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Comparison of the Results of Silver Hake Ageing
from the USSR and Canada Data

by

A. P. Senina and L. I. Stulova

Atlantic Research Institute of Marine Fisheries and Oceanography (AtlantNIRO)
5 Dmitry Donskoy St., Kaliningrad, USSR

Introduction

This paper is prepared under the program of exchange of silver hake otoliths from Divs 4VWX between USSR and Canada scientists. Additional information on results of independent interpretation of silver hake otoliths collected in 1984 is given.

Materials and Methods

A sample of 100 pairs of silver hake otoliths was taken by Canada scientists in July 1984 and submitted to Soviet scientists. Ageing was made without preliminary studying of the estimates of Canadian researchers. All otoliths obtained were of good quality. Both wide and narrow edges of otoliths were used for ageing.

Table 1 presents biological characteristics of the fish which otoliths have been exchanged.

Results

Results of otolith interpretation are shown in table 2. These data indicated that in those cases where disagreements were observed, Soviet estimates usually appeared to be higher than in Canadian ageing which is agreed with the data of Hunt (1985). However, in spite of the high level of agreement on the whole, different interpretation of annual rings on the otolith still exist in some cases. Length-age key derived from agreed estimates of age is given in table 3.

Conclusions

Independent ageing by USSR and Canada scientists has resulted in good agreement (85%) on the whole. However, disagreements still exist, and in our opinion, otolith exchange should be continued in order to eliminate them.

References

1. Hunt J.J., 1985. Comparison of USSR and Canadian estimates of silver hake ageing NAFO SCR Doc. 85/67, 3 p.

Table 1 Length, weight and sex of silver hake used for otolith exchange between Canada and USSR in 1985

A sample was collected by Canadian scientists in July 1984. Asterisks indicate disagreement in estimates.

No.	Length	Weight	Sex	Age	
				Canada	USSR
1	2	3	4	5	6
1	15	-	f	1	1
2	16	-	f	1	1
3	17	-	f	1	1
4	18	50	f	1	1
5	19	75	f	1	1
6	19	-	f	1	1
7	20	-	f	1	1
8	20	75	f	1	1
9	21	75	f	1	1
10	22	125	f	1	1
11	22	100	f	1	1
12	23	100	f	1	1
13	33	100	f	3	3
14	24	125	f	1	2*
15	24	100	f	1	1
16	25	125	f	2	2
17	25	100	f	1	2*
18	26	175	f	1	2*
19	26	150	f	1	2*
20	27	175	f	2	3*
21	27	125	f	2	2

Table 1 (continued).

1	2	3	4	5	6
22	28	175			
23	28	150	f	3	3
24	29	200	f	2	2
25	30	250	f	3	3
26	31	225	f	3	3
27	31	275	f	3	3
28	32	275	f	3	4*
29	32	250	f	4	4*
30	33	300	f	4	4
31	33	225	f	3	3
32	34	300	f	5	5
33	35	300	f	3	3
34	36	300	f	3	3
35	36	350	f	4	4
36	37	375	f	4	6*
37	37	425	f	4	5*
38	38	450	f	6	6
39	39	500	f	6	6
40	40	475	f	6	6
41	41	425	f	5	5
42	42	550	f	6	6
43	43	650	f	6	6
44	44	625	f	7	7
45	45	750	f	7	7
46	46	650	f	8	8
47	47	825	f	6	7*
48	48	1025	f	8	9*
49	49	950	f	9	9
50	50	950	f	10	10
51	53	1125	f	8	8
52	55	1250	f	10	11*
53	61	2000	f	11	10*
54	14	-	m	11	11
55	14	-	m	1	1
56	15	-	m	1	1
57	15	-	m	1	1
58	16	-	m	1	1
59	16	-	m	1	1
60	17	50		1	1
61	17	-	m	1	1
62	18	50	m	1	1
63	18	-	m	1	1

Table 1 (continued).

1	2	3	4	5	6
64	19	75	m	1	1
65	19	-	m	1	1
66	20	50	m	1	1
67	20	50	m	1	1
68	21	75	m	1	1
69	21	75	m	1	1
70	22	75	m	1	1
71	22	100	m	1	1
72	23	75	m	1	1
73	23	100	m	1	1
74	24	150	m	2	2
75	24	125	m	1	1
76	25	125	m	2	2
77	25	100	m	1	1
78	26	125	m	2	2
79	26	150	m	2	2
80	27	150	m	2	2
81	27	150	m	2	2
82	28	125	m	2	2
83	28	150	m	2	2
84	29	150	m	3	3
85	29	150	m	2	2
86	30	250	m	3	3
87	30	175	m	2	3*
88	31	225	m	4	4
89	31	250	m	4	5*
90	32	200	m	4	4
91	32	225	m	6	6
92	33	225	m	5	5
93	33	225	m	4	4
94	34	300	m	5	5
95	34	225	m	4	4
96	35	250	m	6	6
97	35	375	m	6	6
98	36	300	m	6	6
99	36	250	m	8	8
100	38	250	m	7	7

Table 2 Comparison of estimates of silver hake age
by Soviet and Canadian scientists

Age	Soviet ageing											Canada	USSR	Diffe- rence	
	1	2	3	4	5	6	7	8	9	10	11+				
1	35	4											39	35	+4
2		12	2										14	16	-2
3			10	2									12	12	0
4				6	2	1							9	8	+1
5					4								4	6	-2
6						9	1						10	10	0
7							3						3	4	-1
8								3	1				4	3	+1
9									1				1	2	-1
10										1	1		2	2	+1
11										1	1		2	2	-1
Total:	35	16	12	8	6	10	4	3	2	2	2		100	100	-

Complete agreement 85%
 1 year lower 1%
 1 year higher 13%
 2 years higher 1%

Table 3 Silver hake length-age key from agreed age readings by Canada and USSR

Length	Age											Total
	1	2	3	4	5	6	7	8	9	10	11	
1	2	3	4	5	6	7	8	9	10	11	12	13
14	2											2
15	3											3
16	3											3
17	3											3
18	3											3
19	4											4
20	4											4
21	3											3
22	4											4
23	3											3
24	2	1										3
25	1	2										3
26		2										2
27		3										3
28		3	1									4
29		1	2									3
30			2									2
31			1	1								2
32				2		1						3
33			2	1	2							5
34			1	1	1							3
35			1			2						3
36				1		1		1				3
37						1						1
38						1	1					2
39						1						1
40					1							1
41						1						1
42						1						1
43							1					1
44							1					1
45								1				1
46												
47												
48									1			1
49										1		1
50								1				1
51												
52												
53												
54												
55												
56												
57												
58												
59												
60												
61											1	1
Total:	35	12	10	6	4	9	3	3	1	1	1	85