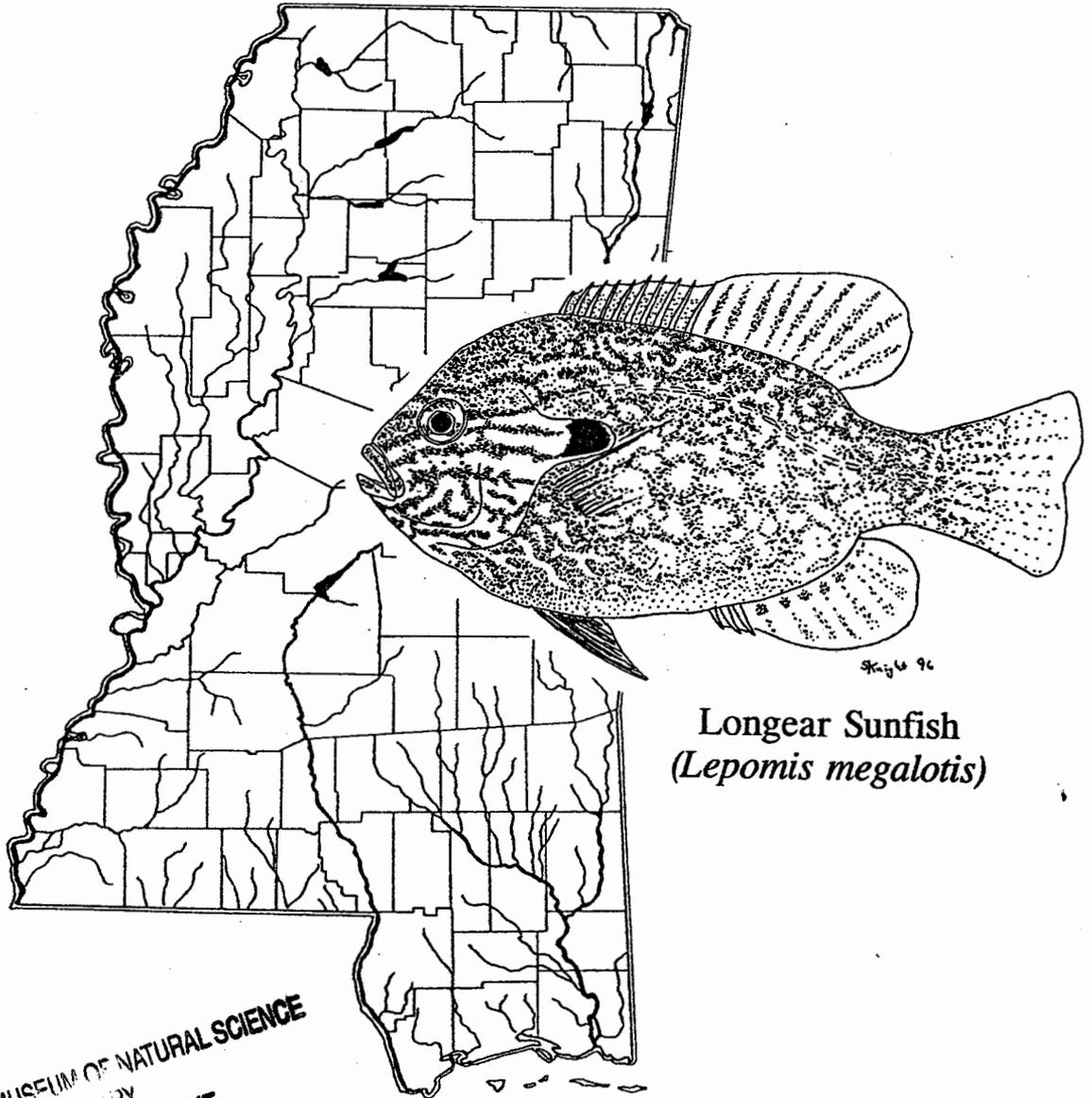


Proceedings of the Mississippi
Chapter of the
American Fisheries Society



Longear Sunfish
(*Lepomis megalotis*)

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Vol. XXI
6 February 1997

Mississippi Museum of Natural Science,
Jackson, Mississippi

**PROGRAM AND ABSTRACTS:
1997 ANNUAL MEETING OF THE MISSISSIPPI CHAPTER OF
THE AMERICAN FISHERIES SOCIETY**

6 February 1997

**Mississippi Museum of Natural Science
Jackson, Mississippi**

**Phil Kirk, President
Charles Knight, President-elect
Walter Hubbard, Secretary-Treasurer
John Taylor, Newsletter Editor**

Program, 1997 Meeting of the Mississippi Chapter of the American Fisheries Society.

5-6 February 1997 - Mississippi Museum of Natural Science, Jackson, Mississippi

Wednesday evening, 5 February 1997

7:00-9:00 Informal mixer at Hal and Mal's, Commerce Street, Jackson.

Thursday, 6 February 1997

8:00-8:30 Registration

8:30-8:45 Welcome and announcements: Charles Knight, Program Chair; Phil Kirk, Chapter President.

Contributed Papers; Eric Dibble, Chair

(*indicates participation in the best student paper competition.)

8:45-9:00 Jan Hoover and Jack Killgore. Fish Communities in the White River Basin, Arkansas.

9:00-9:15 Peter C. Smiley Jr. , Scott S. Knight, and Charles M. Cooper. The effect of pool area, depth, and season on fish communities within created habitats.

9:15-9:30 S. Reid Adams*, Glenn R. Parsons, and Peter C. Smiley. Fishes of Indian Creek, Wolf River Drainage.

9:30-9:45 Brett Albanese* and William T. Slack. A preliminary status survey of the ironcolored shiner, *Notropis chalybaeus*, in Mississippi: another good reason to database fish collections.

9:45-10:00 Steven G. George. Forty kilometers and 20 years: spatial and temporal similarity of an Ouachita drainage fish community.

10:00-10:15 Break

Contributed Papers; Scott Knight, Chair

10:15-10:30 James V. Morrow, Jr., James P. Kirk, K. Jack Killgore, Howard Rogillio, and Charles Knight. Status and recovery potential of the Gulf of Mexico sturgeon, *Acipenser oxyrinchus desotoi*, in the Pearl River system, Louisiana-Mississippi.

10:30-10:45 Eric D. Dibble, and Sherry L. Harrel. Can aquatic plant diversity in fish habitat influence fish growth?

- 10:45-11:00** Sherry L. Harrel* and Eric D. Dibble. A preliminary analysis of the relationship among aquatic plant habitats, distribution, and behavior of fishes.
- 11:00-11:15** James H. W. Bartlett* and Glenn R. Parsons. The effect of dissolved oxygen levels and absorptive state on the swimming performance and respiration rates of juvenile channel catfish, *Ictalurus punctatus*.
- 11:15-11:30** John Barry Taylor*, John A. Hargreaves, and David J. Wise. Evidence that fluctuations in prior feeding activity and solar radiation influence subsequent feeding activity in commercial channel catfish ponds.
- 11:30-11:45** Donald C. Jackson, Jay M. Francis and Qifeng Ye. Logistics and effectiveness of hand grappling blue catfish in the Tallahatchie River.
- 11:45-12:00** Larry L. Pugh and Harold L. Schramm, Jr. Movement of tagged catfish in the lower Mississippi River.

12:00-1:30 Lunch (not provided)

1:30-2:30 Wiley Prewitt (Guest Speaker). Folklore and the fisheries resource.

2:30-2:45 Break

Contributed Papers; Dennis Reicke, Chair

- 2:45-3:00** Charles E. Vyles and Garry M. Lucas. Lake Washington yo-yo utilization and harvest survey April 10, 1996 to May 10, 1996.
- 3:00-3:15** John R. Jackson, Joseph E. Flotemersch, and Donald C. Jackson. Comparability of channel catfish stock description obtained from different hoop net configurations.
- 3:15-3:30** John Barry Taylor. Considering the effects of time in experimental design of fisheries research.
- 3:30-3:45** Charles E. Vyles, Garry Lucas, James Glahn, Charles (Bo) Sloan, and Jobe Maynor. Impact of cormorant on the crappie population of Lake Beulah.
- 3:45-4:00** Donald G. Cloutman and Donald C. Jackson. Relative abundance of young-of-the-year and adult catfishes in dredged and undredged sections of the Yalobusha River, Mississippi.
- 4:00-4:30** Business Meeting
- 6:30 - 9:00** Dinner at the Natural Science Museum - southern fried catfish filet plate.

FISHES OF INDIAN CREEK, WOLF RIVER DRAINAGE. S. Reid Adams*¹, Glenn R. Parsons², and Peter C. Smiley³. ¹Waterways Experiment Station, Vicksburg MS., ²Department of Biology, University of Mississippi, Oxford, MS., ³USDA Sedimentation Laboratory, Oxford, MS.

The Wolf River system of north-central Mississippi and southwest Tennessee has received little attention from ichthyologists, particularly the portion in Mississippi. We surveyed the fishes of Indian Creek, a small (17 km) tributary of the Wolf River. Forty-four collections at fifteen sites were made using a backpack electroshocker and a five meter seine. Nine of these sites were sampled quarterly to resolve fish community structure. Nine species are new records for the Wolf River system in Mississippi, and four of these (Lampetra aepyptera, Noturus hildebrandi, Ammocrypta beani, and Etheostoma histrio) are new records for the Wolf River drainage (MS. and TN. combined). Two fish (Noturus stigmosus and Ammocrypta beani) are species of concern in either TN. or MS. Analysis of the fish community along Indian Creek indicates longitudinal differences in diversity. Diversity indices were higher at downstream sites near the confluence with the Wolf River. Longitudinal distribution of fish in Indian Creek is attributed primarily to the presence of an erosion control structure which serves as a barrier to upstream fish movement. Habitat differences between sites may also influence fish community structure upstream and downstream of the weir.

* participating in student paper competition

A PRELIMINARY STATUS SURVEY OF THE IRONCOLORED SHINER, *NOTROPIS CHALYBAEUS*, IN MISSISSIPPI: ANOTHER GOOD REASON TO DATABASE FISH COLLECTIONS. Brett Albanese* and William T. Slack. University of Southern Mississippi, Hattiesburg, MS.

Notropis chalybaeus is only known from 20 collections taken from 14 different localities in Mississippi. Prior to the onset of this study, *N. chalybaeus* had not been collected in the state since 1984. We sampled twelve of the fourteen original historic sites and an additional sixteen localities in close proximity to historic sites during 1995-1996. We collected 5492 specimens comprising 70 taxa and 14 families. Not a single specimen of *Notropis chalybaeus* was taken at any of these sites. However, a new locality for *Notropis chalybaeus* was discovered in the Escatawpa River System in June 1996. A variety of factors may account for the decline of *N. chalybaeus* in Mississippi. This species may be naturally uncommon in the Western Gulf Coastal Plain, and habitat degradation may be driving these small populations to extinction. We recommend a more thorough survey of *N. chalybaeus* be undertaken. Conservation efforts should target the Wolf and Escatawpa River systems because of the potential for multiple extant populations and relatively high habitat quality. For this study, a properly databased fish collection was instrumental in identifying a potential conservation problem. This technology should be applied proactively toward the conservation of the rest of Mississippi's rich fish fauna.

* participating in student paper competition

FISH COMMUNITIES IN THE WHITE RIVER BASIN, ARKANSAS. Jan Hoover and Jack Killgore. Waterways Experiment Station, Vicksburg, MS.

We sampled littoral fishes and physical habitat of the main channel and tributaries of the White River, near Stuttgart, Arkansas. Species richness of the channel collections was substantially higher (32 species/1000 fish) than tributaries (23 species/1000 fish) as were estimates of total ichthyofauna (80 species vs 50 species). In the channel, number of species collected was positively correlated with water temperature, discharge, and conductivity. Emerald shiner, gizzard shad, blacktail shiner were abundant but numbers decreased at higher discharges. In the tributaries, number of species was positively correlated with stream width. Western mosquitofish were abundant, but numbers decreased in wider streams; gizzard shad, white crappie, bluegill, and golden shiner numbers, however, were higher in wider, deeper streams. Green sunfish and warmouth, also abundant in tributaries, were not significantly correlated with any measured habitat variable. In both systems, correlations of fish abundance with water quality were equivocal, but variation in the channel community was closely associated with hydraulics, and the tributary community with stream geomorphometry. Fish-habitat relationships in the channel exhibited lower variance than those in tributaries, reflecting domination of tributary community by "tolerant" species and the degraded nature of these smaller streams.

THE EFFECT OF POOL AREA, DEPTH, AND SEASON ON FISH COMMUNITIES WITHIN CREATED HABITATS. Peter C. Smiley Jr. , Scott S. Knight, and Charles M. Cooper. USDA-ARS, National Sedimentation Laboratory, Oxford, MS.

The Demonstration Erosion Control (DEC) project in the Yazoo Basin has utilized drop pipes extensively to control gully erosion. Drop pipe installation often results in the creation of stream level pools, which are scour holes located within the channels of incised streams. From June to September 1996, we used a backpack electroshocker to sample 38 stream level pools located within Hotophia, Long, and Otoucalofa Creek watersheds. Measurements of physical size and maximum pool depths were obtained from all sites. A total of 22 species and 668 fish were collected from 26 sites, while no fish were collected from the 12 remaining sites. Regression analysis indicated that pool area significantly affected on species richness and numbers per unit effort (NPUE), while only species richness was significantly affected by pool depth. In addition, we collected fish from nine selected sites from Hotophia Creek in October/November 1995 and June/July 1996 to assess seasonal effects. Student's t-test indicated no significant effect of season on species richness, NPUE, and Shannon diversity index. However, examination of overall relative abundance between seasons reveals a temporal change in community structure. These results may be used to develop alternate drop pipe installation designs which more effectively incorporate habitat creation.

FORTY KILOMETERS AND 20 YEARS: SPATIAL AND TEMPORAL SIMILARITY OF AN OUACHITA DRAINAGE FISH COMMUNITY. Steven G. George, Dyntel Corporation and Waterways Experiment Station, Vicksburg, MS

Using museum collections and field data from the Saline River, Arkansas, I evaluated fish zonation (among three stations) and persistence (among three intervals: 1969-1971, 1981-1982, 1991-1992). Pairwise similarity of communities was expressed using the Jaccard Index (J) which ranges from 0.00 (no species shared) to 1.00 (all species shared). Stations were located at 67, 50, and 26 km upstream from the mouth of the river; total numbers of species recorded were 53, 67, and 81, respectively. Similarity among stations (within intervals) was moderate ($J=0.57$, $SD=0.07$). Zonation was evident in distribution of larger species; gar, eel, several suckers, and black basses were limited to the middle and/or lower stations. Similarity among intervals (within stations) was also moderate ($J=0.55$, $SD=0.03$). Persistence was limited by singular occurrences of 16 species, mostly mid-channel and backwater fishes, and by sporadic occurrences of 13 species, including redbfin shiner, ribbon shiner, and speckled chub. Range of values for community similarity, among stations and periods, was low ($J_{\min}=0.47$, $J_{\max}=0.67$). Upper limits reflected predominance of species that are rare, mobile, or habitat-specialized. Lower limits reflected a substantial "core" of ubiquitous and persistent fishes; these include five shiners, a madtom, and 7 darters, all of which were abundant in riffles and readily collected by seining.

STATUS AND RECOVERY POTENTIAL OF THE GULF OF MEXICO STURGEON, ACIPENSER OXYRINCHUS DESOTOI, IN THE PEARL RIVER SYSTEM, LOUISIANA-MISSISSIPPI. James V. Morrow, Jr.¹, James P. Kirk¹, K. Jack Killgore¹, Howard Rogillio², and Charles Knight³. ¹Waterways Experiment Station, Vicksburg, MS; ²Louisiana Department of Wildlife and Fisheries, LaCombe LA; and ³Mississippi Museum of Natural Science, Jackson, MS.

We studied Gulf sturgeon, Acipenser oxyrinchus desotoi from 1992 until present. Fleets of bottom set gill nets and biotelemetry were used to estimate the population size and locate preferred summer habitats. Few fish were located above the sills at Pools Bluff and on the Bogue Chitto River. Gulf sturgeon concentrated in deep holes at specific river reaches, and the total population estimate was approximately 290. Age and growth analysis using pectoral fin rays showed very few adults in the population. Total annual mortality, estimated at 30%, was determined using von Bertalanffy equation parameters and length at capture information. Population modeling suggests that the population may not be moving toward recovery, especially if recruitment is related to the density of mature fish. Further intensive studies that focus on population attributes, identifying causes of mortality, and development of reliable recruitment functions are justified.

CAN AQUATIC PLANT DIVERSITY IN FISH HABITAT INFLUENCE FISH GROWTH?
Eric D. Dibble, and Sherry L. Harrel. Department of Wildlife and Fisheries, Mississippi State University, Mississippi State, MS 39762.

We experimentally investigated the relationship between aquatic plant diversity and individual growth of young fishes in enclosures (10 m diam) constructed in a pond (1.2 h). Juvenile bluegill (*Lepomis macrochirus*) and largemouth bass (*Micropterus salmoides*) were introduced into the enclosures (May 1996). Each enclosure contained either a plant monoculture (*Hydrilla verticillata*), or a diverse culture of plants, (*Vallisneria americana*, *Heteranthera dubia*, *Potamogeton nodosus*, and *Najas guadalupensis*). Plant treatments were replicated 6 times. Spatial complexity between plant treatments were measured, and individual fishes were marked dorsally with different color combinations of fluorescent elastomer dye. Pop-nets and strata-traps were used to obtain subsamples of fish in each treatment during the experiment. The pond was drained (October 1996) and all fish were collected by hand, identified, and immediately measured for lengths (SL & TL; mm) and weights (g). Spatial-complexity of plants and individual growth of the fishes differed significantly across the plant treatments. These results suggest that differences between spatial-complexity provided by monospecific and diverse stands of plants may be directly, if not, indirectly responsible for the differences in fish growth.

A PRELIMINARY ANALYSIS OF THE RELATIONSHIP AMONG AQUATIC PLANT HABITATS, DISTRIBUTION, AND BEHAVIOR OF FISHES. Sherry L. Harrel* and Eric D. Dibble. Department of Wildlife and Fisheries, Mississippi State University, Mississippi State, MS 39762.

We investigated the relationship between fish distribution and behavior associated with variables within aquatic plant beds in a Wisconsin lake. Fish distribution and behavior were measured within 15 aquatic plant patches (1 m²) with the use of underwater videography (30 min/plant patch). Environmental data and invertebrates were collected from each patch consisting of different plant species and densities. Each video was analyzed with 15 random 1-minute focal animal samples for a total of 3 hrs 45 min. Invertebrate abundance measured in 8 patches was significantly correlated with plant stem density ($r = 0.76$; $p < 0.05$). To test fish association with environmental variables, a redundancy analysis (RDA) was used. The first two axes accounted for >70% of the variance between the behavioral and environmental matrices. Bluegill (*Lepomis macrochirus*) and largemouth bass (*Micropterus salmoides*) exhibited distinct separations in distribution across sites. Patterns illustrated by these data suggest that patch specific variables within aquatic plants may mediate fish distribution and behavior.

* participating in student paper competition

THE EFFECT OF DISSOLVED OXYGEN LEVELS AND ABSORPTIVE STATE ON THE SWIMMING PERFORMANCE AND RESPIRATION RATES OF JUVENILE CHANNEL CATFISH, *ICTALURUS PUNCTATUS*. James H. W. Bartlett* and Glenn R. Parsons. Department of Biology, University of Mississippi, Oxford, MS 38677 USA

Effects of dissolved oxygen and absorptive state on the swimming performance and swimming respiration rate of juvenile channel catfish, *Ictalurus punctatus*, will be determined. Three levels of dissolved oxygen (1.0, 3.0, and 8.0 mg/l) and three absorptive states (2, 6, and 24 hours after feeding) will be combined in a two-way ANOVA. All fish will be held and tested at 25 degrees C. Critical swimming speeds and respiration rates will be determined using a sealed Blazka-type water tunnel respirometer. All fish will be fed *ad libitum* prior to being tested. Fish will be sacrificed immediately after fatigue in order to accurately determine absorptive state. Stomach and intestinal contents will be dried and weighed after each fish fatigues and is removed from the swim tunnel.

* participating in student paper competition

EVIDENCE THAT FLUCTUATIONS IN PRIOR FEEDING ACTIVITY AND SOLAR RADIATION INFLUENCE SUBSEQUENT FEEDING ACTIVITY IN COMMERCIAL CHANNEL CATFISH PONDS. John Barry Taylor¹, John A. Hargreaves¹, and David J. Wise². ¹Department of Wildlife and Fisheries, Mississippi State University, ²Delta Research and Extension Center, Mississippi State University.

Although feeding activity of catfish has been shown to be related to water temperature, fish size and health, and density and biomass, large daily variation in feeding activity has been observed in commercial ponds despite maintenance of these conditions at a constant level. Anecdotal evidence suggests that fluctuation of dissolved oxygen, as well as other water quality and meteorological parameters, also influence feeding activity. We used state-space time series modeling to relate daily fluctuations in feeding activity (as measured by amount of feed applied to each pond) to fluctuations in amount fed, early morning dissolved oxygen, mean water temperature, and total cumulative solar radiation from preceding days for 25 commercial channel catfish ponds in Mississippi. The model indicated a significant inverse relationship between amount fed and the amount fed the previous day in 24 of 25 ponds. Additionally, amount fed was significantly and directly related to total cumulative solar radiation the previous day in 22 of 25 ponds. No consistent relationships were found between amount fed and early morning dissolved oxygen or mean water temperature on previous days. Knowledge of feeding activity and meteorological conditions from previous days can assist commercial producers in prediction of daily variation in feeding activity.

* Participating in student paper competition

LOGISTICS AND EFFECTIVENESS OF HAND GRAPPLING BLUE CATFISH IN THE TALLAHATCHIE RIVER. Donald C. Jackson¹, Jay M. Francis² and Qifeng Ye³. ¹Department of Wildlife and Fisheries, Mississippi State, MS., ²Fisheries Division, Nebraska Game and Parks Commission, Lincoln, NE., ³Bejing University, People's Republic of China.

Blue catfish (*Ictalurus furcatus*) were hand grappled, primarily using SCUBA gear, from 30.5 cm square X 122 cm long wood boxes, 208-L metal drums and 132-L plastic barrels set approximately 2 m deep May-July over a 4-year period (1990-1993) from the Tallahatchie River, a principal tributary of the Yazoo River. During the study, 676 grabs were conducted and 28 blue catfish were captured. For a 5-year period (1990-1994) in the same river (January-August), blue catfish were collected with hoop nets (4.3-m long, having 7 hoops with 1.07-m diameter and 3.81-cm bar mesh netting). There were 638 overnight hoop net sets which resulted in the capture of 71 blue catfish. Annual mean lengths of blue catfish captured by hand grappling ranged from 69.0 cm in 1991 (SE = 1.2; \bar{N} = 2) to 88.2 cm in 1992 (SE = 5.3; \bar{N} = 5). Annual mean lengths of blue catfish captured by hoop nets ranged from 40.0 cm in 1993 (SE = 2.0 \bar{N} = 7) in 1993 to 58.5 cm in 1994 (SE = 3.1; \bar{N} = 23). The overall hoop net catch per unit of effort for the entire study was 0.04 blue catfish per grab and 0.11 blue catfish per overnight net set. Hand grappling resulted in the catch of larger blue catfish on the average than have been reported by studies in the Yazoo River system that addressed commercial gear and blue catfish angling.

MOVEMENT OF TAGGED CATFISH IN THE LOWER MISSISSIPPI RIVER. Larry L. Pugh¹ and Harold L. Schramm, Jr.². ¹Department of Wildlife and Fisheries, Mississippi State University. ²Mississippi Cooperative Fish and Wildlife Research Unit National Biological Service, Mississippi State University.

We tagged 176 blue catfish (*Ictalurus furcatus*), 169 channel catfish (*Ictalurus punctulatus*), and 224 flathead catfish (*Pylodictis olivaris*) in the Lower Mississippi River during the period August 1995 - December 1995. Two channel catfish, two blue catfish, and 9 flathead catfish were recaptured. Time between release and recapture ranged from 1 day to 409 days. For blue catfish, 1 recapture occurred approximately 5 km downstream from the release site. For channel catfish, 1 recapture occurred 10 km downstream from the release site, and the other recapture was 52 km upstream from the release site. All flathead catfish recaptures occurred < 1 km from release sites. These results suggest that localized management programs may be adequate rather than a large-scale approach for managing flathead catfish stocks in the Lower Mississippi River.

LAKE WASHINGTON YO-YO UTILIZATION AND HARVEST SURVEY APRIL 10, 1996 TO MAY 10, 1996. Charles E. Vyles, Associate Resource Biologist MDWFP, Garry M. Lucas, Fisheries Biologist MDWFP.

Anglers complained of a need to regulate yo-yo fishing on Lake Washington to reduce harvest of fish not protected by length limit, ie crappie under 20 cm, reduce waste caused by fish dying and spoiling on yo-yo's before being harvested. that yo-yo's were fished in a way and at locations that prevented access by boat anglers. A project was developed to determine the fishing pressure exerted through the use of this fishing device and quantify the harvest of specific species of game and non-game species. The majority of the fish harvested by this method include channel catfish and black and white crappie. The average number of fish harvested for each sampling day was 105.20, with 90.8% catfish and 7.8% crappie. The data from the 1996

COMPARABILITY OF CHANNEL CATFISH STOCK DESCRIPTORS OBTAINED FROM DIFFERENT HOOP NET CONFIGURATIONS. John R. Jackson, Joseph E. Flotemersch, and Donald C. Jackson. Department of Wildlife and Fisheries, Mississippi State University, Mississippi State, MS.

Channel catfish (Ictalurus punctatus) stock characteristics were compared from samples collected using three different hoop net configurations (large hoop net LH(3.81): 4.3-m long; 7-hoops with 1.07-m diameters; 3.81-cm bar mesh netting, small hoop net SH(3.81): 1.3-m long; 4-hoops with 0.51-m diameters; 3.81-cm bar mesh netting, and small hoop net SH(2.54): 1.3-m long; 4-hoops with 0.51-m diameters; 2.54-cm bar mesh netting) in the Yockanookany River, a small floodplain river in central Mississippi (1994-1995). Channel catfish were fully recruited at 35-cm total length (TL) in LH(3.81) and SH(3.81) and at 30-cm TL in SH(2.54). Approximately three times the number of channel catfish were collected with SH(2.54) than with LH(3.81) and SH(3.81) combined. Due to differences in length at full recruitment relative to mesh size, comparative analyses were conducted only on channel catfish ≥ 35 -cm TL. Mean lengths, mean weights, length-frequency distributions, proportional stock densities, and mean daily catch per unit effort values (CPUE: g/hoop net night) were similar among hoop net configurations. Sample size was identified as an important consideration due to variability in catch rates and poor CPUE correlation between large and small hoop net configurations. Use of small hoop nets would reduce logistical challenges associated with sampling small rivers.

CONSIDERING THE EFFECTS OF TIME IN EXPERIMENTAL DESIGN OF FISHERIES RESEARCH. John Barry Taylor. Department of Wildlife and Fisheries, Mississippi State University.

The effects of time are inherent in many experimental designs used in fisheries research, but often these effects are given insufficient consideration. This oversight is often due to a lack of awareness of analytical methods which may provide information pertaining to time effects. Additionally, although regression and analysis-of-variance are commonly used analytical tools in fisheries research, time effects may invalidate assumptions key to the underlying statistical theories governing the effectiveness of these techniques. Other less-commonly known statistical methodologies are available, however, which incorporate the effects of time more effectively. For example, Box-Jenkins methodologies are a popular tool used in the specialized area of statistics known as "time series analysis", which provides powerful tools to identify trends, cycles, and seasonal variations in data collected over time. Although specific structural requirements must be met by data used in Box-Jenkins methodology, some of the ideas from this methodology may be applied to regression and analysis-of-variance, to increase these techniques' utility with data that is collected over time, but does not meet the structural requirements for Box-Jenkins methods.

IMPACT OF CORMORANT ON THE CRAPPIE POPULATION OF LAKE BEULAH
Charles E. Vyles, Associate Resource Biologist - MDWFP, Garry Lucas, Fisheries Biologist - MDWFP, James Glahn - USDA-ADC, Charles (Bo) Sloan - USDA-ADC, Jobe Maynor - USDA-ADC

The Mississippi Department of Wildlife, Fisheries & Parks (MDWFP) received complaints from anglers of poor fishing on Lake Beulah during the winter of 1994-1995. These fishermen reported tremendous numbers of Doubled Breasted Cormorants on Lake Beulah and were concerned that cormorants were the reason for their poor fishing success. This project was under taken to determine if double crested cormorants were capable of exerting significant predatory pressure on the gamefish, principally crappie, of Lake Beulah. Project results initially show that the Double Breasted Cormorants are impacting the crappie population, but not to the same degree as the fishing public. However, the question is how much are the cormorants impacting the resource over time and is that impact greater than the public's impact on the resource. The initial results from this project should be used to illustrate to the public that predator-prey relationships are important and man has the same effect as a predator in ecosystem based management. Because of man's relationship to the ecosystem we must be careful to take into consideration his or her effect on the environment.

RELATIVE ABUNDANCE OF YOUNG-OF-THE-YEAR AND ADULT CATFISHES IN DREDGED AND UNDREDGED SECTIONS OF THE YALOBUSHA RIVER, MISSISSIPPI. Donald G. Cloutman and Donald C. Jackson. Department of Wildlife and Fisheries, Mississippi State University.

Small-mesh hoop nets (4 hoops, 0.61-m diameter, 6.4-mm heavy delta mesh) were used March-June, 1995 and 1996 (N = 230 net-nights), in the Yalobusha River, Mississippi, to estimate relative abundance (catch per unit of effort: CPUE = mean number of fish per net night) of young-of-the-year catfishes. Standard¹ experimental hoop nets (7 hoops, 1.07-m diameter, 3.81-cm treated bar mesh cotton netting) were used January-August, 1995 and 1996 (N = 400 net-nights), to estimate relative abundance (catch per unit of effort: CPUE = mean kg of fish per net night) of adults. Two-way analyses of variance indicated that CPUE did not differ significantly in the upstream (undredged) and downstream (dredged) sections of the river or between years for young-of-the-year and adult channel catfish Ictalurus punctatus and blue catfish Ictalurus furcatus. CPUE for young-of-the-year flathead catfish Pylodictis olivaris did not differ between years, but was higher in the dredged section than in the undredged section. In contrast, CPUE of adult flathead catfish did not differ significantly between years or sections of the river. Physical habitat conditions resulting from single-bank dredging of the lower reaches of the Yalobusha River apparently are within tolerance limits of these catfishes.

¹ Standard established by Mississippi Department of Wildlife, Fisheries and Parks