

MEETING OF THE WORKING GROUP ON THE FUTURE OF NEAFC
8-9 April 2002

Agenda Item 6

For discussion

Quotes

"Statisticians and economists cannot yet make accurate forecasts. Their guesses occasionally turn out to be quite wrong. Nonetheless, people insist that they do their best. Why? Because lack of any forecast usually itself involves an *implicit* forecast, and non-economists have an even worse long-run average score at making forecast than do trained statistical economists."

P. Samuelson, Economics

"The road to wisdom?
Well, it's plain & simple to express,
Err and err and err again,
But less and less and less."

Gruk

The Memorandum of Understanding with ICES and the Precautionary Approach – a note prepared by the Secretariat

Introduction

There have been developments in international law regulating the utilisation and management of marine resources. In addition to codifying customary law, a net of words has been cast to indicate the aims of the process. The knots in that net are words like *sustainable*, *biodiversity*, *responsible fisheries*, *ecosystem considerations* and the *precautionary approach*. They all point towards long term development. The net metaphor is useful in indicating the general direction in which we would like to move, but does not give much advice on operation or implementation. In this cluster the precautionary approach in a sense comprises all the others. If a fishery is managed with due diligence under the precautionary approach, the other concepts are probably fulfilled.

There has been a focus on exploited fish stocks and their relationship to the net. This is sensible because healthy fish stocks are a necessary, but not sufficient, prerequisite for healthy fisheries. Advice to managers is almost entirely presented on a stock-by-stock basis and, in most cases, the short term annual TAC is the essential piece of advice. The format makes it difficult to pay attention to the interests of the stakeholders in the fishing industry. From the scientific advice, it is difficult or, in most cases, impossible to evaluate the consequences for catches by different categories of fishing vessels and the fishing industry as a whole in the long term. The interest of stakeholders is, therefore, dealt with in the political process that modifies the scientific advice. The basis of this political process is, however, seen as unscientific and dominated by vested interest. At the very least the basis of it is less transparent than the basis for predicting the state of fish stocks. This does not mean that the political process is unsubstantiated.

Considerable knowledge is vested in the industry and the administration. The problem is that it is not easy to marry the world as seen by the scientist and the world as seen by industry and managers.

What this note attempts to do

At the 20th Annual Meeting of NEAFC in November 2001, it was suggested that the precautionary approach (implying other “general” concepts) should be discussed in the context of the MoU with ICES.

This note attempts to raise aspects of the advisory process other than those given in the MoU of 1999. It proposes, in addition to the advice on annual TACs, to break down information from ICES into a form that makes it possible to analyse consequences at a detailed level in the medium and short term. This will make it possible to address different concepts i.e. the precautionary approach with respect to consequences other than fish stocks. It will also make it possible to handle probabilities and risks in a more transparent fashion. ICES has already given NEAFC advice on a fleet basis when advising on the consequences of mesh changes in the Rockall haddock fishery.

The note will suggest that the form of the advice is tailored to each case. Some fisheries are “clean” fisheries, some are mixed. Some involve a large number of gears and vessel categories, some only a few. The form of the advice must be case specific.

Advice on the Convention Area or Regulatory Area

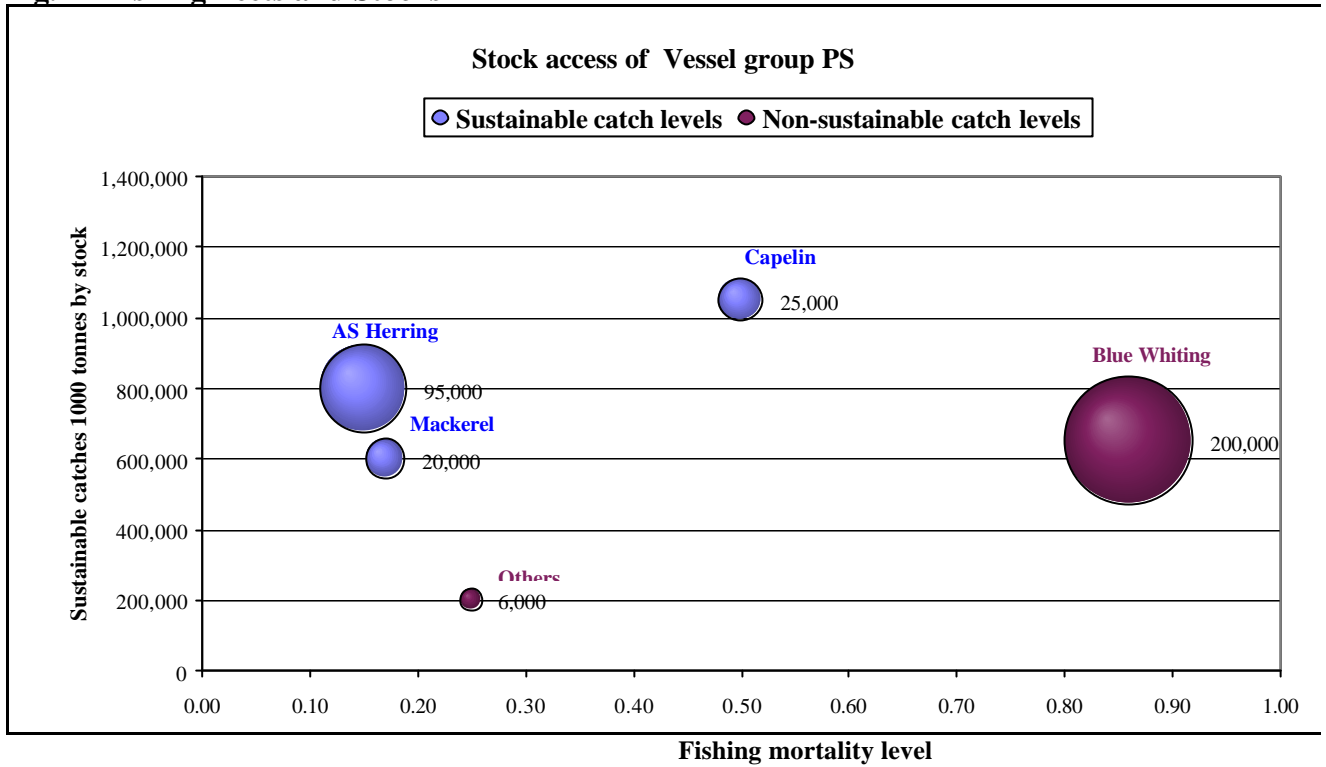
The MoU gives (in Annex 1) a list of species from the NEAFC Convention Area. These 25 species (+ 11 deep-sea-species) are assessed by a number of unit stocks. The list of regulated stocks in the NEAFC Regulatory Area is at present five assessed in one or two stock units each.

Presenting advice from ICES in a different way

Contracting Parties may wish to consider other ways in which to present the information underlying the management advice. One possibility may be to focus on the fishing fleets in the Regulatory Area, another to focus on medium term developments, rather than short-term annual point estimates.

An illustration of how data on a fleet basis could be presented is given in Figure 1 and Figure 2, below. Information by fishing fleet is already used in the assessments; the figures are just another way of presenting information.

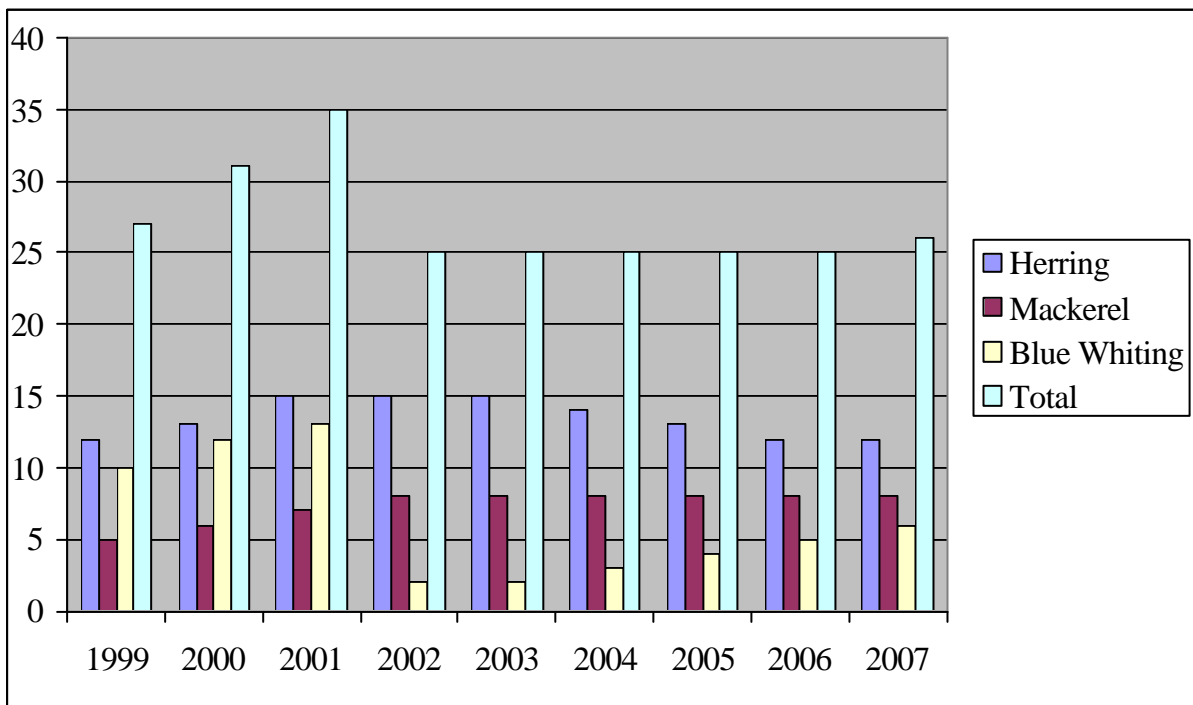
Fig. 1 Fishing fleets and Stocks



The y-axis gives the level of sustainable catches, the size of the bubbles give the share of the catches for the vessel group. The overall fishing mortality level the stocks are fished at is also given and the colour groups the levels into sustainable and non-sustainable levels.

Fig. 2. Presentation of the medium term economic effect of the quota regime for a group of Purse seiners.

1000 tonnes



Linkage to the Precautionary Approach

The precautionary approach is essentially to establish sustainable catch levels that ensure that stocks are resilient to external shock, such as changes in recruitment and growth rate. If recruitment is stable and the level of fishing mortality level is approximately right, catches should fluctuate without any trend.

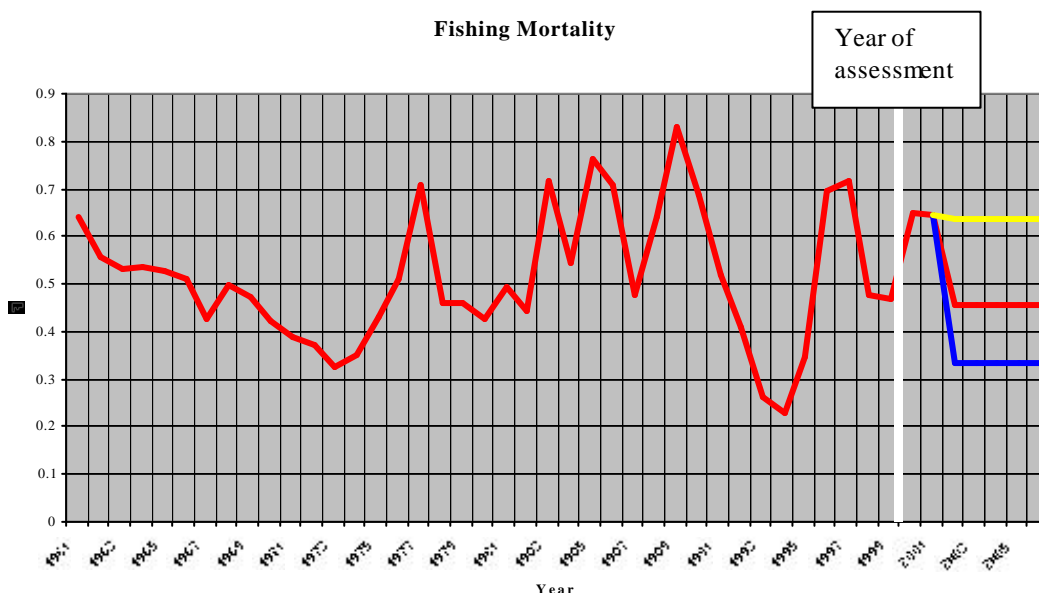
The present form of the “standard” advice focuses on a point estimate of catches and spawning stock biomass, based on assumptions of fishing mortality levels in the last year of the assessment. These point estimates, because of inherent statistical variance, fluctuate inside a band of possible outcomes. They may be 25 % above or below the true value, or even more with poorer data.

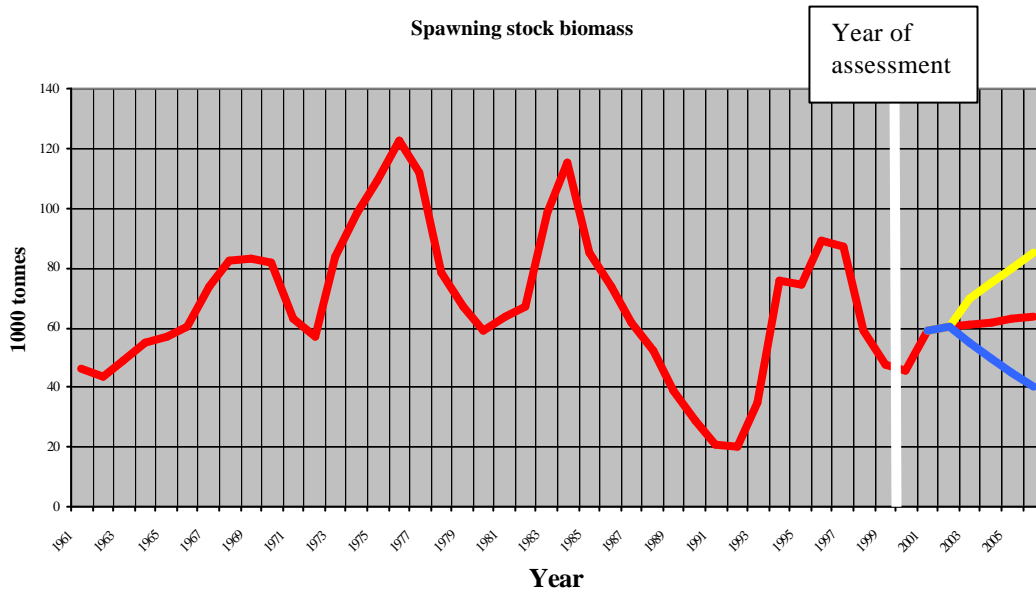
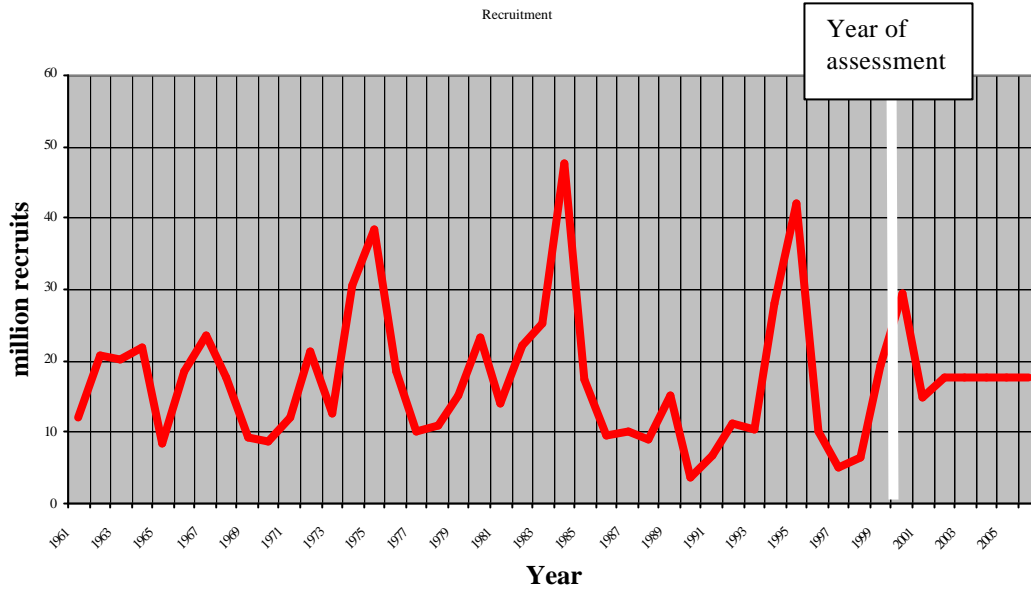
Discussion of the point estimate of catches translated to a TAC (have the scientists got it right, if it is low, will it not be better next year etc?) very often overshadows the crucial question: how do predictions compare with historical catch levels and sustainable levels on average over a number of years? What are consequences for the vessel groups involved? How does a given catch level affect economic risks etc?

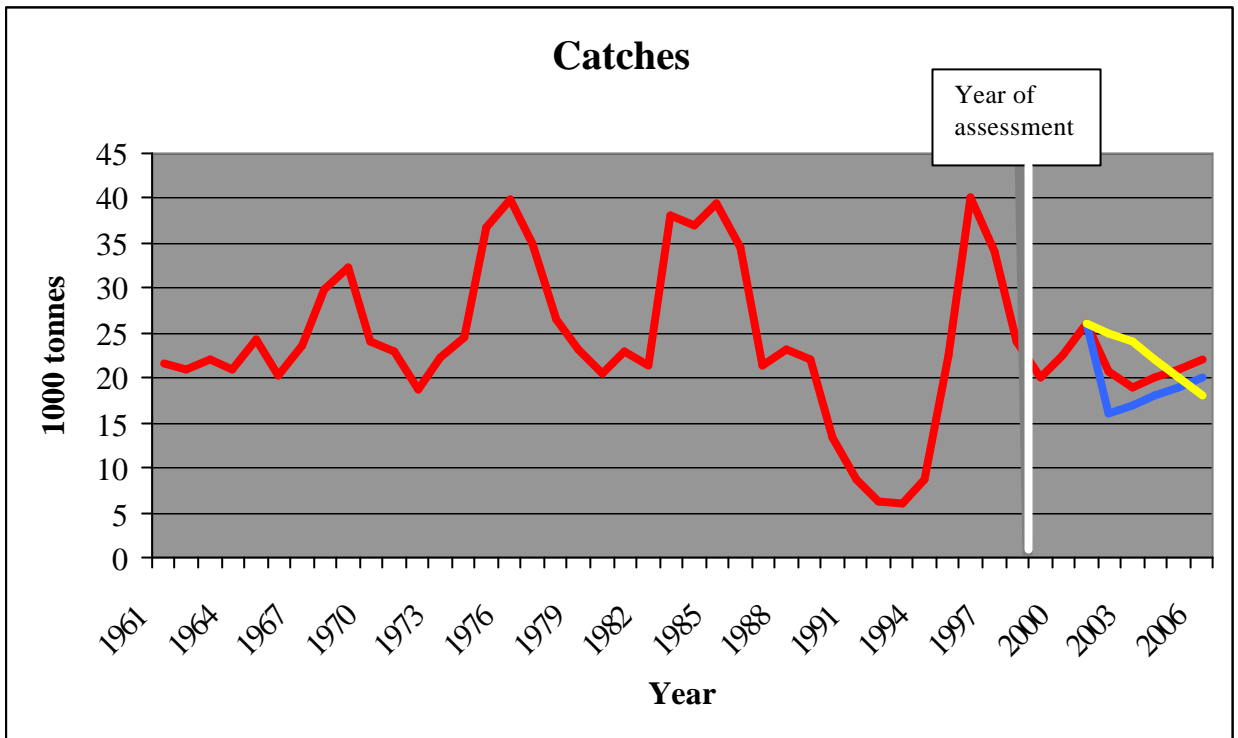
Below are suggestions for graphs that combine assessments of the history of a stock and predictions in the medium term for easy comparison. This is only one example of how data could be presented in a different way. There are several other possibilities.

Trends in fishing mortality, catches and spawning stock biomass.

Assessments and predictions in one figure. The vertical line indicates the change from assessment to prediction. There are three assumptions of fishing mortality in the predictions.





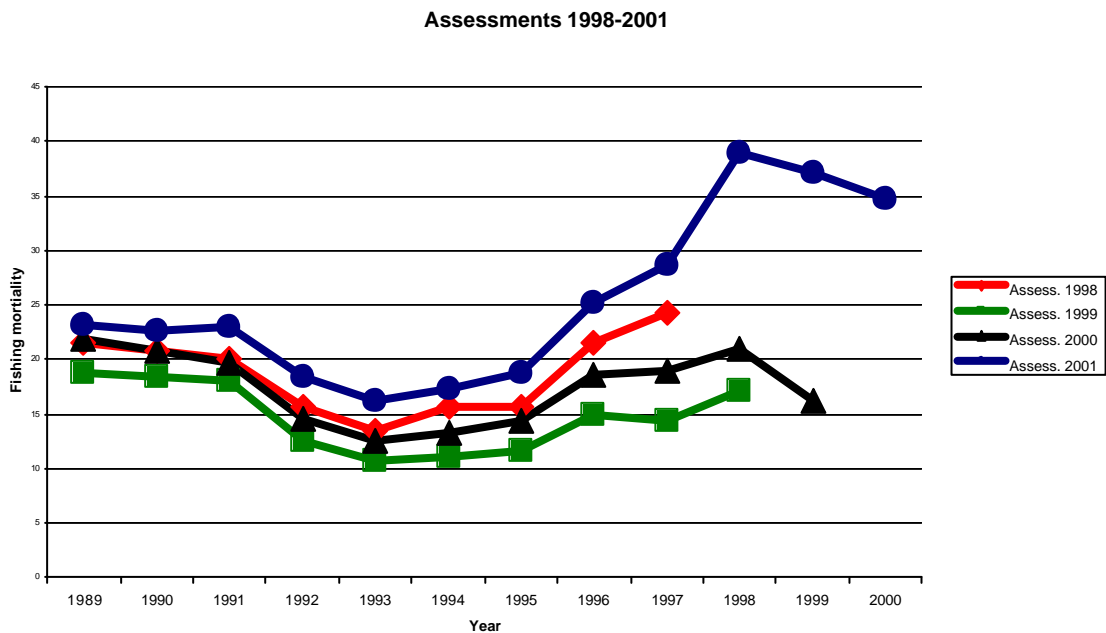


Quality control

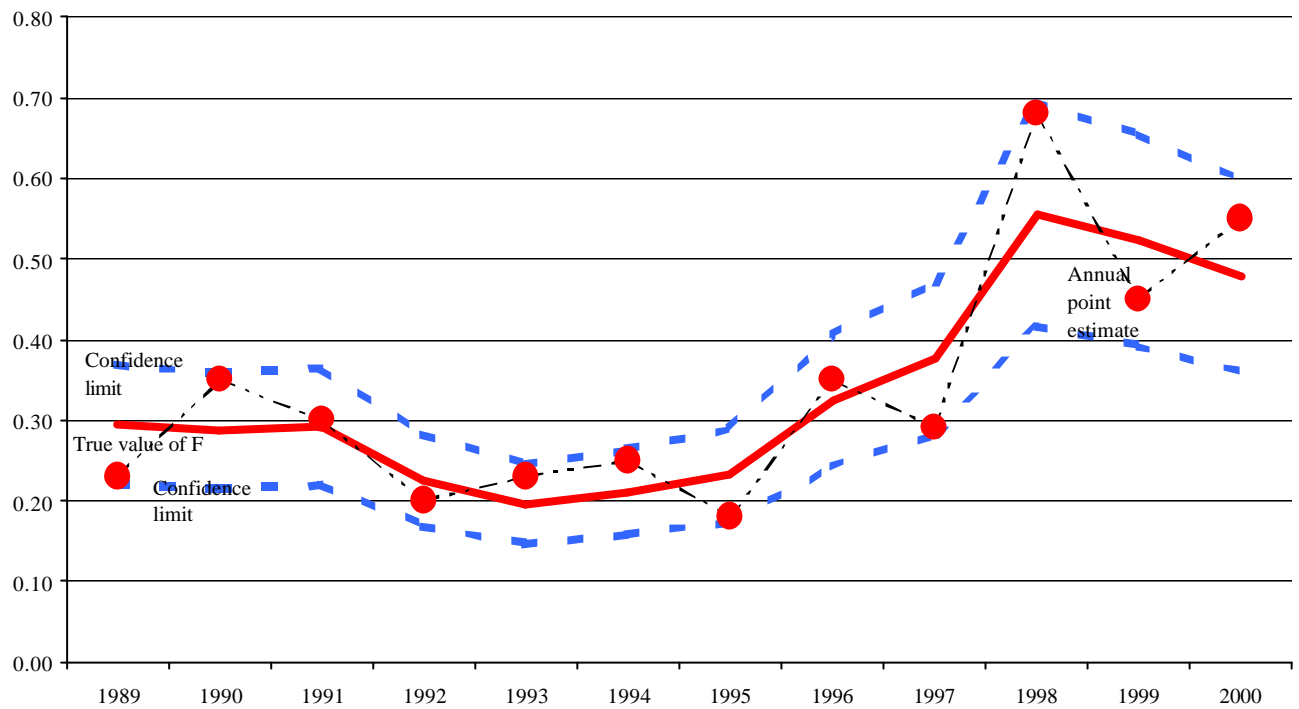
It is suggested to ask ICES to produce information on the quality of the assessments

Two figure are suggested:

Comparison of assessments between years



Comparison of true value and annual point estimates



Fishing mortality. True value, confidence limits and • annual point estimates used as basis for TACs

26 March 2002