

## Practical No. -7-

### Abundance Estimates

- 1. During a feasibility study of the Herring off the coast of Scotland attempts were made to determine absolute Abundance of the fish in question.**

-In the 1<sup>st</sup> season, 15000 individuals were tagged and set back in water, in the following season 500 individuals of the tagged small were rescued from a total catch of 10500 individuals.

-From this:

- (a). Calculate the absolute abundance in the area.
- (b). Comment on the accuracy of the methods used, and
- (c). If the method is defective give an alternative proposal.

-The above employs Peterseris Method where the equation:

$$N = nT/m$$

N= population required.

T= individual marked in the 1<sup>st</sup> occasion.

n=the individual captured in the 2<sup>nd</sup> occasion.

m= the number rescued of the tagged individuals.

**-The Defects of the method being:**

1. The distribution was organized in a typical way (pattern).

2. Doesn't take in consideration the loss in number through natural and induced mortality.
3. It has neglected the possibility of emigration and migration.

**Remedy:**

Remedy is to repeat the capture and recapture by further tagging.

**2. A pond measuring 100 cm x 100 m x 0.7 m**

Devoted for rearing *Oreochromis* was divided into 5 equal portions.

The extensive causal made in one gave 240,000 eggs and larvae.

You are required to e female brings more abundant.caluculate the absolute number of adults *Oreochromis* in the pond.

-It's worth-mentioning that the fecundity of the female is about 600 and the sex ratio was 51: 49 with the female brings more abundant.