**Stock: Herring VIa (North)**

**Assessment Quality Control Diagram 1**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Average F(3-6,u) | | | | | | | | | | | | | | |
| Date of assessment | Year | | | | | | | | | | | | | |
|  | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | |
| 1989 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1990 | 0.149 |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1991 | 0.190 | 0.25 |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1992 | 0.170 | 0.225 | 0.208 |  |  |  |  |  |  |  |  |  |  |  | |
| 1993 | 0.169 | 0.208 | 0.165 | 0.161 |  |  |  |  |  |  |  |  |  |  | |
| 1994 | 0.172 | 0.271 | 0.245 | 0.178 | 0.172 |  |  |  |  |  |  |  |  |  | |
| 1995 | 0.168 | 0.261 | 0.247 | 0.180 | 0.189 | 0.164 |  |  |  |  |  |  |  |  | |
| 1996 | 0.155 | 0.178 | 0.152 | 0.112 | 0.118 | 0.070 | 0.091 |  |  |  |  |  |  |  | |
| 1997 | 0.172 | 0.215 | 0.172 | 0.139 | 0.154 | 0.096 | 0.102 | 0.117 |  |  |  |  |  |  | |
| 1998 | 0.182 | 0.234 | 0.163 | 0.159 | 0.175 | 0.105 | 0.104 | 0.109 | 0.478 |  |  |  |  |  | |
| 1999(\*) | 0.195 | 0.248 | 0.176 | 0.201 | 0.248 | 0.159 | 0.144 | 0.179 | 0.334 | 0.306 |  |  |  |  | |
| 2000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2001 | 0.248 | 0.347 | 0.264 | 0.292 | 0.257 | 0.243 | 0.273 | 0.215 | 0.450 | 0.394 | 0.224 | 0.183 |  |  | |
| 2002 | 0.242 | 0.342 | 0.255 | 0.279 | 0.248 | 0.231 | 0.271 | 0.198 | 0.448 | 0.420 | 0.258 | 0.216 | 0.197 |  | |
| 2003 | 0.2364 | 0.3298 | 0.2487 | 0.2807 | 0.2499 | 0.2434 | 0.2614 | 0.2147 | 0.4658 | 0.4236 | 0.2536 | 0.219 | 0.1954 | 0.2115 | |

**Remarks:** (\*) Mean of Bayes posterior distribution

**Stock: Herring VIa (North)**

**Assessment Quality Control Diagram 2**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Recruitment (age 2) Unit: millions | | | | | | | | | | | | | | | | |
| Date of assessment | | Year class | | | | | | | | | | | | | | |
|  | 1986 | | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | |
| 1989 | 555 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1990 | 572 | | 586 |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1991 | 501 | | 750 | 623 |  |  |  |  |  |  |  |  |  |  |  |  | |
| 1992 | 544 | | 469 | 395 | 647 |  |  |  |  |  |  |  |  |  |  |  | |
| 1993 | 674 | | 659 | 593 | 640 | 640 |  |  |  |  |  |  |  |  |  |  | |
| 1994 | 503 | | 528 | 447 | 658 | 523 |  |  |  |  |  |  |  |  |  |  | |
| 1995 | 675 | | 477 | 373 | 433 | 729 | 593 | 593 |  |  |  |  |  |  |  |  | |
| 1996 | 538 | | 408 | 265 | 283 | 536 | 553 | 349 | 465 |  |  |  |  |  |  |  | |
| 1997 | 496 | | 379 | 229 | 223 | 399 | 360 | 309 | 71 | 123 |  |  |  |  |  |  | |
| 1998 | 487 | | 376 | 212 | 181 | 437 | 404 | 380 | 130 | 227 |  |  |  |  |  |  | |
| 1999(\*) | 471 | | 300 | 182 | 171 | 258 | 199 | 392 | 279 | 250 | 225 |  |  |  |  |  | |
| 2000 |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 2001 | 417 | | 308 | 761 | 341 | 267 | 152 | 121 | 270 | 202 | 297 | 283 | 319 | 614 |  |  | |
| 2002 | 420 | | 310 | 764 | 333 | 308 | 155 | 120 | 284 | 205 | 316 | 277 | 300 | 564 | 201 |  | |
| 2003 | 354 | | 279 | 151 | 120 | 282 | 202 | 300 | 244 | 324 | 604 | 222 | 164 | 776 | 237 | 316 | |

GM

(\*) Mean of Bayes posterior distribution

**Remarks:** 1996 and later assessments have been calculated on the basis of catch data revised to account for area misreporting of Division IVa catches as VIa catches.

**Stock: Herring VIa (North)**

**Assessment Quality Control Diagram 3**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Spawning stock biomass ('000 t) | | | | | | | | | | | | | | | | | |
|  | Year | | | | | | | | | | | | | | | | |
|  | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
| 1989 | 490 | 465 | 447 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1990 | 449 | 430 | 414 | 402 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1991 | 350 | 361 | 359 | 367 | 376 |  |  |  |  |  |  |  |  |  |  |  |  |
| 1992 | 376 | 343 | 295 | 328 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1993 | 400 | 397 | 379 | 431 | 406 | 409 |  |  |  |  |  |  |  |  |  |  |  |
| 1994 | 360 | 337 | 285 | 293 | 317 | 341 | 344 |  |  |  |  |  |  |  |  |  |  |
| 1995 | 351 | 330 | 291 | 283 | 294 | 330 |  |  |  |  |  |  |  |  |  |  |  |
| 1996 | 308 | 301 | 278 | 268 | 277 | 307 | 307 | 327 | 339 | 348 |  |  |  |  |  |  |  |
| 1997 | 243 | 245 | 206 | 187 | 185 | 193 | 163 | 194 | 205 | 210 | 216 |  |  |  |  |  |  |
| 1998 | 230 | 233 | 201 | 180 | 180 | 189 | 167 | 216 | 107 | 151 | 132 | 119 |  |  |  |  |  |
| 1999(\*) | 311 | 322 | 280 | 251 | 197 | 184 | 157 | 214 | 137 | 115 | 131^ | 138^ | 139^ |  |  |  |  |
| 2000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2001 | 164 | 152 | 122 | 99 | 93 | 85 | 70 | 117 | 82 | 105 | 96 | 93 |  |  |  |  |  |
| 2002 | 168 | 159 | 129 | 105 | 99 | 90 | 72 | 124 | 81 | 99 | 87 | 80 | 140 | 139 | 136 | 130 |  |
| 2003 | 174 | 163 | 130 | 105 | 99 | 89 | 73 | 118 | 79 | 100 | 88 | 80 | 142 | 147 | 145 | 135 | 123 |

Forecast.

(\*) Mean of Bayes posterior distribution. (^) Assuming F00=F99=F98

**Remarks:** Substantial revisions to weights at age from 1992 onwards made in 1994.

Assessment in 1996 and later based on catches adjusted for misreporting. GM recruitment assumed for 1998-2000.