

3 Faroe Bank Cod

Summary

- The total reported landings in 2008 were 219 tonnes the lowest since 1992.
- The summer and spring index suggest the stock is well below average while there is no indication of strong incoming year classes.
- The exploitation ratio has sharply decreased since 2006. In 2008 it is estimated to levels comparable to those in the 1990's for both survey indices.

3.1 State of the stock - historical and compared to what is now.

Total nominal catches of the Faroe Bank cod from 1987 to 2008 as officially reported to ICES are given in Table 3.7.1 and since 1965 in Figure 3.7.1 UK catches reported to be taken on the Faroe Bank are all assumed to be taken on the Faroe Plateau and are therefore not used in the assessment. Landings have been highly variable from 1965 to the mid-1980s, reflecting the opportunistic nature of the cod fishery on the Bank, with peak landings slightly exceeding 5 000t in 1973 and 2003. The trend of landings has been smoother since 1987, declining from about 3 500t in 1987 to only 330 t in 1992 before increasing to 3 600t in 1997. In 2008 landings were estimated at 219t less than half the previous year (Figure 3.7.1). Longline fishing effort increased substantially in 2003 and although it decreased in 2004 and 2005 the latter remains the second highest fishing effort observed since 1988 (Figure 3.7.1). Since 2006 the effort has been reduced substantially to about the same levels as in early 1990s.

[ToR 11] The Faroese groundfish surveys (spring and summer) cover the Faroe Bank and cod is mainly taken within the 200 m depth contour. The catches of cod per trawl hour in depths shallower than 200 meter are shown in Figure 3.7.2.

The spring survey was initiated in 1983 and discontinued in 2004 and 2005. The summer survey has been carried out since 1996. The CPUE of the spring survey was low during 1988 to 1995 varying between 73 and 95 kg per tow. Although noisy, the survey suggests higher, possibly increasing biomass during 1995 - 2003. The 2009 index is 74 kg per tow, which is slightly lower than in 2007 and thus well below the average in the period 1996-2004. The 2008 summer index (33 kg per tow) is almost the same as in 2007. The agreement between the summer and spring index is good during 1996 to 2001 and since 2006, but they diverged in 2002 and 2003.

The figure of length distributions (figure 3.7.3 and figure 3.7.4) show in general good recruitment of 1 year old in the summer survey from 2000 – 2002 (lengths 26 – 45 cm), corresponding to good recruitment of 2 years old in the spring surveys from 2001 to 2003 (40 – 60 cm). The spring index shows poor recruitment from 2006 to 2009 reflecting the weak year classes observed in the summer survey since 2004.

The recruitment is estimated by simply counting the number of fish in length groups in the surveys. In the spring index, recruitment was estimated as total number of fish below 60 cm (2-year old) and in the summer index as number of fish below 45 cm (1-year old). According to the summer index the recruitment of 1 year old has been good from 2000 to 2003, while the recruitment has been relatively poor since 2004. The spring recruitment index in 2009 shows no sign of incoming year classes (Figure 3.7.5a). Figure 3.7.5b shows a fairly good correlation between spring and summer survey recruitment ($r^2=0.82$)

Figure 3.7.6 shows a positive correlation between the survey indices and the landings in the same year, but the relationship between the summer survey and the landings deteriorates in 2003. The ratio of landings to the survey indices provides an exploitation ratio, which can be used as a proxy to relative changes in fishing mortality. For the summer survey, the results suggest that fishing mortality has been reasonably stable during 1996 to 2002, but that it increased steeply in 2003, consistent with the 160% increase in longline fishing days in that year (Figure 3.7.1). The exploitation ratio has decreased since 2006 and in 2008 it is estimated to levels close to those in the 1996-2002.

3.2 Comparison with previous assessment and forecast

The status of the stock remains almost unchanged with respect to last year assessment. Both the spring and the summer indexes suggest the stock is well below average while there are no indications of incoming recruitment.

3.3 Management plans and evaluations (Could just be a reference to the year when the plan was agreed/evaluated. Include proposed/agreed management plan.)

None

3.4 Management considerations (what do managers need to consider when managing this stock.)

The landing estimates are uncertain because since 1996 vessels are allowed to fish both on the Plateau and on Faroe Bank during the same trip, rendering landings from both areas uncertain. Given the relative size of the two fisheries, this is a bigger problem for Faroe Bank cod than for Faroe Plateau cod, but the magnitude remains unquantified for both. The ability to provide advice depends on the reliability of input data. If the cod landings from Faroe Bank are not known, it is difficult to provide advice. If the fishery management agency intends to manage the two fisheries to protect the productive capacity of each individual unit, then it is necessary to identify the catch removed from each stock. Simple measures should make it possible to identify if the catch is originating from the Bank or from the Plateau e.g. by storing in different section of the hold and/or by tagging of the different boxes.

Consistent with the advice given in 2008 the WG suggests the closure of the fishery until the recovery of the stock is confirmed. The reopening of the fishery should not be considered until both surveys indicate a biomass at or above the average that of the period 1996-2002.

3.5 Regulations and their effects (Include new regulations (e.g. gear restrictions, TAC etc). Focus on effects of regulations.)

In 1990, the decreasing trend in cod landings from Faroe Bank lead ACFM to advise the Faroese authorities to close the bank to all fishing. This advice was followed for depths shallower than 200 meters. In 1992 and 1993 longliners and jiggers were allowed to participate in an experimental fishery inside the 200 meters depth contour. For the quota year 1 September 1995 to 31 August 1996 a fixed quota of 1 050 t was set. The new management regime with fishing days was introduced on 1 June 1996 allowing longliners and jiggers to fish inside the 200 m contour. The trawlers are allowed to fish outside the 200 m contour.

A total fishing ban during the spawning period (1 March to 1 May) has been enforced since 2005. In 2009 fishing was restricted to all fishing gears from 1 January to 31 August.

3.6 Changes in fishing technology and fishing patterns

None

3.7 Changes in the environment

None

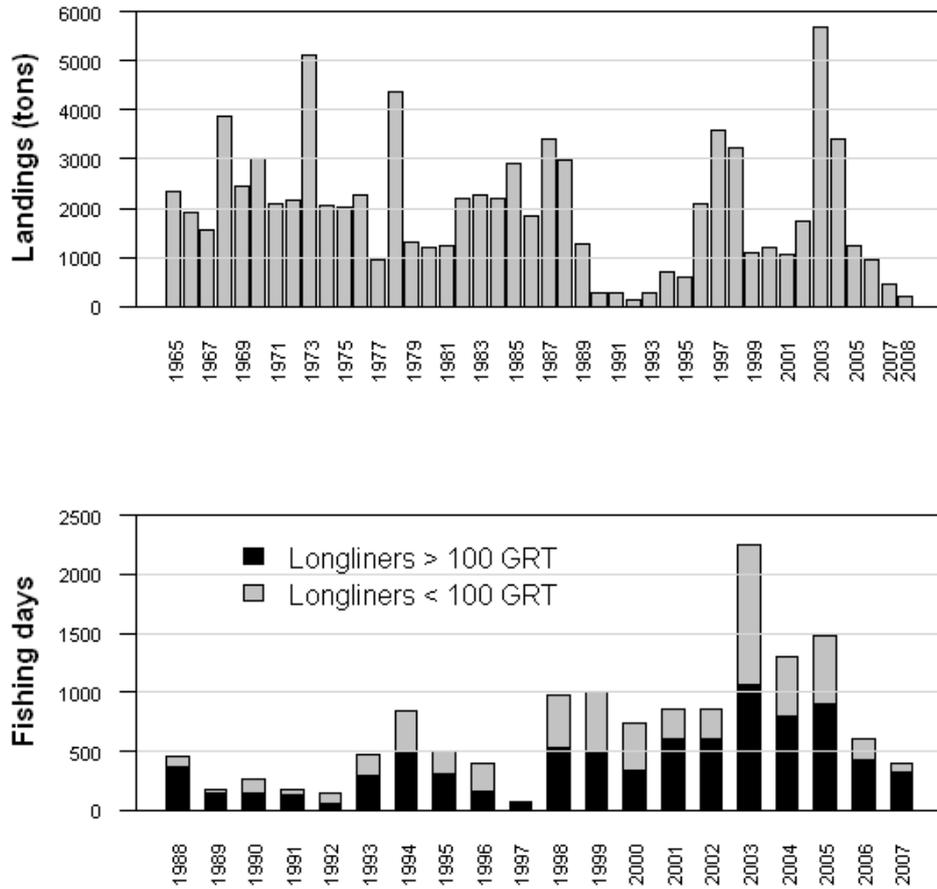


Figure 3.7.1. Faroe Bank (sub-division Vb2) cod. Reported landings 1965-2008. Since 1992 only catches from Faroese and Norwegian vessels are considered to be taken on Faroe Bank. Lower plot: fishing days 1988-2007 for long line gear type in the Faroe Bank (exerted)(fishing days for 2008 were not available to the WG.)

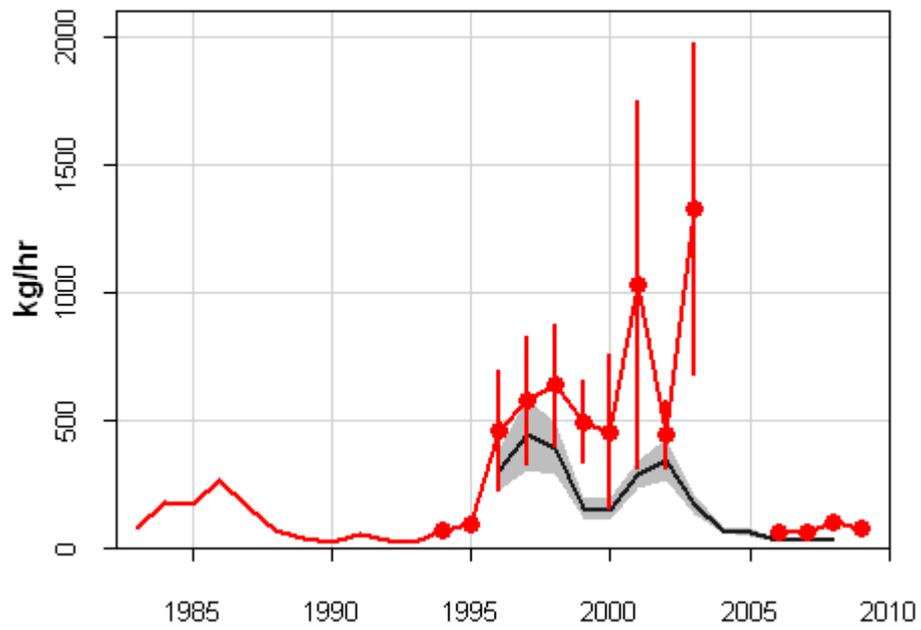


Figure 3.7.2. Faroe Bank (sub-division Vb2) cod. Catch per unit of effort in the spring groundfish survey and summer survey. Vertical bars and shaded areas show the standard error in the estimation of indexes.

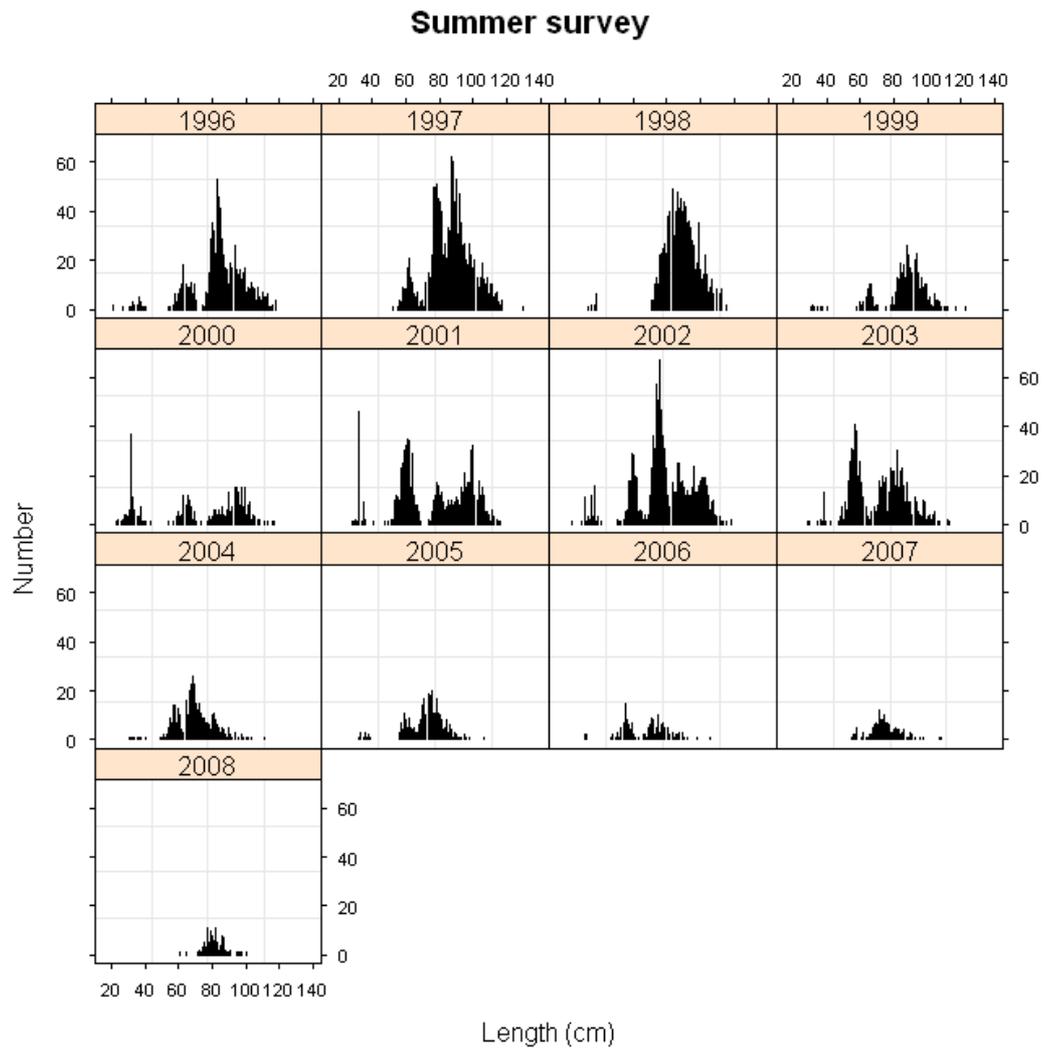


Figure 3.7.3. Faroe Bank (sub-division Vb2) cod. Length distributions in summer survey (1996-2008.)

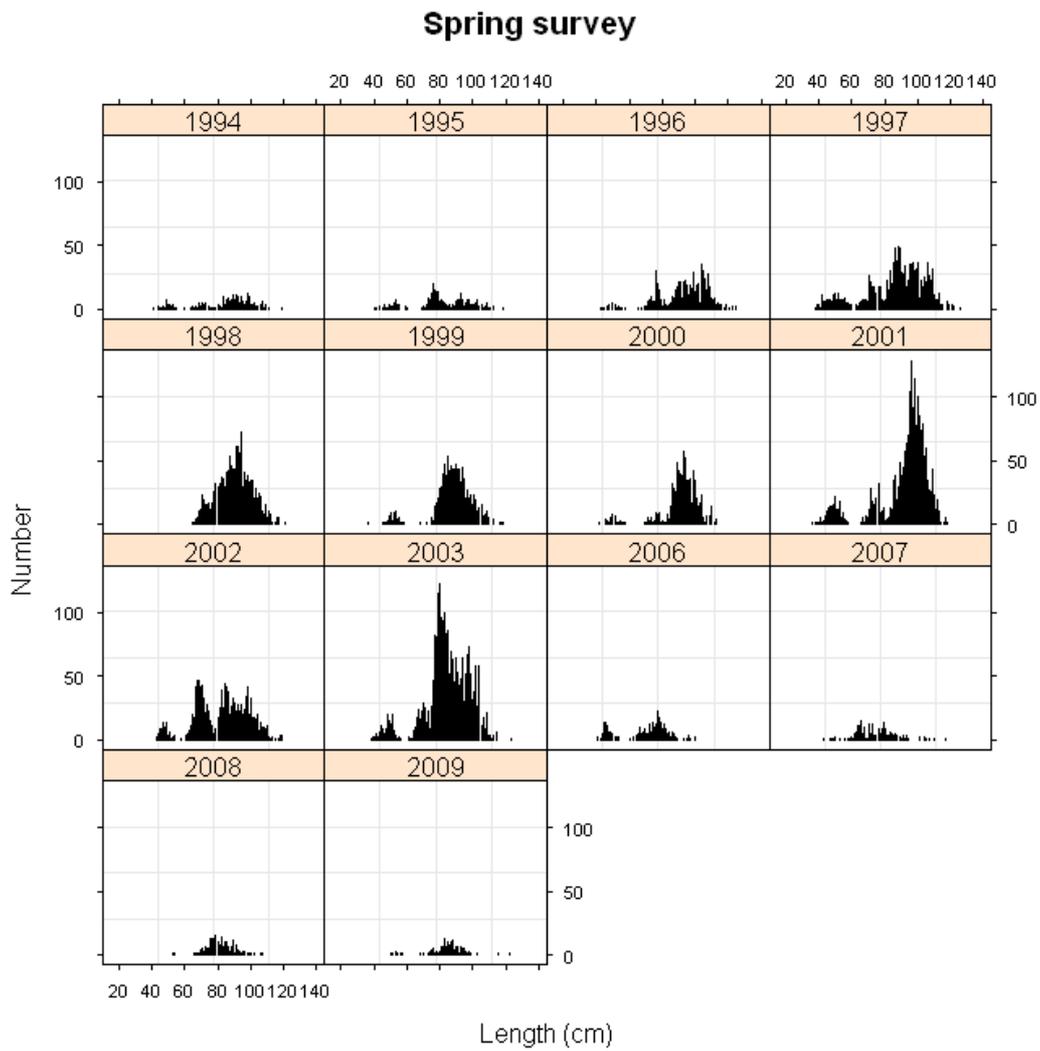


Figure 3.7.4. Faroe Bank (sub-division Vb2) cod. Length distributions in spring survey (1994-2003, 2006-2009.)

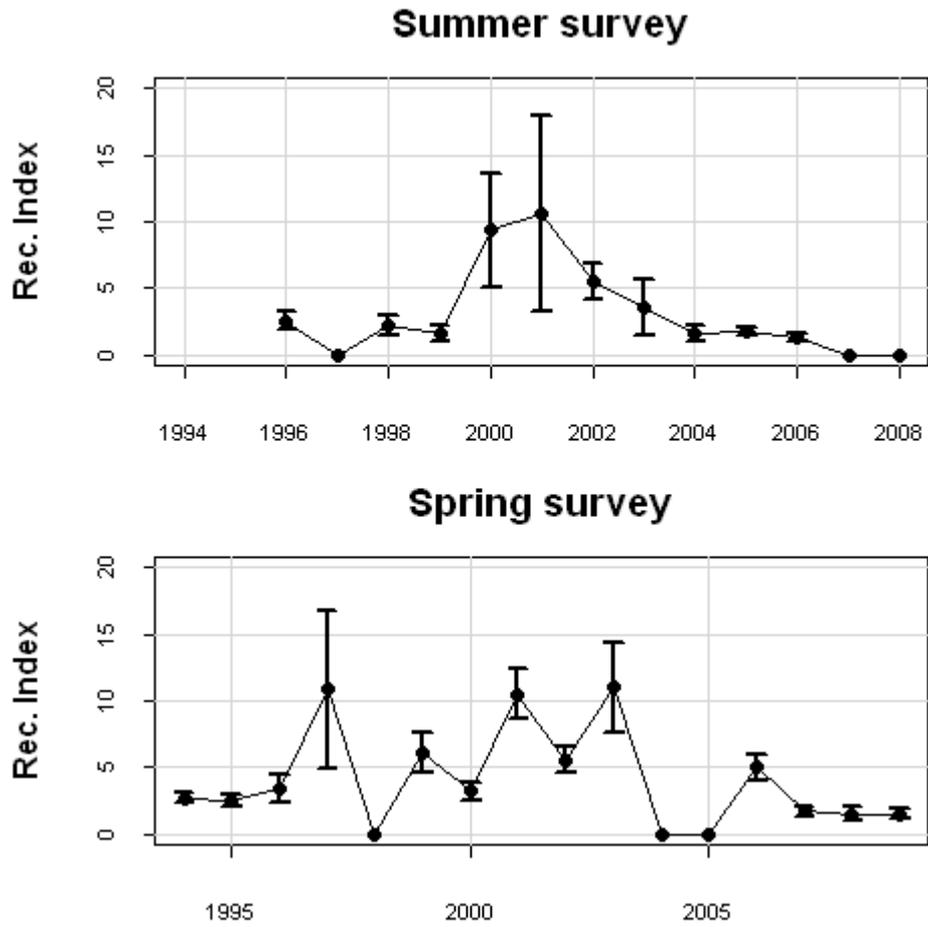


Figure 3.7.5a. Faroe Bank (sub-division Vb2) cod. Estimated recruitment index in summer (upper panel) and in spring survey (lower panel). In summer surveys the 1 year old recruitment is estimated. In spring surveys the recruitment of 2 year old is estimated. Dashed lines show the standard error in the estimated indices.

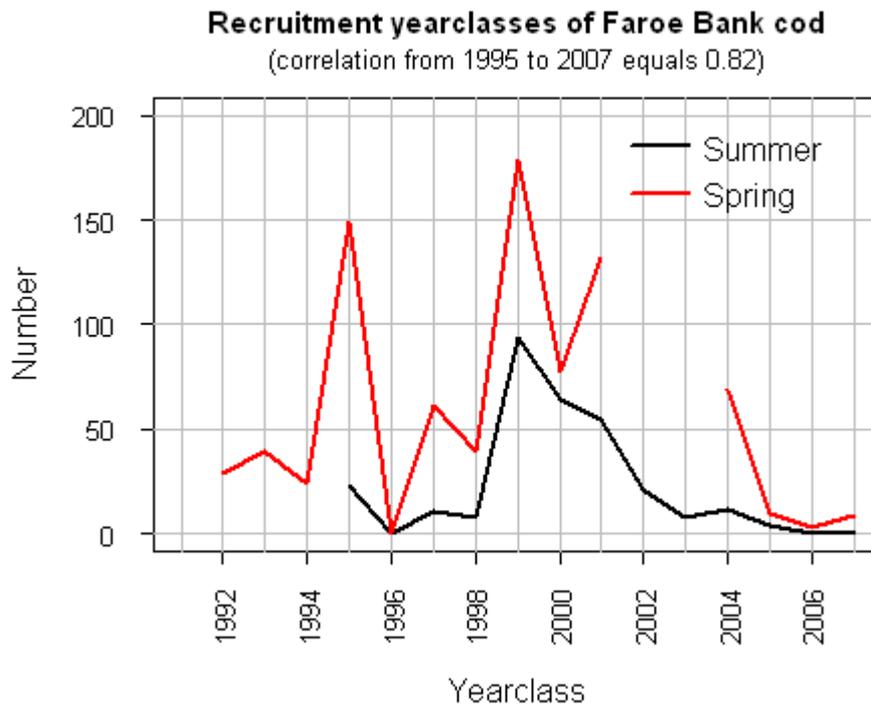


Figure 3.7.5b. Faroe Bank (sub-division Vb2) cod. Correlation between recruitment year classes.

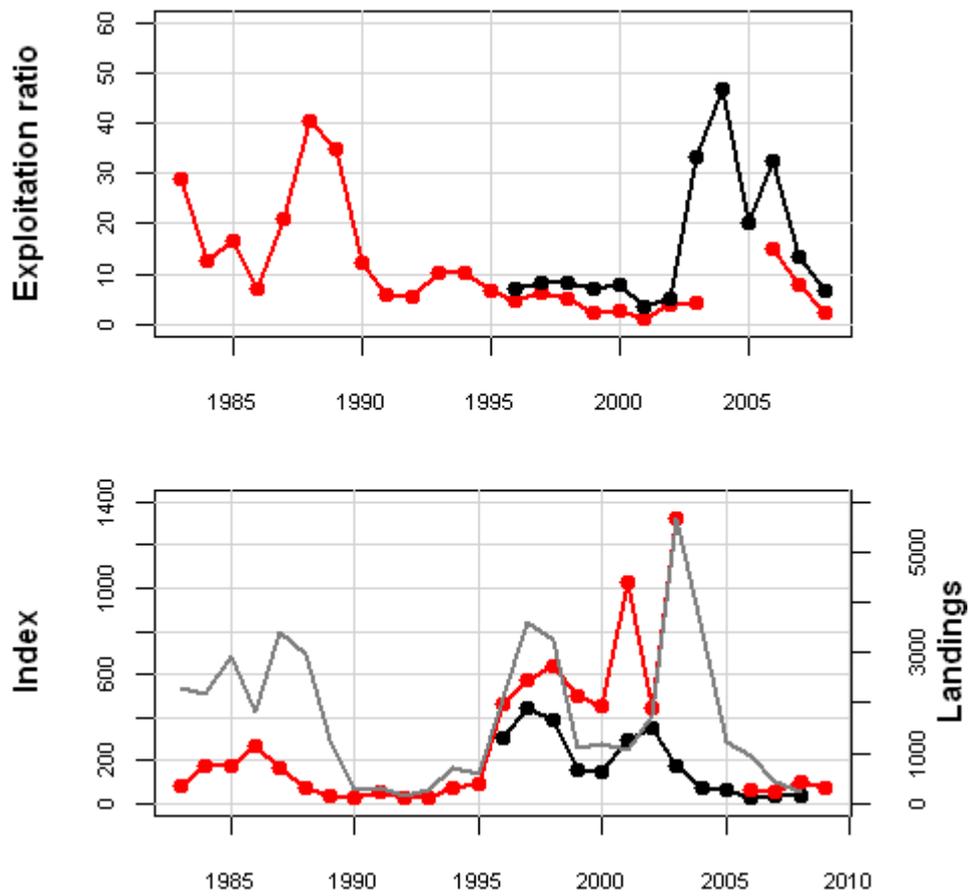


Figure 3.7.6. Faroe Bank (Subdivision Vb2) cod. Exploitation ratio (ratio of landings to survey interpreted as an index of exploitation rate). Lower plot: Landings and cpue (kg/hr) in spring and summer survey.