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REPORT ON THE PLANTING OF BLUEGILLS IN WEST FISH LAKE,

MONTMORENCY COUNTY

by

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On the morning of November 1, 1940, the Grayling Hatchery delivered "3,000 bluegills" to the Hunt Creek Experimental Laboratory, where they were temporarily held in the basement holding tank, while they were being marked before release in West Fish Lake. The fish were presumably raised at the Wolf Lake Hatchery.

Before release in West Fish Lake, it was decided that the fingerling fish should be marked by removing the right pectoral fin. The marking and planting were done on November 1, 1940, by Edwin Cooper, Eugene Roelofs, and the author.

In the course of the marking, it was immediately noted that many of the fish were not bluegills. All fish other than bluegills were sorted out, and in so far as it was possible to determine, only bluegills were marked for release. The actual count of fish delivered follows by species:

Planted	1,972	bluegills (<u>Lepomis macrochira</u>)
Preserved	68	bluegills (dead on arrival or after handling)
"	65	green sunfish (<u>Lepomis cyanellus</u>)
"	179	common sunfish (<u>Lepomis gibbosus</u>)
"	14	largemouth bass (<u>Huro salmoides</u>)
"	2	yellow perch (<u>Perca flavescens</u>)
"	34	lake shiners (<u>Notropis atherinoides</u>)
Total delivered	<u>2,334</u>	all species

The average weight of 225 bluegills dipped at random in three lots of 75 each was 2[†] grams, or about 227 to the pound. The dead bluegills and the extraneous species were counted and preserved.

Because the fish were sorted before release, no unwanted species was planted in West Fish Lake. Sorting, however, does not often take place before the planting of fingerling "bluegills". The mixture of species delivered as bluegills for West Fish Lake is undesirable for most lakes, from the standpoint of fish management.

The inclusion of the green sunfish is particularly undesirable, because it has been demonstrated (Hubbs and Cooper, 1955) that very few fish of this species ever reach legal size (6 inches) in Michigan waters. The green sunfish is also known to compete with the bluegill for food and spawning habitat, and also is a predator of other fishes (Hubbs and Cooper, 1935; Forbes and Richardson, 1920).

The mixture of centrarchids in such plantings is generally considered undesirable because of the likelihood that hybridization between the bluegill, pumpkinseed and green sunfish will occur.

The story in a lake planted with the above-mentioned species, after several years, might be as follows:

1. A few legal bluegills and pumpkinseeds of pure strain available to the angler.

2. A fair number of hybrid bluegill x pumpkinseed of better than average size (these latter fish leave no young, being infertile, so they are taking all and giving nothing to the lake).
3. A greatly increased number of green sunfish which are not legally available to the angler, so are under complete protection.
4. Eventually hybridization between the species reduces the potential fertility of the bluegills and pumpkinseeds to a point where the latter two species cannot compete with the green sunfish, which are protected automatically from the fishermen. The lake then will become overpopulated by green sunfish which cannot legally be fished for.

There is also evidence at hand to show that plantings of mixed species of bluegills, pumpkinseeds, and green sunfish have been planted as "bluegills" before. In August, 1937, Clear Lake in Alcona County was poisoned (Inst. Fish. Report #551), and a planting of bluegills was recommended. In 1937, a planting of 10,000 five-months-old "bluegills" was released there. Subsequent netting operations by the Institute for Fisheries Research in July, 1940, produced bluegills and green sunfish. It may be logically assumed that this latter species came from the planting. The population composition of Clear Lake, Alcona County, previous to the 1937 poisoning provides excellent example of interspecific hybridization among the sunfishes. Bluegills, pumpkinseeds, green sunfish, long-eared sunfish, and Warmouth bass had been planted or were present. Hybrids between the pumpkinseeds and all other species had resulted, and also present were crosses between the bluegill x green sunfish, and the green x long-eared sunfish. All these species were found when the poisoning was effected,

despite the fact that planting records from 1933-36 show only 2,000 bluegills released in Clear Lake. Although it is possible that the pumpkinseed sunfish and bluegill were native here, the other species were probably introduced unwittingly.

There is an obvious need for some means of control on the purity of the stock involved in such plantings of fingerling centrarchids. Time should be allotted for the elimination of such "weed" species as green and long-eared sunfish before or at the release; or the placement of pure bluegill brood stock in holding ponds drained completely dry and refilled just before the onset of the spawning season, should be demanded.

Literature Cited

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