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## THE DECLINE IN CATCHES OF EUROPEAN ELVER 1980-1992

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**ABSTRACT.** Records of catches and abundance indices from nine countries on the Atlantic seaboard indicate that the low level of catch observed throughout the 1980s has persisted. It is possible that this will lead to poor catches and low supply of breeding adults.

**Key words:** EELS, ELVER CATCHES, STATISTICS FOR EUROPE

## INTRODUCTION

At the first meeting of the EIFAC Working Party on Eel in 1981, Jorgen Dahl presented a report on the capture of elvers in Europe which gave data from four participating countries. Since then, the number of countries reporting has increased to nine and three reports have been published (Moriarty 1986, 1990, 1992). Studies of local variations were published over the same period by Dekker (1986), Guerault and Desaunay (1990), Hagstrom and Wickstrom (1989), Hvidsten (1985) and Tesch et al (1986). All these studies agree that excellent catches of estuarine glass eel and riverine elvers were made in the 1960s and 1970s after which a severe decline was observed, beginning early in the 1980s. The few long-term data sets available, namely those for the Ems, the Loire and Ijsselmeer (Moriarty 1990) show one or more periods of decline in the 1930s and 1940s, particularly one of ten years or more in the 1930s. Figures for the Gota Alv (Wickstrom 1990) suggest a continuing decline in recruitment to the Baltic over a period of twenty years or more. With few exceptions, notably the data for the Ijsselmeer (Dekker 1986), the long-term data sets suffer from the absence of information on fishing effort.

This paper presents new data for 1991 and 1992 and examines the figures collected since 1978, to include a period of about five years when high catches were being made.

TABLE 1

Catches of 0+ eels by weight, by index to zero mean (1993-1985) for Den Oever, larval catch per hour for Bay of Biscay

	Imsa kg	Vidaa kg	Viskan kg	Bann t	Erne t	Shan- non t	Ems t	Den O- ever index	Yser kg	Loire t	Minho t	Biscay index
1978		335	533	7.5	0.3	1.3	2.0	0.68	388	523	24	21
1979		220	505	3.1	0.5	6.7	2.7	1.06	675	608	28	6
1980		220	72	3.7	1.3	4.5	3.1	0.43	358	502	21	5
1981		226	513	4.5	2.8	2.1	0.96	0.4	74	284	54	6
1982		490	380	5.7	4.5	3.1	0.67	-0.1	138	266	16	6
1983	7	662	308	0.4	0.7	0.6	0.12	-0.5	10	276	30	1
1984	3	123	21	2.3	1.1	0.5	0.35	-0.4	6	168	31	2
1985		13	200	0.8	0.4	1.1	0.25	-0.6	13	159	20	2
1986		123	151	2.7	0.7	0.9	0.11	-0.7	26	137	12	3
1987	2	341	146	2.5	2.3	1.6	0.01	-0.5	33	93	8	4
1988	7	141	92	3.9	3	0.1	0.02	0.4	48	138	8	5
1989	4	9	32	2.3	1.8	0.1	0.01	-0.9	30	61	9	2
1990	13	5	42	3.4	2.4	0.5	0.01	-0.5	200	76	6	nf
1991	3	nf	1	1	0.5	0.09	nf	-1.2	13	30	9	3
1992	2	nf	70	1.4	1.4	0.03	nf	-0.7	19	32	10	na
Means												
1978-1982		298	401	5	2	4	2.00	0	327	437	29	9
1983-1987	4	252	265	1.7	1.7	0.9	0.17	-0.54	18	167	20	2
1988-1992	5.8	31	47.4	2.4	2.4	0.2	0.01	-0.58	62	67.4	8	3

## RESULTS

The figures supplied are set out in Table 1 which includes also data from 1978 onwards and means of the three five-year periods given. An outline of results is given below under country headings provided by named colleagues.

*Norway* (River Imsa, L A Vollestad). Catches were equal to lowest on record and declined from 1991 to 1992.

*Denmark* (Vidå sluice, J. Jørgensen). Commercial fishing here has been suspended, following very poor results in 1989 and 1990 when the catch was less than 5% of that for the preceding 5 years.

*Sweden* (River Viskan, H. Wickström). Catch in 1991 was 1 kg and lowest on record. In 1992 it increased to 70 kg, which was the best since 1988 though well below the means for the previous 10 years.

*Ireland* (Rivers Bann, Erne and Shannon). The catch in the Bann increased from 1 t in 1991 to 1.4 t in 1992: still well below average but exceeding catch in 1985. The Erne catch in 1992 was above the average for the previous five years and better than some of the 1970s catches. The Shannon had the lowest on record.

*Germany* (River Ems, F-W Tesch). Fishing abandoned in 1991, following 8 years of poor catches.

*Netherlands* (Den-Oever, W Dekker). Catches were amongst the lowest on record, though catch in 1992 was nearly double that for the previous year.

*Belgium* (River Yser, C Belpaire). Catches equal to lowest on record, but again with a better result in 1992 than in 1991.

*France* (River Loire, Y Desaunay). Catches were the lowest on record in recent years, though somewhat better than in the 1930s.

*Minho* (Spain/Portugal). Catches were slightly better than in the previous 4 years, with a marked increase in 1992.

*Bay of Biscay* (Research vessel, F-W Tesch). Larval index in 1991 was low, slightly better than in the early 1980s.

## DISCUSSION

The results of this monitoring exercise provide evidence that for a period of about 12 years the catches of glass eel and elvers have been very much lower than in the preceding period of between 20 and 30 years. The fact that the River Erne in Ireland is the only one of 11 monitoring stations suggests very strongly that the poor catches have resulted from the arrival of unusually small numbers of glass eel to coastal waters. The low larval index observed in the Bay of Biscay over the same period suggests very strongly that the numbers of larvae arriving over the continental shelf are similarly low.

There are too many possible causes, associated with too little knowledge of the natural mortality of glass eels even to allow the conclusion that breeding success in the Sargasso Sea has been low. In this situation, it is unreasonable to speculate on causes for the decline in catch.

However, it would be unwise at this stage to predict - rather than hope for - an improvement and there is no evidence that the decline will not continue. The continuation of the poor supply for 12 years is a subject for serious concern. Broadly speaking,

12 years corresponds to a time when male eels in northern Europe are reaching sexual maturity and females are being recruited to the fishery. It is therefore possible that both the supply of breeding males and of marketable females may be falling. This could have serious consequences for both fishing and processing industries throughout Europe.

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## STRESZCZENIE

SPADEK POŁOWÓW WĘGORZYKA MONTEE W EUROPIE, LATA 1980-1992.

Przedstawiono dane dotyczące połowów węgorzyka szklatego u wybrzeży Europy oraz wskaźniki obfitości dopływu montee do 9 krajów położonych nad Atlantykiem. Stwierdzono, że niski poziom tych odłowów obserwowany od początku lat osiemdziesiątych nie ulega zwiększeniu. Istnieje możliwość, że doprowadzi to do znacznego ograniczenia поголовья рыб доjrzałych płciowo udających się na tarło.