**Stock: Whiting in Division VIa (West of Scotland)**

**Assessment Quality Control Diagram 1**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Average F(2-4,u) | | | | | | | | | | | | | | |
| Date of assessment | Year | | | | | | | | | | | | | |
|  | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
| 1990 | 1.04 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1991 | 0.89 | 0.72 |  |  |  |  |  |  |  |  |  |  |  |  |
| 1992 | 0.92 | 0.67 | 0.84 |  |  |  |  |  |  |  |  |  |  |  |
| 1993 | 0.90 | 0.63 | 0.77 | 0.75 |  |  |  |  |  |  |  |  |  |  |
| 1994 | 0.87 | 0.58 | 0.64 | 0.53 | 0.60 |  |  |  |  |  |  |  |  |  |
| 1995 | 0.85 | 0.52 | 0.47 | 0.56 | 0.55 | 0.87 |  |  |  |  |  |  |  |  |
| 1996 | 0.95 | 0.57 | 0.49 | 0.58 | 0.57 | 0.70 | 0.66 |  |  |  |  |  |  |  |
| 1997 | 0.96 | 0.58 | 0.48 | 0.63 | 0.61 | 0.79 | 0.90 | 0.79 |  |  |  |  |  |  |
| 1998 | 1.06 | 0.83 | 0.78 | 0.67 | 0.86 | 0.77 | 0.85 | 0.89 | 0.86 |  |  |  |  |  |
| 1999 | 1.04 | 0.83 | 0.79 | 0.71 | 0.85 | 0.77 | 0.82 | 0.91 | 0.94 | 0.94 |  |  |  |  |
| 2000 | 1.03 | 0.83 | 0.80 | 0.71 | 0.83 | 0.76 | 0.81 | 0.89 | 0.89 | 0.86 | 0.98 |  |  |  |
| 2001 | 1.03 | 0.82 | 0.79 | 0.69 | 0.82 | 0.75 | 0.80 | 0.88 | 0.88 | 0.87 | 1.03 | 0.97 |  |  |
| 2002 | 1.02 | 0.82 | 0.77 | 0.68 | 0.81 | 0.75 | 0.79 | 0.88 | 0.89 | 0.88 | 1.04 | 0.95 | 0.85 |  |
| 2003 | 0.93 | 0.74 | 0.79 | 0.71 | 0.81 | 0.75 | 0.79 | 0.88 | 0.84 | 0.93 | 1.06 | 1.01 | 0.94 | 0.61 |

Misreporting estimates included from 1992. Discard estimates included TSA assessment

**Remarks:**

**Stock: Whiting in Division VIa (West of Scotland)**

**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 |
| 1990 | 49 | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1991 | 37 | | 42 |  |  |  |  |  |  |  |  |  |  |  |  |
| 1992 | 43 | | 33 | 63 |  |  |  |  |  |  |  |  |  |  |  |
| 1993 | 45 | | 30 | 38 | 34 |  |  |  |  |  |  |  |  |  |  |
| 1994 | 51 | | 33 | 43 | 43 | 18 |  |  |  |  |  |  |  |  |  |
| 1995 | 65 | | 40 | 64 | 81 | 71 | 63 |  |  |  |  |  |  |  |  |
| 1996 | 110 | | 75 | 161 | 270 | 204 | 285 | 223 |  |  |  |  |  |  |  |
| 1997 | 110 | | 75 | 163 | 263 | 186 | 232 | 185 | 201 |  |  |  |  |  |  |
| 1998 | 104 | | 65 | 93 | 130 | 97 | 97 | 97 | 83 | 78 |  |  |  |  |  |
| 1999 | 102 | | 66 | 92 | 127 | 93 | 93 | 87 | 73 | 64 | 104 |  |  |  |  |
| 2000 | 103 | | 66 | 91 | 122 | 89 | 89 | 89 | 63 | 51 | 96 | 66 |  |  |  |
| 2001 | 102 | | 64 | 87 | 116 | 84 | 84 | 86 | 60 | 47 | 77 | 46 | 79 |  |  |
| 2002 | 100 | | 62 | 84 | 113 | 83 | 83 | 84 | 58 | 44 | 69 | 38 | 69 | 38 |  |
| 2003 | 108 | | 79 | 104 | 136 | 97 | 99 | 93 | 68 | 59 | 76 | 64 | 77 | 63 | 45 |

Tapered geometric mean. RCT3. Discard estimates included. Figures in parentheses = O-gp. TSA estimates

**Remarks:**

**Stock: Whiting in Division VIa (West of Scotland)**

**Assessment Quality Control Diagram 3**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Spawning stock biomass ('000 t) | | | | | | | | | | | | | | | | |
| Date of assessment | Year | | | | | | | | | | | | | | | |
|  | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
| 1990 | 15 | 16 | 18 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1991 | 12 | 14 | 17 | 18 |  |  |  |  |  |  |  |  |  |  |  |  |
| 1992 | 13 | 13 | 19 | 21 | 20 |  |  |  |  |  |  |  |  |  |  |  |
| 1993 | 14 | 13 | 13 | 13 | 15 | 17 |  |  |  |  |  |  |  |  |  |  |
| 1994 | 16 | 15 | 16 | 18 | 13 | 15 | 16 |  |  |  |  |  |  |  |  |  |
| 1995 | 19 | 19 | 24 | 30 | 25 | 25 | 25 | 24 |  |  |  |  |  |  |  |  |
| 1996 | 22 | 24 | 36 | 53 | 57 | 59 | 60 | 64 | 54 |  |  |  |  |  |  |  |
| 1997 | 22 | 24 | 35 | 50 | 51 | 47 | 35 | 40 | 38 | 31 |  |  |  |  |  |  |
| 1998 | 19 | 16 | 18 | 26 | 22 | 22 | 23 | 20 | 17 | 20 | 21 |  |  |  |  |  |
| 1999 | 19 | 16 | 18 | 26 | 22 | 21 | 22 | 18 | 14 | 18 | 19 | 20 |  |  |  |  |
| 2000 | 19 | 16 | 18 | 25 | 21 | 21 | 22 | 17 | 12 | 16 | 14 | 17 | 19 |  |  |  |
| 2001 | 19 | 16 | 17 | 24 | 21 | 20 | 21 | 17 | 12 | 13 | 9 | 13 | 13 | 16 |  |  |
| 2002 | 19 | 16 | 17 | 24 | 21 | 20 | 21 | 16 | 11 | 11 | 7 | 10 | 10 | 12 | 14 |  |
| 2003 | 18 | 17 | 18 | 26 | 22 | 21 | 22 | 17 | 12 | 11 | 8 | 9 | 10 | 11 | 13 | 14 |

Forecast. Misreporting included for 1992 onwards. Discards included in assessment. TSA assessment.

**Remarks**