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Designation of hake (Urophycis) in ICNAF statistics

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Currently there are three categories into which landings of hake (Urophycis) are being placed and tabulated in ICNAF statistics. These are white hake, Urophycis tenuis, red hake, Urophycis chuss, or hake (not specified). The last category, according to a footnote to the tables, is reported to be a combination of white and red hake.

Comparing 1963 and 1964 landings by the three countries (Canada, USSR and USA) which produce most in these categories, it appears that these hakes are not being correctly identified in the landings (accompanying table). For example, in 1964, landings from Subarea 3 are placed in each of the three categories, depending on the country reporting the landings. A similar situation existed for Subarea 4 in both 1963 and 1964. The pattern for Subarea 5 is less clearly shown, but it seems there is still a bias toward one or other species, depending on the country reporting.

From the ichthyological literature about these species, it is easy to see why the confusion and difficulties with separation occur. Bigelow and Schroeder (1953), in referring to Urophycis chuss and tenuis, state in an introduction, "we are forced to discuss these two hakes together, for they are so hard to tell apart that they are often confused, while they agree so closely in habits and distribution that what is said of one applies equally to the other, except as noted below". They then proceed to show that hake reported as U. chuss and tenuis are exclusively North American, that their geographic range is similar, and that in general their habits are reported to be alike. There are some regional

differences suggested for distribution of U. chuss and U. tenuis, and it is also suggested that U. chuss extends into deeper water than U. tenuis.

The specific differences between the two hakes for the Gulf of Maine, Georges Bank region given by Bigelow and Schroeder (1953) are not such that they can be applied to commercial landings. They record a difference in numbers of oblique scale rows along the lateral line between gill opening and base of the tail fin (about 140 for U. tenuis and 110 or less for U. chuss). The other difference reported is that for U. tenuis the upper jaw bone (maxillary) reaches to the rear edge of the eyes but only as far as the rear edge of the pupil in U. chuss. In addition, U. tenuis is reported to reach a larger size than U. chuss. None of these differences would make separation of hakes in commercial landings feasible, except that larger hake would likely be reported as U. tenuis.

In the more eastern region (Subarea 4 and possibly Subarea 3), separation of Urophycis into species is even more difficult. Leim and Scott (in press) state: "Many authorities recognize two species of hake, U. tenuis (white hake) and U. chuss (red or squirrel hake). They are said to differ mainly in the number of rows of scales between the gill opening and the base of the caudal fin, in the length of the filamentous dorsal ray, in the length of the pelvic fins, and in the position of the posterior angle of the mouth. Canadian specimens show so much variation and overlapping in the first three of these characters that Vladykov and McKenzie⁵¹³ and Battle³¹ considered U. tenuis and U. chuss to be one species. Because of the resulting confusion the two species are here treated together." Cornish (1912) recorded that hake from the southern Gulf of St. Lawrence (4T) had 123 scale rows, those taken off eastern Nova Scotia (4W) had 130 rows. This character was thus intermediate between the definition for U. tenuis and U. chuss.

The writer has examined hake from commercial landings in the 4T region and found the characters used to separate these species vary considerably. In general, the hake taken were large and the scale row numbers approached those of U. tenuis.

Because of this confusion, Canadian Maritimes and Quebec landings of hake have been shown as hake unspecified. We believe that it is senseless to try to assign commercial landings of hake to two such undifferentiated species groups. It seems more logical to combine landings of red and white hake. We do not believe that to do so loses any particularly pertinent information since species designation in any case may be erroneous.

We would suggest (a) that the landings categories white hake, red hake, and hake (unspecified) become hake (common); (b) that the scientific name designation become Urophycis sp.

References

- Bigelow, H. B., and W. C. Schroeder. 1953. Fishes of the Gulf of Maine. U.S. Fish and Wildlife Serv., Fish. Bull., 53: 221-230.
- Cornish, G. A. 1912. Notes on the fishes of Tignish, Prince Edward Island. Contrib. Canadian Biol., 1907-1910, 7: 79-81.
- Leim, A. H., and W. B. Scott. Fishes of the Atlantic coast of Canada. Bull. Fish. Res. Bd. Canada. In press.

Landings of hakes (Urophycis) from ICNAF area, 1963, 1964

Year	Country	Subarea 3		Subarea 4		Subarea 5	
		White	Red Unsp.	White	Red Unsp.	White	Red Unsp.
1964	Canada (N)	158	...	...	...	...	...
	Canada (M&Q)	...	...	...	...	...	...
	USSR	...	1102	...	9503	...	...
	USA	...	...	...	2369	...	3588
		...	...	190	...	3145	24573
		158	1102	121	190	2369	9503
						3145	28161
1963	Canada (N)	168	...	...	6	...	...
	Canada (M&Q)	...	...	80	...	7809	...
	USSR	...	...	...	...	1152	...
	USA	...	...	...	229	6	3475
		168	...	80	235	1158	7809
						2546	3166
						2546	6641
							11