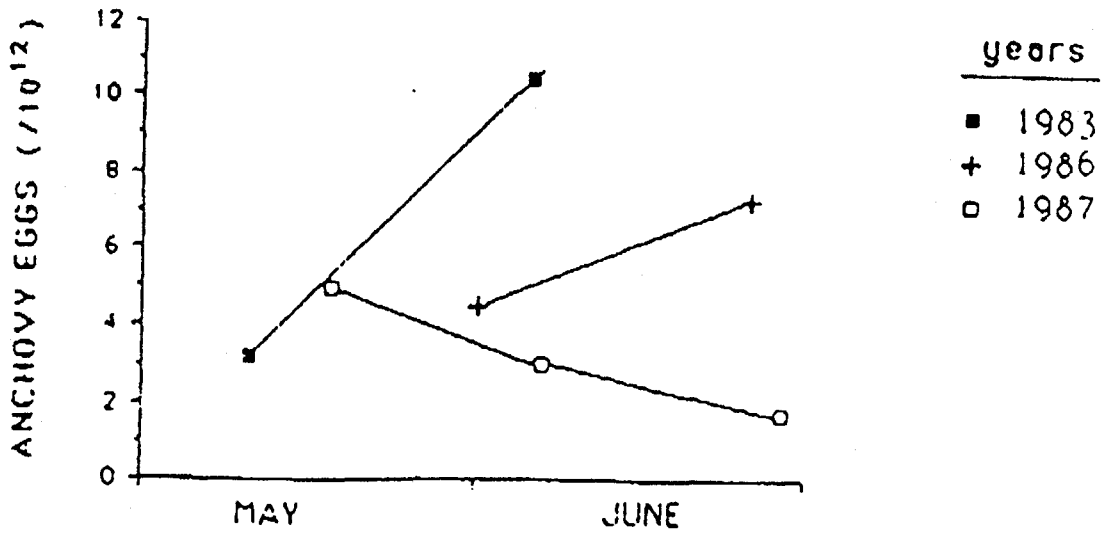
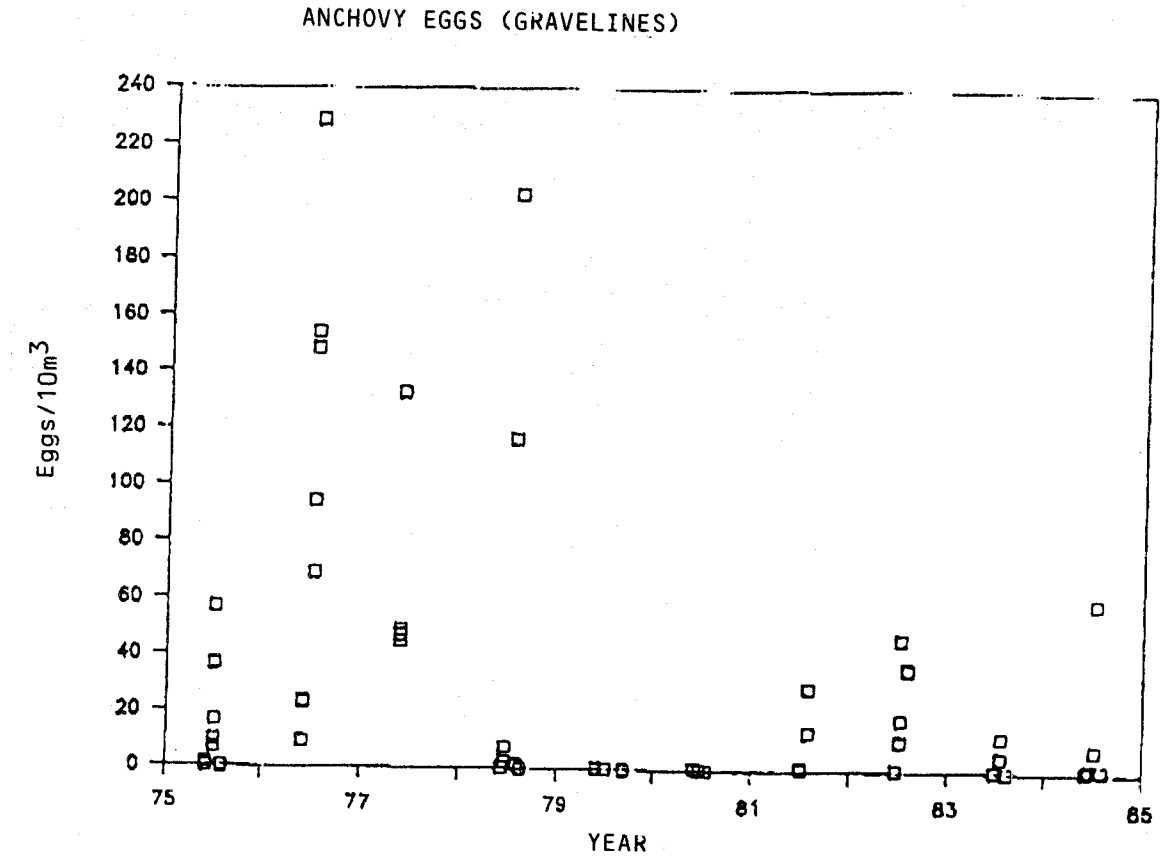


Fig.4 .- Abundance of anchovy eggs in May and June, 1983, 1986 and 1987 in the Bay of Biscay, from Santiago, 1988.



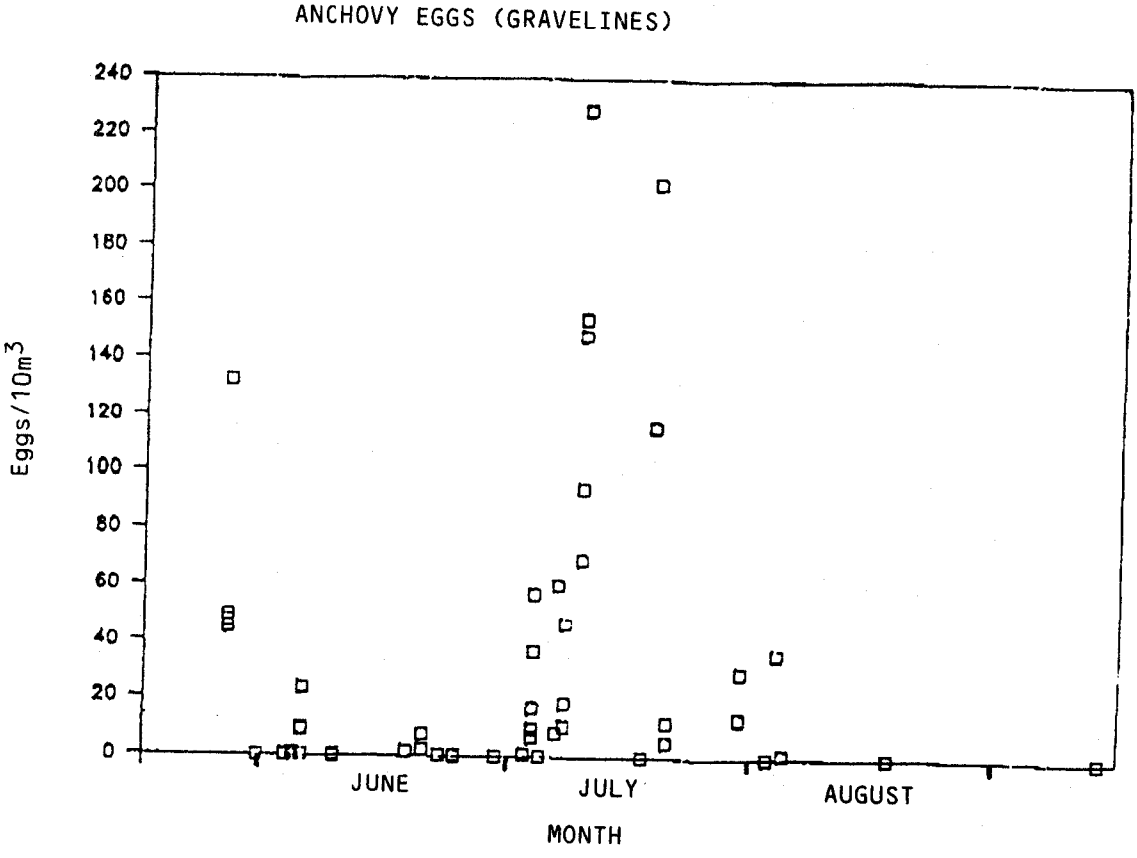
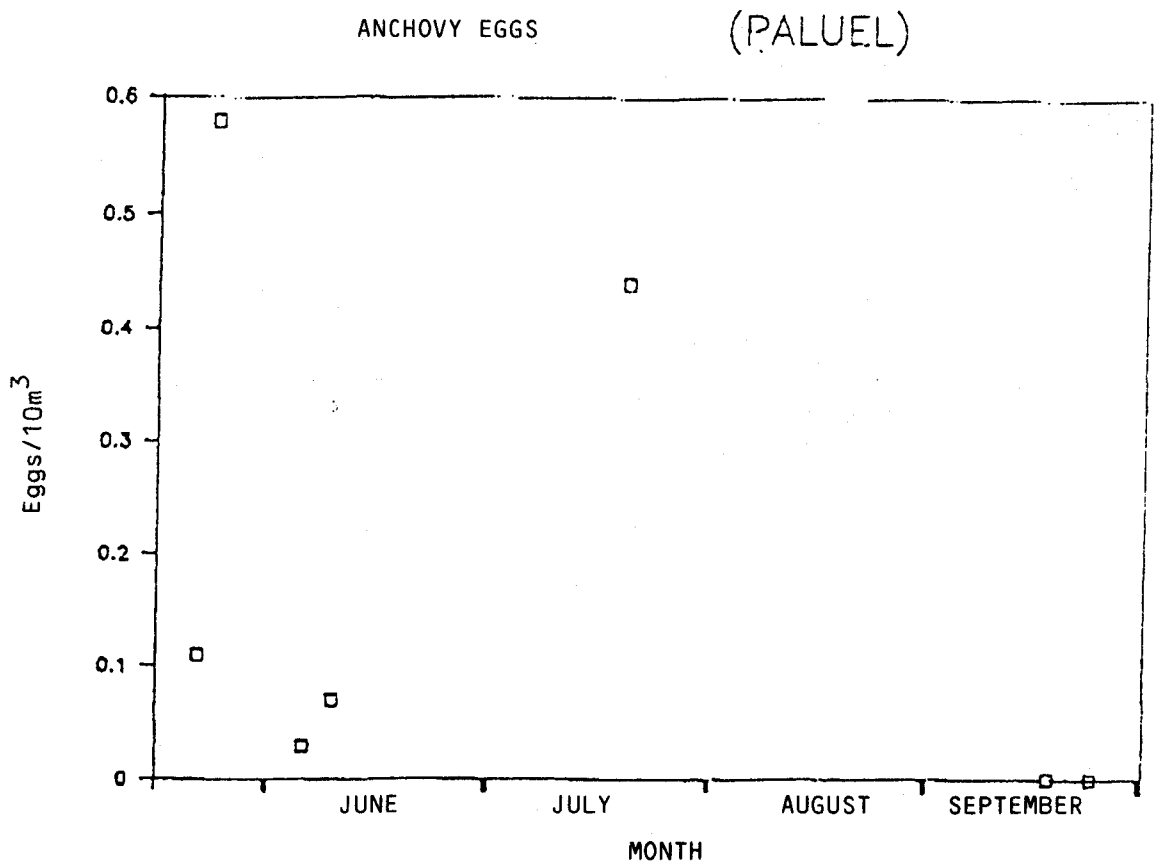


Fig. 5 - Annual and monthly variations in anchovy egg density at Gravelines site



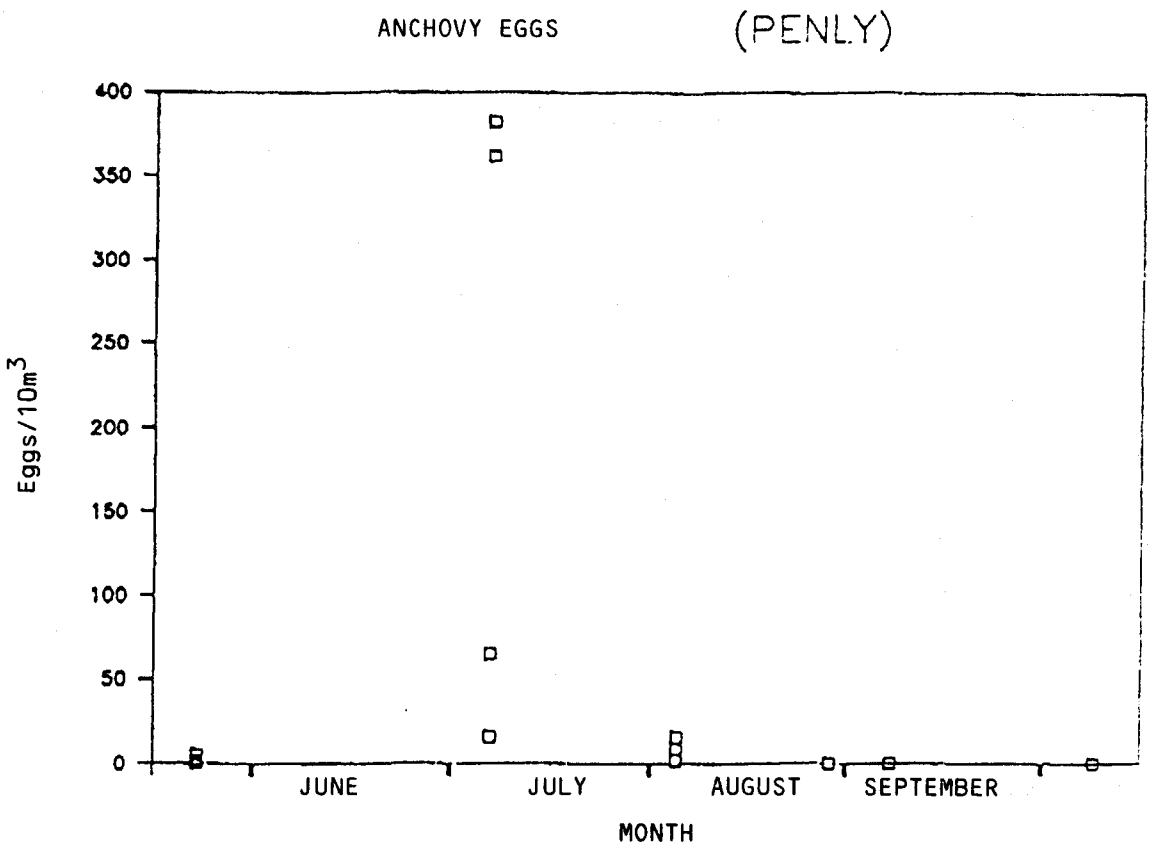
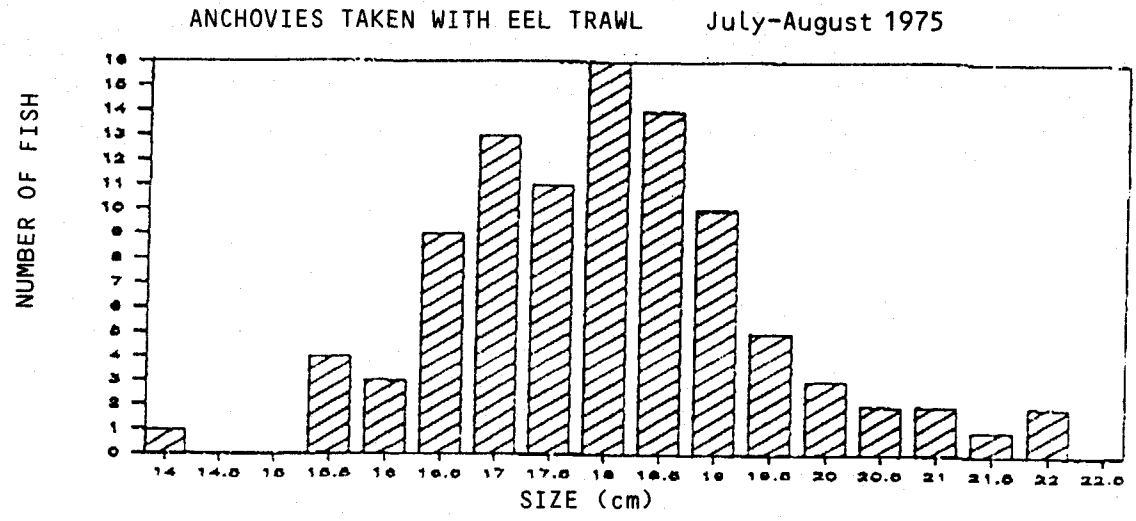
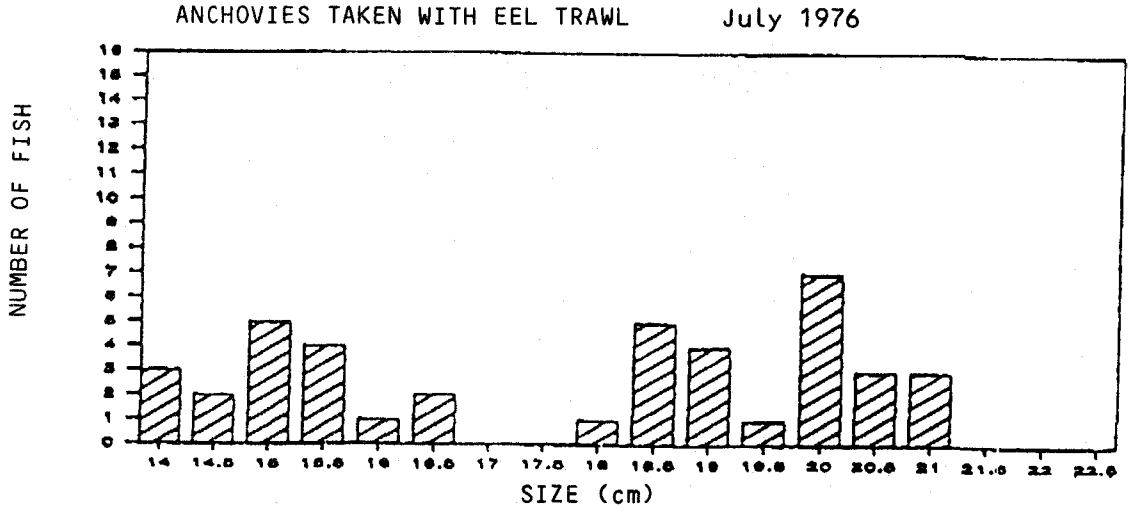


Fig. 6 - Monthly variations in anchovy eggs at the Paluel (1975-1985) and Penly (1978-79) sites





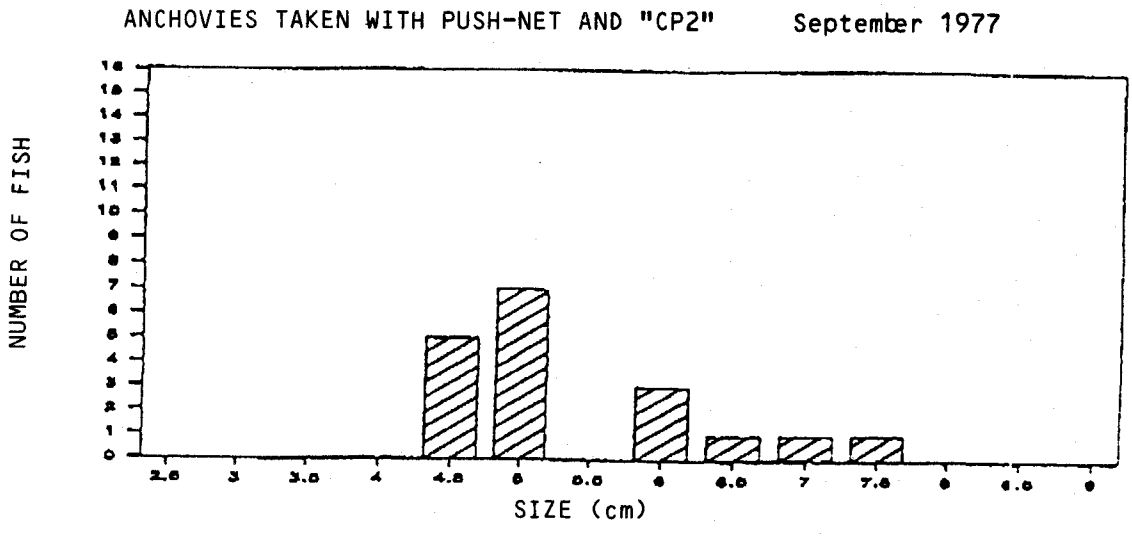


Fig. 7 - Size distribution of anchovies taken at Gravelines

ANNEX II

ANCHOVY

Catches (in tonnes) in the Channel (ICES zones VIId, e)

Source: CHRONOS

Year	France	Netherlands	United Kingdom	Total
1973	0	0	0	0
1974	0	0	0	0
1975	3	0	0	3
1976	0	0	0	0
1977	0	0	0	0
1978	223	8	0	231
1979	4	0	0	4
1980	0	0	0	0
1981	0	0	0	0
1982	0	0	0	0
1983	0	0	0	0
1984	0	0	25	25
1985	0	0	0	0
1986	0	0	0	0
1987	0	0	5	5