**Stock: *Pandalus* in Division IIIa and Division IVa East (Skagerrak and Norwegian Deeps)**

**Assessment Quality Control Diagram 1**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Average F(1-3,u) | | | | | | | | | | | | | | |
| Date of assessment | Year | | | | | | | | | | | | | |
|  | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
| 1989 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1990 | 0.49 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1991 | 0.59 | 0.37 |  |  |  |  |  |  |  |  |  |  |  |  |
| 1992 | 0.65 | 0.43 | 0.40 |  |  |  |  |  |  |  |  |  |  |  |
| 1993 | 0.84 | 0.71 | 0.91 | 0.57 |  |  |  |  |  |  |  |  |  |  |
| 1994 | 0.73 | 0.56 | 0.72 | 0.83 | 0.55 |  |  |  |  |  |  |  |  |  |
| 1995 | 0.69 | 0.61 | 0.73 | 1.09 | 0.87 | 0.64 |  |  |  |  |  |  |  |  |
| 1996 | 0.68 | 0.60 | 0.72 | 1.07 | 0.78 | 0.42 | 0.67 |  |  |  |  |  |  |  |
| 1997 | 0.73 | 0.65 | 0.79 | 1.13 | 0.83 | 0.45 | 0.65 | 0.74 |  |  |  |  |  |  |
| 1998 | 0.73 | 0.65 | 0.79 | 1.13 | 0.84 | 0.45 | 0.65 | 0.71 | 0.67 |  |  |  |  |  |
| 1999 | 0.68 | 0.65 | 0.67 | 1.26 | 0.74 | 0.50 | 0.79 | 0.86 | 0.65 | 0.73 |  |  |  |  |
| 2000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2001 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2002 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2003 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Division IIIa only. ACFM May 1990. Discards included from 1993 assessment onwards.

**Remarks:** Revised ageing in 1999 for 1987-1998.

**Stock: *Pandalus* in Division IIIa and Division IVa East (Skagerrak and Norwegian Deeps)**

**Assessment Quality Control Diagram 2**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Recruitment (age 0) Unit: billions | | | | | | | | | | | | | | | | |
| Date of assessment | Year class | | | | | | | | | | | | | | | |
|  | | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
| 1990 | | 8.0 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1991 | | 11.5 | 15.5 |  |  |  |  |  |  |  |  |  |  |  |  |
| 1992 | | 11.3 | 9.6 | 7.2 |  |  |  |  |  |  |  |  |  |  |  |
| 1993 | | 11.3 | 11.1 | 7.9 | 11.0 |  |  |  |  |  |  |  |  |  |  |
| 1994 | | 22.9 | 22.0 | 17.1 | 24.6 | 17.6 |  |  |  |  |  |  |  |  |  |
| 1995 | | 20.4 | 19.6 | 12.7 | 22.6 | 15.0 | 13.6 |  |  |  |  |  |  |  |  |
| 1996 | | 20.4 | 19.7 | 15.1 | 25.5 | 16.4 | 13.7 | 15.1 |  |  |  |  |  |  |  |
| 1997 | | 20.2 | 19.5 | 14.5 | 25.8 | 15.7 | 15.0 | 29.0 | 7.3 |  |  |  |  |  |  |
| 1998 | | 20.2 | 19.5 | 14.4 | 25.9 | 16.2 | 14.1 | 27.4 | 47.8 | 6.6 |  |  |  |  |  |
| 1999 | | 22.3 | 17.7 | 11.9 | 29.5 | 16.2 | 14.7 | 20.4 | 28.4 | 12.0 | 12.4 |  |  |  |  |
| 2000 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2001 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2002 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2003 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

ACFM November 1990. Assumed to be at the size of the 1989 year class. Recruitment age 0.

**Remarks:**

**Stock: *Pandalus* in Division IIIa and Division IVa East (Skagerrak and Norwegian Deeps)**

**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 | 2005 |
| 1989 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1990 | 14.2 | | 16.0 | 17.0 | 16.0 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1991 | 10.4 | | 16.4 | 22.0 | 32.0 | 29.0 |  |  |  |  |  |  |  |  |  |  |  |  |
| 1992 | 10.0 | | 12.0 | 18.0 | 23.0 | 20.0 | 18.0 |  |  |  |  |  |  |  |  |  |  |  |
| 1993 | 10.0 | | 9.0 | 14.0 | 18.0 | 17.0 | 18.4 | 16.5 |  |  |  |  |  |  |  |  |  |  |
| 1994 | 13.7 | | 11.1 | 14.3 | 15.3 | 16.3 | 19.6 | 19.3 | 18.2 |  |  |  |  |  |  |  |  |  |
| 1995 | 10.6 | | 11.2 | 14.7 | 13.3 | 12.0 | 15.3 | 14.8 | 12.6 | 15.3 |  |  |  |  |  |  |  |  |
| 1996 | 11.9 | | 12.6 | 14.5 | 14.7 | 14.2 | 18.4 | 15.4 | 12.1 | 10.4 | 12.4 |  |  |  |  |  |  |  |
| 1997 | 16.0 | | 17.0 | 19.8 | 22.3 | 19.6 | 24.2 | 22.0 | 17.9 | 25.0 | 24.8 | 20.1 |  |  |  |  |  |  |
| 1998 | 15.5 | | 16.8 | 20.8 | 20.8 | 18.9 | 22.6 | 22.3 | 18.0 | 23.9 | 40.0 | 26.4 | 18.1 |  |  |  |  |  |
| 1999 | 10.7 | | 17.3 | 19.3 | 17.5 | 11.32 | 26.7 | 24.0 | 20.6 | 18.8 | 25.7 | 13.8 | 13.9 | 10.7 |  |  |  |  |
| 2000 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2001 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2002 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2003 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Forecast. ACFM November 1990.

**Remarks:** From 1997 onwards FPROP and MPROP were set to 0