FINAL REPORT

Dingell-Johnson Project F-1-R-27
Study S-22, Job 1

LIFE HISTORY OF WILD RAINBOW TROUT IN MISSOURI

Missouri Department of Conservation

Larry R. Gale, Director

Charles A. Purkett, Jr., Assistant Director

Dan F. Dickneite , D-J Coordinator

James P. Fry, Chief, Division of Fisheries

Date prepared: May 1, 1979

Prepared by:

isheries Research Biologist

Approved by:

isheries Research Superintendent

C

CONTENTS

	PAGE
INTRODUCTION	. 1
MISSOURI'S TROUT FISHERY RESOURCES	. 1
HISTORY OF MISSOURI'S TROUT REARING AND STOCKING PROGRAM	. 1
LIFE HISTORY OF WILD RAINBOW TROUT IN MISSOURI	. 5
Wild Trout Populations	. 6
Reproduction	. 7
Age and Growth	. 8
Survival	. 9
SUMMARY AND RECOMMENDATIONS	. 10
ACKNOWLEDGEMENTS	. 11
TITERATURE CITED	. 12

ABSTRACT

Most trout fisheries in Missouri have been maintained by stocking rainbow trout (Salmo gairdneri Richardson) or brown trout (Salmo trutta Linnaeus) since the late 1800's. However, there are a few small, self-sustaining, wild rainbow trout populations scattered throughout the Ozarks (remnants of earlier stockings). The purpose of this report is to consolidate the information about these wild populations, and to document the locations and extent of Missouri's trout habitat and trace the history of Missouri's trout program.

Trout stocking (by state and federal government) in Missouri began in 1878 with a release of California salmon followed during the next 20 years by releases of rainbow trout, brook trout, brown trout, Atlantic salmon, lake trout, and grayling. These early releases came from Missouri Fish Commission Brown's Spring Hatchery at St. Joseph, Missouri and the Neosho Federal Hatchery at Neosho, Missouri. Presently rainbow trout and brown trout are stocked in Missouri's 4 trout parks and 11 trout management areas from Missouri's four trout hatcheries (Shepherd of the Hills, Bennett Springs, Montauk, and Roaring River) and one rearing area (Maramec Springs). Additional trout are supplied from federal hatcheries at Neosho, Missouri and Greer's Ferry, Arkansas.

Since the early rainbow trout releases, wild rainbow trout populations have become established in several Ozark spring branches. The most abundant populations (as high as 300 trout per acre) are found within 1 to 2 miles of a spring source in streams that have stable tree lined banks, deep pools with overhead cover, stable riffles with large rubble and gravel for spawning and nursery areas, and only limited fishing. Wild rainbow trout in Missouri spawn beginning in December and continue through the first week of February. Spawning is usually associated with a day length of approximately 10 hours, decreas-

ing water temperature, and a minimum water temperature less than 50°F. Wild trout in Missouri grow faster than the average reported for other rainbow trout in North America, and average approximately 6 inches in length the first year, 9 inches the second year, and 11 inches the third year. Annual survival ranges from 35% for two-year-old trout to 70% for four-year-old and older trout.

Trout habitat in Missouri is limited to approximately 170 miles of springfed streams and rivers, or about 1% of the total stream resource, and one 1,730 acre cold water reservoir, or about 0.3% of the lake resource. The Missouri Department of Conservation manages approximately 71 stream miles and the cold water reservoir for public trout fishing. Any expansion of Missouri's trout program will have to be on the smaller springs or spring branches. These waters are capable of supporting wild self-sustaining trout populations, but are too small to sustain a significant trout harvest. The existing wild trout populations need protection from environmental degradation, and overuse. They can and do provide a unique fishing experience. To protect and effectively manage these populations, I recommend that the Missouri Department of Conservation acquire portions of two or more wild rainbow trout streams to ensure the integrity of these unique resources. Further, I feel that we should restrict fishing to artificial lures, establish a high length limit, or allow fishing with no harvest to ensure adequate survival to maintain viable wild rainbow trout populations.

INTRODUCTION

Trout are not native to Missouri, but since the late 1800's several trout fisheries have been developed or established in a number of Ozark spring branches. Most of these fisheries are maintained by stocking rainbow trout (Salmo gairdneri Richardson) or brown trout (Salmo trutta Linnaeus); however, there are a few small, self-sustaining, wild rainbow trout populations scattered throughout the Ozarks (remnants of earlier stockings) that support limited fishing.

The Missouri Department of Conservation has considerable information about the location and extent of water suitable for trout, the history of trout releases in Missouri, and life history information about wild rainbow trout populations, but much of it is in memorandums, annual and biennial reports, and hatchery records. The purpose of this report is to consolidate this information into one source.

MISSOURI'S TROUT FISHERY RESOURCES

Trout habitat in Missouri is limited to approximately 170 miles of spring fed streams and rivers and one 1,730 acre coldwater reservoir (Appendix A; Fig. 1). Trout streams range from very short reaches below small spring ponds to one, 19 mile stretch of the Eleven Point River.

About 45% (77 miles) of the stream trout habitat is open to public fishing. The remainder is privately owned. To date, the Missouri Department of Conservation owns and/or directly manages approximately 71 miles of trout fishing streams and the Lake Taneycomo trout fishery.

HISTORY OF MISSOURI'S TROUT REARING AND STOCKING PROGRAM

Missouri's trout program evolved during three fairly distinct time

periods: 1878-1921, 1922-1936, and 1937-present. The earliest years of the program were characterized by indiscriminate releases of many different salmonid species by the Missouri Fish Commission, U. S. Fish Commission, and private individuals. The first salmonids released were "California salmon" acquired by the Missouri Fish Commission from the U. S. Fish Commission in 1878 and 1879 (Appendix B; Fig. 2). These salmon fry were released in the tributaries of the Missouri and Mississippi rivers in hopes of creating a migratory salmon run from the Gulf of Mexico to Missouri. Brook trout from Wisconsin were released in rivers adjacent to the Frisco Railroad between St. Louis and Southwestern Missouri in 1879.

Rainbow trout eggs were first purchased by the Missouri Fish Commission from the U. S. Fish Commission's McCloud River Station in California in 1880. This station supplied rainbow trout that were eventually shipped, cultured, and stocked around the world (MacCrimmon 1971; Wales 1939). Missouri received rainbow trout eggs from the McCloud River Station in 1880, 1882, 1883, 1886, and 1887. The "Missouri strain rainbow", now cultured in Missouri's trout hatcheries, are direct descendants from these early purchases. Hatchery records reveal that many of the wild rainbow trout in Missouri streams are also descendants of the McCloud River strain.

Missouri's first cold water hatchery was constructed by the Missouri Fish Commission on Brown's Spring in St. Joseph, Missouri in 1879. Only a limited number of salmonids were reared and released before the hatchery was discontinued in 1916 because of an unsuitable water supply. Most salmonids released in Missouri from 1878 to 1922 were reared at the Neosho Federal Fish Hatchery in Neosho, Missouri which began operation in 1889. Their rainbow trout broodstock (McCloud strain from Wytheville, Virginia)

have been maintained since 1890. The Neosho Hatchery had substations at Roaring River, Bennett Spring, Greer Spring, and Blue Spring near Bourbon, Missouri. The Neosho Hatchery also stocked Missouri's rivers with brown trout, several species of Pacific salmon, Atlantic salmon, lake trout, steelhead trout, and grayling.

Development of Missouri's hatchery system and the "Missouri strain rainbow trout" characterized the second stage (1922-1936) of Missouri's trout rearing and stocking program. The state's first successful cold water hatchery was built in 1921 at Sequiota Spring near Springfield, Missouri. Rainbow trout (from Neosho Hatchery broodstock) and other stream fishes were reared and stocked from this facility until 1958 when it was replaced by Shepherd of the Hills Hatchery at Branson, Missouri. Bennett Spring (in 1927), Roaring River (in 1928), and Montauk (in 1928) were also purchased during this period by the Missouri Game and Fish Commission as trout hatcheries and fishing areas. Roaring River and Bennett Spring had been operated as substations of the Neosho Hatchery and probably had rainbow trout broodstock that were mixed with the Sequiota broodstock.

The Neosho Hatchery supplied rainbow and brown trout to the Missouri Game and Fish Commission, private individuals, and sporting clubs until 1937. After 1937, private individuals and sporting clubs could no longer get fish from the hatchery. Trout from the hatchery were only distributed by the Missouri Department of Conservation.

Missouri's current trout program began in 1937 and now includes 4 trout parks and 11 trout management areas (including a cold water reservoir and a trophy trout fisher). Trout are stocked from Missouri's 4 trout hatcheries and federal hatcheries at Neosho, Missouri and Greer's Ferry, Arkansas. In 1937, the newly formed Missouri Department of Conservation (MDC) established a policy of stocking

catchable size (approximately 10 inches) trout only in suitable habitat that was open to public fishing. Trout stocking in Bennett Spring, Roaring River and Montauk state parks began before 1937, but daily trout tags were not sold until 1938. A history of trout tags in shown in Table 1. A fourth trout park (Maramec Spring) was added in 1958. Now, approximately 930,000 rainbow trout are stocked annually in Missouri trout parks.

Prior to 1937, trout streams other than the parks were stocked indiscriminately. The Missouri Department of Conservation initiated a stocking program in 1938 which restricted stocking to five trout management areas. The most important of these were the Current River downstream from Montauk State Park and the Eleven Point River downstream from Greer Spring. Since then, the streams stocked have varied, but presently, MDC stocks 10 trout management areas (not including Lake Taneycomo) approximately 6 to 10 times annually. About 90,000 rainbow and brown trout were stocked in these areas in 1978.

Missouri's only reservoir trout fishery was established in Lake Taneycomo (immediately below Table Rock Dam) in 1958 when coldwater releases from Table Rock Lake changed Lake Taneycomo from a warmwater lake to a cold water lake (Fry and Hanson 1968). More than 6,000,000 trout have been stocked in Lake Taneycomo since 1958, to maintain this popular fishery. Hanson (1977) reported approximately 249,000 fishermen visiting this reservoir annually.

The most recent addition to Missouri's trout program was the trophy trout fishery concept initiated in 1974 (Turner 1974) on the Meramec River. Subsequently this program has been expanded to include portions of the

Table 1. Number of trout tags sold at Missouri's trout parks, 1938-1978.

	Bennett		Roaring	Marame	
Year	Spring	Montau	River	Spring	Total
1000*					4,020
1938*	40.000	2.040	44 470		
1939	12,689	3,040	11,470		27,199
1940	15,642	4,875	12,764		33,281
1941	16,335	8,740	12,809		37,884
1942	12,029	8,659	11,126		31,814
1943	8,859	7,419	8,801		25,079
1944	10,679	8,863	9,772		29,264
1945	No repo				
1946	12,257	7,783	11,055		31,095
1947	16,248	9,603	14,066		39,917
1948	15,291	10,337	17,252		42,880
1949	19,938	12,976	18,127		51,041
1950	26,396	17,946	27,446		71,288
1951	20,936	17,944	18,434		57,314
1952*					78,829
1953	31,915	17,737	20,637		70,289
1954	31,941	19,046	16,519		67,506
1955	33,390	19,141	21,431		74,502
1956	44,918	21,738	24,662		91,318
1957	50,159	20,160	30,519		100,838
1958	51,012	22,943	34,965	19,127	128,047
1959	56,471	26,657	37,733	18,180	139,041
1960	65,028	31,915	42,091	23,178	162,212
1961	73,675	36,532	44,969	24,722	179,898
1962	81,608	42,389	45,399	26,296	195,692
1963	86,945	44,124	44,888	29,955	205,912
1964	95,524	45,373	42,447	34,314	217,658
1965	104,037	·			
		49,174	46,615	37,863	237,689
1966	110,319	62,772	52,859	44,877	270,827
1967	110,771	79,830	56,029	49,825	296,455
1968	123,259	80,066	65,887	57,317	329,529
1969	125,992	80,444	68,167	63,501	338,104
1970	138,266	90,549	78,544	62,515	369,874
1971	153,111	94,861	79,231	58,529	385,732
1972	138,863	83,684	67,226	42,367	332,140
1973	153,282	82,562	74,638	46,084	356,566
1974	142,123	76,782	68,649	47,486	335,041
1975	140,210	92,088	76,208	58,513	367,019
1976	147,074	97,120	85,748	54,929	384,871
1977	151,870	100,210	89,090	57,868	399,038
1978	158,387	90,261	95,412	61,948	406,008

^{*} Number sold and individual park unavailable.

Current River and North Fork of White River. These trophy trout fisheries were established by stocking a species relatively difficult to catch (brown trout), imposing a relatively high length limit (15 inches), and reducing the daily creel to provide an opportunity for more fishermen to catch a large trout. These regulations are currently being investigated (Turner 1978) to determine their effectiveness in producing and maintaining high quality trophy fishing.

LIFE HISTORY OF WILD RAINBOW TROUT IN MISSOURI

Reproduction of rainbow trout in Missouri streams was first reported in Spring River (southwest Missouri) and Meramec River (Missouri Fish Commission 1885-1886; and Maynard 1887). In 1893, the superintendent of the Neosho Federal Fish Hatchery also reported that rainbow trout were reproducing in Spring River, Meramec River, and Crane Creek (1893 annual report and daily log of the Neosho Federal Fish Hatchery, Neosho, Missouri). Surber (1931) observed rainbow trout spawning in Cave Spring near Cedar Grove, Missouri before 1930. Later, Bridges (1966) found rainbow trout reproducing in Kratz Spring Branch and Spring Creek (a tributary of the Bourbeuse River), and Spring Creek (a tributary of the Big Piney River). Recent observations indicate rainbow trout are reproducing in at least 14 spring branches and streams in Missouri (Appendix A). These observations also revealed how little knowledge we have concerning these natural, self-sustaining trout populations.

To improve our knowledge, a study was initiated at three trout streams in 1969 to determine the reproductive success, survival, and growth of wild rainbow trout in Missouri (Turner 1975). The three study streams (Fig. 3) located

approximately 10 miles southwest of Rolla contained reproducing rainbow trout populations, were similar morphologically, were in the same climatic region, but received different amounts of fishing.

The information presented here includes the study results and observations made after completion of the study. The methodology used in the study will not be repeated in this report but may be found in Turner (1975).

Wild Trout Populations

Wild rainbow trout populations in Missouri are dependent on habitat quality, fishing pressure, and the abundance of warmwater fishes. Under optimum stream conditions, a trout population of approximately 300 trout per acre (50 pounds per acre) can be expected. Populations of this size are characteristically found within 1 to 2 miles of a spring source in streams with stable tree lined banks; deep pools with logs and undercut banks providing overhead cover, feeding, and escape areas; stable riffles with large rubble and gravel for spawning and nursery areas; and have limited fishing (Turner, 1975). Trout streams with unstable conditions and high fishing pressure, such as the Lane Spring Trout Management Area in Phelps County, would generally support less than 60 wild trout or about 8 pounds per acre and most of these would be young-of-the-year. When streams are stocked regularly with hatchery trout, and fished heavily following the stockings, the harvest of wild trout is increased (Butler 1975 and Vincent 1975).

Rainbow trout evolved under torrential stream conditions in the mountains along the Pacific coast. They existed in simple fish communities with few fish species where they were the principal predator (White 1975). In Missouri, they generally co-exist with a sizable community of stream

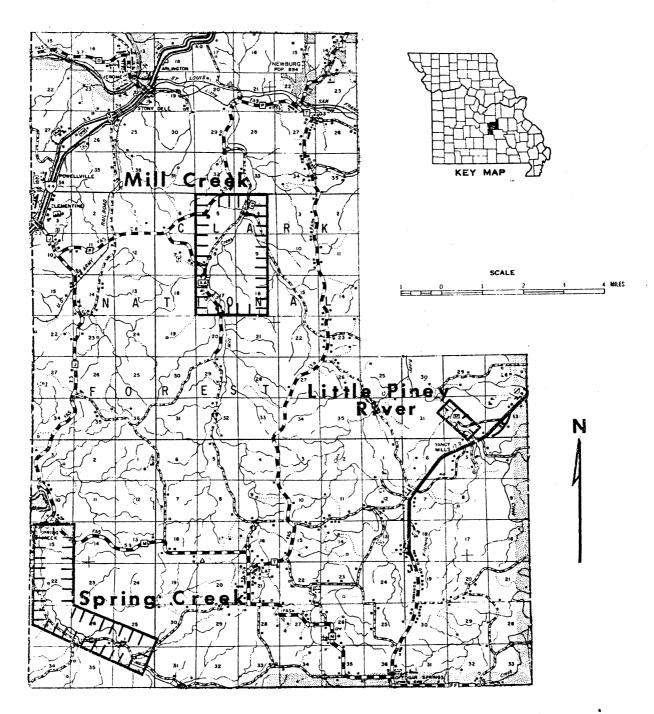


Figure 3. Location of wild rainbow trout populations used for life history observations.

fishes that increases progressively downstream from spring sources (Turner 1975). Predators such as smallmouth bass, largemouth bass, rock bass, and green sunfish are common. Competition between these fishes and rainbow trout may take two forms: competition for food and space, and predation (Chapman 1966, Frost and Brown 1967). Ultimately, as the number of warmwater fish increases, the number of trout decrease.

Reproduction

Wild rainbow trout in Missouri begin spawning in late December and continue through the first week in February. This is approximately the same spawning time period as that of their ancestors from the McCloud River in California. McCloud River rainbow trout originally spawned during spring when water temperatures were increasing (Wales 1939, Breder and Rosen 1966), but the mixing of different strains of rainbow trout has resulted in considerable variation in the spawning period (Agersberg 1934). Hatchery broodstock descendants from the McCloud strain rainbow trout presently spawn in October and November because of intentional selection by hatcheries.

Wild rainbow trout spawning in Missouri is generally associated with a day length of approximately 10 hours, decreasing water temperatures, and minimum water temperatures lower than $50^{\circ}F$. Trout generally spawn after a sharp reduction (at least $10^{\circ}F$) in the minimum water temperature.

Spawning behavior of rainbow trout in Missouri is similar to that reported by Shapovalov and Taft (1954), Briggs (1953) and Greeley (1932). Female rainbow trout, accompanied by one or more males, select an area in a riffle for the redd. (A redd is a depression, or nest, hollowed out by a female trout for deposition of her eggs.) Redds are usually built near the

break between pool and riffle, providing maximum water flow through the gravel and optimum oxygen conditions for incubating eggs. After selecting the site, the female excavates the redd by undulating her tail against the substrate dislodging gravel which is moved downstream by the current. This is repeated until an oval depression 2-6 inches deep and 18-36 inches long is excavated. The larger the female, the larger the redd. When the redd is complete, the dominant male moves into the redd with the female, and eggs are deposited and fertilized simultaneously. The female then resumes digging upstream from the redd and covers the eggs with gravel carried into the redd by water current. This sequence of events may be repeated several times by the same female. Unlike some stream fishes, trout do not guard the redd after the eggs have been deposited.

Age and Growth

Wild trout in Missouri grow faster than most wild trout in other North American streams. In those streams, wild rainbow trout average 4.0 inches by the end of the first year (Age 0), 6.5 inches by the end of the second year (Age 1) and 8.5 inches by the end of the third year (Age II) (calculated from Carlander 1969). In Missouri, young-of-the-year rainbow trout are about 2.0 inches longer and by the second and third years they are approximately 2.5 inches and 3.0 inches longer. The reason for this difference in growth is that in most trout streams growth slows or stops because of cold water temperatures. Water temperatures in Missouri trout streams remain favorable for growth because, they are springfed and flow at approximately 58°F throughout the year.

Young-of-the-year (Age 0) rainbow trout average about 6 inches in length and weigh about 1 ounce by October. By October of the second year (Age I) they average about 9 inches (range 6 to 10 inches) and weigh about 4 ounces. Three year old (Age II) rainbow trout average 11 inches (range 10.0 to 13.3)

and 9 ounces.

Rainbow trout longer than 14 inches (mature fish) are 3 years old or older. Examinations of ovaries suggests that wild rainbow trout in Missouri must be at least 14 inches long before they mature sexually. The largest wild rainbow trout we have taken was a 21 inch female. The same fish was 18 inches long when captured the previous year.

Survival

Trout survival in streams is influenced by many interrelated factors, but generally improves as the fish become older and larger. The more important factors affecting survival are predation by fishes and birds (Leonard and Shetter 1936), destruction of redds by floods (Corning 1969; Gangmark and Broad 1955), siltation in redds during incubation (Coble 1961; Peters 1962), and fishing (Turner 1974). The most vulnerable period for trout during their life cycle is while they are in the redd and during the first year. Survival of wild trout during the first year in Missouri is probably similar to survival rates reported from other trout streams. Allen (1951) and Frost and Brown (1967) report that trout survival during the first year ranges from about .05% to 2.5% (conversely, the percent dying is between 97.5 and 99.95). After the first year, survival gradually increases. Annual survival of two-year-old wild trout in Missouri is approximately 35% and three-year-old trout is 45%. Survival of four-year-old and older trout increases to about 70%. For every 1,000 trout eggs deposited (two or three redds), only three trout will live 4 years or longer.

SUMMARY AND RECOMMENDATIONS

Trout habitat is limited to about 1% of the 18,000 stream miles and about 0.3% of the 500,000 acres of lakes in Missouri. By now, most major springs and branches where trout habitat exists are managed by the Missouri Department of Conservation as put and take trout fisheries. Consequently, any expansion of Missouri's trout program probably will have to be on the smaller springs or spring branches. These waters are capable of supporting wild self-sustaining trout populations, but are too small to sustain a significant harvest of wild trout.

The wild trout populations surviving in many of these spring brances represent a genetic link with the past since they are direct descendants of the McCloud rainbow trout. These fishes have a genetic pool of characteristics that has been derived from millions of years of natural selection. These populations need protection from environmental degradation, and/or overuse. They can and do provide a unique fishing experience.

To protect and effectively manage these populations, the following is proposed:

- 1. The Missouri Department of Conservation should acquire portions of two or more trout streams containing wild rainbow trout populations. These streams should be geographically remote from each other and be of sufficient length to ensure that the integrity of the stream environment be maintained for trout.
- 2. The harvest of wild trout should be regulated to ensure adequate survival to maintain a viable population. I recommend that we restrict fishing to artificial lures, establish a high length limit, or allow fishing with no harvest.

- 11-ACKNOWLEDGEMENTS

I recognize the United States Forest Service, Mark Twain National Forest for their cooperation in the rainbow trout life history research; Mr. Charles Tryon, Watershed Scientist, Mark Twain National Forest, for bringing to our attention the wild trout population in Mill Creek and assisting during the study; Mr. Norman Hines, Superintendent, Neosho Federal Fish Hatchery, for providing historical information on trout stocking in Missouri; Mr. and Mrs. Clarence Hudgens for allowing access to Mill Creek, providing historical information about the stream, and for playing a major role in preserving the wild rainbow trout population in Mill Creek; Conservation Agents of the Missouri Department of Conservation for providing information about the locations of trout streams in their counties; Fisheries Assistants for their help in sampling; and the editors for their constructive review of this report.

LITERATURE CITED

- Agersborg, H. P. K. 1934. When do the rainbow trout spawn? Trans. Am. Fish. Soc. 64:167-169.
- Allen, K. R. 1951. The Horokiwi Stream. A study of a trout population.

 New Zealand Marine Dept. Fish Bull. 10. 231 pp.
- Breder, C. M. and D. E. Rosen. 1966. Modes of reproduction in fishes. The Natural History Press, Garden City, New York. 941 pp.
- Bridges, D. W. 1966. Introduction of rainbow trout. Missouri Dept. Cons.
 D-J Proj. F-1-R-15, Study S-7, Job No. 6. Progress Rept. 9 pp.
- Briggs, J. C. 1953. The behavior and reproduction of salmonid fishes in a small coastal stream. Calif. Dept. Fish and Game Fish Bull. 94. 62 pp.
- Butler, R. L. 1975. Some thoughts on the effects of stocking hatchery trout on wild trout populations. Pages 83-87 In W. King, ed. Proceedings of the wild trout management symposium at Yellowstone National Park, September 25-26, 1974. Trout Unlimited, Inc., Denver, Colorado.
- Carlander, K. D. 1969. Handbook of freshwater fishery biology. Vol. I.

 Iowa State Univ. Press, Ames, Iowa. 752 pp.
- Chapman, D. W. 1966. Food and space as regulators of salmonid populations in streams. Am. Nat. 100(913):345-357.
- Coble, D. W. 1961. Influence of water exchange and dissolved oxygen in redds on survival of steelhead trout embryos. Trans. Am. Fish. Soc. 90(4):439-474.
- Corning, R. D. 1969. Water fluctuation, a detrimental influence on trout streams. Proc. Annu. Conf. Southeast Assoc. Game Fish Comm. 23:431-454.
- Frost, W. E. and M. E. Brown. 1967. The trout. N. M. N. Collins Co., St. James Place, London. 286 pp.

- Fry, J. P. and W. D. Hanson. 1968. Lake Taneycomo: a cold-water reservoir in Missouri. Trans. Am. Fish. Soc. 97(2):138-145.
- Gangmark, H. A. and R. D. Broad. 1955. Experimental hatching of king salmon in Mill Creek, a tributary of the Sacramento River. Calif. Fish Game. 42(1):37-49.
- Greely, J. R. 1932. The spawning habits of brook, brown, and rainbow trout and the problem of egg predators. Trans. Am. Fish. Soc. 62:239-348.
- Hanson, W. D. 1977. Harvest of fish from Lake Taneycomo. Mo. Dept. Cons.

 D-J Pro j . F-1-R-25, Study I-11, Job No. 3. Final Rept. 13 pp.
- Leonard, J. W. and D. S. Shetter. 1936. Studies on merganser depredations in Michigan trout waters. Trans. Am. Fish. Soc. 66:335-337.
- MacCrimmon, H. R. 1971. World distribution of rainbow trout (Salmo gairdneri). J. Fish. Res. Board Can. 28(5):663-704.
- Maynard, H. J. 1887. Rainbow trout in southern Missouri. Bull. U. S. Fish.

 Comm. VII:55-56.
- Missouri Fish Commission. 1886. Fourth Biennial Report Missouri State Fish Commission, 1885-86.
- Peters, J. C. 1962. The effects of stream sedimentation on trout embryo survival. Pages 275-287 <u>In</u> Biological problems in water pollution, 3rd Seminar, 1962. U. S. Dept. of Health, Education, and Welfare, Pub. Health Ser. Publ. No. 999-WP-25, Cincinnati, Ohio.
- Shapovalov, L. and A. C. Taft. 1954. The life histories of the steelhead rainbow trout (Salmo gaindneri gairdneri) and silver salmon (Oncorhynchus kisutch). Calif. Dept. Fish and Game Fish Bull. No. 98. 375 pp.
- Surber, T. 1931. Fish culture successes and failures in Minnesota. Trans.

 Am. Fish. Soc. 61:240-246.

- Turner, S. E. 1974. A study of the introduction of brown trout in two Missouri rivers. Mo. Dept. Cons. D-J Proj. No. F-1-R-23, Study S-8, Job Nos. 2 and 3. Final Rept. 16 pp.
 - . 1975. Natural reproduction of rainbow trout. No. Dept.
 - Cons. D-J Proj. No. F-1-R-23, Study S-9, Job No. 2. Final Rept. 16 pp.
 - 1978. An evaluation of a high quality trout fishery in Missouri. Mo. Dept. Cons. D-J Proj. No. F-1-R-27, Study S-25, Perform. Rept. 3 pp.
- Vincent, R. E. 1975. Effect of stocking catchable trout on wild trout populations.

 Pages 88-96 <u>In</u> W. King, ed. Proceedings of the wild trout management symposium at Yellowstone Park, September 25-26, 1974. Trout Unlimited, Inc., Denver, Colorado.
- Wales, J. H. 1939. General report of investigations on the McCloud River drainage in 1938. Calif. Fish Game. 25:272-309.
- White, R. J. 1975. Instream management for wild trout. Pages 48-53 <u>In</u> W. King, ed.

 Proceedings of the wild trout management symposium at Yellowstone Park,

 September 25-26, 1974. Trout Unlimited, Inc., Denver, Colorado.

Appendix A. Location and ownership of Missouri's stream trout habitat. Rainbow trout are the predominant species unless otherwise noted in the remarks section. In addition, trout occur in Lake Taneycomo (1,730 acres), Bull Shoals Lake (9,000 acres, in Missouri), and Table Rock Lake (43,100 acres).

Name	Miles	County	Township	Range	Section(s)	Ownership*	Remarks
Barron Fork Creek	2	Shannon	31N	4W	20,29	P	Stocked by private club.
Blue Spring Creek	4	Crawford	39N	3W,2W	1-3,6-8	P	Contains a self-supporting
Bryant Creek	7	Douglas	27N 26N	15W 14W	16,17,22,23 28,29,33,34	P	wild rainbow trout popula- tion
	3	0zark	24N	12W	28,29,33,34	P	
Carnahan's Trout Spring	0.3	Wayne	27N	4W	6	P	
Capps Creek	5.5	Barry & Newton	25N	29W	7,11,12,15,17,18	P	Missouri Department of Conservation trout management area.
Center Creek	3.5	Lawrence	27N	28W	17-19	Р	Contains a self-sustaining wild rainbow trout population.
Crane Creek	13	Stone	25N 25N 26N	24W 23W 24W	1,4,5,10,11 5,6,8,17 29,30,32	Р	Contains a self-sustaining wild rainbow trout population.
Current River	2.8	Dent	32N	7W	22,23,26-27,36	S	Missouri Department of Conservation trout park.
	6	Dent	32N	6W	29,30,31-33	S	Trophy trout management area; brown trout are stocked.
	6	Shannon	31N (23N)	6W 2W	3,4,6,9,10,14,15,23 4,5,7-9,16		
Eleven Point River	19	Oregon	24N 24N 25N	3W	18-20,29,32 1-4,11-13 31-33	F,P	Missouri Department of Conservation trout management area; contains some wild rainbow trout.
Flat Creek	8	Barry	23N 24N	27W 27W	3,9,15,16,21 12,13,23,24,26,34,35	P	
Hazelton Spring	0.3	Texas	33N	10W	34	P	Private hatchery.

Appendix A. (Continued.)

Name	Miles	County	Township	Range	Section(s)	Ownership*	Remarks
Hunter Creek	5	Douglas	26N	14W 15W	19,20,29 22-24	P	
Hurricane Creek	1.5	Ozark	24N	12W	20	P	Rainbow trout have been observed.
Kratz Spring (Spring Creek)	1.5	Franklin	41N 23N	2W 2OW	4,33,34 27,30,32	P	Contains self-sustaining wild rainbow trout population.
Little Flat Creek	2	Barry	25N	27W	28,29,32	P	
Little North Fork White River	3	0zark	23N	15W	33	F,P	
Meramec River	0.7	Phe1ps	37N	6W	2	P	Missouri Department of Conservation trout park.
	7	Phelps Crawford	37N 38N	6W 6W	1 36	P,S P	Trophy trout management area; brown trout are
							stocked.
Mill Creek	1.5	Dallas	36N	18W	7–10	Р	Contains self-sustaining wild rainbow trout population.
Mill Creek	3	Phe1ps	36N	9W	17,20	F,P	Contains self-sustaining wild rainbow trout population.
Niangua River	1.3	Laclede	35N	17W	31	S	Missouri Department of Conservation trout park.
	9	Laclede Dallás	35N 36N	17W 17W	5-8,19,30,31 19,30-32	S,P	Missouri Department of Conservation trout management area; brown trout are stocked.
North Fork of White River	10	0zark	24N 23N 23N	11W 11W 12W	28,33 4,5,8,17-19,30 24,25,35,36	P,F	Missouri Department of Conservation trophy trout management area. Contains self-sustaining wild rainbow trout populations.

Appendix A. (Continued.)

Name	Miles	County	Township	Range	Section(s)	Ownership*	Remarks
Reed Spring	0.3	Reynolds	32N	1E	28	P	
Ringo Spring	0.3	Reynolds	33N	1 E	28	P	
Roaring River	2 6	Barry Barry	22N 22D 21N	27W 27W 36W	25-27,35 36 6-9	S F,P	Missouri Department of Conservation trout park.
Roubidoux Creek	3	Pulaski	36N	12W	13,24,25	P,S	Missouri Department of Conservation trout management area.
Schafer Springs	1	Dent	32N	6W	20,29	P	
Shoal Creek	1	Barry	24N	29W	36	P	
Sinking Creek	0.3	Shannon	31N	4 W	23	P	
Slabtown Spring Branch	0.3	Texas	33N	10W	15	P	
Spring Creek	1	Douglas & Ozark	25N	13W	33	P	
Spring Creek	3	Ozark	23N	11W	14	P	Rainbow trout reproduction has been observed.
Spring Creek	2	Ozark	24N	13W	3	P	
Spring Creek	7	Stone	26N 26N	25W 23W	12,13 1,8,19,30,31	Р	Contains self-sustaining wild rainbow trout population.
Spring Creek	4	Phe1ps	35N	10W	15,22,26,27	P,F	Contains self-sustaining wild rainbow trout population.
Spring River	5	Lawrence	26N 27N	26W 26W	6,8,17,20,21 25,26	P	Rainbow trout reproduction has been observed.
Terrell Creek	3	Christain	27N	23W	4–6	P	Contains self-sustaining wild rainbow trout population.

Name	Miles	County	Township	Range	Section(s)	Ownership*	Remarks
Trout Dale Ranch	Unknown	Morgan	41N	17W	19	P	
Turkey Creek	1	0zark	23N	15W	20	P	
Turnback Creek	4	Lawrence	28N	25W	13,24,25	Р	Contains self-sustaining wild rainbow trout population.
Williams Creek	2	Lawrence	28N	27W	28	Р	

^{*} P = Private ownership; F = Federal ownership; S = State ownership.

Appendix B. Trout releases made in Missouri, 1878-1936. Stocking records reviewed for this table include those from the Neosho Federal Fish Hatchery (*) and reports of the Missouri Fish Commission and Missouri Conservation Commission.

<u>Year</u>	Location	Species Stocked
1878	Arkansas River Tributaries Black River Saline River St. Francis River	Salmon Salmon Salmon Salmon
1879	Blue River Chariton River Gasconade River Grand River Lamine River Missouri River Osage River Platte River Salt River Spring Creek (Phelps Co.) Spring River 102 River Bennett's Spring Pritchett Spring (Camden Co.) Schicht's Spring & Pond (Pulaski Co.) Springs (Reynolds Co.) Trims Spring (Barry Co.) Barttells Mill Pond Beans Lake Contrary Lake Sugar Lake	Salmon Salmon Salmon Salmon Salmon Salmon Salmon Salmon Salmon Brook trout Salmon Salmon
1880	Released in rivers along the Frisco Railroad	Rainbow trout
1881	No reported releases	
1882	Shoal Creek Large Springs Gasconade River Buchanan Co. Davis Co. Holt Co. Lawrence Co. Nodaway Co.	Rainbow trout Rainbow trout Rainbow trout, brook trout & salmon Rainbow trout & brook trout Rainbow trout & brook trout Brook trout Rainbow trout & brook trout
1883	Release locations not reported	Rainbow trout
1884	No reported releases	
1885	No reported releases	

<u>Year</u>	Location	Species Stocked
1886	Capp's Creek	Rainbow trout
	Center Creek	Rainbow trout
	Clear Creek	Rainbow trout
	Little Piney River	Rainbow trout
	Meramec River	Rainbow trout
	Niangua River	Rainbow trout
	Spring River	Rainbow trout
	Mammoth Spring (Oregon Co.)	Rainbow trout
1887	Bennett's Mill Spring	Rainbow trout
	Meramec Spring	Rainbow trout
	Spring tributaries Neosho River	Rainbow trout
1888	No reported releases	
1889	No reported releases	
1890*	Big Lost Creek	Rainbow trout & brown trout
	Center Creek	Rainbow trout & brown trout
	Crane Creek	Rainbow trout
	Elk River	Lake trout
	Elkhorn Creek	Rainbow trout & brown trout
	Hickory Creek	Rainbow trout & brown trout
	Indian Creek	Rainbow trout & brown trout
	Jones Creek	Rainbow trout & brown trout
	Little Sugar Creek	Rainbow trout & brown trout
	Spring River	Rainbow trout & brown trout
	Sugar Fork Creek	Rainbow trout & brown trout
	Turkey Creek	Rainbow trout & brown trout
	5-mile Creek	Rainbow trout & brown trout
	Coper Mine Spring Branch	Rainbow trout
	Barton Co.	Rainbow trout & brown trout
1891*	Current River	Rainbow trout & brown trout
	Private pond Newton Co.	Rainbow trout
1892*	Current River	Rainbow trout
	Exeter, Mo.	Brown trout
	Joplin, Mo.	Brown trout & brook trout
	Monett, Mo.	Rainbow trout
	Neosho, Mo.	Rainbow trout
	Racine, Mo.	Brown trout
	Ritchey, Mo.	Brown trout
1893	Capps Creek	Rainbow trout
	Clear Creek	Rainbow trout
	James River	Rainbow trout
	Spring River	Rainbow trout
	Wilson Creek	Rainbow trout
	Big Springs	Rainbow trout
	Dale County	Rainbow trout

Year	Location	Species Stocked
1893*	Big Lost Creek	Rainbow trout
	Crane Creek	Rainbow trout
	Elk Creek	Rainbow trout
	Hickory Creek	Rainbow trout & brook trout
	Indian Creek	Rainbow trout
	Shoal Creek	Rainbow trout
	South Fork Buffalo River	Rainbow trout
	Chilton, Mo.	Rainbow trout
	Columbia, Mo.	Rainbow trout
	Diamond, Mo.	Rainbow trout
	Exeter, Mo.	Rainbow trout
	Everton, Mo.	Rainbow trout
	Pineville, Mo.	Rainbow trout
	Southwest City, Mo.	Rainbow trout
	Willard, Mo.	Rainbow trout
1894	Independence, Mo.	Rainbow trout
	Langdon, Mo.	Rainbow trout
	St. Joseph, Mo.	Rainbow trout
1894*	Crane Creek	Rainbow trout
	Gasconade River	Rainbow trout
	Anapolis, Mo.	Rainbow trout
	Ash Grove, Mo.	Rainbow trout
	Bethpage, Mo.	Rainbow trout
	Diamond, Mo.	Rainbow trout
	Indian Springs, Mo.	Rainbow trout
	Ironton, Mo.	Rainbow trout
	Kansas City, Mo.	Rainbow trout
	Springfield, Mo.	Rainbow trout
1895*	Locations not legible	Rainbow trout
1896*	Hickory Creek	Rainbow trout, salmon, & graylin
	Sclicht's Spring	Rainbow trout, salmon, & graylin
	Bennett Mill Pond	Rainbow trout, salmon, & graylin
	Ha Ha Tonka Lake	Rainbow trout, salmon, & graylin
	Blue Lodge near Bourbon, Mo.	Rainbow trout, salmon, & graylin
	Lebanon, Mo.	Rainbow trout, salmon, & graylin
	Seneca, Mo.	Rainbow trout, salmon, & graylin
1897*	5-mile Creek	Rainbow trout
	Diamond, Mo.	Rainbow trout
	Joplin, Mo.	Rainbow trout
	Neosho, Mo.	Rainbow trout
	Southwest City, Mo.	Rainbow trout
	Springfield, Mo.	Rainbow trout

Year	Location	Species Stocked
1898*	Crane Creek Indian Creek Carthage, Mo. Christopher, Mo. Sweetwater, Mo. Frisco Railroad	Rainbow trout Rainbow trout Rainbow trout Rainbow trcut Rainbow trout Rainbow trout
1899*	Arlington, Mo. Carthage, Mo. Crane, Mo. Fairbanks, Mo. Jane, Mo. Joplin, Mo. Kansas City, Mo. Neosho, Mo. Springfield, Mo. Sweetwater, Mo. Frisco Railroad	Rainbow trout
1900*	Flat Creek Neosho River Lebanon, Mo. March, Mo. Frisco Railroad	Rainbow trout Rainbow trout Rainbow trout Rainbow trout Rainbow trout
1901*	Frisco Railroad	Rainbow trout
1902	Bennett's Mill Creek Big River Indian Creek Meramec River Spring Creek Spring River Blue Springs Salt Petre Springs Springfield, Mo.	Grayling Brook trout & grayling Brook trout & grayling Brook trout & grayling Grayling Brook trout & grayling Brook trout
1902*	Release locations not reporte	d Rainbow trout & salmon
1903 & 1904	Big River Black River Cain Creek Current River Dry Fork Creek Gasconade River Indian Creek James River Lamine River Little River Little Piney River Meramec River Mill Creek Moreau River Nishnabotna River Osage River Sac River Sheridan River	Brook trout & grayling

Year	Location	Species Stocked
1903	St. Francis River	Brook trout & grayling
&	White River	Brook trout & grayling
1904	Salt Petre Spring	Brook trout & grayling
1904*	Hickory Creek Little Piney River Spring River Lebanon, Mo.	Rainbow trout Rainbow trout Rainbow trout Rainbow trout
	Kansas City, Mo.	Rainbow trout
1905*	Current River Blue Spring Meramec Spring Schlicht's Spring	Rainbow trout Rainbow trout Rainbow trout Rainbow trout
	Estes Pond (Billings, Mo.)	Rainbow trout
1905 &	Indian Creek James River	Brook trout Brook trout
1906	Meramec River	Brook trout
	Niangua River	Brook trout
	Spring Creek (Salem, MO.)	Brook trout
	Blue Spring (Bourbon, Mo.)	Brook trout
	Schlicht's Sring	Brook trout
	Meramec Springs	Brook trout
1906*	Current River	Rainbow trout
1,00	Finley River	Rainbow trout
	Gasconade River	Rainbow trout
	Hickory Creek	Rainbow trout
	Indian Creek	Rainbow trout
	James River	Rainbow trout
	Little Piney River	Rainbow trout
	Meramec River	Rainbow trout
	Blue Springs (Bourbon, Mo.)	Rainbow trout
	Schlicht's Spring	Rainbow trout
	Arlington, Mo.	Rainbow trout
	Bethpage, Mo.	Rainbow trout
	Billings, Mo.	Rainbow trout
	Brookline Station	Rainbow trout
	Farming, Mo.	Rainbow trout
	Monett, Mo.	Rainbow trout
	Newburg, Mo.	Rainbow trout
	Ozark, Mo.	Rainbow trout
	Springfield, Mo. Frisco Railroad	Rainbow trout Rainbow trout
	Kansas City Southern Railroad	Rainbow trout
	manda ore, boathern marridad	TUTITOW CTOUL

Year	Location	Species Stocked
1907*	Schlicht's Spring	Rainbow trout
	Arlington, Mo.	Rainbow trout
	Aurora, Mo.	Rainbow trout
	St. James, Mo.	Rainbow trout
	Summerfield, Mo.	Rainbow trout
	Warsaw, Mo.	Rainbow trout
1907	Current River	Brook trout & grayling
&	James River	Brook trout & grayling
1908	Indian Creek	Brook trout
	Little Piney River	Brook trout
	Meramec River	Brook trout
	Niangua River	Brook trout
	Paydown Creek	Brook trout
	Spring Creek	Brook trout
	White River	Grayling
	Blue Springs	Brook trout
	Meramec Springs	Grayling
1908*	Crane Creek	Rainbow trout
	Spring Creek	Rainbow trout
	Aurora, Mo.	Rainbow trout
	Billings, Mo.	Rainbow trout
	Crane, Mo.	Rainbow trout
	Marionville, Mo.	Rainbow trout
	Mt. Vernon, Mo.	Rainbow trout
	Newburg, Mo.	Rainbow trout
	Purdy, Mo.	Rainbow trout
	Springfield, Mo.	Rainbow trout
	Sullivan, Mo.	Rainbow trout
1909*	Little Piney River	Rainbow trout
	Mill Creek	Rainbow trout
	Turkey Creek	Rainbow trout
	Aurora, Mo.	Rainbow trout
	Clever, Mo.	Rainbow trout
	Crane, Mo.	Rainbow trout
	Purdy, Mo.	Rainbow trout
	Republic, Mo.	Rainbow trout
	Rolla, Mo.	Rainbow trout
	Sparta, Mo.	Rainbow trout
	Summerfield, Mo.	Rainbow trout
	Thayer, Mo.	Rainbow trout
	Wheaton, Mo.	Rainbow trout
	Frisco Railroad	Rainbow trout
	Kansas City Southern Railroad	Rainbow trout
	Missouri Pacific Railroad	Rainbow trout

Year	Location	Species Stocked
1909	Beaver Creek	Brook trout
&	Crane Creek	Rainbow trout
1910	Indian Creek	Rainbow trout & brook trout
	James River	Brook trout
	Little Piney River	Brook trout
	Meramec River	Brook trout
	Spring Creek (Marshfield, Mo.)	Brook trout
	Blue Springs (Bourbon, Mo.)	Brook trout
	Meramec Springs	Brook trout
	Cameron, Mo.	Rainbow trout & brook trout
	Joplin, Mo.	Rainbow trout
	Springfield, Mo.	Rainbow trout
	Willow Springs	Rainbow trout & brook trout
1910*	Hickory Creek	Rainbow trout
	Joy's Creek	Rainbow trout
	Little Piney River	Rainbow trout
	Mill Creek	Rainbow trout
	Pogusa Creek	Rainbow trout
	Shoal Creek	Rainbow trout
	Spring Creek	Rainbow trout
	Toucis Creek	Rainbow trout
	Turnback Creek	Rainbow trout
	Wistman's Creek	Rainbow trout
	Blue Springs	Rainbow trout
	Meramec Springs	Rainbow trout
	Brown Spring Lake	Rainbow trout
	Lauglings Pond	Rainbow trout
	Cabool, Mo.	Rainbow trout
	Clever, Mo.	Rainbow trout
	Crane, Mo.	Rainbow trout
	Exeter, Mo.	Rainbow trout
	Joplin, Mo.	Rainbow trout
	Lebanon, Mo.	Rainbow trout
	Marshfield, Mo.	Rainbow trout
	Reed Springs, Mo.	Rainbow trout
	Rolla, Mo.	Rainbow trout
	Southwest City, Mo. Springfield, Mo.	Rainbow trout Rainbow trout
1911*	Meramec River	Rainbow trout
1711	Aurora, Mo.	Rainbow trout
	Clever, Mo.	Rainbow trout
	Rolla, Mo.	Rainbow trout
	Seneca, Mo.	Rainbow trout
	Springfield, Mo.	Rainbow trout
	Steelville, Mo.	Rainbow trout
	Woodfil, Mo.	Rainbow trout
	Frisco Railroad	Rainbow trout
		ICCLIDON CLOUC

Ash Grove, Mo. Farming, Mo. St. Louis, Mo. St. Clair, Mo. St. Loseph, Mo. St. Clair, Mo. St. Joseph, Mo. St. Sainbow trout St. Joseph, Mo. St. Sainbow trout St. Joseph, Mo. St. Sainbow trout St. Joseph, Mo. St. Clair, Mo. St.	Year	Location	Species Stocked
8 Bennett's Mill Spring 1912 Blue Springs (Bourbon, Mo.) Ha Ha Tonka Spring Meramec Springs Meramec Springs Niangua Fish Preserve Alton, Mo. Ash Grove, Mo. Farming, Mo. St. Louis, Mo. Rainbow trout	1911	Little Pinev River	Rainbow trout & brook trout
Blue Springs (Bourbon, Mo.) Ha Ha Tonka Spring Meramec Springs Niangua Fish Preserve Alton, Mo. Ash Grove, Mo. Farming, Mo. St. Louis, Mo. Blig Spring Creek Hill Creek Browns Spring McAntire's Trout Lake Suler's Pond Arlington, Mo. Rainbow trout Rainbow			
Ha Ha Tonka Spring Meramec Springs Niangua Fish Preserve Alton, Mo. Ash Grove, Mo. Farming, Mo. St. Louis, Mo. 1913* Big Spring Creek Mill Creek Perric Creek Turnback Creek Browns Spring McAntire's Trout Lake Suler's Pond Arlington, Mo. Rainbow trout Ra			
Meramec Springs Niangua Fish Preserve Alton, Mo. Ash Grove, Mo. Farming, Mo. St. Louis, Mo. Rainbow trout Ash Grove, Mo. Farming, Mo. St. Louis, Mo. Rainbow trout Rainb			Rainbow trout & brook trout
Niangua Fish Preserve Alton, Mo. Ash Grove, Mo. Ash Grove, Mo. St. Louis, Mo. 1913* Big Spring Creek Mill Creek Perric Creek Browns Spring McAntire's Trout Lake Bourbon, Mo. Bainbow trout Bourbon, Mo. Bainbow trout Bourbon, Mo. Bourbon, Wo. Bourbon, W			
Alton, Mo. Ash Grove, Mo. Farming, Mo. St. Louis, Mo. Rainbow trout & brook trout Rainbow trout Rain			
Ash Grove, Mo. Rainbow trout & brook trout Farming, Mo. St. Louis, Mo. Rainbow trout & brook trout Perrie Creek Rainbow trout Rainbow trout Browns Spring Rainbow trout McAntire's Trout Lake Rainbow trout Rainbow trout Arlington, Mo. Rainbow trout Rai		-	Rainbow trout & brook trout
Farming, Mo. St. Louis, Mo. Rainbow trout & brook trout St. Louis, Mo. Rainbow trout Rainbow trout Rainbow trout Mill Creek Perrie Creek Rainbow trout Rainb			
St. Louis, Mo. Rainbow trout & brook trout Mill Creek Perrie Creek Rainbow trout Turnback Creek Browns Spring McAntire's Trout Lake Suler's Pond Arlington, Mo. Bourbon, Mo. Chicopee, Mo. Dixon, Mo. Rainbow trout Rainbow trou			
Mill Creek Perric Creek Rainbow trout Rainbow trout Rainbow trout Rainbow trout Browns Spring McAntire's Trout Lake Suler's Pond Arlington, Mo. Bourbon, Mo. Bourbon, Mo. Chicopee, Mo. Dixon, Mo. Farming, Mo. Goodman, Mo. Lebanon, Mo. Rainbow trout Rockbridge, Mo. Rainbow trout Rolla, Mo. Rainbow trout St. Clair, Mo. Rainbow trout Rainbo		_ ·	Rainbow trout & brook trout
Mill Creek Perric Creek Perric Creek Turnback Creek Browns Spring McAntire's Trout Lake Suler's Pond Arlington, Mo. Bourbon, Mo. Bourbon, Mo. Chicopee, Mo. Dixon, Mo. Farming, Mo. Godman, Mo. Lebanon, Mo. Marshfield, Mo. Nainbow trout Newburg, Mo. Rockbridge, Mo. Rolla, Mo. Rolla, Mo. Rolla, Mo. Rainbow trout R	1913*	Big Spring Creek	Rainbow trout
Turnback Creek Browns Spring McAntire's Trout Lake Suler's Pond Arlington, Mo. Rainbow trout Bourbon, Mo. Chicopee, Mo. Dixon, Mo. Farming, Mo. Goodman, Mo. Lebanon, Mo. Rainbow trout Lebanon, Mo. Rainbow trout Lockwood, Mo. Rainbow trout Rainbow trout Newburg, Mo. Narshfield, Mo. Rainbow trout Rainbow trout Rockbridge, Mo. Rainbow trout Rockbridge, Mo. Rainbow trout Rolla, Mo. Rainbow trout St. Clair, Mo. St. Clair, Mo. Rainbow trout St. Joseph, Mo. Winong, Mo. Rainbow trout Alton, Mo. Rainbow trout			Rainbow trout
Browns Spring McAntire's Trout Lake Rainbow trout Suler's Pond Rainbow trout Arlington, Mo. Rainbow trout Bourbon, Mo. Rainbow trout Chicopee, Mo. Rainbow trout Dixon, Mo. Rainbow trout Goodman, Mo. Rainbow trout Goodman, Mo. Rainbow trout Lebanon, Mo. Rainbow trout Lebanon, Mo. Rainbow trout Lebanon, Mo. Rainbow trout Marshfield, Mo. Rainbow trout Newburg, Mo. Rainbow trout Niangua, Mo. Rainbow trout Rolla, Mo. Rainbow trout Rolla, Mo. Rainbow trout Rolla, Mo. Rainbow trout Rolla, Mo. Rainbow trout Rainbow trout Rolla, Mo. Rainbow trout Rain		Perrie Creek	Rainbow trout
McAntire's Trout Lake Suler's Pond Arlington, Mo. Bourbon, Mo. Bourbon, Mo. Chicopee, Mo. Dixon, Mo. Farming, Mo. Goodman, Mo. Lebanon, Mo. Newburg, Mo. Rockbridge, Mo. Rolla, Mo. St. Clair, Mo. St. Clair, Mo. St. James, Mo. Rainbow trout R		Turnback Creek	Rainbow trout
McAntire's Trout Lake Suler's Pond Arlington, Mo. Bourbon, Mo. Bourbon, Mo. Chicopee, Mo. Dixon, Mo. Farming, Mo. Goodman, Mo. Lebanon, Mo. Newburg, Mo. Rockbridge, Mo. Rolla, Mo. St. Clair, Mo. St. Clair, Mo. St. James, Mo. Rainbow trout R		Browns Spring	Rainbow trout
Arlington, Mo. Bourbon, Mo. Chicopee, Mo. Chicopee, Mo. Dixon, Mo. Rainbow trout Dixon, Mo. Rainbow trout Lebanon, Mo. Rainbow trout Lebanon, Mo. Rainbow trout Rainbow trout Marshfield, Mo. Rainbow trout Newburg, Mo. Rainbow trout Rockbridge, Mo. Rainbow trout Rolla, Mo. Rainbow trout Rolla, Mo. Rainbow trout St. Clair, Mo. Rainbow trout Winong, Mo. Rainbow trout Winong, Mo. Rainbow trout Ra			Rainbow trout
Bourbon, Mo. Chicopee, Mo. Dixon, Mo. Rainbow trout Bixon, Mo. Rainbow trout Farming, Mo. Rainbow trout Goodman, Mo. Lebanon, Mo. Rainbow trout Lebanon, Mo. Rainbow trout Lockwood, Mo. Rainbow trout Marshfield, Mo. Newburg, Mo. Rainbow trout Niangua, Mo. Rainbow trout Rockbridge, Mo. Rainbow trout Rolla, Mo. Rainbow trout St. Clair, Mo. Rainbow trout St. Joseph, Mo. Rainbow trout Winong, Mo. Rainbow trout		Suler's Pond	Rainbow trout
Bourbon, Mo. Chicopee, Mo. Rainbow trout Chicopee, Mo. Rainbow trout Dixon, Mo. Rainbow trout Rainbow trout Rainbow trout Goodman, Mo. Rainbow trout Lebanon, Mo. Rainbow trout Lebanon, Mo. Rainbow trout Rainbow trout Marshfield, Mo. Rainbow trout Newburg, Mo. Rainbow trout Rockbridge, Mo. Rainbow trout Rolla, Mo. Rainbow trout Rolla, Mo. Rainbow trout Rainbow trout Rolla, Mo. Rainbow trout Rainbow trout Rolla, Mo. Rainbow trout Rain		Arlington, Mo.	Rainbow trout
Dixon, Mo. Farming, Mo. Goodman, Mo. Lebanon, Mo. Lebanon, Mo. Marshfield, Mo. Nainbow trout Newburg, Mo. Rainbow trout Rockbridge, Mo. Rainbow trout Rolla, Mo. St. Clair, Mo. St. Joseph, Mo. Winong, Mo. Rainbow trout Rainbow			Rainbow trout
Dixon, Mo. Farming, Mo. Goodman, Mo. Lebanon, Mo. Lebanon, Mo. Lockwood, Mo. Marshfield, Mo. Newburg, Mo. Niangua, Mo. Rainbow trout Rockbridge, Mo. Rainbow trout Rockbridge, Mo. Rainbow trout Rolla, Mo. St. Clair, Mo. St. Joseph, Mo. Winong, Mo. Rainbow trout Rockbridge, Mo. Rainbow trout Rainbow trout Rockbridge, Mo. Rainbow trout Rainbow trout Rockbridge, Mo. Rainbow R		•	Rainbow trout
Farming, Mo. Goodman, Mo. Lebanon, Mo. Lebanon, Mo. Rainbow trout Lockwood, Mo. Marshfield, Mo. Marshfield, Mo. Newburg, Mo. Niangua, Mo. Rainbow trout Rockbridge, Mo. Rockbridge, Mo. Rolla, Mo. St. Clair, Mo. St. Joseph, Mo. Winong, Mo. Rainbow trout Rainbow trout St. Joseph, Mo. Rainbow trout			Rainbow trout
Goodman, Mo. Lebanon, Mo. Lebanon, Mo. Lockwood, Mo. Rainbow trout Rainbow trout Marshfield, Mo. Newburg, Mo. Newburg, Mo. Rainbow trout Rockbridge, Mo. Rainbow trout Rockbridge, Mo. Rainbow trout Rolla, Mo. St. Clair, Mo. St. Joseph, Mo. Winong, Mo. Rainbow trout Rai			Rainbow trout
Lebanon, Mo. Lockwood, Mo. Rainbow trout Marshfield, Mo. Newburg, Mo. Niangua, Mo. Rockbridge, Mo. Rainbow trout Rockbridge, Mo. Rainbow trout Rolla, Mo. St. Clair, Mo. St. Joseph, Mo. Winong, Mo. Rainbow trout Alton, Mo. Rainbow trout Rain		- ·	Rainbow trout
Lockwood, Mo. Marshfield, Mo. Newburg, Mo. Niangua, Mo. Rainbow trout Rockbridge, Mo. Rainbow trout Rolla, Mo. St. Clair, Mo. St. Joseph, Mo. Winong, Mo. Mill Creek Bennett's Mill Spring Blue Springs Ha Ha Tonka Spring Meramec Springs Ash Grove, Mo. Elm Springs Club Farming, Mo. Rainbow trout Rainbow trout Rainbow trout Rainbow trout Rainbow trout Ash Grove, Mo. Elm Springs Club Farming, Mo. Lebanon, Mo. Rainbow trout Rainbow trout Rainbow trout Rainbow trout Rainbow trout Rainbow trout Abrook Rainbow trout Abrook trout Abrook trout Rainbow trout Abrook trout Rainbow trout Abro		·	Rainbow trout
Marshfield, Mo. Newburg, Mo. Niangua, Mo. Rainbow trout Rockbridge, Mo. Rainbow trout Rolla, Mo. Rainbow trout Rolla, Mo. Rainbow trout St. Clair, Mo. St. Joseph, Mo. Winong, Mo. Rainbow trout Blue Springs Rainbow trout Blue Springs Rainbow trout Abrook trout Ash Grove, Mo. Rainbow trout & brook trout		•	Rainbow trout
Newburg, Mo. Niangua, Mo. Rainbow trout Rockbridge, Mo. Rolla, Mo. Rolla, Mo. Rainbow trout Rolla, Mo. Rainbow trout Rolla, Mo. Rainbow trout			Rainbow trout
Niangua, Mo. Rockbridge, Mo. Rolla, Mo. Rolla, Mo. Rainbow trout Rolla, Mo. Rainbow trout Rainbow tr		•	Rainbow trout
Rockbridge, Mo. Rolla, Mo. Rolla, Mo. Rainbow trout St. Clair, Mo. Rainbow trout St. Joseph, Mo. Rainbow trout Winong, Mo. Rainbow trout Rainb			Rainbow trout
Rolla, Mo. St. Clair, Mo. Rainbow trout St. Joseph, Mo. Rainbow trout Ra			Rainbow trout
St. Clair, Mo. St. Joseph, Mo. Winong, Mo. Rainbow trout			Rainbow trout
St. Joseph, Mo. Winong, Mo. Rainbow trout Alton, Mo. Rainbow trout Ash Grove, Mo. Elm Springs Club Farming, Mo. Rainbow trout Rainbo		-	Rainbow trout
Winong, Mo. Rainbow trout Rainbow trout Bennett's Mill Spring Rainbow trout Blue Springs Rainbow trout Blue Springs Rainbow trout Rainbow trout Branhow trout Branhow trout Brook trout Rainbow trout Rainbow trout Rainbow trout Rainbow trout Rainbow trout Rainbow trout Brook trout Rainbow t			Rainbow trout
& Bennett's Mill Spring Blue Springs Rainbow trout & brook trout Ha Ha Tonka Spring Meramec Springs Alton, Mo. Ash Grove, Mo. Elm Springs Club Farming, Mo. Lebanon, Mo. Onandaga Club St. James, Mo. Rainbow trout Rainbow trout & brook trout			Rainbow trout
Blue Springs Ha Ha Tonka Spring Rainbow trout & brook trout Meramec Springs Rainbow trout Alton, Mo. Rainbow trout & brook trout	1913	Mill Creek	Rainbow trout & brook trout
Blue Springs Ha Ha Tonka Spring Rainbow trout & brook trout Meramec Springs Rainbow trout Alton, Mo. Rainbow trout & brook trout	&	Bennett's Mill Spring	Rainbow trout
Ha Ha Tonka Spring Meramec Springs Alton, Mo. Ash Grove, Mo. Elm Springs Club Farming, Mo. Lebanon, Mo. Onandaga Club St. James, Mo. Rainbow trout & brook trout	1914	Blue Springs	Rainbow trout & brook trout
Meramec Springs Alton, Mo. Ash Grove, Mo. Elm Springs Club Farming, Mo. Lebanon, Mo. Onandaga Club St. James, Mo. Rainbow trout Rainbow trout & brook trout			Rainbow trout & brook trout
Alton, Mo. Ash Grove, Mo. Elm Springs Club Farming, Mo. Lebanon, Mo. Onandaga Club St. James, Mo. Rainbow trout & brook trout			Rainbow trout
Ash Grove, Mo. Elm Springs Club Rainbow trout & brook trout Farming, Mo. Rainbow trout & brook trout Lebanon, Mo. Rainbow trout & brook trout Onandaga Club Rainbow trout & brook trout Rainbow trout & brook trout Rainbow trout & brook trout St. James, Mo. Rainbow trout & brook trout			Rainbow trout & brook trout
Elm Springs Club Rainbow trout & brook trout Farming, Mo. Rainbow trout & brook trout Lebanon, Mo. Rainbow trout & brook trout Onandaga Club Rainbow trout & brook trout St. James, Mo. Rainbow trout & brook trout		· · · · · · · · · · · · · · · · · · ·	Rainbow trout & brook trout
Farming, Mo. Lebanon, Mo. Onandaga Club St. James, Mo. Rainbow trout & brook trout Rainbow trout & brook trout Rainbow trout & brook trout			Rainbow trout & brook trout
Lebanon, Mo. Rainbow trout & brook trout Onandaga Club Rainbow trout & brook trout St. James, Mo. Rainbow trout & brook trout			Rainbow trout & brook trout
Onandaga Club Rainbow trout & brook trout St. James, Mo. Rainbow trout & brook trout		•	Rainbow trout & brook trout
St. James, Mo. Rainbow trout & brook trout		<u>.</u>	Rainbow trout & brook trout
			Rainbow trout & brook trout
		•	Rainbow trout & brook trout

Year	Location	Species Stocked
1914*	Anderson, Mo.	Rainbow trout
	Berwick, Mo.	Rainbow trout & brook trout
	Bourbon, Mo.	Rainbow trout & brook trout
	Brown Spring, Mo.	Rainbow trout & brook trout
	Bunker, Mo.	Rainbow trout & brook trout
	Exeter, Mo.	Rainbow trout & brook trout
	Grans, Mo.	Rainbow trout & brook trout
	Lebanon, Mo.	Rainbow trout
	Marshfield, Mo.	Rainbow trout & brook trout
	Newburg, Mo.	Rainbow trout & brook trout
	Niangua, Mo.	Rainbow trout & brook trout
	Stark City, Mo.	Rainbow trout & brook trout
	Verona, Mo.	Rainbow trout
	Webb City, Mo.	Rainbow trout & brook trout
1915*	Bunker, Mo.	Rainbow trout
	Crane, Mo.	Rainbow trout
	Monett, Mo.	Rainbow trout
	Newburg, Mo.	Rainbow trout
	Rolla, Mo.	Rainbow trout
	Seneca, Mo.	Rainbow trout
	Springfield, Mo.	Rainbow trout
	Wayne, Mo.	Rainbow trout
	Webb City, Mo.	Rainbow trout
1915	James River	Rainbow trout
& ₂	Brown's Spring	Rainbow trout
1916	Sequiota Lake	Rainbow trout
	Alton, Mo.	Rainbow trout
	Ash Grove, Mo.	Rainbow trout
	Newburg, Mo.	Rainbow trout
	St. Louis, Mo.	Rainbow trout
	Ouchita Park	Rainbow trout
	Springlawn Farm	Rainbow trout
1916*	Hickory Creek	Rainbow trout
	Bourbon, Mo.	Rainbow trout
	Bunker, Mo.	Rainbow trout
	Elk Springs, Mo.	Rainbow trout
	Greer Spring, Mo.	Rainbow trout
	Goodman, Mo.	Rainbow trout
	Jaudan, Mo.	Rainbow trout
	Monett, Mo.	Rainbow trout
	Noel, Mo.	Rainbow trout
	Salem, Mo.	Rainbow trout
	Springfield, Mo.	Rainbow trout
	Vale, Mo.	Rainbow trout
	Webb City, Mo.	Rainbow trout

Year	Location	Species Stocked
1917 to 1921	No reported releases by state	
1917* to 1923	No records	
1922	Current River James River Finley River Little Piney River Niangua River Spring River Bennett Springs Lake Taneycomo Private Individuals	Rainbow trout
1923*	Stocking locations not reported	Rainbow trout
1924*	Stocking location not reported	Rainbow trout & brook trout
1925	Blue Spring Creek Bartley Spring Branch Bull Creek Cockery Branch Conn Spring Branch North Fork of White River Pearson Creek Piney River Spring River Syring Branch Wet Glaize Spring Branch White River Wilder Branch Bennett Springs Big Spring (Waynesville) Big Spring (Webster Co.) Blue Springs Headley Springs Siloam Springs Greer Spring Gravois Mill Spring Lake Ha Ha Tonka Lake Newton's Spring Lake Phillips Lake Rainbow Lake Schleet Spring Lake Shafer Sportsman Lake	Rainbow trout

Year	Location	Species Stocked
1925	Silver Lake	Rainbow trout
	Taylor Lake	Rainbow trout
	Woodruff Club Lake	Rainbow trout
	Eminence State Park	Rainbow trout
	Van Buren State Park	Rainbow trout
1926	Stocking localities not reported	Brown trout
	Big Piney River	Rainbow trout
	Caster River	Rainbow trout
	Current River	Rainbow trout
	Little Piney River	Rainbow trout
	Meramec River	Rainbow trout
	Niangua River Spring Branch	Rainbow trout
	Paydown Creek	Rainbow trout
	Peason Creek	Rainbow trout
	Twelve Mile Creek	Rainbow trout
	Westover Spring Branch	Rainbow trout
	Whittenburg Spring Branch	Rainbow trout
	Wilder Branch	Rainbow trout
	Ally Spring	Rainbow trout
	Bay Springs	Rainbow trout
	Cold Spring	Rainbow trout
	Double Springs	Rainbow trout
	Fullbright Spring	Rainbow trout
	Greer Spring	Rainbow trout
	Headley Spring	Rainbow trout
	Jones Spring	Rainbow trout
	Meramec Spring	Rainbow trout
	Pulltight Spring	Rainbow trout
	Round Spring	Rainbow trout
	Topaz Spring	Rainbow trout
	Young Spring	Rainbow trout
	Anthony's Pond	Rainbow trout
	Collins Fish Lake	Rainbow trout
	Field Lake	Rainbow trout
	Finke Lake	Rainbow trout
	Green Wade Pond	Rainbow trout
	Ha Ha Tonka Lake	Rainbow trout
	McNiel Lake	Rainbow trout
	Moore's Pond	Rainbow trout
	Northwest Maas & Son Lake	Rainbow trout
	Rainbow Fishing Lake	Rainbow trout
	Schmitt's Lake	Rainbow trout
	Smithe Cave Lake	Rainbow trout
	Wewasee Lake	Rainbow trout
* *	Wilkerson Lake	Rainbow trout
1927*	Stocking locations not reported	Rainbow trout & brown trout

Appendix B. (Continued.)

Year	Location	Spe	ecies S	Sto	cked	
1927	Stocking locations not reported (32 counties stocked)	Rainbow	trout	&	brown	trout
1928	Stocking locations not reported	Rainbow	trout			
1929*	Stocking locations not reported	Rainbow	trout			
1929	Roaring River Alley Spring Bennett Spring Montauk State Park	Rainbow Rainbow Rainbow Rainbow	trout trout	&	brown	trout
1930	Christian Co. Crawford Co. Dallas Co. Greene Co. Lawrence Co. Maries Co. Ozark Co. Phelps Co. Shannon Co. Stone Co. Vernon Co. Wright Co.	Rainbow	trout	& & & & & & & & &	brown brown brown brown brown brown brown brown	trout trout trout trout trout trout trout trout trout
1931	Christian Co. Greene Co. Laclede Co. Stone Co.	Rainbow Rainbow Rainbow Rainbow	trout trout	& &	brown brown	trout trout
1931*	Stocking locations not reported	Rainbow	trout	&	brown	trout
1932	Stocking locations not reported	Rainbow	trout			
1932*	Stocking locations not reported	Rainbow	trout	. &	brown	trout
1933*	No stocking records					
1934 to 1935	No stocking records					
1936 to 1966	Production and stocking of brown trout has been discontinued. Rainbow trout are only stocked in trout parks and management areas	Rainbow	trout	Ξ.		

Year	Location	Species Stocked
1966 to Present	Rainbow trout stocking continues. Brown trout are stocked in selected streams	Rainbow trout & brown trout
1936 to Present	The Neosho Federal Fish Hatchery continues to produce trout, but stocking is by MDC.	Rainbow trout