**Stock: Cod in the Skagerrak (part of Division IIIa)**

**Assessment Quality Control Diagram 1**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Average F(3-6,u) | | | | | | | | | | | | | | | |
| Date of assessment | | Year | | | | | | | | | | | | | |
|  | 1988 | | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | |
| 1989 | 1.02 | |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1990 | 0.85 | | 1.14 |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1991 | 0.80 | | 1.05 | 1.05 |  |  |  |  |  |  |  |  |  |  |  | |
| 1992 | 0.83 | | 0.95 | 0.86 | 0.75 |  |  |  |  |  |  |  |  |  |  | |
| 1993 | 0.83 | | 0.98 | 0.88 | 0.85 | 0.75 |  |  |  |  |  |  |  |  |  | |
| 1994 | 0.88 | | 1.05 | 0.96 | 0.94 | 0.83 | 0.72 |  |  |  |  |  |  |  |  | |
| 1995 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1996 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1997 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1998 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1999 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2000 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2001 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2002 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |

**Remarks:** Tuning without F-shrinkage in 1993.

**Stock: Cod in the Skagerrak (part of Division IIIa)**

**Assessment Quality Control Diagram 2**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Recruitment (age 1) Unit: millions | | | | | | | | | | | | | | | |
| Date of assessment | | Year class | | | | | | | | | | | | | |
|  | 1988 | | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | |
| 1989 | 27.0 | |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1990 | 15.0 | | 16.7 |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1991 | 14.0 | | 16.4 | 17.0 |  |  |  |  |  |  |  |  |  |  |  | |
| 1992 | 16.9 | | 16.6 | 10.2 | 20.7 |  |  |  |  |  |  |  |  |  |  | |
| 1993 | 12.7 | | 16.7 | 9.8 | 16.3 | 20.0 |  |  |  |  |  |  |  |  |  | |
| 1994 | 12.7 | | 10.0 | 14.0 | 27.2 | 15.4 | 18.4 |  |  |  |  |  |  |  |  | |
| 1995 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1996 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1997 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1998 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1999 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2000 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2001 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2002 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |

RCT3 estimates.

**Remarks:** Tuning without F-shrinkage in 1993

**Stock: Cod in the Skagerrak (part of Division IIIa)**

**Assessment Quality Control Diagram 3**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Spawning stock biomass ('000 t) | | | | | | | | | | | | | | | | |
| Date of assessment | Year | | | | | | | | | | | | | | | |
|  | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | |
| 1989 | 14.0 | 24.0 | 27.2 |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1990 | 18.6 | 24.0 | 17.5 | 15.6 |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1991 | 19.5 | 18.7 | 15.1 | 15.5 | 16.1 |  |  |  |  |  |  |  |  |  |  |  | |
| 1992 | 20.7 | 21.5 | 17.5 | 20.8 | 19.2 | 25.9 |  |  |  |  |  |  |  |  |  |  | |
| 1993 | 19.8 | 20.3 | 15.8 | 14.7 | 14.6 | 19.1 | 26.4 |  |  |  |  |  |  |  |  |  | |
| 1994 | 11.2 | 9.8 | 8.3 | 8.3 | 9.9 | 14.7 | 20.0 | 21.0 |  |  |  |  |  |  |  |  | |
| 1995 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1996 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1997 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1998 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1999 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2001 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2002 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |

Forecast.

**Remarks:** New maturity ogive applied in 1993