S
597.5
F
2d
1980

due
1991

APR 27 2001

MAR 29 2012

DISTRIBUTION OF FISHES IN SOUTHEASTERN MONTANA

Cooperatively Compiled
by

Montana Department of Fish, Wildlife and Parks
and
United States Department of Interior, Bureau of Land Management

PLEASE RETURN

Authors

Allen A. Elser, Fisheries Manager
Region 7, Montana Department of Fish, Wildlife and Parks

Mark W. Gorges, Fisheries Biologist
Miles City District, U.S.D.I., Bureau of Land Management

Lani M. Morris, Fisheries Fieldworker
Montana Department of Fish, Wildlife and Parks

April 1980

STATE DOCUMENTS COLLECTION

OCT 29 1991

MONTANA STATE LIBRARY
1515 E. 6th AVE.
HELENA, MONTANA 59620

1071 3 898

TABLE OF CONTENTS

	Page
Introduction	1
Description of Area	1
History	1
Physiography and Geology	2
Climate	2
River Basins	2
Yellowstone Basin	2
Tongue River	3
Powder River	4
Minor Yellowstone River Tributaries	4
Little Missouri River	4
Literature Review	5
Methods	5
Sampling Sites	9
Fish Distribution	23
Pallid Sturgeon	24
Shovelnose Sturgeon	26
Paddlefish	28
Goldeye	30
Mountain Whitefish	32
Rainbow Trout	34
Brown Trout	36
Brook Trout	38
Northern Pike	40
Carp	42
Goldfish	44
Golden Shiner	46
Pearl Dace	48
Creek Chub	50
Northern Redbelly Dace	52
Flathead Chub	54
Sturgeon Chub	56
Lake Chub	58
Emerald Shiner	60
Sand Shiner	62
Brassy Minnow	64
Plains Minnow/Western Silvery Minnow	66
Fathead Minnow	68
Longnose Dace	70
River Carpsucker	72
Blue Sucker	74
Smallmouth Buffalo	76
Bigmouth Buffalo	78
Shorthead Redhorse	80
Longnose Sucker	82
White Sucker	84

TABLE OF CONTENTS

	Page
Mountain Sucker	86
Black Bullhead	88
Yellow Bullhead	90
Channel Catfish	92
Stonecat	94
Burbot	96
Plains Killifish	98
Mosquitofish	100
Brook Stickleback	102
Rock Bass	104
Green Sunfish	106
Pumpkinseed	108
Bluegill	110
Smallmouth Bass	112
Largemouth Bass	114
White Crappie	116
Black Crappie	118
Yellow Perch	120
Sauger	122
Walleye	124
Iowa Darter	126
Freshwater Drum	128
Summary	130
References	131

LIST OF FIGURES

Page

1. Major drainages in Montana. The area included in this report is shaded.	6
2. Upper half of study area with all sampling sites numbered.	7
3. Lower half of study area with all sampling sites numbered.	8
4. Pallid Sturgeon	25
5. Shovelnose Sturgeon	27
6. Paddlefish	29
7. Goldeye	31
8. Mountain Whitefish	33
9. Rainbow Trout	35
10. Brown Trout	37
11. Brook Trout	39
12. Northern Pike	41
13. Carp	43
14. Goldfish	45
15. Golden Shiner	47
16. Pearl Dace	49
17. Creek Chub	51
18. Northern Redbelly Dace	53
19. Flathead Chub	55
20. Sturgeon Chub	57
21. Lake Chub	59
22. Emerald Shiner	61
23. Sand Shiner	63
24. Brassy Minnow	65
25. Plains Minnow/Western Silvery Minnow	67
26. Fathead Minnow	69
27. Longnose Dace	71
28. River Carpsucker	73
29. Blue Sucker	75
30. Smallmouth Buffalo	77
31. Bigmouth Buffalo	79
32. Shorthead Redhorse	81
33. Longnose Sucker	83
34. White Sucker	85
35. Mountain Sucker	87
36. Black Bullhead	89
37. Yellow Bullhead	91
38. Channel Catfish	93
39. Stonecat	95
40. Burbot	97
41. Plains Killifish	99
42. Mosquitofish	101
43. Brook Stickleback	103
44. Rock Bass	105
45. Green Sunfish	107
46. Pumpkinseed	109
47. Bluegill	111

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

LIST OF FIGURES

	Page
48. Smallmouth Bass	113
49. Largemouth Bass	115
50. White Crappie	117
51. Black Crappie	119
52. Yellow Perch	121
53. Sauger	123
54. Walleye	125
55. Iowa Darter	127
56. Freshwater Drum	129

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

LIST OF TABLES

	Page
1. Sampling Gear	9
2. Locations of sampling sites	10-22

INTRODUCTION

Montana's streams have traditionally supplied water for irrigation, domestic and livestock consumption, recreation, and industry. But a new industry spawned by the energy crisis of the early 70's threatens to alter Montana's streams and streamflow to an even greater extent. In 1971, the North Central Power Study (North Central Power Study Coordinating Committee, 1971) identified 42 potential power plant sites in the northern Great Plains, 21 of them in Montana. These plants, all to be fired by Northern Great Plains Coal, would generate 200,000 megawatts of electricity, consume 3.4 million acre-feet of water per year and result in a large population increase.

Energy development in eastern Montana will affect not only land use but the water resources of the area. Water will be pumped from streams and used to cool steam generators, heated effluents will be added; stream discharge patterns will be altered, run-off from strip mined areas will increase turbidity and change the chemical make up of many streams. Fish populations inhabiting the streams of eastern Montana could undergo great changes in species composition, distribution and abundance as a result of coal and energy development.

The objective of this report is to compile available baseline data on the distribution of fishes in southeastern Montana. Then, as decisions are made concerning resource development, protection of the aquatic environment can be adequately considered.

DESCRIPTION OF AREA

History

The first white men to enter southeast Montana were Pierre and Louis Verendyre and two other men in 1742, in search of a route to the Pacific. From the party's sketchy journals, it appears they entered the Yellowstone basin north of Miles City, traveling the Yellowstone, Powder, Tongue and Little Missouri River Valleys. Francois Larocque led another party into the area in 1805, a year earlier than the Lewis and Clark Expedition, pushed by the fears that fur trading activities would be affected by the planned expedition. When Larocque crossed the Powder River, he observed: "The current of the river is very strong and the water so muddy that it is scarcely drinkable. The savages say that it is always thus and that it is for this reason that they call the river Powder; for the wind rises and carries from the slope a fine sand which obscures and dirties the water." The Powder hasn't changed in the 185 years since Larocque visited its banks.

The third expedition and most famous was the Lewis and Clark Expedition. In the latter part of June 1806, the party split; Lewis returned via the Missouri, exploring the Marias River, while Clark explored the Yellowstone. Expeditions that followed were for mercenary reasons rather than the scientific purposes of Lewis and Clark.

The Northern Pacific Railroad came into the area from the east in 1881. Construction of military forts and the railroad brought cattlemen into the area. Irrigation developed slowly in eastern Montana, since the practice was not essential to most crops grown in the early days. Surveys for the Lower Yellowstone Irrigation Project were completed in 1902. Construction began in 1905 and initial water was available in 1909. And so agriculture remained the top user of water until "King Coal" threatened that spot in the 70's.

Physiography and Geology

The lower Yellowstone and Little Missouri basins lie in the unglaciated Missouri plateau. The majority of this area is classified as Northern Rolling High Plains, followed by Northern Smooth High Plains, Pierre Shale Plains and Badlands and Rolling Soft Shale Plains. Nearly all of this is a plains area of one kind or another - a factor that certainly affects water resources and the quality of these resources (Missouri River Basin Commission, 1978).

Most of the lower Yellowstone basin is underlain by the Fort Union Formation, the remainder by the Hell Creek Formation. The Little Missouri drainage lies above the Montana and Colorado sedimentary rock groups. The Fort Union Formation was formed 50-60 million years ago in a vast shallow water lake. Broad swamps and lowlands supported thick forests which formed the base for extensive coal beds.

The northern most part of the lower Yellowstone basin came under continental glaciation twice. Prior to glaciation, the Missouri and Yellowstone Rivers flowed north through Canada to the Arctic Ocean. With glacial advance, the north-flowing rivers were dammed, changed course and started their eastward flow across Montana in front of the ice and then southward across the Dakotas. Thus a new drainage pattern was formed and the continental divide (flow to the Arctic Ocean) was moved north. (Missouri River Basin Commission, 1978).

Climate

The climate of this region is continental with severe temperatures in summer and winter. Most precipitation falls during the April-September growing season which makes dryland farming possible. On the average, places near the mainstem of the Yellowstone receive 30-35 cm of precipitation annually.

River Basins

Yellowstone Basin. The Yellowstone River heads near Yellowstone National Park and flows some 1091 km to its confluence with the Missouri River in North Dakota. Of this length, 885 km are in Montana and 410 km

are within the scope of this report. Total watershed area is 182,336 sq. km with slightly over half of that in Montana (92,981 sq. km).

Flow regimens of the lower Yellowstone are typical of prairie streams with two peaks of runoff. The first occurs in late winter and early spring as a result of low land runoff from snow melt, followed by an early summer peak due to higher elevation snowmelt. Stream gradient in the lower basin is 0.53 m/km. Streamflows vary greatly from year to year, with an average annual discharge of 11.6 billion m^3 (1.16 million ha-m) at Sidney. Extremes range from 13.3 m^3 /sec to 4502.9 m^3 /sec. Water quality is considered generally good above Miles City, while below Miles City dissolved solids and sulfate concentrations may restrict some uses of water. Total suspended solids (TSS) and turbidity increase with progression downstream.

The dominant land use of the lower basin is agriculture with emphasis on irrigated crops. Irrigation returns result in an increased sediment load and concentration of total dissolved solids (TDS). The surrounding terrestrial environment is an impressive cottonwood-willow bottom land.

The lower Yellowstone River supports a diverse and productive fishery which is dependent on good water quality and adequate flows. A total of 46 species of fish representing 12 families has been collected in this reach of the river.

Tongue River. The headwaters of the Tongue River rise on the eastern slope of the Bighorn Mountains of Wyoming and flow generally northeast through Montana to join the Yellowstone at Miles City. The length of the Tongue River from the Montana-Wyoming border to its confluence with the Yellowstone is 337 km. Flow in Montana is controlled by the Tongue River dam. The dam, completed in 1940 for irrigation and flood control, stores about 85 million m^3 (8,512 ha-m) of water with a full pool area of 1416 surface ha.

Drainage area of the Tongue basin is 13,932 sq. km, with 70% in Montana. Average annual discharge is 11.9 m^3 /sec, with a maximum of 377 m^3 /sec in 1962. Flow from the Tongue is generally less than 6 percent of the Yellowstone at Miles City, with its greatest contribution occurring in March.

The Tongue River basin is comprised of narrow stream valleys, plateaus and gently rolling uplands. Relief grows less rugged towards the mouth of the river. Major land uses are agricultural with cattle ranching dominating, followed by dryland and irrigated farming. Water quality of the Tongue is better than other prairie streams of the lower basin. TDS in the Tongue average near 500 mg/l.

Fish populations vary from a cold-water mixed population downstream from the dam to a slow-water assemblage near the mouth. Migrant fish from the Yellowstone depend on high spring flows to allow good passage.

Powder River. The Powder River basin drains an area of approximately 34,318 sq. km of northeast Wyoming and southeast Montana. Over half of the drainage is in Wyoming. In general, the Powder flows north to its confluence with the Yellowstone River near Terry. The river, including the South Fork, is approximately 780 km. Typical of prairie streams, the Powder is silt-laden and subject to erratic flow fluctuations with much of its substrate constantly shifting as bed load.

Historically, the Powder was much the same as it is now. Early settlers knew it as "a mile wide and an inch deep, too thin to plow and too thick to drink." The river develops only shallow pools and lacks vegetation. Discharge averages 17.6 m³/sec, with an extreme of 878 m³/sec in 1943. The Powder is naturally saline and exhibits an average annual TDS concentration of 1100 mg/l. A major factor affecting the quality of water in the Powder is suspended sediment. Effects of the Powder on the Yellowstone are most pronounced during the peak prairie runoff in March and April. March flow contributions of sediment from the Powder have been noticed as far downstream as Sidney.

Livestock and irrigated farming are the dominant land uses in the basin. Fish populations in the Powder are limited in diversity and abundance due to water quality and quantity.

Minor Yellowstone River Tributaries

Rosebud Creek rises in the Wolf and Rosebud Mountains, flowing northerly some 326 km to its confluence with the Yellowstone near the town of Rosebud. It drains an area of over 3,100 km² with an elevation drop of 530 m. Rosebud Creek has its largest average monthly discharge during March.

O'Fallon Creek originates in the rolling foothills southwest of Baker, Montana, flowing generally northward to its confluence with the Yellowstone River near Fallon. The O'Fallon Creek drainage is large, with the stream flowing about 212 km. The stream is considered intermittent with some reaches flowing year around. Water is sodium-sulfate burdened, with best quality during high flows.

Other minor creeks flowing south include: Greater Porcupine Creek, Little Porcupine Creek, Sunday Creek, Sevenmile Creek, Burns Creek and Fox Creek. The north flowing creeks include: Sarpy Creek, Armells Creek, Cabin Creek, Cedar Creek, Glendive Creek and Box Elder Creek.

Little Missouri River

The Little Missouri passes through a small corner of Montana; entering at Alzada and leaving at Capitol, flowing in a northeasterly direction. The Little Missouri River has highly erratic flows and greatly varying annual discharges. Water quality is poor to fair, with a sodium-sulfate content, very hard water. Turbidities are moderate to high.

LITERATURE REVIEW

Earliest records of fish in eastern Montana come from the Lewis and Clark Expedition of 1803 to 1806. According to Brown (1971), many of their diary descriptions were inadequate for positive identification of species. However, the following Yellowstone species were credited to them: goldeye, longnose sucker, mountain sucker, channel catfish and sauger.

Scientific investigation of fishes in southeastern Montana was only an incidental part of the westward expansion until well into the twentieth century. The Pacific Railroad surveys of 1853-1855 collected several species which were sent to the Smithsonian Institute (Brown 1971). Additional collections were made in 1870-71 by the U.S. Geological Survey, followed by reconnaissance surveys under the direction of the U.S. Fish Commissioner in 1889.

Limited collections were made during the late 1950's and early 1960's by Dr. C.J.D. Brown and his associates while preparing the Fishes of Montana (Brown 1971).

Early interest and the high esteem placed on Montana's prime trout waters resulted in a scarcity of information on warm water fish until recently. Since Montana is nationally known as a "trout fishing paradise", the warm water species were ignored. Another factor was the greater difficulties encountered in sampling warm water streams with their more diversified habitats with larger and more varied fish populations.

Increased interest in coal and its rapidly expanding development in the early 1970's brought the prairie fishes into focus. The earliest concerted sampling effort occurred on the Yellowstone River near Forsyth to evaluate possible impacts of water withdrawals for Colstrip Generating plants 1 and 2. From there, sampling efforts expanded throughout the coal fields with extensive sampling being conducted on major drainages and many smaller streams as well. Ranges and distribution patterns of prairie fishes were clarified greatly with this sampling effort.

METHODS

Sampling techniques varied widely among the numerous references used in this report. Some of the sites were sampled in depth using electro-fishing gear, seines, gillnets and trapnets. More extensive sampling on some streams may find that sites sampled only with a dip net or small seine have a greater fish diversity than shown here. Table (1) lists the gear used for fish sampling in each of the studies used as a reference. Baited fish traps included hoop nets and/or home made catfish traps.

Table 1. Sampling Gear.

Gear	Literature Cited Numbers
Electrofishing Boat	4, 7, 8, 11, 13, 14
Boat Mounted Mobile Electrode	6, 15, 16, 20, 21
Bank Shocker	3, 5, 6, 7, 13, 17, 18, 21
Gillnet	3, 4, 6, 7, 11, 13, 15, 16, 20, 21
Seine	4, 5, 6, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20
Baited Fish Traps	4, 6, 7, 8, 11, 13, 15, 16
Minnow Traps	4
Dip Net	5, 6, 9, 12, 13, 15, 16, 17, 18, 19
Hook and Line	11

SAMPLING SITES

Figure 1 shows the major drainages in the state of Montana. The creeks and rivers of the southeastern portion of Montana which are covered in this report are exhibited in Figures 2 and 3. On these two maps, the location of each collection site is identified and numbered. A total of 253 sites are included. Table 2 lists the township, range and section of each site, where known; data references are indexed by collection site in this table. Stock ponds, reservoirs and other water impoundments where game species have been stocked in this area were not included as part of the distribution of these fishes.

Figure 1. Major drainages in Montana. The area included in this report is shaded.

Figure 2. Upper half of study area with all sampling sites numbered.

Figure 3. Lower half of study area with all sampling sites numbered.

Table 2. Locations of sampling sites.

Site	Location	Reference #
YELLOWSTONE RIVER DRAINAGE		
1	Yellowstone River above & below Armell's Creek	11,14,20
2	Between Armell's & Rosebud Creeks	11,14
3	Above & below mouth of Tongue River	11,14
4	Above & below mouth of Powder River	11,14
5	Near mouth of Box Elder Creek	11,14
SARPY CREEK		
6	S7,T6N,R37E	3,12
7	S30,T6N,R37E	3
8	S16,T2N,R37E	3
9	S21,T2N,R37E	3
10	S10,T1N,R37E	3
11	S33,T1N,R37E	3
EAST FORK SARPY CREEK		
12	S12,T1N,R37E	3
13	S22,T1N,R38E	3
RESERVATION CREEK		
14	S23,T6N,R38E	12
GREAT PORCUPINE CREEK		
15	S19,T7N,R39E	9
ARMELL'S CREEK		
16	S23,T6N,R39E	12
LITTLE PORCUPINE CREEK		
17	S30,T8N,R41E	9
ROSEBUD CREEK		
18	S16,T6N,R42E	8
19	S8,T3N,R43E	8
20	S4,T1N,R43E	8
21	S8,T1N,R43E	8
22	S34,T1N,R42E	8
23	S28,T1S,R41E	8
24	- T3S,R39E	8
25	S8,T6S,R39E	8
26	S22,T7S,R39E	8

Table 2 Continued.

Site	Location	Reference #
LAME DEER CREEK		
27	S17,T2S,R41E	8
MUDDY CREEK		
28	S35,T2S,R40E	8
THOMPSON CREEK		
29	S26,T5S,R38E	8
CACHE CREEK		
30	S7,T6S,R39E	8
INDIAN CREEK		
31	S31,T6S,R39E	8
NORTH FORK ROSEBUD CREEK		
32	S24,T7S,R38E	5
SOUTH FORK ROSEBUD CREEK		
33	S30,T7S,R39E	5
SHEENEY CREEK		
34	S22,T6N,R43E	12
TONGUE RIVER		
35	S4,T7N,R47E	7
36	S14,15, T7N,R47E	7
37	S15,T4N,R47E	7
38	S36,T3N,R45E	7
39	S2,T1S,R44E	7
40	S10,15,T2S,R44E	4,7
41	S5,8,T4S,R44E	4,7
42	S7,T6S,R43E	4,7
43	S32,T6S,R42E	4,7
44	S27,28, T7S,R41E	7
45	S7,T8S,R41E	7
46	S22,27, T9S,R40E	7
TONGUE RIVER RESERVOIR		
47	-,T8,9S, R40,41E	7,12

Table 2 Continued

Site	Location	Reference
TONGUE RIVER		
48	S34,T9S,R40E	5,21
49	S29,T6N,R48E	12
50	S35,T6N,R48E	12
51	S7,T4N,R50E	5
52	S30,T4N,R50E	17
53	- T1N,R49E	17
BEAVER CREEK		
54	S10,T1S,R45E	12
OTTER CREEK		
55	S2,T3S,R44E	4,12,18
56	S12,T3S,R44E	12,17,18
57	S19,T3S,R45E	12
58	S4,T4S,R45E	4,12,18
59	S9,T4S,R45E	12
60	S2,T5S,R45E	4,12
61	S26,T5S,R45E	12
62	S19,T6S,R46E	12
63	S30,T6S,R46E	4,12,17,18
64	S13,T7S,R45E	12
65	S19,T8S,R46E	12
EAST FORK OTTER CREEK		
66	S16,T3S,R45E	17
TAYLOR CREEK		
67	S33,T6S,R46E	12
NORTH FORK TAYLOR CREEK		
68	S35,T6S,R46E	12
SOUTH FORK TAYLOR CREEK		
69	-T7S,R46E	12
COW CREEK		
70	S22,T6S,R45E	12
INDIAN CREEK		
71	-T6S,R46E	12

Table 2 Continued

Site	Location	Reference
COOK CREEK		
72	S25,T5S,R43E	4
HANGING WOMAN CREEK		
73	S18,T6S,R43E	4,12,18
74	S18,T6S,R43E	4,12,18
75	S5,T7S,R43E	4,12,18
76	S17,T7S,R43E	4,18
77	S30,T7S,R43E	12
78	S20,T8S,R43E	12,17
79	S15,T9S,R43E	12
80	S2,T10S,R43E	12
EAST FORK HANGING WOMAN CREEK		
81	S20,T6S,R43E	12
82	S29,T6S,R43E	12
LEE CREEK		
83	S32,T6S,R43E	12
STROUD CREEK		
84	S2,T8S,R43E	12
BULL CREEK		
85	S28,T6S,R42E	12
SQUIRREL CREEK		
86	S32,T9S,R40E	5
87	S29,T9S,R40E	5,12
88	S14,T9S,R39E	5
YOUNG'S CREEK		
89	- T9S,R39E	19
LITTLE YOUNG'S CREEK		
90	- T9S,R39E	19
SUNDAY CREEK		
91	- T9N, R47E	10

Table 2 Continued

Site	Location	Reference #
NORTH FORK SUNDAY CREEK		
92	- T8N, R47E	10
LOUIE & SCOTTIE CREEK		
93	- T9N, R43E	5
LONE TREE CREEK		
94	- T10N, R43E	5
95	S21, T11N, R43E	9
MUSTER CREEK		
96	S10, T9N, R48E	13
HARRIS CREEK		
97	S30, T10N, R49E	13
CUSTER CREEK		
98	S18, T11N, R50E	13
99	S9, T11N, R49E	13
100	S35, T12N, R48E	13
POWDER RIVER		
101	S3, T11N, R50E	15, 16
102	S8, T9N, R51E	15, 16
103	S30, T6N, R52E	15, 16
104	S17, T1S, R54E	15, 16
105	S3, T5S, R51E	15, 16
106	S17, T9S, R48E	15, 16
107	S36, T9S, R47E	15, 16
TENMILE CREEK		
108	S32, T11N, R51E	13
109	S3, T10N, R51E	13, 16
COAL CREEK		
110	S29, T10N, R51E	13, 16
111	S3, T9N, R51E	13
LOCATE CREEK		
112	S2, T8N, R51E	13
113	S22, T8N, R51E	13

Table 2 Continued

Site	Location	Reference #
SHEEP CREEK		
114	S36,T7N,R51E	13
MIZPAH CREEK		
115	S24,T6N,R51E	12,15;16
LITTLE POWDER RIVER		
116	S29,T4S,R52E	17
117	S32,T4S,R52E	15,16
118	S27,T8S,R52E	17
CROOKED CREEK		
119	S33,T12N,R51E	13
LOST MAN'S CREEK		
120	S15,T12N,R51E	13
CHERRY CREEK		
121	S12,T12N,R51E	13
122	S12,T13N,R48E	13
BRAKETT CREEK		
123	S23,T13N,R50E	13
124	S34,T14N,R50E	13
O'FALLON CREEK		
125	S33,T13N,R52E	13,18
126	S30,T11N,R54E	13,17
127	S17,T9N,R55E	13
128	S17,T5N,R56E	17
WHITNEY CREEK		
129	S31,T12N,R53E	13
130	S9,T10N,R53E	13
PENNEL CREEK		
131	S6,T9N,R55E	13
132	S34,T10N,R55E	13

Table 2 Continued

Site	Location	Reference #
SANDSTONE CREEK		
133	S6,T8N,R56E	13
134	S26,T8N,R57E	13
BAD ROUTE CREEK		
135	S16,T13N,R53E	13
136	S24,T14N,R52E	13
137	S36,T15N,R51E	13
CRACKERBOX (TIMBER) CREEK		
138	S6,T13N,R64E	13
CABIN CREEK		
139	S34,T14N,R54E	13
140	S3,T12N,R54E	13
CLEAR CREEK		
141	S19,T14N,R55E	13
142	S35,T15N,R53E	13
CEDAR CREEK		
143	S20,T14N,R55E	13
144	S2,T13N,R55E	13
145	S20,T13N,R56E	13
SAND CREEK		
146	S29,T15N,R55E	13
UPPER SEVENMILE CREEK		
147	S34,T16N,R55E	13
148	S36,T16N,R54E	13
149	S10,T16N,R53E	13
GLEN DIVE CREEK		
150	S20,T16N,R56E	6
151	S24,T15N,R56E	6
KRUG CREEK		
152	S33,T16N,R56E	6
153	S14,T15N,R57E	6

Table 2 Continued

Site	Location	Reference #
GRIFFITH CREEK		
154	S31,T16N,R57E	6
HODGES CREEK		
155	S9,T14N,R58E	6
DEER CREEK		
156	S5,T16N,R56E	13
157	S12,T16N,R55E	13
158	S6,T16N,R55E	13
159	S19,T17N,R54E	13
160	S10,T17N,R53E	13
COTTON CREEK		
161	S4,T16N,R56E	6
LOWER SEVENMILE CREEK		
162	S18,T17N,R56E	13
163	S4,T17N,R55E	13
MORGAN CREEK		
164	S5,T17N,R56E	13
165	S35,T18N,R55E	13
THIRTEENMILE CREEK		
166	S35,T18N,R56E	13
167	S7,T18N,R56E	13
168	S20,T19N,R55E	13
BOX ELDER CREEK		
169	S31,T18N,R57E	6
170	S18,T17N,R57E	6
171	S6,T16N,R58E	6
172	S8,T16N,R58E	6
173	S27,T16N,R58E	6
WAR DANCE CREEK		
174	S2,T18N,R57E	13

Table 2. Continued

Site	Location	Reference #
COTTONWOOD CREEK		
175	S11,T18N,R57E	13
176	S6,T17N,R58E	13
BURNS CREEK		
177	S25,T19N,R57E	13
178	S32,T19N,R57E	13
NORTH FORK BURNS CREEK		
179	S26,T20N,R56E	13
SMITH CREEK		
180	S3,T19N,R58E	6
181	S29,T19N,R59E	6
182	S36,T19N,R59E	6
DUNLAP CREEK		
183	S27,T20N,R58E	13
SHADWELL CREEK		
184	S7,T20N,R59E	13
185	S24,T20N,R59E	13
SEARS CREEK		
186	S27,T21N,R58E	13
CRANE CREEK		
187	S14,T21N,R58E	13
O'BRIEN CREEK		
188	S10,T21N,R59E	13
FOX CREEK		
189	S19,T22N,R59E	13
NORTH FORK FOX CREEK		
190	S20,T22N,R58E	13
191	S14,T22N,R57E	13

Table 2. Continued

Site	Location	Reference #
SOUTH FORK FOX CREEK		
192	S17,T22N,R56E	13
LONE TREE CREEK		
193	S10,T22N,R59E	13
194	S36,T23N,R58E	13
195	S19,T23N,R58E	13
BENNY PEER CREEK		
196	S1,T22N,R59E	13
FIRST HAY CREEK		
197	S31,T24N,R60E	13
198	S32,T24N,R59E	13
199	S16,T24N,R58E	13
FOUR MILE CREEK		
200	S23,T25N,R59E	13
201	S11,T25N,R58E	13
LITTLE MISSOURI RIVER DRAINAGE		
BEAVER CREEK		
202	S18,T16N,R61E	6
203	S27,T16N,R60E	6
204	S17,T15N,R60E	6
205	S36,T15N,R59E	6
206	S12,T14N,R59E	6
207	S24,T14N,R59E	6
208	S31,T14N,R60E	6
209	S6,T13N,R59E	6
210	S24,T13N,R59E	6
211	S36,T13N,R59E	6
212	S7,T12N,R60E	6
213	S19,T12N,R60E	6
214	S30,T11N,R60E	6
215	S5,T10N,R60E	6
216	S23,T10N,R60E	6
217	S36,T10N,R60E	6
218	S4,T9N,R61E	6
LITTLE BEAVER CREEK		
219	S11,T15N,R60E	6

Table 2. Continued

Site	Location	Reference #
HAY CREEK		
220	S21,T15N,R60E	6
221	S33,T15N,R60E	6
LAME STEER CREEK		
222	S9,T12N,R60E	6
223	S15,T12N,R60E	6
224	S23,T12N,R60E	6
LITTLE BEAVER CREEK		
225	S34,T3N,R56E	18
226	S14,T2N,R57E	18
BOX ELDER CREEK		
227	S17,T1N,R61E	17
228	S19,T5S,R58E	9
229	S7,T6S,R57E	9
NORTH FORK COAL BANK CREEK		
230	S12,T2N,R61E	9
HORSE CREEK		
231	S23,T2N,R61E	9
COAL CREEK		
232	S11,T1N,R60E	9
SPRING CREEK		
233	S16,T1N,R61E	9,17
234	S6,T1S,R62E	9
235	S8,T1S,R62E	9
LONE TREE CREEK		
236	S5,T2S,R59E	9
DEAD BOY CREEK		
237	S27,T2S,R58E	9

Table 2 Continued

Site	Location	Reference #
CORRAL CREEK		
238	S17,T4S,R58E	9
239	S23,T4S,R58E	9
MUSKRAT CREEK		
240	S4,T5S,R58E	9
HAWKSNEST CREEK		
241	S22,T5S,R58E	9
WEST FORK T.L. CREEK		
242	S23,T6S,R57E	9
PORK CREEK		
243	S8,T6S,R57E	9
LITTLE MISSOURI RIVER		
244	S10,T8S,R60E	9
TIE CREEK		
245	S31,T3S,R62E	9
246	S15,T4S,R62E	9
COTTONWOOD CREEK		
247	S9,T5S,R60E	9
NORTH BUTTE CREEK		
248	S24,T7S,R60E	9
COTTONWOOD CREEK		
249	S9,T8S,R60E	9
SEVENMILE CREEK		
250	S27,T8S,R60E	9
THOMPSON CREEK		
251	S19,T9S,R58E	9

Table 2 Continued

Site	Location	Reference #
DEADMAN CREEK		
252	S19,T9S,R57E	9
NORTH FORK THOMPSON CREEK		
253	S8,T9S,R56E	9

FISH DISTRIBUTION

For each species of fish collected in southeastern Montana, there is a distribution map portraying the data compiled in this report. The sites at which each species has been collected are listed by number. A cross-reference between each site and the sources of information is available in Table 2. A reproduction of the map from Brown (1971) shows the former known distribution of each species in Montana. Common and scientific names of fish correspond to those presented by the American Fisheries Society (1970).

PALLID STURGEON

This species is apparently rare in Montana. It has been collected in the large turbid rivers of eastern Montana. The pallid sturgeon is classified as a fish of special concern in the state.

SITES: 4, 5

Figure 4. PALLID STURGEON
(*Scaphirhynchus albus*)

SHOVELNOSE STURGEON

Although the shovelnose is found mainly in the Yellowstone River, major spring spawning runs on the lower Powder and Tongue rivers have been recorded. This sturgeon is not widely distributed in southeastern Montana.

Sites: 2-5, 35, 36, 101, 102, 103

Figure 5. Shovelnose Sturgeon
(*Scaphirhynchus platorhynchus*)

PADDLEFISH

This species is restricted to large rivers. Their access to certain areas of historic spawning runs has been reduced by dam construction. A very popular sport fishery has developed around spring concentrations at Intake, collection site #5. The paddlefish is classified as a state fish of special concern.

Sites: 2-5, 35, 101

Figure 6. Paddlefish
(*Polydon spathula*)

GOLDEYE

Goldeye are widely distributed throughout southeastern Montana. Although collected at only 17% of the sites, they are very common in large streams and rivers.

Sites: 1-6, 18, 35, 36, 49, 50, 91, 101, 102, 106, 107, 115, 117, 125-127, 134, 156, 166, 177, 187, 189, 196, 203-213, 227, 233, 236.

Figure 7. Goldeye
(*Hiodon alosoides*)

MOUNTAIN WHITEFISH

This species is common to the cold mountain streams of western Montana. It is rare in southeastern Montana due to a lack of suitable habitat. Mountain whitefish were identified at two sites on the Tongue River. Brown (1971) recorded this species from only one site in this area - Rosebud Creek.

Sites: 44 and 46

Figure 8. Mountain Whitefish
(*Prosopium williamsoni*)

RAINBOW TROUT

Rainbow trout have been planted in many ponds in southeastern Montana as well as above and below the Tongue River Reservoir dam. A few individuals are caught each year in the lower Yellowstone River, but overall, rainbows are not common to the area.

Sites: 2-5, 42, 44, 45, 47

Figure 9. Rainbow Trout
(*Salmo gairdneri*)

BROWN TROUT

This species was planted in the Tongue River Reservoir (1958-1960). A few individuals are caught in the lower Yellowstone River each year. Overall, the brown trout is not common in southeastern Montana.

Sites: 2, 3, 5, 35, 45-47 and 146.

Figure 10. Brown Trout
(*Salmo trutta*)

BROOK TROUT

This species has been planted in a number of ponds in southeastern Montana. However, due to lack of suitable habitat, brook trout are rare in this part of the state.

Sites: 25, 30, 90, 190 and 195

Figure 11. Brook Trout
(*Salvelinus fontinalis*)

NORTHERN PIKE

Northern pike have been widely planted in the ponds and lakes of southeastern Montana including periodic plants in the Tongue River Reservoir. As a result of these plantings, some stream dwelling populations have developed. Pike in the larger rivers apparently move into weedy tributaries to spawn in the spring. Some of these tributaries are used by the young-of-the-year as nursery grounds.

Sites: 2-5, 19-25, 35, 42, 45, 46, 47, 55, 73, 114, 127, 134, 147-149, 156, 157, 166, 182, 187, 189, 190, 192, 196, 198, 199, 204, and 236.

Figure 12. Northern Pike
(*Esox lucius*)

CARP

The carp has a wide distribution in southeastern Montana. Its habitat preference for warm shallow waters with aquatic vegetation typically is found in many streams and ponds in this part of the state.

Sites: 1-6, 8, 9, 18-24, 34-53, 55, 56, 58, 63, 66, 72-76, 79, 80, 86, 87, 91, 97, 101, 105-107, 112, 114-118, 125-128, 131, 132, 134, 139, 141, 142, 147, 148, 152, 153, 156, 157, 159, 162, 164, 166, 175, 177, 179, 180, 184, 187, 189, 196, 204-210, 212-217, 222-224, 227, 233 and 236.

Figure 13. Carp
(*Cyprinus carpio*)

GOLDFISH

This introduced species is rare in southeastern Montana. It coexists with carp at all sites where it has been found.

Sites: 45, 47, 212, 222 and 223.

Figure 14. Goldfish
(*Carassius auratus*)

GOLDEN SHINER

The golden shiner has been used as a forage fish in stocking programs which may account for its sporadic distribution over the area. This minnow tends to be plentiful where found.

Sites: 6, 42, 45, 47, 55, 56, 58-60, 72-76, 78, 97, 125-127, 196, 227, 233, and 239.

Figure 15. Golden shiner
(*Notemigonus crysoleucas*)

PEARL DACE

We have no data to expand the known distribution of this species in southeastern Montana. Brown listed only one site on the Yellowstone River for the pearl dace.

Sites: None

Figure 16. Pearl Dace
(*Semotilus margarita*)

CREEK CHUB

This species is much more common in southeastern Montana than prior information indicated. Recently, the creek chub has been removed from Montana's list of species of special concern due to an awareness of their wider distribution. Specimens up to 29 cm long have been collected in this part of the state.

Sites: 50, 59, 60, 62, 81, 87, 98-100, 102, 108-115, 121, 123, 124, 125, 127, 129, 131, 132, 135-139, 141, 142, 144, 147, 148, 153, 154, 158-172, 174-184, 187, 189, 191, 193, 194, 200, 202-220, 227, 233, 234.

Figure 17. Creek chub
(*Semotilus atromaculatus*)

NORTHERN REDBELLY DACE

The northern redbelly dace prefers small slow-flowing creeks with clear cool water and abundant vegetation. It is not common in southeastern Montana, but is often plentiful where found. Its distribution in this part of the state seems to be limited to a small grouping of tributaries in the lower Yellowstone basin. Brown did not list any collection sites from southeastern Montana.

Sites: 158, 160, 164-172, 174, 175, 180 and 191.

Figure 18. Northern Redbelly Dace
(*Phoxinus eos*)

FLATHEAD CHUB

The flathead chub is abundant in the prairie streams of south-eastern Montana; it is the fourth most common species in this report. Although widely distributed, the flathead chub is more common in the larger flowing streams than in intermittent creeks.

Sites: 1-7, 18-24, 35-42, 45, 46, 49, 50, 52, 53, 55, 56, 58, 63, 66, 73-76, 78, 86, 87, 92, 94, 96-112, 114-121, 125-129, 131-133, 135, 138, 139, 141, 143, 144, 146, 147, 150-154, 157, 162, 166, 169, 174, 177, 178, 180, 183, 186, 187, 189, 193, 196, 197, 203, 204, 210, 214-217, 220, 227, 230, 233 and 244.

Figure 19. Flathead Chub
(*Hybopsis gracilis*)

STURGEON CHUB

This species is rare in Montana. It has been collected mainly in the Yellowstone and Powder Rivers, generally in areas characterized by moderate to strong currents over a gravelly substrate. Although widely distributed in the large rivers of southeastern Montana, the sturgeon chub is not common where found. This species is classified as a state species of special concern in Montana.

Sites: 3, 4, 5, 36, 101-107 and 169.

Figure 20. Sturgeon Chub
(*Hybopsis gelida*)

LAKE CHUB

The lake chub is abundant and widely distributed in southeastern Montana. It is found mainly in smaller creeks rather than in large rivers. It is the fifth most common fish in this report having been found at about 42% of the sampling sites.

Sites: 6-14, 18-30, 32, 33, 52-54, 56, 57, 60, 62-75, 78, 80-82, 84, 85, 87-90, 94, 100, 109-112, 116, 118, 121-129, 131, 132, 135-138, 142, 144, 145, 153, 154, 158, 162, 163, 165, 167, 168, 170-176, 179, 180, 184, 191, 194, 195, 210-212, 219, 227, 230 and 251.

Figure 21. Lake Chub
(*Couesius plumbeus*)

EMERALD SHINER

The emerald shiner is widely distributed in southeastern Montana. This species has been collected primarily from the lower sections of small prairie streams in this part of the state.

Sites: 6, 16, 18, 56, 73, 98, 99, 127, 133, 144, 150, 162, 173, 174, 177, 180, 183, 189, 193, 196, 213, 214 and 217-219.

Figure 22. Emerald Shiner
(*Notropis atherinoides*)

SAND SHINER

This hardy species is common in southeastern Montana and can be locally abundant. It was collected at about 26% of the sites in this report. The sand shiner has not been found upstream of the Tongue River in the Yellowstone drainage.

Sites: 50, 56-59, 63, 75, 79, 80, 98-100, 106, 114-116, 118, 121, 125-127, 129, 131-133, 135, 139-141, 144, 146-148, 150, 151, 155, 158, 159, 163, 169, 173, 175, 177, 178, 180-182, 184, 186, 189, 193, 203-205, 207-218, 227, 233, 244 and 251.

Figure 23. Sand Shiner
(*Notropis stramineus*)

BRASSY MINNOW

The brassy minnow is common in southeastern Montana. It was collected at about 1/4 of the sites in this study, widely expanding the known distribution of the species in the Yellowstone drainage.

Sites: 34, 50, 56, 57, 59-61, 63, 67, 68, 75, 78, 80, 81, 83-85, 87, 89, 90, 96, 97, 102, 108, 110, 111, 115, 122, 124-127, 129-132, 136, 137, 139, 142, 144, 145, 147, 148, 160, 166, 168, 171, 175, 176, 179, 182, 184, 187, 193-195, 201, 203, 205, 210, 213, 215, 216, 219, 230 and 233.

Figure 24. Brassy Minnow
(*Hybognathus hankinsoni*)

PLAINS MINNOW/WESTERN SILVERY MINNOW

The plains minnow and the western silvery minnow are combined since not all available distribution data differentiates between the two species. These species are widely distributed in southeastern Montana and are often abundant.

Sites: 2-6, 34, 36, 39, 40, 52-56, 58, 59, 66, 71, 73-75, 80, 91, 99-110, 112, 115-119, 123, 125-127, 133, 139, 141, 143-147, 150-155, 162, 169-171, 175, 177, 180, 181, 183, 186, 187, 189, 196, 202, 203, 205, 212, 214, 215, 217, 219, 227, and 233.

PLAINS MINNOW

WESTERN SILVERY MINNOW

Figure 25. Plains Minnow/Western Silvery Minnow
(*Hybognathus*)

FATHEAD MINNOW

This species is widely distributed, and it is very abundant in southeastern Montana. The fathead is the second most common fish in this report, having been collected at about 64% of the sites. This hardy minnow is well suited to the extremes encountered in prairie streams where conditions range from flowing water to ephemeral pools.

Sites: 6-16, 18, 25, 27, 34, 38, 50, 53, 56-58, 62-64, 66, 72-76, 78-81, 84-90, 97-100, 108-116, 118, 119, 121-128, 130-137, 139, 140, 142-145, 147, 148, 151, 153-155, 157, 159, 160, 162-166, 169-177, 179, 180, 184-187, 189, 193-197, 200-222, 224-234, and 236-253.

Figure 26. Fathead Minnow
(*Pimephales promelas*)

LONGNOSE DACE

This species is widely distributed and abundant in southeastern Montana. The longnose dace was collected at about 54% of the sites; it is the third most common species in this report. Although it occurs in a wide variety of habitats, this minnow prefers flowing water with a rocky substrate.

Sites: 2-7, 17-29, 31-34, 36, 38-42, 44-46, 49, 50, 53, 56, 58, 63, 64, 66, 70-75, 78, 81, 82, 84, 86-90, 94, 96-100, 102-106, 108-112, 114-116, 118, 120, 121, 125, 127-129, 131, 132, 134-144, 146-148, 153, 154, 158-170, 174, 177-181, 186, 187, 193-195, 197, 202, 204-207, 210-212, 227, 230, 235, 244, 245 and 251.

Figure 27. Longnose Dace
(*Rhinichthys cataractae*)

RIVER CARPSUCKER

This species is widely distributed and abundant in southeastern Montana. Carpsuckers are usually found in the pools and backwaters of the rivers and lower reaches of the streams.

Sites: 1-6, 18, 35-42, 45-47, 49, 50, 52, 55, 66, 73, 78, 91, 97, 98, 101, 102, 104-108, 110, 112, 115-117, 125-128, 133, 134, 139, 143, 147, 150, 162, 164, 169, 175, 183, 184, 189 and 196.

Figure 28. River Carpsucker
(*Carpoides carpio*)

BLUE SUCKER

The blue sucker is apparently rare in southeastern Montana. Its distribution is confined to large streams and rivers. The blue sucker has been removed from the state list of fishes of special concern because of recent documentation of high population levels in the Missouri drainage.

Sites: 2-5, 35, 36, and 125.

Figure 29. Blue Sucker
(*Cycleptus elongatus*)

SMALLMOUTH BUFFALO

This species is not common in southeastern Montana. It was found at only about 6% of the sites in this report. The smallmouth buffalo has been collected mainly from larger streams and rivers. Brown (1971) listed one site on Rosebud Creek for this species.

Sites: 1-5, 35, 55, 110, 125, 127, 147, 150, 156, 166, 180, 187, 189 and 204.

Figure 30. Smallmouth Buffalo
(*Ictiobus bubalus*)

BIGMOUTH BUFFALO

Although this species occurs throughout the lower mainstem Yellowstone River, its distribution in the smaller rivers and streams of southeast Montana is limited. The bigmouth buffalo was collected at only about 2% of the sites in this report. Brown (1971) listed no sites for this species in southeastern Montana.

Sites: 2-5, 35 and 184.

Figure 31. Bigmouth Buffalo
(*Ictiobus cyprinellus*)

SHORthead REDHORSE

This species is widely distributed in the larger streams in southeastern Montana. It is locally abundant. The shorthead redhorse is the most common fish in the mid-section of the Tongue River, sites 40 to 43 (Clancey 1980).

Sites: 1-7, 18-25, 35-50, 52, 53, 55-59, 63, 66, 73-75, 78, 101, 106, 107, 115, 117, 125-127, 134, 147, 156, 166, 175, 177, 180, 184, 187, 202-213, 227, and 233.

Figure 32. Shorthead Redhorse
(*Moxostoma macrolepidotum*)

LONGNOSE SUCKER

This species is common in the cold water streams of western Montana. In the southeastern part of the state, the longnose sucker is found mainly in the larger and cooler streams.

Sites: 2-7, 16, 18, 35-47, 73, 86, 87, 116, 126, 127, 174, and 227.

Figure 33. Longnose Sucker
(*Catostomus catostomus*)

WHITE SUCKER

The white sucker is widely distributed and abundant in southeastern Montana. It was collected at about 73% of the sites in this report, ranking it as the most common species.

Sites: 1-10, 12-14, 16, 18-50, 52, 53, 55-69, 71-81, 83, 85-89, 97-100, 108-118, 121-139, 141-144, 146-148, 151-153, 156-172, 174-182, 184, 186, 187, 189-198, 200, 202-219, 222, 223, and 233.

Figure 34. White Sucker
(*Catostomus commersoni*)

MOUNTAIN SUCKER

This species is common in the Rosebud and Tongue River drainages, where it finds the cool clear waters it prefers. With the exception of these streams and the Yellowstone River, the mountain sucker is rare in this corner of the state.

Sites: 1-7, 18-27, 30, 31, 36, 38-41, 43-45, 49, 50, 86 and 163.

Figure 35. Mountain Sucker
(*Catostomus platyrhynchus*)

BLACK BULLHEAD

This species is widely distributed and abundant in southeastern Montana. It was collected at almost 1/3 of the sampling sites in this report. Habitats in which it was found varied from large rivers to pools in small intermittent streams.

Sites: 2, 3, 6, 8-10, 15, 18, 39, 40, 42, 45, 47, 52, 53, 55-63, 66, 72-76, 78, 86, 109, 113-116, 118, 126, 127, 140, 149, 153, 157, 160, 174, 175, 179-182, 198, 200, 202-204, 208-219, 222, 227, 229, 233, 234, 236, 237, 240, 247 and 251.

Figure 36. Black Bullhead
(*Ictalurus melas*)

YELLOW BULLHEAD

This species is only about 1/3 as widely distributed in southeastern Montana as the black bullhead. It was found in combination with the black bullhead in 20 of the 26 collection sites in this report. Brown (1971) listed only one site for the yellow bullhead in this part of the state.

Sites: 36, 39, 40, 42, 45-47, 55, 73, 75, 111, 114, 153, 157, 175, 177, 180-182, 184, 202, 205, 210, 212, 214, and 217.

Figure 37. Yellow Bullhead
(*Ictalurus natalis*)

CHANNEL CATFISH

The channel cat is one of the major game fish in southeastern Montana. It was collected at only about 17% of the sites in this report, mainly in the larger rivers and creeks. Much of the sampling in the lower reaches of tributaries coincided with spring spawning migrations.

Sites: 1-5, 18, 35-38, 47, 49-52, 55, 56, 66, 73, 74, 91, 101-106, 115-118, 125-127, 133, 139, 147, 156, 166, 175, 180, 187, 189, 227 and 233.

Figure 38. Channel Catfish
(*Ictalurus punctatus*)

STONECAT

This species has a fairly wide distribution in southeastern Montana. It was found at about 26% of the sites, mainly in flowing water over rocky substrates.

Sites: 1-6, 18-24, 35-50, 55, 56, 58, 63, 73, 74, 86, 97, 101-105, 107, 109, 117, 127, 131, 133, 141, 147, 156, 166, 169, 181, 182, 189, 202, 204, and 207-213.

Figure 39. Stonecat
(*Noturus flavus*)

BURBOT

This species is found in the larger rivers of southeastern Montana. It was identified at approximately 5% of the sites. The burbot is a popular winter and spring game fish in southeastern Montana.

Sites: 1-5, 18, 35, 36, 38, 101, 102 and 157.

Figure 40. Burbot
(*Lota lota*)

PLAINS KILLIFISH

This species is more common in the lower Yellowstone drainage than was originally thought. Expansion of the known distribution of the plains killifish in Montana has warranted the removal of this fish from Montana's list of fishes of special concern. This species has been collected mainly in small clear water creeks. The killifish is usually locally abundant where found.

Sites: 16, 92-94, 98-100, 121, 125, 129, 135, 138-140, 143-145, 152, 157, 158, 161, 162, 164, 169, 170, and 175.

Figure 41. Plains Killifish
(*Fundulus kansae*)

MOSQUITOFISH

Mosquitofish have been collected at Angela Hotsprings which is located at the head of Lone Tree Creek. The year round survival of *Gambusia* in Montana is restricted to waters with thermal influences.

Sites: 95

Figure 42. Mosquitofish
(*Gambusia affinis*)

BROOK STICKLEBACK

This species is normally found in small, clear, cool streams. It has been collected mainly in tributaries to the lower Yellowstone and in the Beaver Creek drainage. The apparent distribution of the stickleback does not extend very far up the Yellowstone drainage.

Sites: 113, 136, 142, 150, 151, 153, 160, 161, 168, 174-176, 179, 182, 184, 185, 188, 189, 191, 195, 200, 201, 204, 210, 212, 213, 215-220, 222, and 224.

Figure 43. Brook Stickleback
(*Culaea inconstans*)

ROCK BASS

This species has been collected exclusively in the Tongue River and its tributaries in Montana. Rehwinkel (1978) collected rock bass in Clear Creek, a Wyoming tributary to the Powder River, entering the Powder near the state line. It is anticipated it will be found in the Lower Yellowstone River.

Sites: 36-48, 55, 73 and 86.

Figure 44. Rock Bass
(*Ambloplites rupestris*)

GREEN SUNFISH

This species is the most widely distributed of the sunfish family in southeastern Montana. It was collected at about 26% of the sites in this report.

Sites: 2, 6-10, 12, 14, 34, 38-40, 42, 45, 47, 55, 56, 63, 66, 73-79, 81, 84, 90, 100, 102, 103, 108-110, 115-118, 121, 124, 125-129, 131-134, 136, 137, 140, 157, 160, 175, 179, 182, 207-210, 212, 213, 215, 227 and 233-235.

Figure 45. Green Sunfish
(*Lepomis cyanellus*)

PUMPKINSEED

This species has a scattered distribution in southeastern Montana reflecting it's wide utilization as a stock pond fish. It was collected at about 9% of the sites in this report.

Sites: 16, 34, 36, 42, 45, 47, 50, 55-63, 78, 79, 128, 148, 215, 216 and 246.

Figure 46. Pumpkinseed
(*Lepomis gibbosus*)

BLUEGILL

This species has a widely scattered distribution in southeastern Montana reflecting its utilization as a stock pond fish. At most sites it is found with other sunfish species.

Sites: 42, 50, 52, 74, 75, 78, 79, 81, 127, 194

Figure 47. Bluegill
(*Lepomis macrochirus*)

SMALLMOUTH BASS

Smallmouth bass were collected primarily from the Tongue and Yellowstone Rivers. The smallmouth population in the Tongue is thriving and with increased interest is providing excellent angling opportunities. Growth rates of the Tongue River smallmouth are comparable to Missouri smallmouth streams (Clancey 1980). Smallmouth bass have been used in stock water ponds in eastern Montana, but are not reflected on the map.

Sites: 2-4, 35-38, 41-43, 45-47, 55, 57, 73 and 194.

Figure 48. Smallmouth Bass
(*Micropterus dolomieu*)

LARGEMOUTH BASS

This species was collected only on the Tongue and Yellowstone Rivers. Numerous ponds throughout southeastern Montana are stocked with largemouth bass; these are not shown on the distribution map.

Sites: 2-5, 35, 45 and 47.

Figure 49. Largemouth Bass
(*Micropterus salmoides*)

WHITE CRAPPIE

White crappie were taken primarily from the Yellowstone and Tongue Rivers. Most of the sites from which white crappie have been collected have also yielded black crappie.

Sites: 2-5, 18, 36, 38-40, 42, 44, 45, 47, 49, 50, 55, 73 and 182.

Figure 50. White Crappie
(*Pomoxis annularis*)

BLACK CRAPPIE

This species has been collected mainly on the Yellowstone and Tongue Rivers. In most cases, black and white crappie were collected together.

Sites: 1-5, 36-38, 42, 44, 45, 47 and 73.

Figure 51. Black Crappie
(*Pomoxis nigromaculatus*)

YELLOW PERCH

Yellow perch were collected mainly in the Yellowstone and Tongue Rivers. The yellow perch has been stocked in a number of ponds throughout southeastern Montana. Ponds are not shown on this distribution map.

Sites: 3, 5, 41, 42, 44-47, 55, 73, 210, 212 and 223.

Figure 52. Yellow Perch
(*Perca flavescens*)

SAUGER

This species is one of the most popular gamefish in southeastern Montana. It has been collected mainly on the larger rivers and streams. Sauger are locally abundant offering great angling opportunities during spring spawning runs in Yellowstone tributaries.

Sites: 1-5, 18, 35, 36, 38-40, 42, 45-50, 55, 91, 101-103, 106, 107, 125, 156, 166, 187, 189 and 227.

Figure 53. Sauger
(*Stizostedion canadense*)

WALLEYE

The walleye is another important sport fish in eastern Montana, but is not as widely distributed as the sauger. This species was taken at about 9% of the sites, restricted primarily to the larger streams. Walleye have been utilized as a pond fish which is not reflected on the distribution map.

Sites: 2-5, 18, 35, 36, 45, 47, 50, 55, 73, 189, 204-207, 209-212, 223.

Figure 54. Walleye
(*Stizostedion vitreum*)

IOWA DARTER

This species has been collected in the Little Missouri drainage and on one tributary of the lower Yellowstone. The limited distribution of the Iowa Darter in southeast Montana probably represents the extent of its westward range.

Sites: 194, 195, 204-206, 209-213, 215-219, 222 and 235.

Figure 55. Iowa Darter
(*Etheostoma exile*)

FRESHWATER DRUM

Freshwater drum have been collected exclusively in the larger rivers in southeastern Montana. The five sites identified here illustrate its wide distribution along the Yellowstone.

Sites: 2-5 and 35

Figure 56. Freshwater Drum
(*Aplodinotus grunniens*)

SUMMARY

In this report, fifty-three species of fish have been identified. Twenty-eight of these, more than half, have been collected at fewer than 10% of the sites. This suggests a wide variety of habitats or, at least, many discontinuous reaches of similar habitat. Both descriptions fit the waters of southeastern Montana. Fourteen species have been collected at more than 25% of the sites; of these only the fathead minnow, longnose dace and white sucker have been found at more than half of the sites. Considering the limited habitat available to the various fish species in southeastern Montana, extreme care must be taken where there is a potential for the degradation of aquatic resources.

Although this report updates Brown using the latest available data, it is not the final word on the distribution of fishes in southeastern Montana. The known distribution of some species will be expanded as more streams are surveyed and as more intensive sampling is done. Nevertheless, this report will assist state and federal agencies, as well as private industry and local governments, in making sound biological decisions concerning the protection of the fisheries resources in southeastern Montana.

REFERENCES

1. American Fisheries Society. 1970. A List of Common and Scientific Names of Fishes from the United States and Canada. Third Edition. Washington, D.C.
2. Brown, C.J.D. 1971. Fishes of Montana. Big Sky Books, Montana State University, Bozeman, Montana.
3. Clancey, Christopher G. 1978. The Fish and Aquatic Invertebrates in Sarpy Creek, Montana. Master's Thesis. Montana State University, Bozeman.
4. Clancey, Christopher G. 1980. Vital Statistics and Instream Flow Requirements of Fish in the MONTCO Mine Area of the Tongue River, Montana. Mont. Dept. Fish, Wildl. & Parks.
5. Elser, Allen A. Personal communication. Regional Fisheries Manager. Miles City Regional Office, Montana Department of Fish, Wildlife & Parks, Miles City, Montana.
6. Elser, Allen A., Christopher Clancey, Lani Morris and Mark Gorges. 1978. Aquatic Habitat Inventory of the Beaver Creek Drainage and Selected Tributaries of the Yellowstone River. Montana Dept. of Fish and Game. Prepared for and submitted to the Bureau of Land Management.
7. Elser, Allen A., Robert C. McFarland, and Dennis Schwehr. 1977. The effect of altered streamflow on fish of the Yellowstone and Tongue rivers, Montana. Yellowstone Impact Study, Technical Report No. 8 DNRC, Water Resources Division.
8. Elser, Allen and James C. Schreiber. 1978. Environmental Effects of Western Coal Combustion. Part 1. The Fishes of Rosebud Creek, Montana. Montana Department of Fish and Game. Miles City, Montana.
9. Gorges, Mark W. Personal communication. Miles City District Office, Bureau of Land Management, Miles City, Montana.
10. Haddix, Mike. 1975. Aquatic Habitat Evaluation Study - Offstream Storage Reservoirs. From: Yellowstone River Habitat Evaluation Attempt - Mainstem Impoundment Compared to Offstream Storage Options. Montana Dept. of Fish and Game, Environment and Information Division in cooperation with Department of Natural Resources and Conservation.
11. Haddix, Michael H. and Christopher Estes. 1976. Yellowstone River Fisheries Study, Final Report. Conducted by: Montana Department of Fish and Game, Region 7, Miles City, MT. Environment and Information Division.
12. Hightower, Terry and Lani Morris. 1980. An Aquatic Resources Inventory of Selected Streams in the Lower Yellowstone River Basin. Interim Report. Montana Department of Fish, Wildlife and Parks. Miles City,
13. Missouri River Basin Commission. 1978
14. Montana Department of Fish, Wildlife and Parks.

15. Morris, Lani. Personal communication. Fish. Div., Fish, Wildl. & Parks, Miles City.
16. North Central Power Study Committee. 1971. North Central Power Study. NCP Study Committee, Report of Phase I, Vol. 2.
17. Penkal, Russell. Personal communication. Fisheries Biologist, Department of Fish, Wildlife & Parks, Miles City.
18. Rehwinkel, Bruce J. 1978. Powder River Aquatic Ecology Project. Final Report. Montana Department of Fish and Game. Prepared for: Utah International, Inc.
19. Rehwinkel, Bruce J. and Mark Gorges. 1977. Powder River Aquatic Ecology Project. Annual Report. Montana Department of Fish and Game.
20. Schoenthal, N.D. Colstrip Plume Fallout Area: Stream Biology Sampling Stations. In Toxic Effects in the Aquatic Biota from Coal and Oil Shale Development: Progress Report - Year 1 Natural Resource Ecology Laboratory Colorado State Univ. Fort Collins. July 1975-June 1976.
21. Schoenthal, N.D. Personal communication. Associate Professor of Biology, Eastern Montana College, Billings, MT.
22. Schmidt, Dana C. Ph. D. 1977. The Aquatic Biology of Young's Creek Ecosystem (Pearl Area). Prepared for WESTECH by Olson-Elliott and Associates.
23. Seaburg, Keith G. 1973. A summary of data collected from the Yellowstone River in the vicinity of Armell's Creek near Forsyth, Montana, during sampling periods of March 29-30 and May 2-4, 1973. Montana Department of Fish and Game.
24. Wesche, Thomas A. and Lora S. Johnson. 1979. The Tongue River in Wyoming; A Baseline Fisheries Assessment, Monarch to the Stateline. Water Resources Research Institute. University of Wyoming, Laramie. Prepared to Peter Kiewit and Sons' Mining Company and Argonne National Laboratory.