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Decline of the Alabama Shad, *Alosa Alabamae*, in the Pearl River, Louisiana
- Mississippi: 1963-1988

DECLINE OF THE ALABAMA SHAD, *ALOSA ALABAMAE*, IN THE PEARL RIVER, LOUISIANA – MISSISSIPPI: 1963-1988

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Abstract. – In 16 years of fish collections from the Pearl River at Monticello, Mississippi, 299,829 fishes representing 84 species were taken; no specimens of the Alabama shad, *Alosa alabamae*, were collected. In 25 years of fish collections from the Pearl River at Bogalusa, Louisiana, 567,441 fishes representing 95 species were taken; 418 Alabama shad were collected. During the first two years of the 25-year study, 384 Alabama shad were collected yielding only 34 specimens taken in the subsequent 23 years; the last specimen was taken in 1980-1981. This study was terminated in 1987-1988.

The Alabama shad, *Alosa alabamae*, is an anadromous species that ascends Gulf coast rivers from the Suwannee west to the Mississippi (Burgess, 1978). The Alabama shad spends most of its adult life in the Atlantic Ocean or Gulf of Mexico and enters coastal rivers to spawn (Pflieger, 1975). The species was once abundant in the Mississippi River and was fished commercially in the early 1900's (Coker, 1920; Evermann, 1902). The species has evidently undergone a marked decline in abundance in the Mississippi (Pflieger, 1975), Alabama and other rivers (Smith-Vaniz, 1968).

We initiated a study of the fishes of the Pearl River in Louisiana and Mississippi in 1963 and have kept detailed records of its relative abundance over the past 25 years.

In Mississippi we collected fishes regularly from 1973 to the present (1988). The study area consisted of 41.8 km of the main stream of the Pearl River both upstream and downstream from Monticello, Mississippi. A total of 512 fish collections was made in the last 16 years (eight stations sampled quarterly in February, May, August and November) with a 3.05 m x 1.83 m seine with 0.47 cm Ace mesh.

In Louisiana, 90 km downstream from Monticello, we collected fishes regularly from 1963 to the present (1988). The study area consisted of an 80.5 km (50 mi) segment of the Pearl River composed of a 16.1 km (10 mi) portion of the main stream above and below Bogalusa, Louisiana, and in addition, two segments downstream: 64.4 km (40 mi) of the main stream and West Pearl River, and 64.4 km (40 mi) of the main stream and East Pearl River. A total of 873 fish collections was made which consisted of 25 years of regular collections in the Bogalusa segment (six stations sampled at least quarterly, or more often, in the months of January, April, July and October) and 16 years of collections (1963-64 thru 1978-79) on the West and East Pearl rivers (19 stations combined sampled once each year in October or November).

Generally, approximately 30 minutes was spent at each station except when the river was flooded and depth limited sampling. An effort was always made to sample over all types

of substrate present at a particular station, and under all current regimes. We have used this methodology consistently for many years and consider the samples quantitative enough to indicate relative abundance (Gunning and Suttkus, 1984).

RESULTS AND DISCUSSION

The Monticello study area yielded 299,829 fishes representing 84 species. No specimens of the Alabama shad were taken during the duration of the survey.

The Bogalusa study area yielded 567,441 fishes representing 95 species. A total of 418 Alabama shad was taken, of which 384 were collected in the first two years of the study, 1963-64 and 1964-65 (Table 1). From 1965-1979, 33 additional specimens were collected, distributed as follows: Main stream of the Pearl River, 11; main stream of the Pearl River and East Pearl River segment, 9 specimens; and main stream of the Pearl River and West Pearl River segment, 13 specimens (Table 1). In the nine years from 1979-1988, only a single specimen was collected from the main stream of the Pearl River in 1980-81 (Table 1). This was the last specimen collected in this study.

The data presented here show a decline in abundance of Alabama shad after relatively high numbers in 1963-1965. This species is declining elsewhere in coastal rivers. It is assumed that locks and dams have contributed to the decreasing numbers both by blocking migrations upstream and by altering habitat conditions by increasing siltation (Douglas, 1974; Burgess, 1978).

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Table 1. Number of Alabama shad, *Alosa alabamae*, collected from the Pearl River near Bogalusa, Louisiana

Year	Main Stream of the Pearl River	Main Stream and East Pearl River	Main Stream and West Pearl River
1963 – 1964	2	4	162
1964 – 1965	2	14	200
1965 – 1966	2	2	2
1966 – 1967	0	5	0
1967 – 1968	9	0	2
1968 – 1969	0	0	2
1969 – 1970	0	0	0
1970 – 1971	0	0	0
1971 – 1972	0	0	0
1972 – 1973	0	0	1
1973 – 1974	0	0	4
1974 – 1975	0	0	0
1975 – 1976	0	0	2
1976 – 1977	0	2	0
1977 – 1978	0	0	0
1978 – 1979	0	0	0
1979 – 1980	0	–	–
1980 – 1981	1	–	–
1981 – 1982	0	–	–
1982 – 1983	0	–	–
1983 – 1984	0	–	–
1984 – 1985	0	–	–
1985 – 1986	0	–	–
1986 – 1987	0	–	–
1987 – 1988	0	–	–
Total	16	27	375