THE FISHES OF PRAIRIE DU PONT CREEK ST. CLAIR COUNTY, ILLINOIS

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ABSTRACT.—A survey of the fishes of Prairie du Pont Creek, St. Clair county, Illinois, included 41 collections totalling 8,050 specimens of 31 species from 40 sites. The fauna consists of: 1) river and large water species found only in the lower portions of the drainage, 2) ubiquitous small stream species of the area.

Prairie du Pont Creek and its two tributaries Hickman and Sparrow creeks drain approximately 40 square miles in St. Clair county in southwestern Illinois. It is the second major tributary entering the Mississippi River from Illinois below the mouth of the Missouri River, and the first major tributary to enter the Mississippi River below the East St. Louis and Cahokia, Illinois "Metroeast" area. The lower part of the drainage flows from east to west through the Mississippi River bottom lands. The upper parts of the drainage flow south to north on top of the bluff that parallels the Mississippi River on the Illinois side (Figure 1). Hickman Creek and Sparrow Creek flow through the Mississippian limestones and thus usually have rock and gravel bottoms. The upper drainage of Prairie du Pont Creek flows through Pennsylvanian sandstones and shales and usually the bottom is sand and mud. The East Side Levee and Sanitary District of St. Clair and Madison counties has altered the lower portions of Prairie du Pont Creek into a canal system as part of the flood control system for St. Clair county.

The Prairie du Pont Creek system was not studied by Forbes and Richardson (1908) but is of considerable interest as a result of its unique location, the largest deep loess area in the state.

Previous to this study no other known collections have been taken from the Prairie du Pont Creek system (Philip W. Smith, personal communication).

METHODS AND MATERIALS

During this study, 41 collections were made at 40 sites and a total of 8,050 specimens and 31 species were taken. Most of the fish studied were collected between 7 July 1970 to 7 October 1970. All collections are deposited at the Southern Illinois University at Edwardsville campus (SIUE). Collections were made with a 6 by 8 foot woven nylon seine and a 3 by 6 foot woven cotton seine during daylight hours. The collection sites are shown in Figure 1. Localities are given by Putz (1971) dates, collectors, total fishes, and site descriptions.

MINOR SPECIES

A minor species represents less than 1% of the total specimens collected or was found in less than 25% of the collections. The total number of each species collected is followed by sites and respective numbers in each collection. Where a site was collected more than once, the numbers of specimens in each collection are listed in chronological order. Nine species taken only in the lower portions of the drainage are as follows.

Hiodon alosoides (Rafinesque), goldeye; Total-1; A4-1. *Ictiobus bubalus* (Rafinesque), smallmouth buffalo; Total-2; A3-2. *Carpiodes carpio* (Rafinesque), river carpsucker; Total-3; A2-2, A3-1. *Hybognathus argyritus* (Girard), western silvery minnow;

Total-1; A3-1. *H. nuchalis* (Agassiz), central silvery minnow; Total-4; A4-4. *H. placitus (Girard),* plains minnow; Total-1; A2-1. *Notropis blennius* (Girard), river shiner; Total-7; A2-5, A3-2. *Pomoxis annularis* (Rafinesque), white crappie; Total-6; A1-6. *Stizostedion canadense* (Smith), sauger; Total-1; A4-1.

The *H. argyritus* and *H. placitus* were taken from swift flowing water. *H. nuchalis* were taken from pools at site A4.

Eight other minor species are as follows:

Pimephales notatus (Rafinesque), bluntnose minnow; Total-2; E1-1, G1-1. *Carassius auratus* (Linnaeus), goldfish; Total-1; A8-1. *Micropterus salmoides* (Lacepede), largemouth bass; Total-5; A4-1, A7-1, A14-1, A15-1, D1-1. *Lepomis humilis* (Girard), orangespotted sunfish; Total-9; A1-2, A2-2, E7-2, 3. *Ictalurus punctatus* (Rafinesque), channel catfish; Total-1; A18-1. *N. stramineus* (Cope), sand shiner; Total-8; A1-1, A5-2, A6-1, A7-3, C1-1. *N. umbratilis* (Girard), redfin shiner; Total-18; A6-1, A10-1, A12-6, A13-5, A14-5. *Gambusia affinis* (Baird and Girard), mosquitofish; Total-42; A1-33, A2-1, A7-4, B1-3, E2-1.

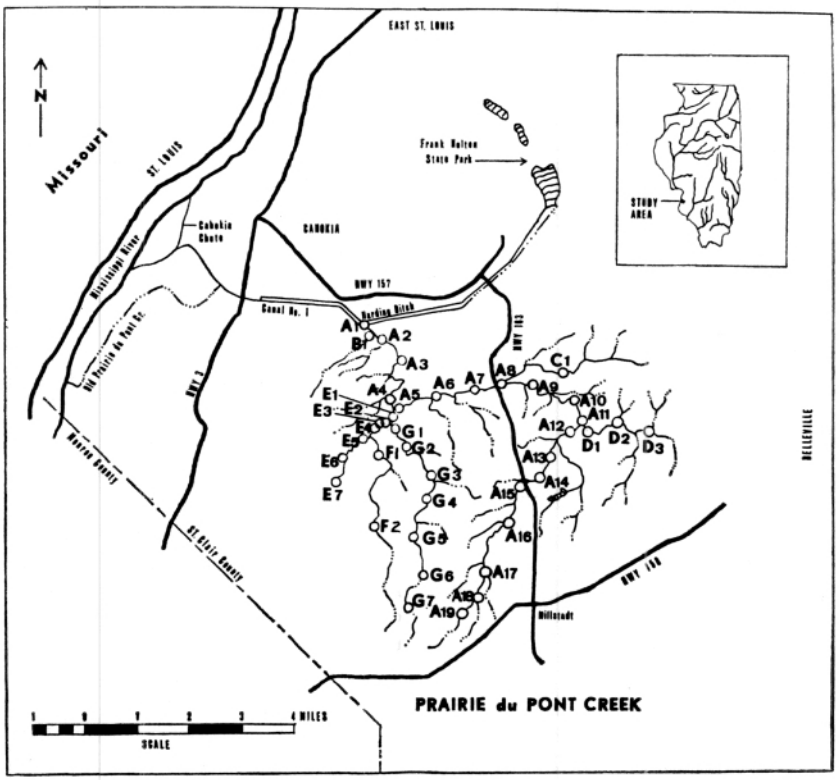

FIGURE 1.—The Prairie du Pont Creek system in South West Illinois. Collection sites marked with open circles. Sites A1-A19 on Prairie du Pont Creek, B1, C1, D1-D3 on unnamed branches of Prairie du Pont Creek, E1-E7 on Sparrow Creek, F1-F2 on unnamed branch of Sparrow Creek, G1-G7 on Hickman Creek.

The *Lepomis humilis* taken at site A1 and A2 were all less than one inch long; however orange-spotted sunfish from just below the spring mouth on Sparrow Creek (E7) were adults.

Major Species

A major species represents at least 1% of the total sample or was found at 25% or more of the collecting sites.

Dorosoma cepedianum (Lesueur), gizzard shad; Total-150; A1-74, A2-34, A3-41, E1-1. The gizzard shad occurs in the lower drainage and was taken mainly from swift flowing water. It made up 1.8% of the total number of specimens collected. The largest gizzard shad taken was 10¼ inches long, but most of the others were under 4 inches in length.

Catostomus commersoni (Lacepede), white sucker; Total-46; A4-1, A8-1, A11-1, A15-4, A16-1, A17-1, A18-5, E1-4, E2-3, E3-7, E4-3, E5-5, E7-2,1, G1-6, G6-1. The white sucker is the common sucker in the drainage and was found in 37.5% of all collections. It was scattered throughout the drainage in small numbers mainly in the deeper pools, but was most abundant in spring fed Sparrow Creek. White suckers up to 14 inches long were taken from Sparrow Creek. These are the first known collections of *Catostomus commersoni* from St. Clair county (Philip W. Smith, personal communication).

Campostoma anomalum (Agassiz), central stoneroller; Total-930; A4-4, A6-1, A8-4, A9-20, A10-17, A11-36, A12-10, A13-16, A14-92, A15-51, A16-29, A17-7, A18-105, A19-20, B1-6, C1-1, D1-28, D2-16, D3-16, E1-34, E2-25, E3-14, E4-38, E5-4, E6-4, E7-2,9, G1-56, G2-63, G3-64, G4-23, G5-60, G6-51, G7-4. The stoneroller is the third most abundant species in the drainage, 11.5% of the total sample, and was collected at all but 7 sites.

Cyprinus carpio (Linnaeus), carp; Total-61; A1-18, A2-16, A3-8, A4-6, A5-1, A8-4, A9-2, A10-1, A11-1, A14-1, A15-1, E1-1, E2-1. Carp were most abundant in larger pools in the lower drainage and were found at 32.5% of the collection sites. The carp taken at A1, A2, and A3 were all under 3 inches in length but small carp were not taken in the upper part of the drainage. Carp taken above A3 ranged from ¼ lb. to 1 lb.

Notemigonus crysoleucas (Mitchill), golden shiner; Total-152; A1-3, A3-1, A5-3, A6-6, A7-9, A9-21, A10-6, A11-9, A12-21, A13-8, A14-1, C1-32, D1-22, D2-7, D3-1, E1-2. The golden shiner was most abundant in the main branch of Prairie du Pont Creek. Our data supports Trautman (1957) "small populations occurred in weedless waters which frequently were silt laden and had a clayey silt bottom; but only strays or relict populations occurred in habitually silt laden waters, and especially where silt deposition on the botton was rapid." The golden shiner made up 1.8% of the total number of fish collected and was found at 40% of the collection sites.

Notropis atherinoides (Rafinesque), emerald shiner; Total-192; A1-94, A2-69, A3-19, A4-10. The emerald shiner was collected only in the lower portions of the drainage. This agrees with Smith (1965) who lists it as occurring in the larger and medium sized rivers throughout Illinois. The emerald shiner made up 2.3% of the total number of specimens collected.

Notropis dorsalis (Agassiz), bigmouth shiner; Total-1,779; A4-28, A5-5, A6-1, A7-69, A8-109, A9-41, A10-17, A11-7, A12-2, A13-31, A14-94, A15-52, A16-60, A17-20, C1-151, D1-37, D2-30, D3-21, E1-171, E2-4, G1-312, G2-197, G3-318, G4-2. The bigmouth shiner made up 22.2% of the total

sample and was the second most abundant species. It was found at 60% of the collection sites but was most numerous where the bottom was mostly sand.

Notropis lutrensis (Baird and Girard), red shiner; Total-432; A1-35 A2-56, A3-88, A5-18, A6-1, A7-2, A8-7, A10-21, A11-8, A12-18, A13-96, A14-23, A15-11, A16-4, A19-3, B1-4, D1-20, E1-14, E2-2, E4-1. The red shiner was found at 50% of the collection sites and made up 5.3% of the total sample. It was the fifth most abundant species in the drainage. The red shiner was more common in the lower drainage.

Pimephales promelas (Rafinesque), fathead minnow; Total-28; A4-2, A8-4, A16-1, A17-5, A18-4, A19-4, C1-1, E1-1, E2-1, E4-1, G1-1, G2-1, G4-2, The fathead minnow was found in small numbers throughout the drainage over mud bottom at 35% of the collection sites.

Semotilus atromaculatus (Mitchill), creek chub; Total-3,073; A4-155, A5-10, A6-6, A7-7, A8-61, A9-64, A10-94, A11-29, A12-33, A13-31, A14-101, A15-62, A16-41, A17-60, A18-186, A19-85, B1-42, C1-17, D1-77, D2-62, D3-35, E1-241, E2-119, E3-26, E4-200, E5-14, E6-48, E7-4,8, F1-16, F2-159, G1-180, G2-151, G3-186, G4-15, G5-167, G6-214, G7-47. The creek chub occurred at all but three sites and was the most abundant species, (38.1% of the total sample). A 9 inch specimen was collected at site D1.

Ictalurus melas (Rafinesque), black bullhead; Total-101: A1-2, A2-1, A4-2, A9-1, A11-23, A12-6, A13-1, A14-1, A15-10, A16-1, A17-11, A18-7, C1-3, D1-1, D2-1, D3-16, E7-6,5, F1-1, F2-5, G1-1, G2-2, G5-2, G6-2. The black bullhead was taken mainly from the deep mud-bottomed pools throughout the drainage. It was sometimes kicked from underneath tree roots or undercut banks. The black bullhead represented 1.2% of the total sample and was found at 46% of the collection sites.

Lepomis cyanellus (Rafinesque), green sunfish; Total 191: A2-3, A3-2, A4-3, A5-6, A6-7, A8-5, A10-2, A11-1, A12-1, A13-11, A14-12, A15-7, A16-2, A17-4, A18-29, A19-8, B1-3, D1-2, D2-2, D3-3, E1-3, E2-2, E2-4, E4-1, E5-2, E6-4, E7-16,20, G1-5, G2-2, G5-1, G6-18. The green sunfish is widespread in the system. It was found in 77.5% of the collections and made up 2.3% of the total sample.

Lepomis macrochirus (Rafinesque), bluegill; Total-172; A1-88, A2-68, A3-2, A4-1, A6-1, A10-1, A17-2, B1-1, E1-2, E2-2, E3-1, E5-1, E7-1, G2-1. Blue gills are scattered throughout the drainage in small numbers. Small specimens were abundant at sites A1 and A2. It was found in 35% of the collections and made up 2.1% of the total sample.

Etheostoma spectabile (Agassiz), orangethroat darter; Total-631; A4-1, A9-1, A11-10, A12-1, A14-8, A15-28, A16-8, A17-10, A18-69, A19-3, B1-5, D1-5, D3-12, E1-142, E2-64, E3-27, E4-6, E5-6, E6-8, E7-5, G1-68, G2-37, G3-61, G4-14, G5-39, G6-3. The orangethroat was abundant in the upper parts of the system. It was collected mainly from the riffles although many specimens were taken from shallow pools. The orangethroat was the fourth most common species and made up 7.8% of the total sample and was found in 65% of the collections. Large orangethroats up to 2.6 inches long were taken from site E6 on spring fed Sparrow Creek. Large population of orangethroat darters was present at E6 but the large rocks in the riffles prevented effective collecting.

Discussion

The lower portion of Prairie du Pont Creek at least upstream to A3

is a highly unstable habitat under the influence of the Mississippi River and has certainly been greatly altered by the canalization of the lower part of the creek. Before canalization the lower part of Prairie du Pont Creek was probably alternating riffles and deep pools such as seen at site A4. Now the lower part of Prairie du Pont Creek during low water is from 1 foot to 3.5 ft. deep with the water moving swiftly along over a thin layer of sand with soft mud underneath. Water now backs up into the creek system when the Mississippi River is high. The water is sometimes 15 to 20 ft. deep for a week or longer. Before canalization the river probably did not flood the lower part of Prairie du Pont Creek as it does now. When the river is up, many river fish migrate up into the lower portion of Prairie du Pont Creek. Local residents put out hoop nets and have caught buffalo and carp up to 30 lbs. during high water. In the fall of 1970 Frank Putz saw *Lepisosteus platostomus, Lepisosteus osseus and Aplodinotus grunniens* caught from the lower portion of the creek system (around A2) during high water.

Sparrow Creek originates from a spring approximately 12 feet wide which flows slowly from the base of a limestone bluff. Sparrow Creek is a clear cold stream. At site E4, Sparrow Creek makes a series of small water falls as it flows down a Mississippian limestone bluff.

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