

The Use of Color Tags in the Study of Fish
Populations in Homocesset Springs
by
Gordon C. Broadhead

Homocesset Springs provides an excellent site for the study of marine fish populations because many species of marine fish enter the springs area where submerged observation towers have been erected for tourists, and because the clarity of the water and the narrow limits of the spring area make observation of their movements easy. Casual observation indicates that the large populations of fish in the springs change from day to day both in species and in the numbers of each species present. By marking with colored Peterson fish tags, the movements of the fish can be recorded, the daily population of fish estimated and the turnover of the fish in the springs also estimated. Tagging will also permit study of the behavior of the tagged fish and estimation of their growth rate if recaptured at a later date.

On December 6, 1955, a preliminary experiment was carried out to test the feasibility of using the colored tags. Nine mullet were caught in the boil of the springs by means of a cast-net. The fish were tagged with large red tags and released into the springs. In future experiments a different color combination will be used for each fish. The following morning five of the nine mullet could be seen swimming in the springs and at one time four of them were observed together in a small school. These fish were observed by the spring attendant for two more days and after that they disappeared and were not seen again.

Although it is impossible to draw any definite conclusions as yet, indications are that the mullet do not remain in the springs any great period of time and that the large daily population is maintained by fish moving in and out of the springs into the much wider run area. The fact that four of the tagged fish were observed in the same small school could indicate that the tagged fish were not randomly distributed throughout the population. Since they were captured one at a time, it is not likely that they were in the same school before tagging.

IV PRODUCTIVITY

Plant Production

The study of the production rates in a community involves the estimation of production rates of each class of organisms in the food chain separately. By trophic levels, there are the primary producers, herbivores, carnivores, secondary carnivores, decomposers. Satisfactory measurement of the production of any of these under natural conditions is difficult and has rarely been accomplished.

To date, attempts to measure production have been directed at measurement of the primary production in situ of the plants in the springs. Most of the effort has been directed at Silver Springs. After some trial and error, some