

Fish Population Dynamics

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DEFINITIONS OF BODY LENGTH

- “*Body length*” means the average body length of a cohort. Individual fish are not considered in the models. When talking about “the length of an animal” in connection with a model it is always tacitly assumed that it is the “average length of the animals of a cohort”. The estimate of average length, however, is derived from averaging the length measurements of individual specimens. The actual measure used for body length is not important as far as the theory behind the growth model is concerned. It is common practice to use the “*total length*” measured to the “*nearest unit below*” unless anatomical details make it not practicable



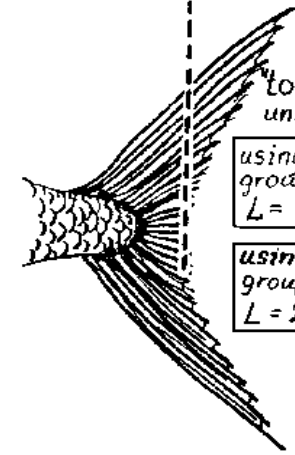
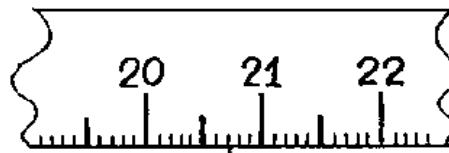
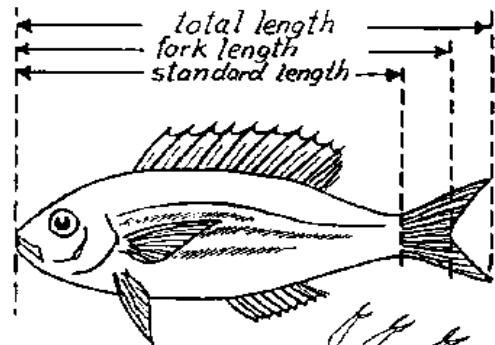
- "*Fork length*" may be used for fish with stiff caudal fins (tunas) or special fin shapes (Nemipteridae). The "*standard length*" is not recommended for length-frequency sampling.
- The most accurate measure for shrimps and lobsters is the "*carapace length*". However, in many cases either total length or tail length is used. In such cases it is necessary to establish the relationship between the various measurements.

- A really important thing is to specify exactly what kind of length measurement has been used, as one may otherwise run into difficulties when comparing results with those of other investigations.
- Other examples are squid, octopus, abalone, scallop and sea cucumber. For animals with a hard shell or skeleton it is not a problem to define a suitable length measure (fish, crustaceans and molluscs with shell).

- Also molluscs with a relatively constant body form (e.g. squid) create no major problem, but animals with a plastic body (e.g. octopus, sea cucumber or jellyfish) are problematic. It may in certain cases be preferable to work with body weight rather than length, as the former is obviously measurable with greater accuracy.



- It is easy to transform one type of length measurement into another type for a single individual. In cases where a sample is grouped into length classes it is more cumbersome to change from one measurement to another as far as the computational aspects are concerned. One simple way of doing it by microcomputer is given in Sparre (1987).



using 1 cm.
groups:
L = 20 cm.

using 1/2 cm
groups:
L = 20.5 cm

