

## 4. English summary of the State of Marine Stocks in Icelandic waters 2006/2007 – Prospects for the Quota Year 2007/2008

### 2.1. Cod

Total nominal landings of cod in 2006 were 196 000 t compared to 215 000 t in 2005. National TAC for cod for the quota year 2005/2006 was set as 193 000 t. In recent years landings have exceeded national TAC by a small margin.

Mean weight at age has decreased considerably in recent years and at present mean weight at age in the: autumn survey in 2006, in landings in 2006 and in the spring survey 2007 are near or at a historical low. This can at least partly be attributed to a decrease in the availability of capelin to cod.

Indices from both the spring and autumn survey have been decreasing since 2004 and they do not show any signs of good recruitment in the foreseeable future. Both the spring and autumn survey show similar trends in terms of stock size, but the increase in 1996-1998 is not as high in the autumn as in the spring survey and the autumn survey does not show the same decrease in recent years.

Now the 2001-2006 cohorts are all estimated small and the 2001 and 2004 are at or close to historical low. Fishing mortality and exploitation rate have been decreasing in recent years but in spite of that the exploitation rate has remained above the target 25%. Since the implementation of the HCR the exploitation rate has been on average 31% and fishing mortality at 0.63 compared to the target value of 0.4. Spawning stock biomass has increased slightly in recent years but the reference biomass (B<sub>4+</sub>) has remained at a nearly constant size. It is likely that both the reference- and spawning stock biomass will remain at similar level if the stock is fished according to the present HCR. Taking into account the uncertainty in the stock assessment and prognosis there is a high probability that the stock will go below its historical low if fished according to the HCR. Reference biomass is estimated at 650 000 t and according to present HCR the national TAC should be 178 000 t in 2007/2008.

The estimate of reference biomass in 2007 has decreased by 13% from the prognosis in 2006. Around 40% of the decrease can be attributed to lower mean weight at age than predicted and around 60% to lower estimates of cohort abundance. Stock assessment based solely by the spring survey indices indicates that the stock may be at an even lower level than the VPA based method estimate which forms the base for calculation of TAC according to the HCR. Contrary to this the autumn survey indicates

that the reference biomass may be marginally larger than the VPA based estimate.

Last year the Marine Research Institute highlighted the urgent need for immediate action to increase in the spawning stock biomass because of its overwhelming importance for increased recruitment. A committee appointed by the Ministry of Fisheries to review the HCR recommended in April 2004 that the optimal exploitation rate would be achieved at the range of 18-23% and that the exploitation rate should be set at the lower end of this range in periods of low recruitment as is certainly the case now. Results from a risk analysis suggests that there is a high probability of a significant increase in the spawning stock if the exploitation rate is lowered to 20% or less.

In recent years the Marine Research Institute has recommended that the HCR be changed and the exploitation rate lowered but these recommendations have not been implemented by the Ministry of Fisheries. Reference biomass is now estimated close to a historical low and the spawning stock biomass is only half of what is assumed needed to produce maximum sustainable yield. Recruitment in the last six years has been low and mean weight at age of all age groups is close to or at historical low. Because of this, the Marine Research Institute recommends that the exploitation rate be lowered immediately and that TAC be set as 20% of reference biomass instead of the current 25%. Because of low recruitment in recent years, it is also recommended that the TAC should not be calculated from last years TAC and present assessment as stated by the current HCR. The Marine Research Institute therefore recommends that TAC should be set at 130 000 t and additionally that regulations regarding maximum mesh size of gillnets and area closures on spawning grounds should still be in effect.

### 2.2. Haddock

In 2006, 98 000 t of haddock (*Melanogrammus aeglefinus*) were landed, compared with 97 000 t in 2005. The advice for the fishing year 2006/07 was 95 000 t and the TAC was 105 000 t.

This year's assessment used age disaggregated catch in numbers and age disaggregated abundance indices from the groundfish survey in March and October for tuning.

Year classes 1998–2000 are estimated to be large, year class 2001 small, 2003 very large and 2004–

2006 about medium size. The large year classes caused rapid increase in the stock size from 2002–2007.

The biomass of age 3 and older is now estimated 300 000 t at the beginning of the year 2007. This biomass estimate along with the biomass estimate for 2006 (305 000 t) is the highest for more than 40 years. Mean weights at age are very low in 2006 as predicted, indicating slow growth in 2005 and 2006. Stock in numbers is somewhat lower than last year's prediction and thus the stock biomass is somewhat lower than predicted.

Fishing mortality in the year 2006 is now estimated at 0.66, i.e. higher than in 2005 and well above the sustainable target of 0.47. However, the estimated fishing mortality for the year 2007 is closer to the target or 0.48.

Mean weight at age is predicted assuming continued slow growth as in 2005 and 2006 and slow recruiting of the 2002 and 2003 year classes to the fisheries. Due to the slow growth the big 2003 year class will in 2008 have lagged one year behind in length and weight at age compared to normal growth.

In recent years, the advice from the MRI has been based on  $F_{4-7}=0.47$ , that would give a catch of 120 000 t for the 2008 calendar year. To get maximum yield from the stock in a period of unusually slow growth the MRI proposes to base the advice on mean fishing mortality of the size of haddock that normally would correspond to ages 4–7 ( $F=0.35$ ). This reference will give catch close to 95 thousand tonnes in 2007/08.

Taking the above mentioned factors into account the MRI recommends that the TAC for the quota year 2007/2008 should not exceed 95 000 t to make better use of the large year classes and allow them to last longer in the fishery.

### 2.3. Saithe

In 2006 landings of saithe (*Pollachius virens*) were 76 000 t, or about 44% more than was landed in 2003. Landings have increased annually by 5–10 thousand tonnes since 2001. Annual landings in 1998–2001 were the lowest observed since the 1940s, slightly above 30 000 t. The fishable stock is estimated to be 249 000 or considerably lower than estimated in 2006. In 1997–2000, fishable stock size and spawning stock biomass were at a minimum, but have increased considerably in size since then. Recruiting year classes 1987–1995 were well below the long term average with the exception of the 1992 year class. Estimates of 1998–2000 and 2002 indicate they are well above average while other recent year classes seem to be poor.

The MRI recommends that the TAC should not exceed 60 000 t in the quota year 2007/2008. This yield is likely to correspond to a stable fishing mortality ( $F_{4-9}$ ) close to 0.3 which is considered precautionary for this stock.

### 2.4. Redfish stocks

In 2006, the combined landings of golden redfish (*Sebastes marinus*) and demersal redfish (*S. mentella*) in Icelandic waters were estimated to be 59 000 t, compared to 63 000 t in 2005 and 52 000–97 000 t between 1987–2001.

In 2006, 41 000 t of **golden redfish** were landed, 1 200 t less than in 2005. Effort has remained relatively stable at low levels in recent years but CPUE has increased. Survey stock indices declined to a record low in the mid 1990s, but have, since then, increased to over 60% of the observed maximum due to increased recruitment to the fishable stock. The MRI recommends that fishing effort should be kept low, corresponding to a TAC of no more than 35 000 t in the quota year 2007/2008.

In 2006, about 17 500 t of **demersal redfish** were landed, compared to 20 500 t in 2005 and an average 33 000 t in 1996–2000. Total landings increased substantially from 1989 to 1994, but have since declined. Due to reductions in landings and effort in recent years, the drastic decline in the CPUE has halted and has started to increase again, although it is still very low. Significant recruitment has been observed in the fishable stock in most recent years, but stock size is still considered low. Consequently, ICES and MRI recommends that the effort should be kept low and that the TAC in ICES Division Va, Vb, VI and XIV be no more than 22 000 t in the quota year 2007/2008.

In 2006, an estimated 82 000 t of **pelagic redfish** were caught, compared to 74 000 t in 2005 and 126 000 t in 2004. During the past few years, the international fleet has taken an increasing proportion of the catch from depths greater than 600 m. Between 1998–2001, approximately 25% of the catch was taken at depths above 500 m, while the remainder of the catch was taken at depths below 500 m. In 2006, the Icelandic fleet caught about 22 000 t compared to 36 000 in 2004 and 16 000 t in 2005. About 85% of the Icelandic catch has, in recent years, been caught within the Icelandic 200 mile EEZ at depths below 600 m.

ACFM concluded at the spring meeting in 2006 that the stock is in a state of rapid depletion and therefore, recommended that no fishery should be allowed until there is a clear indication of recovery or until there is more reliable information available about the productivity of the stock. This advice is based on the following:

- 1) a sharp decline in landings and CPUE since 2003 and the observation that the autonomous quotas of the major fishing fleets were not taken in 2005;
- 2) development in the acoustic survey indices in recent years, short time series of biomass measurements in deeper waters where most of the catches have been taken in recent years, in addition to uncertainties related to the technical im-

plementations of the survey at different water depths;

- 3) substantial decrease in the abundance of fish larger than 40 cm in the 2005 survey;
- 4) uncertainties about the stock structure of pelagic *S. mentella*;
- 5) that *S. mentella* is a slow growing, late maturing deep-sea species and hence, is considered to be highly vulnerable to overexploitation.

If pelagic *S. mentella* is in a rapid state of depletion due to overexploitation, it may take a long time for the stock to regain the historical productivity level. In light of this, ICES recommends that no fishing takes place in 2007. NEAFC, however, recommended, that the TAC should not exceed 46 000 t among members countries.

ICES will not give advice on pelagic redfish for 2008 until the autumn 2007 and will base the advice on the results from the international acoustic/ trawl survey conducted in the Irminger Sea and adjacent waters in June–July 2007.

### 2.5. Greenland halibut

In 2006, about 21 000 t of Greenland halibut (*Reinhardtius hippoglossoides*) were landed from the East-Greenland, Iceland and Faeroes waters. Landings of the Icelandic trawler fleet in 2006 were 12 000 t. CPUE of the Icelandic trawler fleet has been at a historic low in the last two years and is only ¼ of what was measured in 1985. Biomass indices from the Icelandic autumn groundfish survey 1996–2006 shows similar pattern as the commercial CPUE indices. The CPUE in East-Greenland waters has been relatively stable in recent years but with some improvements in the last two years. There is no agreement on sharing of the stock between nations.

ICES advises that the total catch in 2008 should not exceed 15 000 t for the East-Greenland, Icelandic and Faeroes waters.

### 2.6. Halibut

In 2006, 550 t of halibut (*Hippoglossus hippoglossus*) were landed. During the past 11 years annual landings have been less than 1 000 t, the lowest observed in the past 50 years. Halibut has mainly been taken as by-catch in the bottom trawl and long-line fisheries. In recent years, CPUE has declined sharply, both in the fishery and in the groundfish surveys. Currently, the halibut stock seems to be severely depleted, with recruitment into the spawning stock most likely remaining at very low levels. The MRI recommends a ban on target fisheries for this species, as well as actions to minimize catches of juveniles.

### 2.7. Plaice

In 2006, 6 400 t of plaice (*Pleuronectes platessa*) were landed, an increase of 1 500 t since the year 2001. CPUE in the Danish seine fishery, decreased

from 400kg/set in 1991 to 210 kg/set in 2000, but has since increased again. According to groundfish survey indices the stock in 1997–2002 was only 10% of the 1985 estimate. Since then the groundfish survey indices have increased, There is an indication that fishing mortality has decreased in recent years. Recruitment measurements from the groundfish survey do not indicate improved recruitment. The MRI recommends that the catch does not exceed 5 000 t in the quota year 2007/2008.

### 2.8. Dab

In 2006, 1 100 t of dab (*Limanda limanda*) were landed. Between 1987–1997, landings of dab increased from 1 200 to 8 000 t but have since decreased considerably. The Danish seine fishery took over 95% of the catches. CPUE on the main fishing grounds off the southwest coast declined by 50% from 1997 to 2000 after increasing in 2001 and 2002 due to strong incoming year classes, CPUE has again declined significantly. The MRI recommends a TAC no higher than 500 t in the quota year 2007/2008.

### 2.9. Long rough dab

In 2006, 700 t of long rough dab (*Hippoglossoides platessoides*) were landed. Landings increased from 650 t in 1990 to 6 400 t in 1996, but have been below 1 000 t in the last two years. Between 1991–1997, CPUE in the Danish seine fishery southwest and south off Iceland declined by 50%. After increasing from 1997–2001, CPUE has decreased again. As the sustainable yield of this stock is unknown, the MRI recommends a precautionary TAC of 500 t in the quota year 2007/2008.

### 2.10. Witch

Landings of witch (*Glyptocephalus cynoglossus*) declined from 4 600 t in 1987 to 1 300 t in 1990. Annual landings since then have been between 1 000–2 500 with landings in 2006 amounting to 2 000 t. CPUE of the Danish seine fleet decreased drastically from 1987 to 1998, but over the past eight years it has doubled. Abundance indices from the annual *Nephrops* survey since 1995 show that the juvenile part of the stock (fish 30 cm or less) has increased considerably but fishable biomass (fish larger than 30 cm) has more than tripled. Results from the groundfish survey in March show a similar trend.

The size of the witch stock remains uncertain, but all data indicate that the status of the stock is good. The MRI recommends a TAC of 2 000 t in the quota year 2007/2008.

### 2.11. Lemon sole

In 2006, 2 700 t of lemon sole (*Microstomus kitt*) were landed. Since exploitation of lemon sole restarted in 1985, landings have been in the range of 400–2 500 t. Groundfish survey indices declined by

one third from 1985 to 2000, but have since increased substantially. CPUE in the Danish seine fishery off southwest Iceland has increased from 200 kg/set between 1993–1998 to 410 kg/set in 2006. The MRI recommends a precautionary TAC of 1 600 t in the quota year 2007/2008.

### 2.12. Megrím

During 1951–1973, landings of megrim (*Lepidorhombus whiffiagonis*) were between 400 t and 700 t, with annual landings declining from 420 t in 1996 to 67 t in 2003. In 2006, 285 t of megrim were landed. Catches of megrim are by-catches in the Danish seine and *Nephrops* fisheries off south Iceland.

### 2.13. Wolffish

Estimated landings of Atlantic wolffish (*Anarhichas lupus*) in 2006 were 16 400 tons, increasing from 15 200 tons in 2004. The difference was mainly due to increased longline catch.

The index of fishable biomass and recruitment indices in the groundfish survey in March decreased considerably from 2003 to 2004, since then the recruitment indices have continued to decrease and are now similar to the low values of 1988–1990. The index of fishable biomass has increased since 2004 and is now similar to that of 2003.

The stock assessment now shows a minor downwards trend compared to the assessment in 2006 and that the stock has been decreasing since 2000. As in recent years, the MRI recommends a management strategy of  $F_{0.1}$  or 11 000 t in the quota year 2007/08. In addition the MRI recommends continued closure for fishing of the major spawning area off W-Iceland during the spawning and incubation season in autumn and winter.

### 2.14. Blue ling

In 2006, 1 807 t of blue ling (*Molva dypterygia*) were landed. Between 1985–2006, landings ranged from 800–2 600 t, with the exception of 1993 when landings were 5 300 t due to a temporary targeted fishery southwest of Iceland. In recent years, blue ling has mainly been taken as by-catch in the bottom trawl fishery. There are indications of increased recruitment to the fishable stock in recent years. The sustainable yield of the stock is unknown and the MRI recommends continued closure of known spawning grounds from 15 February–30 April.

### 2.15. Ling

In 2006, 7 200 t of ling (*Molva molva*) were landed, of which Icelandic vessels landed 6 700 t. This is an increase by 2 000 t from 2005 and is highest catch of ling since early 1970's. Ling has mainly been taken as by-catch in other fisheries. Survey indices indicate that the stock has increased since 2001. The MRI recommends a TAC of less than 6 000 t in the quota year 2007/2008, including catches of for-

eign vessels which has been about 15% of total landings in recent years.

### 2.16. Tusk

Landings of tusk (*Brosme brosme*) from Icelandic waters were 6 300 t in 2006 or an increase of 1 400 tonnes from 2005. During the last decades, the total catch has been between 5 000 and 8 000 t. Indices of fishable biomass in the groundfish survey declined by more than 50% from 1997 to 2000, but have been increasing since then. Recruitment indices, however, have in recent years indicated improved recruitment to the fishable stock and this improvement has been observed in the indices of the fishable stock since 2002. This recruitment has also been observed in the fishery in most recent years. The MRI recommends that the catch does not exceed 5 000 t in the quota year 2007/2008, including catches of foreign vessels. It is also recommended to continue the closure of nursery areas off the southeast and south coasts.

### 2.17. Anglerfish

In 2006, 2590 t of anglerfish (*Lophius piscatorius*) were landed from Icelandic waters, which is the fourth successive year of record anglerfish catches. Until 1999, anglerfish was mainly caught as by-catch by trawlers off the South coast, (particularly by trawlers fishing for *Nephrops* using a small mesh size in the trawler codend) with annual landings between 400 t and 800 t. Directed fishery for anglerfish by small trawlers began in 1999 and in 2000 with gillnets, resulting in increased catches at the same time as the stock size has apparently been rapidly increasing. Good recruitment and expanded distribution of the species into the waters West and Northwest of Iceland is believed to be due to increased water temperature in recent years. The MRI recommends 2 200 t as TAC for the quota year 2007/2008 which is the same recommendation as for the quota year 2006/07.

### 2.18. Lumpfish

In 2006, approximately 4 000 t of lumpsucker (*Cyclopterus lumpus*) were landed, which is about 65% of the average annual landings in 1971–2005. The fishery is characterised by large variations in annual catches, ranging between 13 000 t in 1984 and approximately 3 000 t or less in 1990 and 1998–2001. Both CPUE and abundance indices from groundfish surveys declined between 1991 and 1996. Since 1998 the effort has been reduced considerably and the CPUE has shown an increase, and was at a maximum in 2006. That year the survey index was close to maximum. In 2007, the March survey index was 10% higher than the average index in 1985–2006. The stock is assessed with limited data and resources and must be harvested with caution. The MRI does not recommend a TAC in the quota year 2007/2008.

### 2.19. Herring

About 135 000 t of summer-spawning herring (*Clupea harengus*) were caught in Icelandic waters during the fishing season 2006/07. Despite some uncertainty about the estimate of the spawning stock biomass in 2007, the state of the stock is considered to be good. Therefore, MRI recommends the same TAC for 2007/08 as last year, or 130 000 t.

In 2006, around 157 000 t of Atlanto-Scandian herring were landed by Icelandic vessels and total international landings were about 1 000 000 t. ICES recommended a TAC of 1 280 000 t for the 2007 season, which corresponds to  $F=0.125$ . According to international agreement reached in January 2007, Iceland will have a quota of 186 000 t in 2007. ICES will not recommend TAC for 2008 until next autumn.

### 2.20. Capelin

In the 2006/2007 season the total international landings of capelin (*Mallotus villosus*) were 377 000 t. Icelandic landings were 307 000 t. In order to predict fishable stock abundance for the 2007/2008 fishing season, data on the abundance of immature capelin of the 2004 and 2005 year classes in autumn 2006 are needed. The autumn 2006 surveys located  $44.7 \cdot 10^9$  immature capelin of the 2005 year class but very low numbers of that from 2004. Assuming that the contribution of the older year class (2004) will be very low as it has been in the two last seasons gives a predicted TAC for all of the 2007/2008 season of 308 000 t. Using the 2/3 precautionary rule as in previous times, the Marine Research therefore advises that a precautionary TAC for the 2007/08 season be set at 205 000 t subject to in-season adjustments as usual. The capelin stock seems to be in a reduced state at present. During the summer months the capelin is feeding intensely and rapidly increases its weight and fat content. The MRI advises that the fishing season 2007/08 does not open until autumn 2007 in order to maximize potential yield of the stock.

### 2.21. Blue whiting

In 2006, international landings of blue whiting (*Micromesistius poutassou*) in the northeast Atlantic are estimated to be somewhat less than 2.0 million t. Icelandic landings were 310 000 t.

Results of an acoustic biomass assessment in the spawning area west of the British Isles in spring 2007 gave slightly larger stock than in 2006 but there are indications of decreasing recruitment to the spawning stock. On the other hand analytical assessment in 2006 indicates a steady decrease in the spawning stock since 2003 by about 32%. As the ICES stock assessment will be done in August/September, advice for 2008 will not be available until October 2007.

### 2.22. Greater silver smelt

In 2006, 4 800 t of greater silver smelt (*Argentina silus*) were landed. Greater silver smelt has been caught off Iceland for several years, mainly as by-catch in the redfish bottom trawl fishery. However, an experimental fishery commenced in 1986. Since 1996, permits have been issued for a direct fishery, with a subsequent increase in fishing effort, specially in the beginning of that period. Landings increased from about 800 t in 1996 to 13 400 t in 1998, but declined thereafter due to declining interest in the fishery and lack of markets. Total landings during the last 8 years have been between 2 500 t and 5 500 t. The stock is assessed with limited data must be harvested with caution. The MRI does not recommend a TAC in the quota year 2007/2008.

### 2.23. Nephrops

In 2006, 1 875 t of *Nephrops norvegicus* were landed compared to 2 030 t in 2005. CPUE (kg/hour, single rigged) was 66 kg in 2006 compared to 45 kg and 39 kg in 2005 and 2004. According to the current assessment, the fishable stock biomass (*Nephrops* 6 years and older) in 2007 is estimated to be 16 000 t or somewhat larger than in the assessment made in 2006. The stock declined to its lowest recorded levels around 1995 due to very poor overall recruitment and high fishing intensity off SE-Iceland. While recruitment from the year classes around 1990–1992 benefited the fishable stock off SE-Iceland after 1995, it has remained relatively low off SW-Iceland. Recruitment is expected to remain good off SE-Iceland but is still at relatively low levels off the southwest coast. The MRI recommends a TAC of no more than 1 900 t in the quota year 2007/2008. Also it is recommended that the TAC be divided by areas according to the latest information on stock size.

### 2.24. Northern shrimp

In 2006, 250 t of Northern shrimp (*Pandalus borealis*) were landed from inshore areas, decreasing from 1 500 t in the year 2003. Prospects for the inshore shrimp fishery in the coming season are very poor in those areas where cod is abundant, such as Húnaflói, Skagafjörður, Skjálíandi Eldey and Öxarfjörður. The MRI recommends a preliminary TAC of 400 t for the Northern shrimp in the inshore areas for the quota year 2007/2008. TAC recommendations for the whole season will be made on the basis of surveys to be carried out in autumn 2007.

In 2006, only 600 t of Northern shrimp were landed from offshore areas, decreasing from about 26 000 t in 2002. The increased abundance of cod in waters north of Iceland is estimated to be largely responsible for the decline in shrimp abundance from a near historic high in 1997 to a historic low in 1999. Survey results indicated an increase in the

shrimp stock and decrease in cod abundance in 2000 and 2001 but a decrease in the shrimp stock in 2003–2006. The MRI recommends a TAC of 7 000 t for Northern shrimp in the offshore areas (excluding the Dohrnbank area) in the quota year 2007/2008.

In the Denmark Strait, east of the midline EEZ between Iceland and Greenland, Iceland caught about 30 t in 2005 and nothing in 2006. The total landings in Denmark Strait declined from 2 200 tonnes on average from 1994–2003 to only 5 000 tonnes in 2006. For all nations, NAFO has recommended a TAC of 12 400 t for the whole area of the Denmark Strait in 2007.

### 2.25. Iceland scallop

There were no landings in 2006/2007 due to a closure of the Iceland scallop (*Chlamys islandica*) fishery. The stock remained relatively stable during 1993–2000 but survey indices have declined drastically in the years 2001–2006 with the 2005–2006 indices amounting to only 16% of the average for 1993–2000. Also, CPUE declined by some 55% from the average of 1996–1999 to the last year of the fishery in 2003. The downward trend in stock abundance is mainly due to increased natural mortality, probably linked with a recently identified protozoan infestation in adult scallops, in addition to low recruitment of year classes from the period 1992–1996. Therefore, the MRI recommends a continued closure of the scallop fishery in the quota year 2007/2008.

### 2.26. Ocean quahog

In 2006, only 450 t of ocean quahog (*Artica islandica*) were landed. Since 1996 a fishery for human consumption has been developing, but annual landings have been variable because of variable effort. MRI recommends an harvesting policy of 2.5% of the estimated stock size corresponding to no more than 31 500 t in the quota year 2007/2008.

### 2.27. Whelk

Pot fishing for whelks (*Buccinum undatum*) started in Breiðafjörður in 1996. Annual landings have varied greatly with a maximum of about 1 300 t in 1997, but landings were negligible in 1998 and 2002. In 2006, the total catch amounted to 839 t.

### 2.28. Whales

Whaling for large whales has been conducted intermittently from shore-based stations in Iceland since the 1880's. Between 1948 and 1985, the average catch was 234 fin whales (*Balaenoptera physalus*), 68 sei whales (*Balaenoptera borealis*), and during 1948–1982, 82 sperm whales (*Physeter macrocephalus*). Minke whaling was conducted around Iceland from small motor boats during most of last century. Between 1977–1985, annual common minke whale (*Balaenoptera acutorostrata*) catches were around 200 animals. In 1986, the Inter-

national Whaling Commission's (IWC) resolution on a temporary pause in commercial whaling came into effect. In 2006 Icelandic authorities decided to resume commercial whaling by issuing a quota of 9 fin whales and 30 common minke whales for the period 1. September 2006 to 31. August 2007. A total of 7 fin whales and one common minke whale of the quota were caught in 2006.

In accordance with the International Convention for the Regulation of Whaling, scientific whaling under special permit of a limited number of fin and sei whales occurred between 1986–1989. A research program including scientific whaling under special permit of a total of 200 common minke whales was initiated in 2003. The completion of the sampling is scheduled in 2007.

According to a 2001 sightings survey, 67 000 common minke whales were estimated in the Central North Atlantic stock region, with 44 000 animals in Icelandic coastal waters.

The Scientific Committee of NAMMCO conducted an assessment of the state of the Central North Atlantic stock of minke whales in 2003. In agreement with earlier scientific assessments on this stock the Scientific Committee concluded that the stock is close to pre-exploitation abundance, and that historic catches have not appreciably affected the stock. Even under the most pessimistic scenarios considered, an annual catch of 200 minke whales over the next 20 years will maintain the population above 80% of the pre-exploitation level. Similarly an annual catch of 400 common minke whales would maintain the population above 70% of this level. Based on these assessments it is clear that annual catches of 200–400 minke whales are in accordance with the objective of sustainable utilization of the minke whale stock, as it is widely recognized that the population level giving maximum sustainable yield lies within the bounds of 60–72% of the pre-exploitation level. The Marine Research Institute therefore recommends that annual catches of common minke whales do not exceed 400 animals and further that catches will be distributed in accordance with minke whale distribution in the continental shelf area. It is furthermore clear from the above scientific assessments that the special permit takes of 200 minke whales spread over a period of 5 years will not significantly affect the abundance of minke whales in Icelandic waters.

According to a 1995 sightings survey there were estimated to be 18 900 fin whales in the East-Greenland, Iceland, and Jan Mayen stock area (EGI stock area). Results from a survey conducted in 2001 show an increased abundance in comparable areas, and a total population size of around 24 000 fin whales.

According to an assessment conducted by the Scientific Committee of the North Atlantic Marine Mammal Commission (NAMMCO) in 2003 the EGI

stock of fin whales is estimated to be close to its pre-exploitation abundance. The Scientific Committee further concluded that annual catches of 150 fin whales for the next 20 years on the traditional whaling grounds west of Iceland would be sustainable. If catches were spread more widely, annual catches of 200 fin whales are sustainable.

Sighting surveys indicated that the sei whale stock in Icelandic and adjacent waters is around 10 500 animals. The limited harvesting of this stock in the years prior to the fishery closure in 1988, is unlikely to have had any adverse effects on the stock.

### **2.29. Seals**

In 2006 reported seal catch in Iceland was 286 grey seals (*Halichoerus grypus*), 192 common seals (*Phoca vitulina*), two harp seals (*Phoca groenlandica*), and single hooded (*Cystophora cristata*) and bearded seal (*Erignathus barbatus*) each.

A grey seal survey was conducted in 2005 from which 6 000 grey seals were estimated along the Icelandic coast. The stock was estimated at 12 000 in 1990. According to a survey conducted in August 2006 the stock of common seals was about 12 000 animals. That stock was estimated at about 30 000 in 1980.

