**Stock: Sandeel in the northern 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 | 1.44 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1990 | 1.28 | 1.51 |  |  |  |  |  |  |  |  |  |  |  |  |
| 1991 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1992 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1993 | 0.973 | 0.931 | 0.919 | 1.011 | 1.094 |  |  |  |  |  |  |  |  |  |
| 1994 | 0.963 | 0.945 | 0.851 | 0.889 | 0.695 | 0.768 |  |  |  |  |  |  |  |  |
| 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 northern 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 | 135 | 68 |  |  |  |  |  |  |  |  |  |  |  |  |
| 1991 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1992 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1993 | 129 | 30 | 84 | 40 | 274 |  |  |  |  |  |  |  |  |  |
| 1994 | 138 | 35 | 99 | 34 | 59 |  |  |  |  |  |  |  |  |  |
| 1995 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1996 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1997 |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| 1998 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1999 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2001 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2002 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Remarks:**

**Stock: Sandeel in the northern 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 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1990 | 161 | 194 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1991 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1992 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1993 | 212 | 221 | 129 | 117 | 152 |  |  |  |  |  |  |  |  |  |  |  | |
| 1994 | 214 | 202 | 133 | 169 | 138 |  |  |  |  |  |  |  |  |  |  |  | |
| 1995 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1996 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1997 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1998 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1999 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2001 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2002 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |

Forecast.

**Remarks:**