**Stock: Whiting in Divisions VIIe-k**

**Assessment Quality Control Diagram 1**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Average F(2-5,u) | | | | | | | | | | | | | | |
| Date of assessment | Year | | | | | | | | | | | | | |
|  | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
| 1989 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1990 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1991 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1992 | 1.1 | 1.1 | 1.0 | 1.2 |  |  |  |  |  |  |  |  |  |  |
| 1993 | 1.05 | 1.07 | 1.0 | 1.31 | 1.16 |  |  |  |  |  |  |  |  |  |
| 1994 | 1.07 | 1.07 | 0.99 | 1.27 | 1.07 | 1.05 |  |  |  |  |  |  |  |  |
| 1995 | 1.07 | 1.05 | 1.02 | 1.25 | 0.94 | 0.66 | 0.92 |  |  |  |  |  |  |  |
| 1996 | 1.11 | 1.01 | 1.00 | 1.26 | 0.91 | 0.60 | 0.69 | 0.86 |  |  |  |  |  |  |
| 1997 | 1.06 | 0.98 | 0.97 | 1.20 | 0.83 | 0.82 | 0.68 | 0.75 | 1.02 |  |  |  |  |  |
| 1998 | 1.04 | 0.96 | 0.95 | 1.18 | 0.81 | 0.80 | 0.63 | 0.58 | 0.51 | 0.69 |  |  |  |  |
| 1999 | 1.10 | 0.94 | 0.92 | 1.15 | 0.79 | 0.78 | 0.60 | 0.53 | 0.41 | 0.44 | 0.59 |  |  |  |
| 2000 | 1.12 | 0.93 | 0.90 | 1.12 | 0.77 | 0.76 | 0.58 | 0.52 | 0.38 | 0.39 | 0.48 | 0.78 |  |  |
| 2001 | 1.15 | 0.99 | 0.97 | 1.14 | 0.75 | 0.73 | 0.55 | 0.49 | 0.35 | 0.36 | 0.43 | 0.62 | 0.41 |  |
| 2002 | 1.19 | 1.04 | 0.99 | 1.19 | 0.77 | 0.75 | 0.57 | 0.49 | 0.36 | 0.36 | 0.45 | 0.72 | 0.62 | 0.53 |

**Remarks:** 1992-93: Divisions VIIfg

1994-95: Divisions VIIfgh

1996: Divisions VIIe,f,g,h

since 1997: Divisions VII e-k

**Stock: Whiting in Divisions VII e-k**

**Assessment Quality Control Diagram 2**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Recruitment (age 0) Unit: millions | | | | | | | | | | | | | | | | |
| Date of assessment | | Year class | | | | | | | | | | | | | | |
|  | | 1987 | | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
| 1989 | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1990 | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1991 | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1992 | | 54.6 | | 16.5 | 26.3 | 34.6 |  |  |  |  |  |  |  |  |  |  |
| 1993 | | 53.6 | | 16.1 | 25.6 | 45.9 | 44.1 |  |  |  |  |  |  |  |  |  |
| 1994 | | 55.6 | | 16.7 | 25.0 | 44.7 | 51.2 | 28.6 |  |  |  |  |  |  |  |  |
| 1995 | | 55.0 | | 16.5 | 26.2 | 49.6 | 68.4 | 48.1 | 17.8 |  |  |  |  |  |  |  |
| 1996 | | 64.7 | | 19.6 | 31.5 | 60.6 | 89.8 | 62.8 | 28.4 | 11.5 |  |  |  |  |  |  |
| 1997 | | 86.3 | | 27.1 | 44.7 | 87.7 | 125.0 | 93.1 | 61.2 | 19.7 | 15.6 |  |  |  |  |  |
| 1998 | | 86.2 | | 27.1 | 44.9 | 88.3 | 131.2 | 113.0 | 115.8 | 43.2 | 20.8 | 61.3 |  |  |  |  |
| 1999 | | 105.9 | | 33.1 | 55.0 | 108.4 | 162.9 | 145.4 | 184.4 | 93.7 | 62.2 | 67.9 | 106.6 |  |  |  |
| 2000 | | 106.2 | | 33.1 | 55.3 | 108.5 | 163.7 | 147.5 | 201.0 | 106.8 | 65.0 | 56.6 | 66.0 | 94.9 |  |  |
| 2001 | | 106.5 | | 33.2 | 55.7 | 109.5 | 166.9 | 150.5 | 208.8 | 112.8 | 69.4 | 66.6 | 82.7 | 130.6 | 287.4 |  |
| 2002 | | 106.2 | | 33.2 | 55.4 | 109.3 | 165.6 | 150.0 | 209.0 | 112.2 | 64.8 | 60.9 | 61.5 | 98.5 | 217.5 | 41.8 |

**Remarks:**

**Stock: Whiting in Divisions VII e-k**

**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 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1991 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1992 | 22.2 | 14.0 | 10.5 | 11.1 | 10.7 | 10.2 |  |  |  |  |  |  |  |  |  |  |
| 1993 | 22.4 | 14.0 | 10.0 | 12.4 | 14.2 | 11.6 | 10.0 |  |  |  |  |  |  |  |  |  |
| 1994 | 28.1 | 18.1 | 13.3 | 14.8 | 19.7 | 18.2 | 15.4 | 14.5 |  |  |  |  |  |  |  |  |
| 1995 | 27.9 | 18.4 | 13.8 | 16.6 | 26.4 | 26.8 | 22.5 | 18.1 | 17.4 |  |  |  |  |  |  |  |
| 1996 | 32.6 | 21.8 | 16.5 | 20.1 | 34.1 | 36.1 | 31.0 | 18.4 | 16.9 | 18.6 |  |  |  |  |  |  |
| 1997 | 36.6 | 24.8 | 19.3 | 24.7 | 41.9 | 49.7 | 50.7 | 27.5 | 15.3 | 16.9 | 20.4 |  |  |  |  |  |
| 1998 | 36.6 | 24.8 | 19.5 | 24.9 | 43.4 | 54.8 | 67.8 | 48.4 | 34.7 | 31.8 | 31.5 | 32.6 |  |  |  |  |
| 1999 | 36.2 | 26.7 | 20.2 | 27.2 | 44.8 | 60.8 | 76.3 | 70.8 | 58.1 | 45.5 | 47.1 | 45.8 | 45.1 |  |  |  |
| 2000 | 36.3 | 26.8 | 20.3 | 27.4 | 45.2 | 61.6 | 80.0 | 76.9 | 64.4 | 49.7 | 38.4 | 35.8 | 35.9 | 36.1 |  |  |
| 2001 | 36.1 | 26.7 | 20.3 | 27.6 | 46.1 | 63.2 | 83.0 | 81.0 | 68.9 | 55.5 | 50.5 | 55.0 | 88.0 | 84.0 | 61.3 |  |
| 2002 | 35.9 | 26.4 | 20.1 | 27.3 | 45.6 | 62.7 | 82.5 | 80.5 | 67.6 | 53.6 | 44.7 | 39.3 | 63.2 | 59.3 | 40.6 | 35.5 |

Forecast.

**Remarks:**