

Table 95. VPA Bootstrap results: precision of estimates.

VPA Version 2.1

Bootstrap Summary Report

Number of Bootstrap Repetitions Requested = 500
 Number of Bootstrap Repetitions Completed = 500
 Bootstrap Output Variable: Stock Estimates (2003)

	NLLS Estimate	Bootstrap Mean	Bootstrap Std Error	C.V. For NLLS Soln.
N 1	31168.	31517.	6651.	0.2110
N 2	18817.	19218.	3453.	0.1797
N 3	15346.	15514.	2503.	0.1613
N 4	6048.	6028.	1108.	0.1839
N 5	4786.	4789.	975.	0.2036
N 6	2466.	2468.	641.	0.2598

	Bias Estimate	Bias Std. Error	Per Cent Bias	NLLS Estimate Corrected For Bias	C.V. For Corrected Estimate
N 1	349.	298.	1.1195	30819.	0.2158
N 2	401.	155.	2.1336	18415.	0.1875
N 3	167.	112.	1.0909	15179.	0.1649
N 4	-19.	50.	-0.3173	6067.	0.1827
N 5	3.	44.	0.0644	4783.	0.2039
N 6	1.	29.	0.0571	2465.	0.2601

	LOWER 80. % CI	UPPER 80. % CI
N 1	23438.	40316.
N 2	14634.	23870.
N 3	12356.	18634.
N 4	4628.	7451.
N 5	3618.	6025.
N 6	1697.	3308.

Table 95 continued.

Bootstrap Output Variable: Fishing Mortality (2002)

	NLLS Estimate	Bootstrap Mean	Bootstrap Std Error	C.V. For NLLS Soln.
AGE 0	0.0079	0.0081	0.001712	0.2106
AGE 1	0.0575	0.0582	0.010624	0.1827
AGE 2	0.2756	0.2785	0.039951	0.1434
AGE 3	0.3934	0.4039	0.062750	0.1554
AGE 4	0.1770	0.1833	0.035937	0.1961
AGE 5	0.1224	0.1303	0.035616	0.2733
AGE 6	0.2310	0.2392	0.027873	0.1165
AGE 7	0.2310	0.2392	0.027873	0.1165

	Bias Estimate	Bias Std. Error	Per Cent Bias	NLLS Estimate Corrected For Bias	C.V. For Corrected Estimate
AGE 0	0.000260	0.000077	3.3045	0.0076	0.2250
AGE 1	0.000641	0.000476	1.1152	0.0569	0.1868
AGE 2	0.002942	0.001792	1.0673	0.2727	0.1465
AGE 3	0.010472	0.002845	2.6616	0.3830	0.1638
AGE 4	0.006324	0.001632	3.5732	0.1707	0.2106
AGE 5	0.007892	0.001632	6.4461	0.1145	0.3109
AGE 6	0.008229	0.001300	3.5632	0.2227	0.1251
AGE 7	0.008229	0.001300	3.5632	0.2227	0.1251

	LOWER 80. % CI	UPPER 80. % CI
AGE 0	0.006080	0.010445
AGE 1	0.045594	0.073181
AGE 2	0.232087	0.331920
AGE 3	0.330172	0.488230
AGE 4	0.142719	0.226952
AGE 5	0.092269	0.173241
AGE 6	0.205880	0.276844
AGE 7	0.205880	0.276844

Bootstrap Output Variable: Average F (2002) AGES 3 - 5

	NLLS Estimate	Bootstrap Mean	Bootstrap Std Error	C.V. For NLLS Soln.
AVG F	0.2310	0.2392	0.027873	0.1165
N WTD	0.2794	0.2840	0.032947	0.1160
B WTD	0.2494	0.2535	0.029311	0.1156
C WTD	0.3244	0.3337	0.045602	0.1367

	Bias Estimate	Bias Std. Error	Per Cent Bias	NLLS Estimate Corrected For Bias	C.V. For Corrected Estimate
AVG F	0.008229	0.001300	3.5632	0.2227	0.1251
N WTD	0.004656	0.001488	1.6666	0.2747	0.1199
B WTD	0.004145	0.001324	1.6621	0.2452	0.1195
C WTD	0.009350	0.002082	2.8825	0.3150	0.1448

	LOWER 80. % CI	UPPER 80. % CI
AVG F	0.205880	0.276844
N WTD	0.244167	0.327873
B WTD	0.217744	0.293639
C WTD	0.279495	0.394141

Table 95 continued.

Bootstrap Output Variable: Biomass

JAN-1 Biomass (2003) Mean Biomass & SSB (2002)

	NLLS Estimate	Bootstrap Mean	Bootstrap Std Error	C.V. For NLLS Soln.
JAN-1	56088.	56717.	4761.	0.0839
MEAN	56001.	56367.	4489.	0.0796
SSB	42158.	42399.	3763.	0.0888

	Bias Estimate	Bias Std. Error	Per Cent Bias	NLLS Estimate Corrected For Bias	C.V. For Corrected Estimate
JAN-1	629.	215.	1.1213	55459.	0.0858
MEAN	366.	201.	0.6540	55635.	0.0807
SSB	241.	169.	0.5716	41917.	0.0898

	LOWER 80. % CI	UPPER 80. % CI
JAN-1	50648.	62792.
MEAN	50469.	61735.
SSB	37405.	47048.