

#### 4.4.4 Faroe saithe in Division Vb

##### State of the stock

The available information is inadequate to evaluate stock trends relative to reference points. Therefore, the state of the stock is unknown. However, the two survey-based biomass indices indicate that the exploitable biomass may be higher than at the start of the survey time-series. This can also be seen in the commercial cpue series.

##### Management objectives

The management objective is to achieve sustainable fisheries. An effort management system was implemented in the Faroese demersal fisheries (Division Vb) in 1996 and aims at harvesting, on average, 33% of the saithe stock in numbers. This translates into an average  $F$  of 0.45, above the  $F_{pa}$  of 0.28. ICES considers this to be inconsistent with the Precautionary Approach.

##### Reference points

	ICES considers that:	ICES proposed that:
Precautionary Approach reference points	$B_{lim}$ is 60 000 t.	$B_{pa}$ be set at 85 000 t.
	$F_{lim}$ is 0.40.	$F_{pa}$ be set at 0.28.

##### Technical basis

$B_{lim}$ : lowest observed SSB established in 1999 and corresponding to SSB in 1992.	$B_{pa}$ : former MBAL.
$F_{lim}$ : consistent with $B_{lim}$ of 60 000 t.	$F_{pa}$ : consistent with $F_{lim}$ and previous estimate of $F_{med}$ .

##### Single-stock exploitation boundaries

###### *Exploitation boundaries in relation to existing management plans*

Existing management plans are inconsistent with the Precautionary Approach.

###### *Exploitation boundaries in relation to high long-term yield, low risk of depletion of production potential and considering ecosystem effects*

Long-term yield reference points are not available as there is no accepted assessment [see 2005 advice].

###### *Exploitation boundaries in relation to precautionary considerations*

The stock cannot be evaluated with regard to PA limits. However, effort should not be allowed to increase compared to the present level. Furthermore, at landings in the range of 30–40 000 t, the biomass indices have increased. With landings above this level, biomass indices are fluctuating. Therefore, ICES suggests a level of exploitation corresponding to about 40 000 t. The stock seems to be sustained at a constant level in the short term.

###### *Conclusion on exploitation boundaries*

In the absence of an agreed management plan that is consistent with the precautionary approach, ICES concludes that the exploitation boundaries for this stock should be based on the precautionary considerations.

##### Management considerations

Given the uncertainties regarding stock size, the present spawning closures should be maintained.

The routine collection of information of the bycatch of saithe in the blue whiting fishery in ICES Division Vb should be undertaken. In the meantime, it is advised that sorting grids in the blue whiting fisheries become mandatory.

### *Management plan evaluations*

The effort management system translates to an average  $F$  of 0.45. The management system has not been fully evaluated by ICES in relation to the defined  $B_{lim}$ . A full evaluation should take into account the relationship between fishing mortality and fishing days.

### *Ecosystem considerations*

Blue whiting is a forage species for saithe. A proportion of the saithe stock is far off the shelf, probably preying on blue whiting. The blue whiting fishery thus also affects saithe by removing blue whiting.

### **Factors affecting the fisheries and the stock**

#### *Regulations and their effects*

Limited measurements in the blue whiting fishery in Faroe waters indicate that bycatch of saithe may be significant.

#### *Changes in fishing technology and fishing patterns*

Development in gear technology and optimizing fishing operations has resulted in an increase in the catchability since the early 1990s, preliminarily estimated in the order of 20% in the last decade.

### **Scientific basis**

#### *Data and methods*

The commercial cpue used for stock evaluation have been standardized, taking into account season, fishing area, and boat factors. The survey biomass indices are based on stratified age-disaggregated stock in numbers multiplied by catch weight-at-age.

There are no recruitment indices available for ages younger than 3 in the terminal year. Existing research surveys may be of use in tuning, but this has not been fully evaluated.

#### *Comparison with previous assessment and advice*

An update of previous year's assessment model was unreliable because of major reduction in growth since 1996. Because of these changes the 2005 assessment cannot be used as an indication of current status and, e.g. the yield-per-recruit cannot be used. Various probable assumptions lead to very different perceptions of the status of the stock.

The basis for the advice has consequently changed as no analytical assessment is available. The advice is now based on average catch considerations.

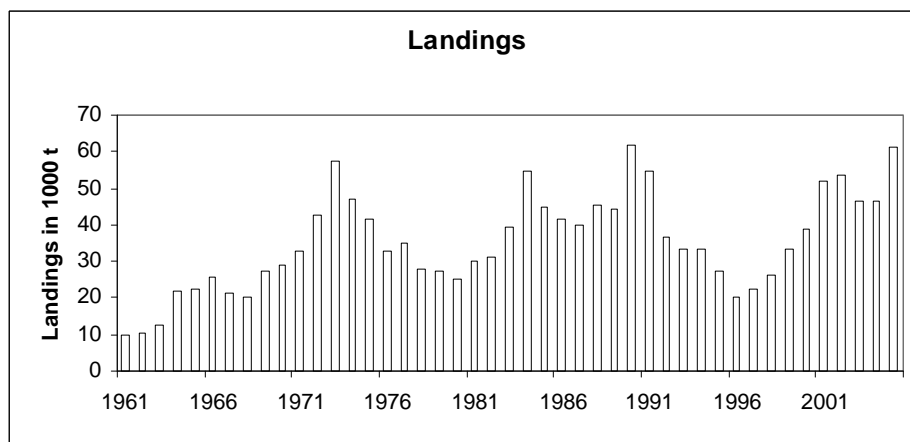
### **Source of information**

Report of the North-Western Working Group, 25 April–4 May 2006 (ICES CM 2006/ACFM:26).

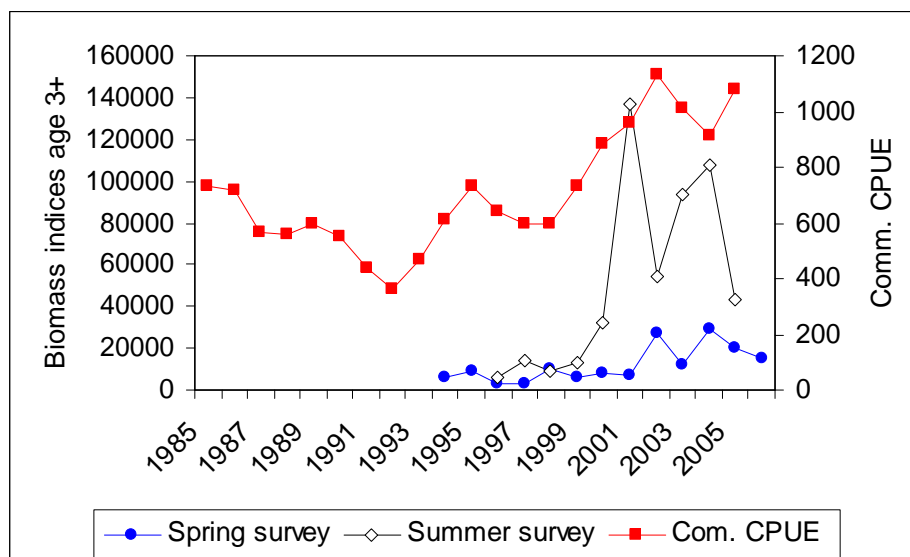
Year	ICES Advice	Predicted catch corresp. to advice	Agreed TAC	ACFM Landings
1987	No increase in F	<32		40
1988	No increase in F	<32		45
1989	Reduction in F	<40		44
1990	Reduction in F	<41		62
1991	TAC	<30		55
1992	Reduction in F	<27		36
1993	Reduction in F	<37		34
1994	TAC	<26	42 <sup>1</sup>	33
1995	TAC	<22	39 <sup>1</sup>	27
1996	TAC	<39	-	20
1997	20% reduction in F from 1995 level	<21	-	22
1998	30% reduction in effort from 1996/97 level	-	-	26
1999	F below $F_{pa}$ (0.28)	<14		33
2000	F below than $F_{pa}$ (0.28)	<15		39
2001	Reduce fishing effort to generate F well below $F_{pa}$ (0.28)	<17		52
2002	Reduce fishing effort to generate F below $F_{pa}$ (0.28)	<28		54
2003	Reduce fishing effort to generate F below $F_{pa}$ (0.28)	<47		47
2004	Reduce fishing effort to generate F below $F_{pa}$ (0.28)	<48		46
2005	Reduce fishing effort to generate F below $F_{pa}$ (0.28)	<32		61
2006	Reduce fishing effort to generate F below $F_{pa}$ (0.28)	<24		
2007	Average catch considerations	40		

Weights in '000 t.

<sup>1</sup> In the quota year 1 September–31 August the following year.



**Figure 4.4.4.1.** Saithe in the Faroes (Division Vb). Landings in '000 t.



**Figure 4.4.4.2** Saithe in the Faroes (Division Vb). CPUE series.

**Table 4.4.4.1** Saithe in the Faroes (Division Vb).

Year	Landings
	tonnes
1961	9592
1962	10454
1963	12693
1964	21893
1965	22181
1966	25563
1967	21319
1968	20387
1969	27437
1970	29110
1971	32706
1972	42663
1973	57431
1974	47188
1975	41576
1976	33065
1977	34835
1978	28138
1979	27246
1980	25230
1981	30103
1982	30964
1983	39176
1984	54665
1985	44605
1986	41716
1987	40020
1988	45285
1989	44477
1990	61628
1991	54858
1992	36487
1993	33543
1994	33182
1995	27209
1996	20029
1997	22306
1998	26421
1999	33207
2000	39020
2001	51786
2002	53546
2003	46555
2004	46355
2005	61372
2006	
Average	35316

**Table 4.4.4.2** Saithe in the Faroes (Division Vb). Nominal catches (tonnes) by countries, 1989–2005, as officially reported to ICES, and the Working Group estimate.

<i>Country</i>	1989	1990	1991	1992	1993	1994	1995	1996
Denmark	-	2	-	-	-	-	-	-
Faroe Islands	43,624	59,821	53,321	35,979	32,719	32,406	26,918	19,267
France <sup>3</sup>	-	-	-	120	75	19	10	12
Germany	-	-	32	5	2	1	41	3
German Dem.Rep.	9	-	-	-	-	-	-	-
German Fed. Rep.	20	15	-	-	-	-	-	-
Netherlands	22	67	65	-	-	-	-	-
Norway	51	46	103	85	32	156	10	16
UK (Eng. & W.)	-	-	5	74	279	151	21	53
UK (Scotland)	9	33	79	98	425	438	200	580
USSR/Russia <sup>2</sup>	-	30	-	12	-	-	-	18
<i>Total</i>	43,735	60,014	53,605	36,373	33,532	33,171	27,200	19,949
<i>Working Group estimate</i> <sup>4,5</sup>	44,477	61,628	54,858	36,487	33,543	33,182	27,209	20,029

<i>Country</i>	1997	1998	1999	2000	2001	2002	2003	2004	2005 <sup>1</sup>
Estonia	16	-	-	-	-	-	-	-	-
Faroe Islands	21,721	25,995	32,439	-	49,676	55,165	47,933	48,222	-
France	9	17	-	273	934	607	370	147	100
Germany	5	-	100	230	667	422	281	186	1
Greenland	-	-	-	-	-	442	-	-	-
Ireland	-	-	-	-	5	-	-	-	-
Norway	67	53	160	72	60	77	94	82	82
Portugal	-	-	-	-	-	-	-	5	-
Russia	28	-	-	20	1	10	32	71	210
UK (E/W/NI)	-	19	67	32	80	58	89	85	-
UK (Scotland)	460	337	441	534	708	540	610	748	-
United Kingdom	-	-	-	-	-	-	-	-	940
<i>Total</i>	22,306	26,421	33,207	1,161	52,131	57,321	49,409	49,546	1,333
<i>Working Group estimate</i> <sup>4,5,6,7</sup>	22,306	26,421	33,207	39,020	51,786	53,546	46,555	46,355	61,372

<sup>1</sup> Preliminary.

<sup>2</sup> As from 1991.

<sup>3</sup> Quantity unknown 1989-91.

<sup>4</sup> Includes catches from Sub-division Vb2 and Division IIa in Faroese waters.

<sup>5</sup> Includes French, Greenlandic, Russian catches from Division Vb, as reported to the Faroese coastal guard service.

<sup>6</sup> Includes Faroese, French, Greenlandic catches from Division Vb, as reported to the Faroese coastal guard service.

<sup>7</sup> The 2001-2005 catches from Faroe Islands, as stated from Faroese coastal guard service, are corrected in order to be consistent with procedures used previous years.