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Length measurement of roundnose grenadier (*Macrourus rupestris*)

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ABSTRACT

According to the ICNAF sampling program the roundnose grenadier should be measured to total length and reported in 3-cm groups (Redbook 1974, p.128). Unfortunately a great part of individuals sampled have normally lost a small or great part of the whip-shaped tail. Therefore, it is here proposed to measure the roundnose grenadier from the tip of the snout to the beginning of the anal fin, measured to the nearest half centimeter below and reported in $\frac{1}{2}$ -cm groups.

MATERIAL

The material given in Table 1 is from a commercial landing caught in November 1975 in Stat.Area 0 and in Div.1C. Only specimens with whole undamaged tail were used. The following measurements were taken from each fish: Weight, total length (TL) and length from the tip of the snout to the beginning of the anal fin (SAF). All length measurements were taken to the nearest centimeter below. The weight is round, fresh weight.

METHODS AND DISCUSSION

From Table 1 the conversion factors from the partial length (SAF) to the total length (TL) and vice versa are calculated to be

$$l(\text{SAF}) = l(\text{TL}) \times 0.291 - 3.310$$

$$l(\text{TL}) = l(\text{SAF}) \times 3.437 + 11.378$$

Figure 1 shows the relation between whole weight and the two lengths. The length/weight relationship is given by the equation:

$$w = q l^b(\text{SAF}) \quad q = 1.118 \quad b = 2.287 \text{ (estimated from Table 1).}$$

Although it is possible to use the total length in assessment models by applying the conversion factors, it would be easier to use the proposed partial length directly in the assessment. The length measurements are reported to ICNAF in 3-cm groups. Normally the grouping of lengths should be related to the standard deviation of the mean length in the individual age groups. Unfortunately the age determination of roundnose grenadier is very difficult, and not until the last year it has been possible to determine the age. The 3-cm grouping seems to have been chosen as the one giving a reasonable number of cm-groups for assessment. To get a sufficient number of groups by the partial measure it is proposed to measure to the nearest $\frac{1}{2}$ -cm below and report in these groups. As shown in Table 1 thirteen 3-cm groups (total length) correspond only to nine 1-cm groups (partial length).

Table 1. The length taken from the tip of the snout to the beginning of the anal fin of roundnose grenadier from West Greenland and the corresponding total length and round, fresh weight.

Length from snout to anal fin, cm.	Number of fish	Total Length		Round fresh Weight.	
		mean length cm	standard deviation cm	mean weight g.	standard deviation g.
18	3	72.67	7.02	800	100
17	3	70.00	6.00	767	104
16	15	66.73	4.73	610	83
15	19	63.32	4.66	561	61
14	29	60.14	4.04	481	70
13	29	55.83	3.69	383	57
12	23	51.57	2.90	337	57
11	17	48.53	1.66	265	34
10	3	46.67	3.55	217	29
	141				

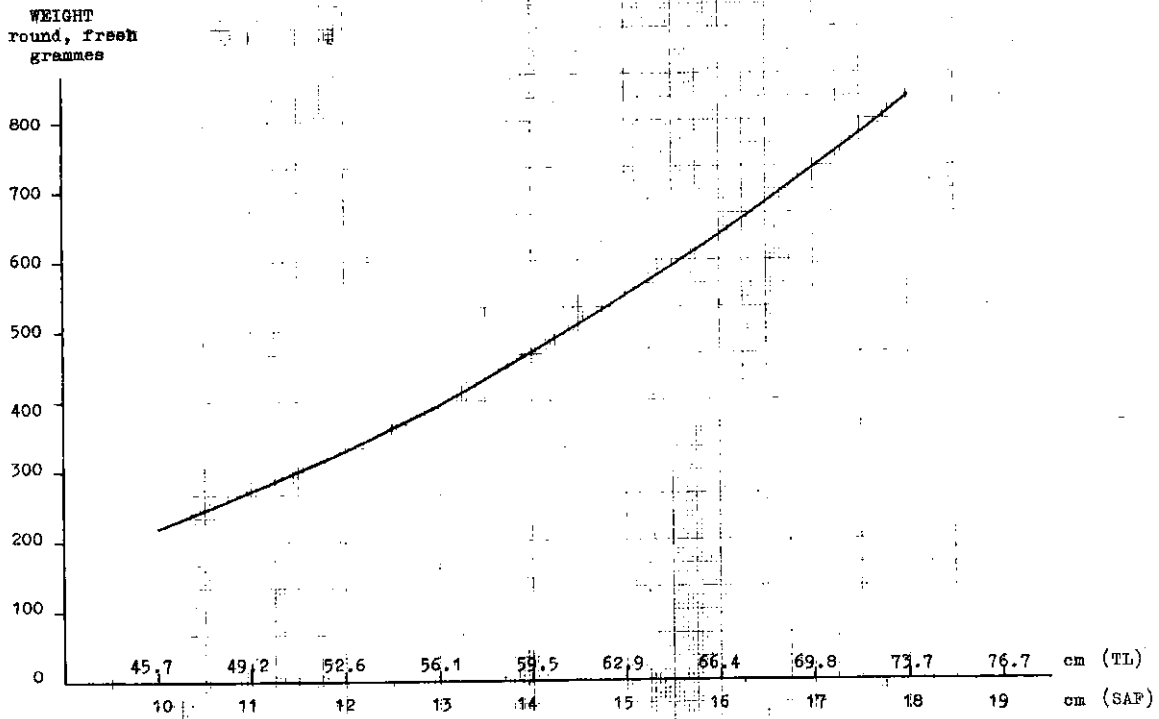


Figure 1. Weight of roundnose grenadier and the corresponding total length (TL) and the length from the tip of the snout to the beginning of the anal fin (SAF)