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Northwest Atlantic



Fisheries Organization

Serial No. N1674

NAFO SCR Doc. 89/88

SCIENTIFIC COUNCIL MEETING - SEPTEMBER 1989

Yield-per-recruit of American Plaice in Div. 3LNO

by

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The yield per recruit calculations have been subject to discussions during the assesment of American Plaice in 3LNO by NAFO for recent years. In June 1988, the assesment conducted by NAFO (Anon. 1988) used, on the basis of changes in the fishery in recent years, for the yield per recruit calculations, the average weights at age and partial recruitments for the period 1960 -1980. This long period of time has been then considered as representing an average situation.

This choice implied that the recent changes in the fishery would not represent any new long term trend in the biological parameters.

It is recognised that biological parameters for projections must not necessarily be changed each year. Nevertheless no information allows to exclude that such recent changes in the fishery could reflect a new stable situation and therefore an alternative option using a more recent time series can be considered.

Without prejudice to the true value of the Yield per recruit relationship for this stock, this paper draws the attention to the sensitivity of projections to the time series chosen for the input parameters.

This document is a formal presentation of the information referred to on this subject in the provisional report of S.C. June 89 meeting (Anon. 1989). It presents the yield per recruit curve calculated with data for a period extending from 1986 to 1988 (as provided in table 7 in the above mentioned report reproduced below in table 1) and subsequent catch projections .

The Y/R curve obtained with these parameters is presented in figure 1 showing values for $F_{0.1}$ and F_{max} respectively equal to 0.21 and 0.40. These results are close to those presented in an analysis done in 1988 (Anon. 1988).

Catch projections presented in table 2 have been made using the same input data as in the S.C. June 1989 report (Anon. 1989).

References

- Anon., 1988 - Scientific Council report 1988. NAFO
- Anon., 1989 - Provisional report of S.C. June 1989 meeting. NAFO SCS Doc. 89/17.

table 1. American plaice in Div. 3LNO: parameters used in projections of biomass and yield. Avg. wt. and PR: Average weight at age and Partial Recruitment averaged from 1986 - 1988.

Age	Jan 1, 1989 Stock Size	Avg. wt.	PR
5	218,000	.173	.020
6	176,592	.247	.058
7	138,866	.338	.113
8	106,246	.426	.189
9	66,849	.504	.331
10	39,108	.632	.504
11	30,643	.789	.733
12	19,024	1.032	1.000
13	8,531	1.342	1.000
14	3,804	1.710	1.000
15	1,634	2.165	1.000
16	905	2.765	1.000
17	356	3.356	1.000
18	55	4.322	1.000
19	1	4.365	1.000

table 2. American plaice 3 LNO : Catch and biomass projections

1989		1990			1991
F	catch	B 5+	F	catch	B 5+
.362	30.3	321	F0.1= 0.21	20.4	353
			Fmax= 0.40	36.7	334
			F88 = 0.50	44.5	325

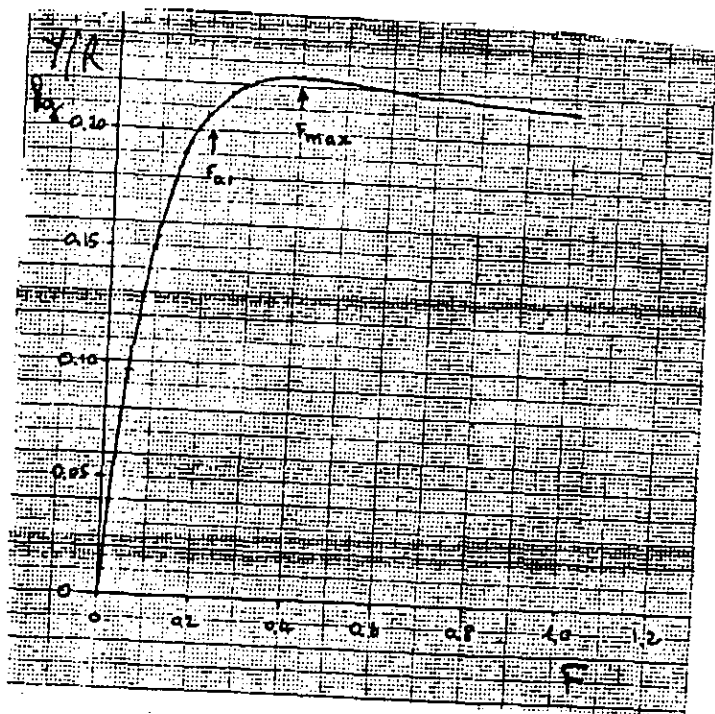


Figure 1. American Plaice 3 LNO: Yield per recruit curve