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Data Deficient Stocks in Scotland

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Introduction

The Common Fisheries Policy shall be guided by... a decision-making process based on sound scientific advice...¹.

There is a general acceptance that fisheries management should be - indeed has to be - based on sound scientific information about the state of fish stocks. For European fisheries such advice has traditionally been provided by the International Council for the Exploration of the Sea (ICES), filtered through the European Commission's Scientific, Technical and Economic Committee for Fisheries (STECF).

Despite this aspiration, the fact remains that scientific advice is not available or complete for all fish stocks. The European Commission has stated that scientific advice is missing for about two-thirds of stocks². The most common reason for the absence of scientific advice is a lack of necessary data.

The 'problem' of data deficient stocks has recently gained greater prominence because the Commission has adopted a policy of proposing automatic 'precautionary' cuts (of at least 25%) in TACs and/or effort levels on stocks for which scientific advice is unavailable². (The situation is somewhat confused by the Commission's references to 'scientific advice on overfishing', although the scientific advice normally covers a much broader range of issues, and stocks for which scientific advice is lacking are not necessarily overfished).

This analysis has been carried out to evaluate the extent of the problem of 'data deficient' stocks, including their number and value, for Shetland and Scottish demersal fishing vessels.

European Commission Categorisation of Stocks

In preparing its review of the 2011 scientific advice on fish stocks (which will inform decisions on fishing opportunities for 2012) STECF was instructed by the European Commission to classify stocks into one of three categories³. Category 3 was to include those stocks for which data are insufficient to carry out an analytical assessment, for which a 25% reduction in TAC is specified.

¹ Council Regulation (EC) No 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy. Article 2.

² Communication from the Commission concerning a consultation on Fishing Opportunities, COM(2011) 298-final. Section 4.1.

³ STECF Review of Scientific Advice for 2012, Part 2 (STECF-11-09). Page 13.

Methodology

Data on the weight and value of landings by Shetland and Scottish fishing vessels were used to identify the most important demersal species (in terms of value). The data¹ covered all landings (everywhere) by Shetland vessels and landings by Scottish vessels in Scottish ports in 2010. (Landings in Scottish ports were estimated to have accounted for about 86% of landings by Scottish vessels in 2010).

The main species landed by each fleet were ranked in order of importance by value. For each species the STECF *Review of Scientific Advice for 2012* was consulted to determine:

- ◆ whether an analytical assessment was available for that species in the North Sea and/or West of Scotland areas;
- ◆ whether biological reference points² had been defined (ditto.); and
- ◆ which category the species had been placed in.

The total values of landings of those species that: a) lacked analytical assessments; b) lacked biological reference points; and c) were classified in Category 3, were calculated.

Results

Landings by Scottish Vessels

Twenty species accounted for 99% of the value of demersal fish landed by Scottish fishing vessels (in Scottish ports) in 2010 (Table 1).

Of these 20 species:

- ◆ No analytical assessments are available for 14 (70%), landings of which were worth £42.0 million in 2010 (34% of the total value of all demersal landings).
- ◆ No reference points are defined for 16 (80%), landings of which were worth £54.5 million (45% of the total).
- ◆ Twelve (60%), landings of which were worth £40.4 million (33% of the total), have been classified as Category 3 stocks.

¹ Provided by the Marine Analytical Unit of Marine Scotland Science.

² Biological reference points are target levels of stock size and fishing mortality that are defined for a fish stock. The actual size of the stock and/or level of fishing mortality in relation to these reference points guides (in some cases dictates) management decisions.

The most important single 'data deficient' species for Scottish fishing vessels is monks (anglerfish), for which there is no analytical assessment, for which no reference points have been defined, and which has been classified as a Category 3 species. Landings of monks in Scotland by Scottish fishing vessels in 2010 were worth £24.9 million, 20% of the value of all demersal landings.

Very few of the species that fall outside the top-20 have either analytical stock assessments or defined reference points. Of the top-40 demersal species landed by Scottish fishing vessels in 2010 (which accounted for 99.7% of the total value of landings): 33 (80%) lack an analytical assessment; 35 (85%) lack reference points; and 28 (68%) are classified in Category 3. (A further five species are non-quota species, which were thus not placed in any category, although the absence of assessments and reference points imply that they would be placed in Category 3.)

Landings by Shetland Vessels

Twenty species accounted for 99% of the value of demersal fish landed by Shetland fishing vessels (everywhere) in 2010 (Table 2).

Of these 20 species:

- ◆ No analytical assessments are available for 14 (70%), landings of which were worth £6.5 million in 2010 (38% of the total value of demersal landings).
- ◆ No reference points are defined for 16 (80%), landings of which were worth £7.9 million (46% of the total).
- ◆ Eleven (55%), landings of which were worth £6.3 million (37% of the total), have been classified as Category 3 stocks.

As with the Scottish fleet, monks was the most important single 'data deficient' species landed by Shetland vessels, with landings worth £3.8 million in 2010, 22% of the total value of all demersal landings.

Again, very few of the species that fall outside the top-20 have either analytical stock assessments or defined reference points. Of the 31 demersal species landed by Shetland fishing vessels in 2010, 23 (74%) lack an analytical assessment; 25 (81%) lack reference points; and 19 (61%) are classified in Category 3. (A further four species are non-quota species, which again would presumably be placed in Category 3.)

Table 1 The top-20 demersal species (by value) landed by **Scottish vessels** in Scottish ports in 2010 and for each: the value of those landings; the value as a percentage of the total value of landings of all demersal species; whether there are reference points or an analytical assessment, and which category the species has been assigned to by STECF under European Commission criteria ('NQ' indicates non-quota species).

The numbers and total value of those species for which there are no analytical assessments, no reference points, and those in category 3, are also shown.

	Species	Value (£ mill')		Reference points ?	Analytical Assess' ?	Category
1	Haddock	£32.1 m	26 %	Yes	Yes	1
2	Monks	£24.9 m	20 %	No	No	3
3	Cod	£23.1 m	19 %	Yes	Yes	1
4	Saithe	£10.2 m	8 %	Yes	Yes	1
5	Whiting	£7.6 m	6 %	No	Yes	1
6	Megrims	£6.4 m	5 %	No	No	3
7	Hake	£4.9 m	4 %	No	Yes	1
8	Ling	£4.0 m	3 %	No	No	3
9	Sole - Lemon	£1.1 m	1.0%	No	No	3
10	Halibut	£1.2 m	1.0%	No	No	NQ
11	Greenland Halibut	£1.0 m	0.8%	No	No	3
12	Pollack (Lythe)	£0.8 m	0.6%	No	No	3
13	Witches	£0.7 m	0.6%	No	No	3
14	Redfish	£0.5 m	0.4%	No	No	3
15	Blue Ling	£0.5 m	0.4%	No	No	3
16	Plaice	£0.4 m	0.4%	Yes	Yes	1
17	Catfish	£0.4 m	0.3%	No	No	NQ
18	Turbot	£0.3 m	0.2%	No	No	3
19	Skates & Rays	£0.2 m	0.2%	No	No	3
20	Tusk	£0.2 m	0.1%	No	No	3
	Total (top-20)	£120.4 m	99 %			
	Total (all species)	£121,856				
	<u>Sub-Totals:</u>					
	No Analyt' Assess'	£42.0 m	35 %	16	80 %	
	No Ref' Points	£54.5 m	46 %	14	70 %	
	Category 3	£40.4 m	33 %	12	60 %	

Table 2 The top-20 demersal species (by value) landed by **Shetland vessels** in 2010 (everywhere) and for each: the value of those landings; the value as a percentage of the total value of landings of all demersal species; whether there are reference points or an analytical assessment, and which category the species has been assigned to by STECF under European Commission criteria ('NQ' indicates non-quota species).

The numbers and total value of those species for which there are no analytical assessments, no reference points, and those in category 3, are also shown.

	Species	Value (£ '000s)		Reference points ?	Analytical Assess' ?	Category
1	Cod	£4,500	26 %	Yes	Yes	1
2	Monks	£3,800	22 %	No	No	3
3	Haddock	£3,100	18 %	Yes	Yes	1
4	Saithe	£1,400	8 %	Yes	Yes	1
5	Whiting	£1,300	8 %	No	Yes	1
6	Megrims	£1,000	6 %	No	No	3
7	Ling	£730	4 %	No	No	3
8	Pollack (Lythe)	£270	2 %	No	No	3
9	Sole - Lemon	£190	1.1%	No	No	3
10	Plaice	£140	0.8%	Yes	Yes	1
11	Hake	£130	0.7%	No	Yes	1
12	Halibut	£80	0.5%	No	No	NQ
13	Turbot	£70	0.4%	No	No	3
14	Cuckoo Ray	£60	0.4%	No	No	3
15	Skates & Rays	£50	0.3%	No	No	3
16	Spotted Ray	£50	0.3%	No	No	3
17	Catfish	£40	0.2%	No	No	NQ
18	Tusk	£30	0.2%	No	No	3
19	Witches	£30	0.2%	No	No	3
20	John Dory	£20	0.1%	No	No	NQ
	Total (top-20)	£17,100	99 %			
	Total (all species)	£17,200				
	<u>Sub-Totals:</u>					
	No Analyt' Assess'	£6,500	38 %	16	80%	
	No Ref' Points	£7,900	46 %	14	70%	
	Category 3	£6,300	37 %	11	55%	

Conclusion

In spite of the aspiration of managing fish stocks on the basis of sound scientific advice, such advice is not available for the majority of demersal fish species caught by Scottish and Shetland fishing vessels. In terms of numbers, scientific advice is only available half a dozen or so out of the 40 most important demersal species. In terms of value, 'data deficient' species account for almost half (~45%) of the value of all demersal landings, some £50 million for Scottish vessels (£8 million for the Shetland fleet). Almost half of this is accounted for by a single species, monks (anglerfish).

To put these figures in context, Marine Scotland's science budget for 2010-11 (which includes fisheries science, but also many other scientific activities) was £13.2 million.

Given the value of 'data deficient' stocks to Scottish and Shetland fishing vessels, it is clear that any policy of reducing fishing opportunities for stocks that lack scientific advice is likely to have significant economic impacts, especially if they were to be repeated year-on-year. An across-the-board 25% cut in quotas for 'data deficient' stocks, as has been proposed, could cost the Scottish fleet some £12.5 million (all else being equal).