**Stock: Sandeel in the southern North Sea**

**Assessment Quality Control Diagram 1**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Average F(1-2,u) | | | | | | | | | | | | | | | |
| Date of assessment | Year | | | | | | | | | | | | | | |
|  | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
| 1989 | 0.61 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1990 | 0.663 | 0.457 |  |  |  |  |  |  |  |  |  |  |  |  |
| 1991 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1992 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1993 | 0.278 | 0.475 | 0.640 | 0.687 | 0.341 |  |  |  |  |  |  |  |  |  |
| 1994 | 0.553 | 0.485 | 0.617 | 0.637 | 0.386 | 0.244 |  |  |  |  |  |  |  |  |
| 1995 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1996 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1997 |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| 1998 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1999 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2001 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2002 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Half yearly 'hand' tuned VPA. Half yearly *ad hoc* tuned VPA. No assessment. Half yearly modif. XSA.

**Remarks:**

**Stock: Sandeel in the southern North Sea**

**Assessment Quality Control Diagram 2**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Recruitment (age 1) Unit: '000 million | | | | | | | | | | | | | | | |
| Date of assessment | Year class | | | | | | | | | | | | | | |
|  | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
| 1989 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1990 | 476 | 230 |  |  |  |  |  |  |  |  |  |  |  |  |
| 1991 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1992 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1993 | 154 | 72 | 154 | 547 | 32 |  |  |  |  |  |  |  |  |  |
| 1994 | 183 | 93 | 188 | 351 | 52 |  |  |  |  |  |  |  |  |  |
| 1995 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1996 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1997 |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| 1998 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1999 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2001 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2002 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Remarks:**

**Stock: Sandeel in the southern North Sea**

**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 | 1001 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1990 | 494 | 1719 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1991 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1992 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1993 | 499 | 583 | 369 | 530 | 1868 |  |  |  |  |  |  |  |  |  |  |  | |
| 1994 | 473 | 587 | 391 | 586 | 1161 |  |  |  |  |  |  |  |  |  |  |  | |
| 1995 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1996 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1997 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1998 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1999 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2001 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2002 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |

Forecast.

**Remarks**