FISHERIES MANAGEMENT PLAN

for

Mountain Lakes in the Clarks Fork of Yellowstone River Drainage

Montana

June 1980

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Acknowledments

This project is indebted to the financial assistance provided by the State of Montana Department of Fish, Wildlife and Parks, the Gallatin National Forest and Montana Federal Aid Project F-20-R. Appreciation is also extended to the secretaries and many summer helpers for their assistance.

Note of Contents

This report deals only with the lakes in the Montana portion of the Clarks Fork River drainage. Comprehensive coverage of all the lakes in the Absaroka-Beartooth Mountain Range of Montana will be detailed under separate cover. Methods, materials and interpretation of findings are included in the comprehensive report. Although not anticipated, some minor changes in stocking schedules may be necessary to best serve the entire Absaroka-Beartooth Study Area.

DESCRIPTION

Location and numbers of lakes

The Clarks Fork of the Yellowstone River originates in the high country of Montana as a maze of subdrainage streams. The river flows into Wyoming for some 60 stream miles before returning to Montana. The Clarks Fork drains 1,237 square miles of Park County, Wyoming (Kent and Pechacek 1972).

The Montana portion of the Clarks Fork River drainage (Figure 1) drains 117.2 square miles of the south side of the Beartooth Mountain Range. The area is administered by the Gardiner Ranger District of the Gallatin National Forest. A scattering of mineral claims and deeded property are included within the southwest portion of the unit. Cooke City, Montana is the nearest town to the drainage.

The Gallatin National Forest portion of the drainage has 424 mountain lakes. Only Jackson's Pond (#2) is on private property. The majority, 286 lakes, are in Carbon County; Park County has 132; Fox Lake is shared by both Carbon and Park counties and five lakes are interstate waters on the Montana-Wyoming border. Except for Line Lake and 13 lakes near Cooke City, all the lakes are within the Absaroka-Beartooth Wilderness Area.

The Clarks Fork drainage also has Line Lake (#426) which occupies a 24.5 square mile drainage in the Beartooth Ranger District of the Custer National Forest in Carbon County, Montana near the Wyoming State Line.

Lake areas and depths

The Gallatin portion of the drainage has 4,273.6 acres of lake water, making 5.7% of this real estate under water. Lakes range from 0.4 acres to 291.8 acres with a 10-acre average for 425 lakes. The largest lake is Upper Aero at 291.8 acres, followed by Granite - 228.0 acres, Lower Aero - 189.9 and six other lakes exceed 100 acres (Table 1). The total area of the 13 lakes outside the Absaroka-Beartooth Wilderness Area is 95.6 acres.

Line Lake in the Custer National Forest portion is 4.7 acres with a maximum depth of 26 feet (Bishop 1967).

The deepest lake in the drainage is Upper Aero at 195 feet (Marcuson 1974). Lakes exceeding 100 feet follow:

Lake Number	Name	Maximum Depth
31	Upper Aero	195
100	Lake of the Winds	186
29	Lower Aero	185
103	Otter	177
168	Lake Elaine	156
245	Albino	149
104	Rock Tree	130
173	Green	129
151	Copeland	125
147	Granite	125
121	Jorden	120
73	Rock Island	110
72	Widewater	110
36	Rough	110
237	Jasper	107

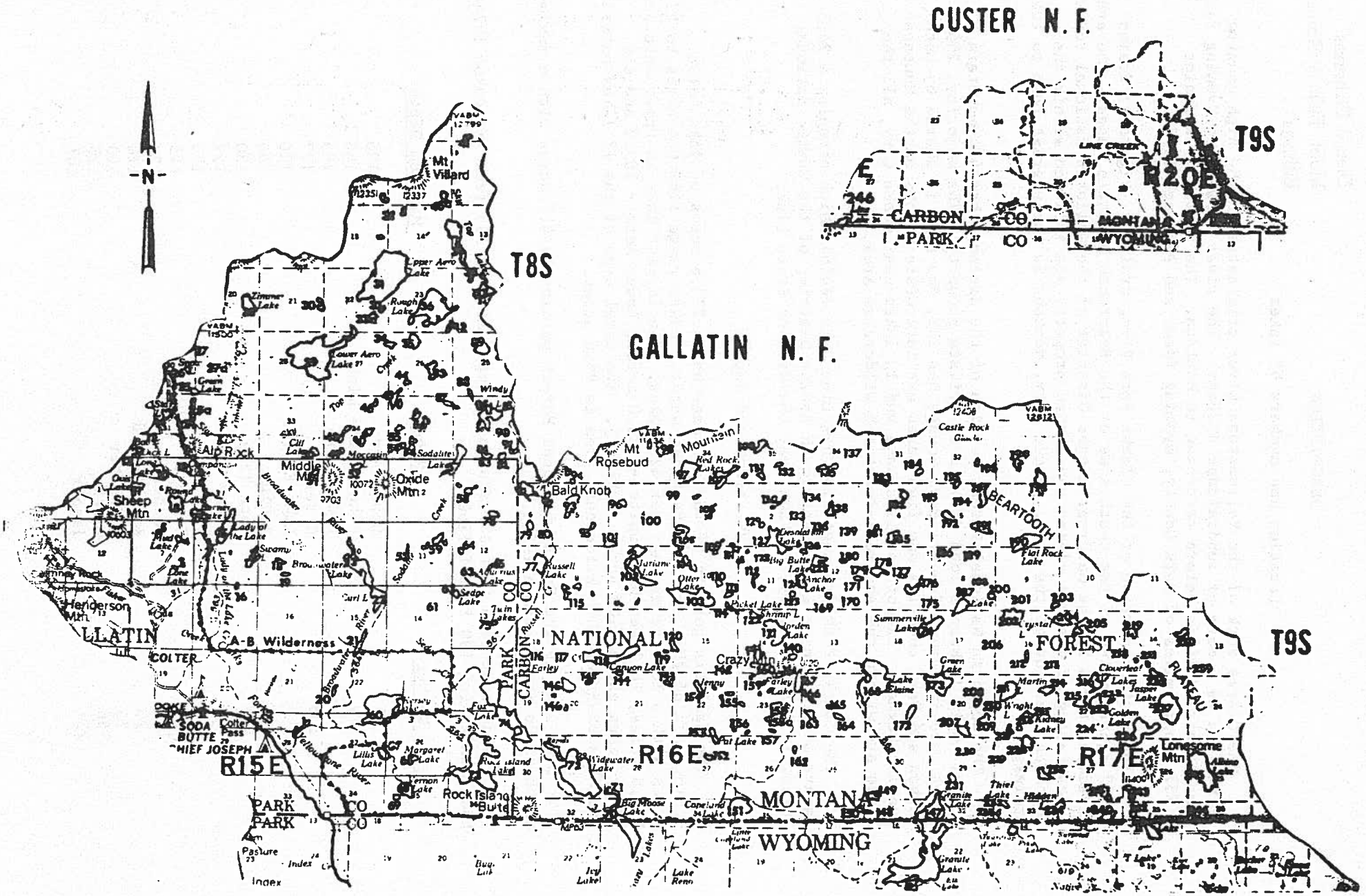

Figure 1. Location of lakes in Clarks Fork River drainage.

Table 1. Summary of locations, physical features and fisheries information for lakes in the Clarks Fork River drainage of the Beartooth mountain range

Location code[1]	Name	County[2]	Forest[3]	Elevation in feet	Area in acres t = trace	Maximum depth in feet	% shoal (% of lake less than 15 feet deep	Ecological zone[4]	Fish species[5]	Fish population type[6]	Fish management[7]
	BROADWATER RIVER										
1	Broadwater Meadow	49	G	7,978	1.4	4	100	2	EB GR CT	1 4 4	1 1 1
	LADY OF THE LAKE CREEK										
2	Jackson's Pond	49	P	8,005	.7	4	100	2	B		3
3	Lone	49	G	9,250	1.5	8	100	2	B		3
4	Mud	49	G	9,320	4.4	12	100	2	B		3
5	Schoolmarm (upper Mud)	49	G	9,520	3.0	25	53	3	B		3
6	Lady of the Lake	49	G	8,800	42.8	29	64	2	EB CT	1 1	1 1
7	Corner	49	G	9,220	11.1	42	37	2	CT	1	1
8	Round	49	G	9,340	31.0	32	39	3	EB CT	1 1	1 1
10	Long	49	G	9,471	11.9	21	74	3	EB	1	1
11	Ovis	49	G	9,600	8.6	45	28	3	CT EB	3 1	2 1
12	Bob	49	G	9,480	2.3	15	100	3	EB	1	1
13	Dick	49	G	9,475	1.9	15	100	3	EB	1	1
	STAR CREEK										
14	Star	49	G	9,646	7.9	36	47	3	CT EB	2 1	2 1
	LADY OF THE LAKE CREEK										
15	Companion	49	G	9,040	5.2	24	62	3	FB	1	4

Table 1. Summary of locations, physical features and fisheries information for lakes in the Clarks Fork River drainage of the Beartooth mountain range (Cont.)

Location code[1]	Name	County[2]	Forest[3]	Elevation in feet	Area in acres t = trace	Maximum depth in feet	% shoal (% of lake less than 15 feet deep	Ecological zone[4]	Fish species[5]	Fish population type[6]	Fish management[7]
16	Unnamed	49	G	7,810	2.1	4	100	2	EB	1	1
16a	Unnamed	49	G	8,450	2.4	5	100	2	B		3
17	Swamp	49	G	8,940	10.4	21	77	2	CT	2	5
18	Wiedy	49	G	9,010	7.1	68	26	2	B		6
18a	Mosquito	49	G	9,020	3.0	21	58	2	B		6
19	Marsh	49	G	9,018	3.8	25	69	2	B		6
	BROADWATER RIVER										
20	Broadwater Meadow	49	G	8,030	3.6	3	100	2	EB	1	1
									GR	4	1
21	Broadwater Meadow	49	G	8,317	7.8	4	100	2	EB	1	1
									GR	4	1
22	Curl	49	G	8,398	30.6	45	49	2	EB	1	1
									GR	4	1
23	Broadwater	49	G	8,398	93.6	64	53	2	EB	1	1
									GR	4	1
	STAR CREEK										
24	Astral	49	G	9,320	5.2	4	100	3	EB	1	1
25	Green	49	G	9,640	4.8	16	90	3	EB	1	1
25a	Little Green	49	G	9,580	1.8	6	100	3	EB	1	1
26	Snow	49	G	9,980	4.0	20	60	3	B		1
	ZIMMER CREEK										
27	Unnamed	49	G	10,360	1.3	3	100	3	B		3

Table 1. Summary of locations, physical features and fisheries information for lakes in the Clarks Fork River drainage of the Beartooth mountain range (Cont.)

Location code[1]	Name	County[2]	Forest[3]	Elevation in feet	Area in acres t = trace	Maximum depth in feet	% shoal (% of lake less than 15 feet deep	Ecological zone[4]	Fish species[5]	Fish population type[6]	Fish management[7]
27a	Unnamed	49	G	10,340	1.7	7	100	3	B		3
28	Zimmer	49	G	10,140	26.0	55	35	4	CT	2	2
	SKY TOP CREEK										
29	Lower Aero	49	G	9,995	189.9	185	40	3	EB	1	1
									CT	1	7
30	Unnamed	49	G	10,620	7.2	9	100	4	B		3
31	Upper Aero	49	G	10,140	291.8	195	7	4	CT	2	2
32	Unnamed (5)	49	G	11,200	14.5+	15	100	4	B		3
33	Unnamed	49	G	10,180	1.8	11	100	4	B		3
33a	Leaky Raft	49	G	10,150	8.5	30	57	4	CT	2	2
34	Shelter	49	G	10,040	6.8	45	34	3	EB	1	1
35	Lone Elk	49	G	10,070	18.1	40	17	3	GR	1	1
									EB	1	1
36	Rough	49	G	10,150	102.2	110	46	3	GR	1	1
									EB	1	1
37	Sky Top	49	G	10,380	17.1	50	61	4	B		1
38	Sky Top	49	G	10,420	2.8	19	83	4	B		1
38a	Unnamed	49	G	10,430	1.9	12	100	4	B		3
38b	Unnamed	49	G	10,380	.7	4	100	4	B		3
39	Sky Top	49	G	10,450	45.2	50	66	4	B		1
39a	Unnamed	49	G	10,630	2.3	10	100	4	B		3
39b	Unnamed			10,140	2.0	-	100	4	B		3
40	Sky Top	49	G	10,460	9.0	4	100	4	B		3

Table 1. Summary of locations, physical features and fisheries information for lakes in the Clarks Fork River drainage of the Beartooth mountain range (Cont.)

Location code[1]	Name	County[2]	Forest[3]	Elevation in feet	Area in acres t = trace	Maximum depth in feet	% shoal (% of lake less than 15 feet deep	Ecological zone[4]	Fish species[5]	Fish population type[6]	Fish management[7]
41	Sky Top	49	G	11,100	1.1	5	100	4	B		3
41a	Sky Top	49	G	10,805	1.7	3	100	4	B		3
42	Unnamed	49	G	10,300	3.2	13	100	3	B		3
43	Rain	49	G	10,300	11.8	20	94	3	B		1
43a	Unnamed	49	G	10,295	1.0	9	100	3	B		1
43b	Unnamed	49	G	10,215	.8	10	100	3	B		1
44	Production	49	G	10,070	3.1	42	36	3	EB	1	1
45	Recruitment	49	G	10,038	13.1	53	50	3	EB	4	7
45a	Paddle	49	G	10,040	3.6	27	85	3	B		1
46	Pneumonia	49	G	9,980	3.6	33	49	3	B		1
46a	Unnamed	49	G	9,885	.6	11	100	3	B		3
47	Hunger	49	G	9,665	5.1	31	75	3	EB	1	1
48	Sliver	49	G	9,520	6.9	22	48	3	EB	4	7
48a	Unnamed	49	G	9,480	1.3	15	100	3	B		3
48b	Unnamed (3)	49	G	9,300	1.6t	10	100	3	EB	1	1
49	Peanut	49	G	9,515	2.0	21	88	3	B		1
49a	Unnamed	49	G	9,900	0.4	3	100	3	B		3
50	Cliff	49	G	9,240	6.6	20	57	2	EB	1	1
51	Little Washtub	49	G	9,190	2.2	30	60	2	B		6
52	Moccasin	49	G	9,400	6.8	30	39	3	EB	1	1
52a	Little Moccasin	49	G	9,405	0.8	11	100	3	EB	1	1

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Location code[1]	Name	County[2]	Forest[3]	Elevation in feet	Area in acres t = trace	Maximum depth in feet	% shoal (% of lake less than 15 feet deep	Ecological zone[4]	Fish species[5]	Fish population type[6]	Fish management[7]
52b	Unnamed	49	G	9,560	.4	3	100	3	B		3
	SODALITE CREEK										
53	Sodalite Meadow	49	G	8,875	2.4	4	100	2	EB	1	1
54	Surprise	49	G	9,860	7.1	33	79	3	CT	2	2
54a	Weasel	49	G	9,940	3.7	20	81	3	B		2
55	Stash	49	G	9,985	3.1	24	68	3	B		2
55a	Unnamed	49	G	9,925	0.7	5	100	3	B		3
56	Unnamed (11)	49	G	10,100	9.4t	16	99	3	B		3
57	Sodalite	49	G	9,840	25.8	90	30	3	EB	1	1
58	Molar	49	G	9,860	7.5	8	100	3	B		3
58a	Unnamed	49	G	9,830	1.6	10	100	3	B		3
59a	Unnamed	49	G	9,190	1.4	6	100	3	B		3
59b	Unnamed	49	G	9,170	6.8	15	100	3	B		1
59c	Unnamed	40	G	9,110	2.5	15	100	3	B		1
	SEDGE CREEK										
60	Kersey	49	G	8,070	118.0	68	28	2	EB CT	1	6
61	Dollar	49	G	8,920	1.1	12	100	2	GR CT	1	1
62	Sedge	49	G	9,100	4.7	28	72	2	GR CT	1 1	1 1
63	Aquarius	49	G	9,180	11.6	65	48	2	CT	1	1

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Location code[1]	Name	County[2]	Forest[3]	Elevation in feet	Area in acres t = trace	Maximum depth in feet	% shoal (% of lake less than 15 feet deep	Ecological zone[4]	Fish species[5]	Fish population type[6]	Fish management[7]
	SODALITE CREEK										
64	Little Molar	49	G	9,300	6.1	8	100	3	B		3
64a	Unnamed (2)	49	G	9,180	1.8t	11	100	3	B		3
	SEDGE CREEK										
65	Unnamed	49	G	9,420	2.6	10	100	3	B		3
	CLARKS FORK RIVER										
66	Margaret	49	G	8,100	3.9	22	50	2	CT	2	2
67	Lillis	49	G	8,140	2.7	30	33	2	EB	1	1
68	Vernon	49	G	7,900	8.2	32	31	2	CT	1	1
									EB	1	1
69	Lower Vernon	49	G	7,880	1.9	10	100	2	CT	1	1
									EB	1	1
	CRAZY CREEK										
70	Big Moose	10	G	8,000	83.8	46	64	2	EB	1	1
		P	S						RB	1	1
71	Big Moose Meadow	10	G	8,004	7.5	3	100	2	EB	1	1
									RB	1	1
									GR	1	1
72	Widewater	10	G	8,008	110.7	110	13	2	RB	1	1
									GR	1	1
									EB	1	1
	CLARKS FORK RIVER										
73	Rock Island	49	G	8,166	137.0	110	13	2	EB	1	1
									CT	2	2

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Location code[1]	Name	County[2]	Forest[3]	Elevation in feet	Area in acres t = trace	Maximum depth in feet	% shoal (% of lake less than 15 feet deep	Ecological zone[4]	Fish species[5]	Fish population type[6]	Fish management[7]
	CRAZY CREEK										
74	Fox	49	G	8,055	111.4	75	57	2	GR	1	1
		10							RB	1	1
									EB	1	1
	RUSSELL CREEK										
75	Twin (2)	49	G	8,630	1.7	17	98	2	B		1
				8,680	2.1	10	100	2	B		1
77	Russell	10	G	8,780	27.5	95	18	3	EB	1	1
78	Unnamed	49	G	9,670	12.1	18	87	3	B		3
78a				9,840	2.0	5	100	3	B		3
b				9,820	1.7	6	100	3	B		3
c&d				9,750	1.2t	4	100	3	B		3
79	Leo	10	G	9,300	8.5	55	32	3	CT	1	1
80	Unnamed (2)	10	G	9,115	2.4	3	100	3	EB	1	1
				9,125	1.0	2	100	3	EB	1	1
81	Bald Knob	10	G	9,420	15.4	38	64	3	EB	1	1
82	Skull	10	G	9,640	5.5	16	86	3	EB	1	1
83	Pablo	49	G	9,780	0.7	12	100	3	B		3
84	Picasso	49	G	9,800	8.1	28	85	3	B		6
85	Deadhorse (Windy)	49	G	9,800	36.7	48	39	3	EB	1	1
86	Unnamed	49	G	9,900	2.6	20	90	3	B		1
87	No Bones (4)	49	G	9,980	7.8t	35	61	3	B		1
88	Unnamed (2)	49	G	9,900	4.1t	4	100	3	B		3

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89	Stephanie	49	G	10,280	13.9	65	38	3	B		2
89a	Unnamed			10,260	1.7	17	85	3	B		7
90	Unnamed (2)	49	G	9,900	1.8t	16	80	3	B		3
91	Mermaid	49	G	9,700	6.8	30	61	3	B		2
92	Ouzel	10	G	9,410	3.5	24	75	3	B		2
93	Lake of the Clouds	10	G	9,680	23.6	85	41	3	CT	2a	2a
94	Unnamed (2)	10	G	9,980	10.6t	3	100	3	B		3
95	Cradle	10	G	9,595	7.8	37	42	3	B		
96	Gallery	10	G	9,920	7.4	40	70	3	B		6
96a	Unnamed (3)	10	G	10,075	4.5t	6	100	3	B		1
b									B		1
c									B		7
97	Red Rock (West)	10	G	10,620	23.6			4	B		1
98	Unnamed	10	G	10,950	11.6			4	B		3
98a	Unnamed	10	G	10,960	1.5			4	B		3
99	Unnamed	10	G	10,600	1.0	10	100	4	B		3
100	Lake of the Winds	10	G	9,910	40.7	186	30	3	CT	2	2
101	Amphitheater	10	G	9,320	8.7	16	99	3	EB	1	1
102	Mariane	10	G	9,542	50.8	70	72	3	EB	1	1
102a	Unnamed (2)	10	G	9,610	1.3t	10	100	3	B		3
103	Otter	10	G	9,620	61.1	177	18	3	EB	1	1

Table 1. Summary of locations, physical features and fisheries information for lakes in the Clarks Fork River drainage of the Beartooth mountain range (Cont.)

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104	Rock Tree	10	G	9,820	18.1	130	16	3	B		6
a&b				9,830	5.6t	4	100	3	B		3
105	Z	10	G	9,880	20.4	10	100	3	B		1
106	Unnamed (3)	10	G	10,575	1.1t	5	100	4	B		3
107	Red Rock (East)	10	G	10,600	8.7			4	B		3
108	Alpestrine	10	G	11,000	8.7			4	B		3
109	Unnamed (2)	10	G	10,130	3.0t	3	100	4	B		3
110	Triangle	10	G	9,830	6.3	55	14	3	B		2
111	Unnamed (4)	10	G	10,230	9.6t	20	51	3	B		1
						3	100				3
112	Planaria	10	G	10,060	7.4	28	31	3	B		1
112a	Snail	10	G	9,980	2.9	20	60	3	B		1
112b	Unnamed	10	G	9,920	.6	6	100	3	B		3
113	Indian Knife	10	G	9,940	5.3	35	34	3	B		6
	RUSSELL CREEK										
114	Picket	10	G	9,700	3.4	12	100	3	B		3
115	Unnamed (8)	10	G	9,760	14.4t	10	100	3	B		3
	FARLEY CREEK										
116	Farley Creek #1	10	G	8,500	1.7	4	100	2	H_2	1	1
117	Farley Creek #2	10	G	8,680	4.2	7	100	2	H_2		1
118	Canyon	10	G	8,780	65.7	87	62	3	RB	1	1
									CT	1	1
									H_2	1	1

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119	Unnamed (2)	10	G	9,000	2.8t	8	100	3	CT	1	1
120	Melody	10	G	8,940	4.8	12	100	3	CT	1	1
121	Jorden	10	G	9,625	36.0	120	20	3	CT		7
122	Shrimp	10	G	9,720	3.2	13	100	3	B		3
123	Widowed	10	G	10,010	3.2	15	100	3	B		7
124	Anchor	10	G	10,045	12.0	90	43	3	CT		7
125	Big Butte	10	G	10,060	22.1	55	43	3	CT		5
126	Unnamed (2)	10	G	10,130	3.6	20	75	3	B		7
					3.8	20	63	3	B		7
127	Desolation	10	G	10,155	31.4	75	30	3	B		5
127a	Unnamed	10	G	10,240	1.2	5	100	4	B		3
128	Unnamed (8)	10	G	10,340	3.8t	6	100	4	B		3
129	Unnamed	10	G	10,230	3.2	8	100	4	B		3
130	Unnamed (3)	10	G	10,390	1.2t	5	100	4	B		3
131	Unnamed	10	G	10,760	9.3	ice		4	B		5
132	Unnamed	10	G	10,840	2.2	ice		4	B		3
133	Unnamed	10	G	10,440	.9	3	100	4	B		3
133a	Unnamed	10	G	10,400	.7	3	100	4	B		3
134	Unnamed	10	G	10,540	1.4	2	100	4	B		3
135	Unnamed	10	G	10,780	19.5	ice		4	B		3
135a	Unnamed	10	G	10,840	1.8	12	100	4	B		3

Table 1. Summary of locations, physical features and fisheries information for lakes in the Clarks Fork River drainage of the Beartooth mountain range (Cont.)

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136	Unnamed	10	G	10,560	.4	3	100	4	B		3
136a	Unnamed	10	G	10,410	3.4	4	100	4	B		3
136b	Unnamed	10	G	10,760	1.8	4	100	4	B		3
137	Unnamed	10	G	11,110	3.8	ice		4	B		3
137a	Unnamed	10	G	10,630	.3	4	100	4	B		3
138	Unnamed	10	G	10,780	7.6	ice	100	4	B		3
138a	Unnamed	10	G	10,810	0.4		100	4	B		3
139	Unnamed	10	G	10,680	.8	8	100	4	B		3
140	Unnamed	10	G	9,950	5.0	16	91	3	B		1
141	Unnamed	10	G	9,420	2.3	7	100	3	B		3
142	Unnamed (7)	10	G	9,700	5.5t	16	100	3	B		1/3[8]
143	Unnamed	10	G	9,250	2.1	13	100	3	B		3
144	Unnamed	10	G	9,020	4.6			3	B		1
145	Unnamed	10	G	8,770	3.3			3	B		1
	CRAZY CREEK										
146	Cliff	10	G	8,550	18.4	83	30	3	GR	1	1
146a	Lower Cliff	10	G	8,480	1.1	2	100	3	GR	1	1
	LAKE CREEK										
147	Granite	10 P	G S	8,625	228.0	125	32	2	RB EB	1	1
148	Unnamed	10	G	9,205	3.7	8	100	2	B		7

Table 1. Summary of locations, physical features and fisheries information for lakes in the Clarks Fork River drainage of the Beartooth mountain range (Cont.)

Location code[1]	Name	County[2]	Forest[3]	Elevation in feet	Area in acres t = trace	Maximum depth in feet	% shoal (% of lake less than 15 feet deep	Ecological zone[4]	Fish species[5]	Fish population type[6]	Fish management[7]
149	Skeeter	10	G	9,310	10.7	25	83	2	B		6
150	Spaghetti & Unnamed	10	G	9,190	6.3	54	55	2	B		6
				9,190	2.8	20	69	2	B		1
151	Copeland	10	G	8,780	36.0	125	13	2	EB	1	1
151a	Unnamed	10	G	8,950	2.3	8	100	2	B		3
152	Unnamed	10	G	9,130	3.0	8	100	2	B		3
153	Pat	10	G	9,190	4.5	11	100	2	B		3
154	Jenny	10	G	9,350	7.5	15	100	2	B		3
155	Unnamed (4)	10	G	9,675	6.2t	10	100	3	B		3
156	Unnamed (2)	10	G	9,760	1.5t	4	100	3	B		3
157	Unnamed (2)	10	G	9,600	3.4t	15	100	3	B		3
158	Hipshot	10	G	9,750	9.6	47	35	3	B		2
158a	Quyat	10	G	9,650	2.5	6	100	3	B		7
159	Unnamed (6)	10	G	9,895	7.4t	15	100	3	B		3
160	Crazy	10	G	9,900	20.0	48	40	3	B		1
160a	Unnamed	10	G	9,896	.9	4	100	3	B		3
161	Little Crazy	10	G	9,920	4.2	20	87	3	B		1
162	Unnamed	10	G	9,400	3.1	8	100	3	B		3
163	Wade	10	G	9,620	10.5	15	100	3	EB	1	1
163a	Wade, Jr.	10	G	9,615	1.8	8	100	3	EB	1	1
164	Midnight	10	G	9,480	5.1	30	61	3	EB	1	1

Table 1. Summary of locations, physical features and fisheries information for lakes in the Clarks Fork River drainage of the Beartooth mountain range (Cont.)

Location code[1]	Name		County[2]	Forest[3]	Elevation in feet	Area in acres t = trace	Maximum depth in feet	% shoal (% of lake less than 15 feet deep	Ecological zone[4]	Fish species[5]	Fish population type[6]	Fish management[7]
164a	Unnamed		10	G	9,350	1.2	6	100	3	B		3
165	Unnamed		10	G	9,590	1.4	4	100	3	EB	1	1
166	Unnamed		10	G	9,620	2.4	12	100	3	EB	1	1
167	Farley		10	G	9,740	24.0	35	51	3	EB	1	1
168	Lake Elaine		10	G	9,250	132.4	156	28	3	EB	1	1
168a	Unnamed (7)		10	G	9,400	3.2+	5	100	3	EB	1	1[9]
168b	Unnamed		10	G	9,550	.6	3	100	3	B		3
169	Unnamed (2)		10	G	10,100	2.5t	3	100	3	B		3
170	Unnamed		10	G	10,170	1.0	3	100	3	B		3
171	Unnamed (4)		10	G	10,250	5.8t	20	45	4	B		1/3[10]
172	Estelle		10	G	9,200	18.7	30	44	3	EB CT	1	1 7
	Unnamed (2)		10	G	9,190 9,180	.6 .6	12 8	100 100	3 3	B B		3 3
173	Green		10	G	9,150	35.7	129	18	3	EB	1	1
173a	Unnamed		10	G	9,470	0.5	4	100	3	B		3
174	Summerville		10	G	9,560	43.0	50	16	3	EB	1	1
174a	Unnamed		10	G	9,940	2.1	11	100	3	B		3
175	Unnamed	(Figure 2)	10	G	9,720	3.2	3	100	3	B		1
176	Erratic	"	10	G	10,130	12.5	8	100	3	B		1
176a	Unnamed (2)	"	10	G	10,130 10,150	5.5 .5	12 6	100 100	3 3	B B		3 1

Table 1. Summary of locations, physical features and fisheries information for lakes in the Clarks Fork River drainage of the Beartooth mountain range (Cont.)

Location code[1]	Name		County[2]	Forest[3]	Elevation in feet	Area in acres t = trace	Maximum depth in feet	% shoal (% of lake less than 15 feet deep	Ecological zone[4]	Fish species[5]	Fish population type[6]	Fish management[7]
177	Rubble	(Figure 2)	10	G	10,150	6.2	22	49	3	B		1
177a	Unnamed	"	10	G	10,160	1.5	10	100	3	B		3
178	Till	"	10	G	10,190	12.0	47	65	3	B		1
178a	Unnamed (3)	"	10	G	10,200	2.1t	8	100	4	B		3
179	Gravel	"	10	G	10,240	6.8	43	45	4	B		1
180	Unnamed	"	10	G	10,300	2.5	4	100	4	B		3
181	Unnamed	"	10	G	10,500	5.4	8	100	4	B		3
182	Unnamed	"	10	G	10,840	4.6	30	62	4	B		3
183	Unnamed	"	10	G	11,100	3.6	-	100	4	B		3
184	Unnamed		10	G	11,250	18.0	ice	100	4	B		3
185	Hermit		10	G	10,690	5.9	25	63	4	B		1
186	Unnamed (5)		10	G	10,600	8.3t	4	100	4	B		3
187	Queer		10	G	9,600	26.4	49	46	3	EB	1	1
188	Unnamed (2)		10	G	9,550	2.8t	13	100	3	B		3
189	Unnamed (3)		10	G	10,840	4.0t	7	100	4	B		3
190	Flat Rock		10	G	9,990	37.0	85	31	3	CT	2	2
191	Copepod		10	G	10,400	11.2	33	60	4	B		1
191 a&b	Unnamed (4)		10	G	10,560	1.0t	4	100	4	B		3
192	Cladocera		10	G	10,540	17.2	37	72	4	B		1
193	Unnamed		10	G	10,860	1.4	10	100	4	B		3

Table 1. Summary of locations, physical features and fisheries information for lakes in the Clarks Fork River drainage of the Beartooth mountain range (Cont.)

Location code[1]	Name	County[2]	Forest[3]	Elevation in feet	Area in acres t = trace	Maximum depth in feet	% shoal (% of lake less than 15 feet deep	Ecological zone[4]	Fish species[5]	Fish population type[6]	Fish management[7]
194	Unnamed	10	G	10,650	1.2	3	100	4	B		3
195	Unnamed	10	G	10,850	0.7	12	100	4	B		3
196	Unnamed (2)	10	G	11,090	4.1t	8	100	4	B		3
197	Unnamed	10	G	10,600	14.0	32	49	4	B		1
198	Forsaken	10	G	10,450	30.5	66	22	4	CT	2	2
198a	Unnamed (2)	10	G	10,540	.4	5	100	4	B		3
b				10,550	.7	8	100	4	B		3
199	Unnamed	10	G	10,780	8.8	23	90	4	B		1
200	Alp	10	G	9,760	2.8	25	80	3	EB		1
201	Unnamed (5)	10	G	9,990	3.7t	5	100	3	B		3
202	Crystal	10	G	9,910	27.5	85	24	3	CT	2	2
203	Unnamed (2)	10	G	10,520	2.3t	12	100	4	B		3
204	Felis	10	G	10,440	17.5	62	10	4	B		1
205	Lynx	10	G	10,450	21.7	20	75	4	B		1
206	Unnamed (2)	10	G	10,020	2.0t	7	100	4	B		3
				10,120				4			
207	Robin (Hunter)	10	G	9,575	8.3	58	54	3	EB	1	1
									RB	1	1
208	Trail	10	G	9,800	7.1	55	33	3	B		2
208a	Little Trail	10	G	9,799	1.4	8	100	3	B		7
208b	Unnamed (6)	10	G	9,810	1.4t	3	100	3	B		3
209	Little Falls	10	G	9,620	11.4	40	35	3	EB	1	1
210	Wright	10	G	9,650	7.9	40	52	3	EB	1	1

Table 1. Summary of locations, physical features and fisheries information for lakes in the Clarks Fork River drainage of the Beartooth mountain range (Cont.)

Location code[1]	Name	County[2]	Forest[3]	Elevation in feet	Area in acres t = trace	Maximum depth in feet	% shoal (% of lake less than 15 feet deep	Ecological zone[4]	Fish species[5]	Fish population type[6]	Fish management[7]
210a	Unnamed	10	G	9,620	0.7	4	100	3	EB	1	1
211	Martin	10	G	9,660	31.4	42	26	3	EB	1	1
212	Ghost	10	G	10,100	6.2	22	63	3	B		1
213	Unnamed	10	G	10,380	2.3	3	100	4	B		3
214	Wall	10	G	9,900	14.4	28	53	3	EB	1	1
215	Cloverleaf	10	G	10,170	18.4	66	29	3	CT	2	2
216	Cloverleaf	10	G	10,180	23.9	30	52	3	CT	2	2
217	Unnamed	10	G	10,190	2.9	12	100	3	CT	2	7
218	Wednesday	10	G	10,200	6.2	12	100	4	B		1
219	Tuesday	10	G	10,210	14.0	30	20	4	B		1
219a	Unnamed	10	G	10,460	0.3	5	100	4	B		3
220	Unnamed	10	G	10,840	9.0	ice		4	B		3
221	Unnamed (2)	10	G	10,350	4.1t	10	100	4	B		3
222	Arrowhead	10	G	10,380	10.2	45	36	4	B		1
222a	Unnamed	10	G	10,300	1.8	12	100	4	B		3
223	Cloverleaf	10	G	10,150	31.0	65	35	3	CT	2	2
224	Unnamed (5)	10	G	10,320	5.0t	15	100	4	B		3
225	Liver	10	G	9,910	7.2	8	100	3	B		1
226	Heart	10	G	10,000	2.9	35	8	3	B		1
227	Kidney	10	G	9,910	2.8	15	100	3	EB	1	1

Table 1. Summary of locations, physical features and fisheries information for lakes in the Clarks Fork River drainage of the Beartooth mountain range (Cont.)

Location code[1]	Name	County[2]	Forest[3]	Elevation in feet	Area in acres t = trace	Maximum depth in feet	% shoal (% of lake less than 15 feet deep	Ecological zone[4]	Fish species[5]	Fish population type[6]	Fish management[7]
228	Renie	10	G	9,900	15.3	55	51	3	EB	1	1
229	Heidi	10	G	9,720	8.2	25	80	3	EB	1	1
230	Unnamed (4)	10	G	9,780	8.2t	12	100	3	B		3
231	Burnt Bacon	10	G	8,950	15.0	46	45	3	B		2
232	Tiel	10	G	9,260	18.5	35	50	3	EB	1	1
233	Unnamed (4)	10	G	9,300	9.1t	30	45	3	EB	1	1[11]
									CT	1	7
234	Hidden	10	G	9,500	18.0	46	40	3	GT	1	1
									CT	1	1[12]
235	Swede	10	G	9,810	11.8	84	37	3	B		6
235a	Unnamed (5)	10	G	10,040	8.6t	13	100	3	B		3
236	Golden	10	G	10,130	48.9	90	26	3	CT		7
237	Jasper	10	G	10,150	54.8	107	17	3	CT	2	2
238	Unnamed	10	G	10,340	4.2	24	90	4	B		1
239	Unnamed	10	G	10,540	1.2	3	100	4	B		3
	BEARTOOTH CREEK										
240	Gus	10 Wyo	G S	9,890	16.7	19	82	3	B		3
241	Unnamed (3)	10	G	10,230	3.4t	8	100	4	B		3
242	Lonesome	10 Wyo	G S	10,050	35.3	38	43	3	EB	1	1
243	Abandoned	10	G	10,100	10.5	25	63	3	EB	1	1
244	Arctic	10 Wyo	G S	10,140	3.7	17	53	3	B		1

Table 1. Summary of locations, physical features and fisheries information for lakes in the Clarks Fork River drainage of the Beartooth mountain range (cont.)

Location code[1]	Name	County[2]	Forest[3]	Elevation in feet	Area in acres t = trace	Maximum depth in feet	% shoal (% of lake less than 15 feet deep	Ecological zone[4]	Fish species[5]	Fish population type[6]	Fish management[7]
245	Albino	10	G	10,000	39.2	149	27	3	CT	2	2
	LINE CREEK										
246	Line	10	C	9,680	4.7	26	52	3	CT	2	2

[1] See Figure 1 for corresponding number.

[2] 10 = Carbon, 49 = Park, P = Park, Wyoming.

[3] C = Custer National Forest, S = Shoshone National Forest, P = private.

[4] 1 = Transition, 2 = Canadian, 3 = Subalpine, 4 = Alpine.

[5] CT = cutthroat trout, GR = arctic grayling, GT = golden trout, LL = brown trout, EB = brook trout, H_2 = CTxRB hybrid, B = barren.

[6] 1 = self-sustaining, 2 = stocked, 2a = stocked, but may be self-sustaining, 3 = self-sustaining and stocked, 4 = drifted in from upstream source.

[7] 1 = no immediate management necessary, 2 = stock at intervals, 3 = no fisheries potential, 4 = rehabilitate and stock new species, 5 = stock new species after present fisheries die out, 6 = stock to establish self-sustaining population, 7 = inhabit from upstream source.

[8] One lake has potential, the other six have none.

[9] Four lakes have brookies, three have no potential.

[10] One lake has potential, three have none.

[11] One lake is barren and has no potential (B-3).

[12] Cutthroat trout from Jasper Lake.

There are 33 lakes between 50-100 feet, 186 between 10 and 50 feet and 186 less than 10 feet (Marcuson 1970, 1971, 1974, 1975, 1976). Six lakes were ice covered and no depths were measured.

Lake Elevations and Ecological Zones

The highest lake in the drainage is Unnamed #32 at 11,200 feet. In the same area near Granite Peak, is the uppermost Sky Top Lake at 11,100 feet. The lake at the lowest altitude in the drainage is Lower Vernon at 7,880 feet (Marcuson 1972). The 426 lakes in the Clarks Fork River drainage are distributed by the following elevations:

Altitude in Feet	Number of Lakes
7,000	4
8,000	27
9,000	213
10,000	170
11,000	12

Ninety percent of the lakes are in the 9,000 to 10,000-foot range. Only four lakes above 10,500 feet have names. Sixty-one percent of the lakes occupy the Sub-alpine environment; 28% are in the Alpine Zone and 11% are in the timbered habitat typical of the Canadian Zone.

Accessibility

U. S. Highway 212 between Red Lodge and Cooke City, Montana provides vehicle access to the area. Many four-wheel-drive trails, not designated as Forest roads, have been closed because of habitat destruction. The only roadways within the Montana portion are the Goose Lake jeep trail #3,230, Lulu Pass road #6,943 and Daisy Pass road #212. Other roads from Highway 212 lead to trail heads in Wyoming which provide routes to waters in Montana. These include Lily Lake-Crazy Lake jeep trail #130, Muddy Creek, Clay Butte and Island Lake spur roads.

The drainage has some good trails providing access to most of the lake regions. Most of the country above Timberline is easily traveled without trails. Many unmaintained trails traverse the drainage, few of which are on maps. Of the 426 lakes, 13 can be driven to by 4x4 vehicle, 275 can be reached by horse, 138 are restricted to foot traffic, 78 lakes have trails to their lake shores or reasonably close, while 348 lakes have no trails.

Water Chemistry

Chemical attributes for 90 lakes (Table 2) had a mean hydrogen ion concentration of 6.4. Conductivities ranged from 7 to 82 mhos. The average silica content was 1.0 ppm, iron averaged .10 ppm, alkalinity averaged 21 ppm and total hardness was 9 ppm. Waters were usually clear except those green lakes at high elevations influenced by glacial milk. Most lake substrates were visible to 18 feet on clear, sunny days. Secchi disks were visible to 26 feet in the majority of the lakes. High flows caused little turbidity.

Thermal

Surface water temperatures peak about the 31st of August for most years. Ice goes off lakes and wide waters east of Cooke City from mid-May to early June. The majority of the lakes are much later, some are ice-free by August 1,

Table 2. Chemical attributes of lakes in the Clarks Fork River drainage of the Beartooth Mountain Range

Location code[1/]	Name of lakes	pH	Conductivity (mhos)	Alkalinity (ppm)	Total hardness (ppm)	Silica (ppm)	Iron (ppm)	Total phosphate (P) t = trace
5	Schoolmarm	6.2		10	5	1.6	0	t
6	Lady of the Lake	6.8	44	40	18	1.0	.03	-
7	Corner	6.6		20	20	3.8	0	-
8	Round	6.3	82	90	25	1.0	0	0
10	Long	6.4	21	0	10	.8	.15	.03
11	Ovis	6.2		15	15	3.0	0	t
12	Bob	6.3	10	0	5	.7	.09	.02
14	Star	6.9	8	0	5	.5	.30	.04
15	Companion	6.3	8	0	3	.7	.15	.03
17	Swamp	7.0	16	75	20	.9	.05	.01
18	Wiedy	6.8	16	50	25	1.8	.05	.15
18a	Mosquito	6.6	17	45	20	1.6	.08	.15
20	Broadwater Meadow	6.2	20	15	15	.8	.11	.03
22	Curl	6.3	13	20	8	.6	0	.02
24	Astral	6.2	18	0	5	.6	.12	.02
25	Green	6.5	21	30	10	1.3	.02	-
28	Zimmer	6.3	11	20	8	1.5	.07	-
29	Lower Aero	6.4	9	19	17	.9	.11	.06
31	Upper Aero	6.2	11	0	5	.6	0	0
33a	Leaky Raft	6.5	10	45	30	.8	.08	.13
34	Shelter	6.3	12	8	10	.9	.05	.02

Table 2. Chemical attributes of lakes in the Clarks Fork River drainage of the Beartooth Mountain Range (cont.)

Location code[1/]	Name of lakes	pH	Conductivity (mhos)	Alkalinity (ppm)	Total hardness (ppm)	Silica (ppm)	Iron (ppm)	Total phosphate (P) t = trace
35	Lone Elk	6.6	11	20	10	.9	.06	.03
36	Rough	6.2	10	0	5	.8	.02	.05
44	Production	6.2	8	5	5	.8	.03	.02
45	Recruitment	6.5	10	50	18	.8	.03	.02
47	Hunger	6.2	15	10	8	.9	.07	0
48	Sliver	6.2	13	30	2	.6	.04	-
50	Cliff	6.6	11	45	20	1.8	.10	.01
52	Moccasin	6.5	18	30	8	1.0	.02	-
52a	Little Moccasin	6.3	18	20	12	.3	0	0
54	Surprise	6.2	10	15	2	.8	.09	.05
57	Sodalite	6.4	10	0	3	.6	.04	.02
60	Kersey	6.7	46	67	10	1.4	.09	.07
62	Sedge	6.3	24	60	15	1.5	.20	.20
63	Aquarius	6.3	23	40	10	.6	0	.05
66	Margaret	6.5	39	65	19	2.9	.21	.12
67	Lillis	6.5	65	117	39	4.0	.03	.16
68	Vernon	6.5	45	83	33	3.2	.10	.17
70	Big Moose	6.1	10	10	5	.6	.15	-
72	Widewater	6.3	8	5	5	1.3	0	t
73	Rock Island	6.6	32	52	18	1.4	.02	.07
74	Fox	6.8	9	0	2	.5	.15	.02

Table 2. Chemical attributes of lakes in the Clarks Fork River drainage of the Beartooth Mountain Range (cont.)

Location code[1/]	Name of lakes	pH	Conductivity (mhos)	Alkalinity (ppm)	Total hardness (ppm)	Silica (ppm)	Iron (ppm)	Total phosphate (P) t = trace
77	Russell	6.8	9	0	2	.8	.10	0
79	Leo	6.5	9	0	3	.7	.05	.04
81	Bald Knob	6.6	8	0	3	1.1	.21	.02
82	Skull	6.0	10	0	1	1.2	.60	.07
84	Picasso	6.6	7	0	2	.7	1.20	0
86	Dead Horse	6.3	9	0	4	.7	0	.07
92	Ouzel	6.4	8	0	4	.8	.04	0
93	Lake of the Clouds	6.4	10	13	5	.8	0	.04
96	Gallery	6.4	10	17	4	.8	0	.02
100	Lake of the Wind	6.2	10	10	3	.8	.26	.10
101	Amphitheater	6.2	9	0	3	.6	.05	0
102	Mariane	6.4	8	10	3	.5	.05	.09
103	Otter	6.2	7	0	5	.5	.08	.04
109	Rock Tree	6.4	9	20	5	.5	0	0
110	Triangle	6.3	8	12	5	.6	.28	.12
113	Indian Knife	6.3	10	20	5	.7	.15	.11
118	Canyon	-	11	-	-	-	-	-
121	Jordan	6.3	10	10	3	1.0	0	-
125	Big Butte	6.2	8	20	7	.6	.37	-
127	Desolation	6.2	8	15	4	.9	.20	-
151	Copeland	6.5	11	20	10	.3	.25	-
158	Hipshot	6.1	10	25	5	.5	.21	-

Table 2. Chemical attributes of lakes in the Clarks Fork River drainage of the Beartooth Mountain Range (cont.)

Location code[1/]	Name of lakes	pH	Conductivity (mhos)	Alkalinity (ppm)	Total hardness (ppm)	Silica (ppm)	Iron (ppm)	Total phosphate (P) t = trace
163	Wade	6.3	14	15	5	.6	.05	-
167	Farley	6.3	15	23	5	.8	.02	-
173	Green	6.4	9	0	2	.8	0	0
174	Summerville	6.3	8	0	3	.7	.09	.10
187	Queer	6.2	11	7	10	.7	.10	.10
190	Flatrock	6.5	11	5	5	.8	.11	.13
198	Forsaken	6.3	10	3	5	1.0	.12	.35
200	Alp	6.4	15	10	5	1.0	.05	.05
202	Crystal	6.3	15	10	8	.9	.20	.09
208	Trail	6.4	16	15	8	.5	.35	.11
209	Little Falls	6.2	11	10	3	.2	.10	.06
215	Cloverleaf	6.4	11	40	18	1.1	.05	.06
216	Cloverleaf	-	11	-	-	-	-	-
219	Tuesday	7.0	13	40	22	1.3	.07	.10
222	Arrowhead	6.8	11	45	22	.6	.11	.06
228	Renie	6.4	9	2	3	.7	.22	.02
229	Heidi	6.4	10	20	10	1.1	.05	.47
231	Burnt Bacon	6.2	15	10	8	1.3	.11	.13
232	Tiel	6.0	11	12	10	.4	.19	.20
234	Hidden	6.1	10	5	3	2.0	0	.47
235	Swede	6.3	10	9	5	1.3	0	t

Table 2. Chemical attributes of lakes in the Clarks Fork River drainage of the Beartooth Mountain Range (cont.)

Location code[1/]	Name of lakes	pH	Conductivity (mhos)	Alkalinity (ppm)	Total hardness (ppm)	Silica (ppm)	Iron (ppm)	Total phosphate (P) t = trace
237	Jasper	6.7	13	35	15	1.0	.09	.09
238	Unnamed	-	12	-	-	-	-	-
242	Lonesome	6.2	10	10	8	.6	0	.09
245	Albino	6.5	11	5	5	1.1	0	.06
246	Line	6.2	55	40	17	1.0	.07	.05

[1/] See Figure 1 for locations.

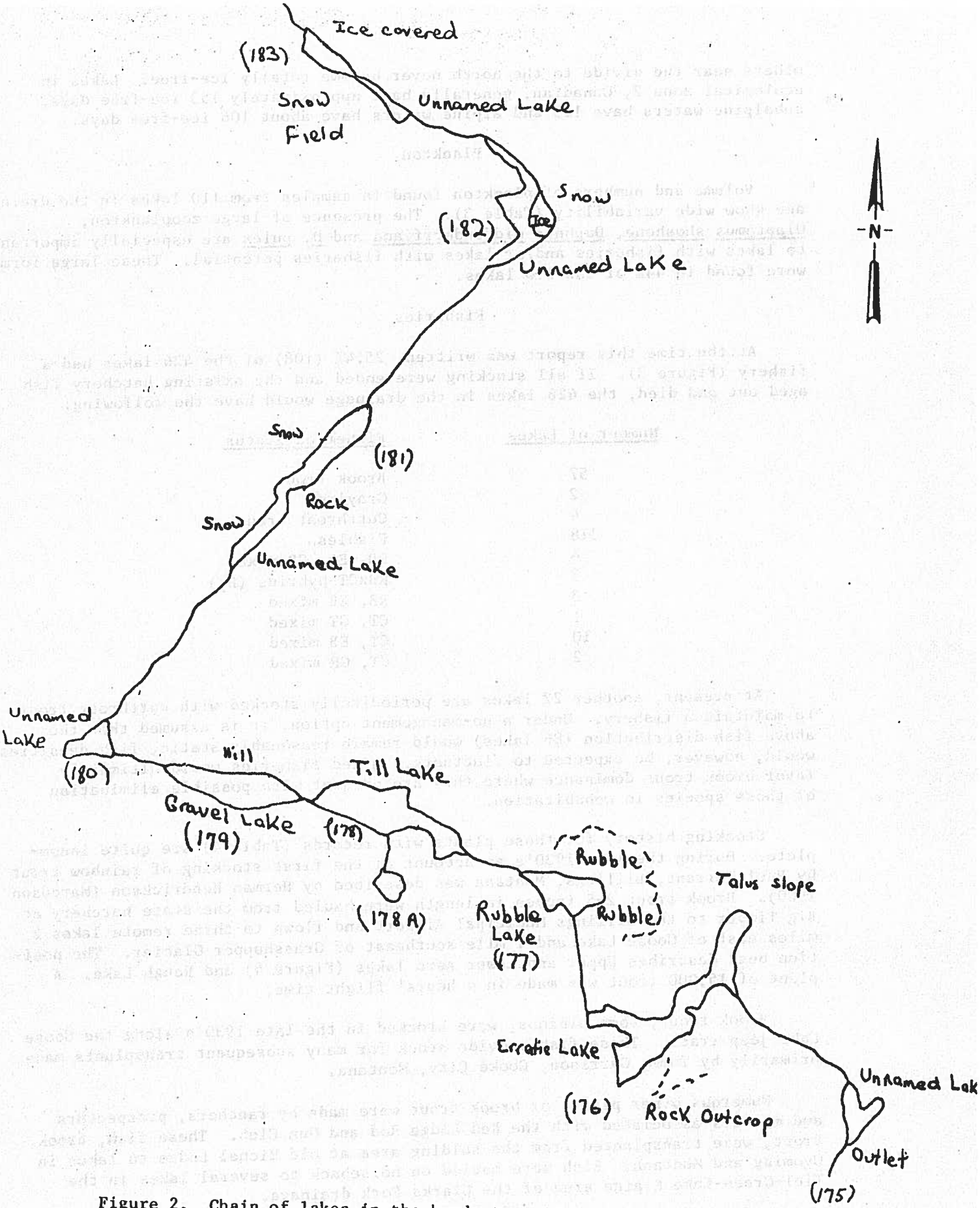

Figure 2. Chain of lakes in the headwaters of Lake Creek in the Clarks Fork drainage, Montana.

others near the divide to the north never become totally ice-free. Lakes in ecological zone 2, Canadian, generally have approximately 153 ice-free days, subalpine waters have 125 and alpine waters have about 106 ice-free days.

Plankton

Volume and numbers of plankton found in samples from 110 lakes in the drainage show wide variability (Table 3). The presence of large zooplankton, Diaptomus shoshone, Daphnia middendorffiana and D. pulex are especially important to lakes with fisheries and/or lakes with fisheries potential. These large forms were found in 44% of the 110 lakes.

Fisheries

At the time this report was written, 25.4% (108) of the 426 lakes had a fishery (Figure 3). If all stocking were ended and the existing hatchery fish aged out and died, the 426 lakes in the drainage would have the following:

Number of Lakes	Fisheries Status
57	Brook trout
2	Grayling
4	Cutthroat trout
318	Fishless
4	RB, EB, GR mixed
3	RBxCT hybrids (H_2)
3	RB, EB mixed
1	CT, GT mixed
10	CT, EB mixed
2	CT, GR mixed

At present, another 22 lakes are periodically stocked with cutthroat trout to maintain a fishery. Under a no-management option, it is assumed that the above fish distribution (86 lakes) would remain reasonably static, fish densities would, however, be expected to fluctuate. Mixed fisheries would ultimately favor brook trout dominance where they are present with possible elimination of those species in cohabitation.

Stocking history for those plants with records (Table 4) are quite incomplete. During the late 1930's an account of the first stocking of rainbow trout by Paul Tarrant, Billings, Montana was described by Herman Hendrickson (Marcuson 1980). Brook trout 2-5 inches in length were hauled from the state hatchery at Big Timber to the Billings Municipal Airport and flown to three remote lakes 2 miles east of Goose Lake and 1 mile southeast of Grasshopper Glacier. The position best describes Upper and Lower Aero lakes (Figure 4) and Rough Lake. A plant of 15,000 trout was made in 4 hours' flight time.

Brook trout, some albinos, were stocked in the late 1930's along the Goose Lake jeep trail. These fish provide stock for many subsequent transplants made primarily by Tommy Garrison, Cooke City, Montana.

Numerous other plants of brook trout were made by ranchers, prospectors and members associated with the Red Lodge Rod and Gun Club. These fish, brook trout, were transplanted from the holding area at old Richel Lodge to lakes in Wyoming and Montana. Fish were hauled on horseback to several lakes in the Tiel-Green-Lake Elaine area of the Clarks Fork drainage.

Table 3. Plankton samples from lakes in the Clarks Fork River drainage of the Beartooth Mountain Range

Location code[1/]	Name of lakes	Sample date	Volume of plankton cc/m^3	Number/m^3 of zooplankton	Number/m^3 of large zooplankton	Species of large zooplankton
5	Schoolmarm	8/10/76	1.29	158	120	D. shoshone
		7/20/78	2.20	135		
6	Lady of the Lake	8/31/78	.32	0		
7	Corner	4/9/76	.60	1,484		
		7/10/78	2.90	3,303		
8	Round	4/2/78	5.99	0		
		7/20/78	1.60	3,568		
10	Long	8/15/78	4.63	694		
11	Ovis	8/10/76	2.15	766		
		8/15/78	.47	239		
12	Bob	8/7/79	.22	314		
14	Star	8/15/78	3.19	1,053		
		8/7/79	2.80	3,783	1,326	D. pulex
15	Companion	8/16/78	5.40	287		
17	Swamp	8/31/78	1.10	176		
18	Wiedy	8/31/78	1.80	18	18	D. shoshone
18a	Mosquito	8/31/78	4.78	180	170	D. shoshone
22	Curl	8/10/79	.30	60		
24	Astral	8/7/79	1.60	33		
25	Green	8/29/78	.62	69		
28	Zimmer					
29	Lower Aero	8/16/76	8.91	2,958	1,470	D. shoshone
		8/29/78	.17	8	8	D. shoshone
31	Upper Aero	8/30/78	.15	23	23	D. shoshone
33a	Leaky Raft	8/30/78	.10	31		

Table 3. Plankton samples from lakes in the Clarks Fork River drainage of the Beartooth Mountain Range (cont.)

Location code[1/]	Name of lakes	Sample date	Volume of plankton cc/m^3	Number/m^3 of zooplankton	Number/m^3 of large zooplankton	Species of large zooplankton
34	Shelter	8/9/79	.22	651	45	D. shoshone
35	Lone Elk	8/30/78	.25	6		
36	Rough	8/9/79	.11	65		
44	Production	8/10/79	3.80	2,000		
45	Recruitment	8/20/78	.96	182	10	D. shoshone
					10	D. middendorffiana
47	Hunger	8/10/79	4.80	2,681	909	D. pulex
48	Sliver	8/31/78	1.54	113		
50	Cliff	9/6/73	2.60	2,166		
		9/31/78	.36	43	14	D. shoshone
52	Moccasin	8/31/78	1.44	57		
52a	Little Moccasin	8/10/79	5.70	6,778	1,436	D. shoshone
					5,112	D. middendorffiana
54	Surprise	8/10/79	8.3	5,882	1,304	D. shoshone
					5,495	D. middendorffiana
57	Sodalite	8/16/79	.06	308		
60	Kersey	4/2/78	.72	72	72	D. middendorffiana
61	Dollar	4/3/78	3.60	0	-	D. shoshone
					-	D. pulex
62	Sedge	4/2/78	2.60	212		
		7/19/78	2.69	323	323	D. shoshone
63	Aquarius	4/3/78	3.20	1,927		
		7/18/78	4.31	1,809	408	D. shoshone
66	Margaret	8/11/76	1.68	1,005		
		4/3/78	3.30	4,741		
		10/10/79	20.00	13,488	12,975	D. pulex
				103	103	D. shoshone

Table 3. Plankton samples from lakes in the Clarks Fork River drainage of the Beartooth Mountain Range (cont.)

Location code[1/]	Name of lakes	Sample date	Volume of plankton cc/m^3	Number/m^3 of zooplankton	Number/m^3 of large zooplankton	Species of large zooplankton
67	Lillis	8/11/76	.96	215		
68	Vernon	8/11/76	.48	72	-	D. pulex
		4/3/78	3.30	0		
70	Big Moose	8/26/75	6.50	144		
72	Widewater	8/11/76	9.97	598	-	D. pulex
73	Rock Island	4/7/78	1.12	11		
77	Russell	8/16/79	.03	82		
79	Leo	8/17/79	2.10	246	164	D. shoshone
81	Bald Knob	8/17/79	2.60	6,205	539	D. pulex
82	Skull	8/16/79	.03	33		
84	Picasso	8/17/79	2.90	2,843	1,177	D. middendorffiana
85	Dead Horse	8/17/79	.02	18		
91	Mermaid	8/17/79	3.30	566	348	D. shoshone
					218	D. middendorffiana
92	Ouzel	8/16/79	.04	0		
93	Lady of the Clouds	8/21/75	.90	1,537	507	D. shoshone
		8/28/79	.99	768		
96	Gallery	8/21/75	0	0		
		8/28/79	.03	56	46	D. middendorffiana
100	Lake of the Winds	9/7/73	4.50	1,346	444	D. shoshone
		8/28/79	.73	982	-	D. Middendorffiana
101	Amphitheater	8/28/79	.39	0		
102	Mariane	9/7/73	5.40	539		
103	Otter	8/12/75	.40	115		

Table 3. Plankton samples from lakes in the Clarks Fork River drainage of the Beartooth Mountain Range (cont.)

Location code[1/]	Name of lakes	Sample date	Volume of plankton cc/m^3	Number/m^3 of zooplankton	Number/m^3 of large zooplankton	Species of large zooplankton
104	Rock Tree	8/12/75	.20	24	24	D. shoshone
105	Z Lake	8/29/79	-	-	-	D. shoshone
110	Triangle	8/12/75	6.20	957	479	D. middendorffiana
111	Unnamed	8/29/79	-	-	-	D. middendorffiana
113	Indian Knife	8/12/75	.60	431		
118	Canyon	9/6/73	4.80	3	1	D. shoshone
		4/4/78	.98	0		
121	Jorden	8/22/75	1.80	1,785		
123	Widowed	8/12/75	4.50	299		
124	Anchor	8/13/75	.50	41		
		8/29/79	2.05	862	21	D. shoshone
					205	D. middendorffiana
125	Big Butte	8/13/75	.10	29		
		8/28/79	.78	140		
126	Unnamed	8/13/75	.40	40		
127	Desolation	8/29/79	.02	23	23	D. shoshone
138	Unnamed	8/22/75	1.20	60	60	D. shoshone
151	Copeland	8/29/79	1.99	399		
158	Hipshot	8/28/79	.50	184	33	D. shoshone
163	Wade	8/29/79	7.18	7,237		
167	Farley	8/28/79	.22	112		
173	Green	8/22/79	.29	57		
174	Summerville	8/22/79	1.12	0		
187	Queer	8/22/79	.02	0		

Table 3. Plankton samples from lakes in the Clarks Fork River drainage of the Beartooth Mountain Range (cont.)

Location code[1/]	Name of lakes	Sample date	Volume of plankton cc/m^3	Number/m^3 of zooplankton	Number/m^3 of large zooplankton	Species of large zooplankton
190	Flatrock	8/22/79	.03	53	27	D. shoshone
					27	D. middendorffiana
200	Alp	8/22/79	.03	0		
202	Crystal	8/22/79	6.90	1,644	1,552	D. shoshone
208	Trail	8/21/79	3.00	658	30	D. shoshone
					90	D. middendorffiana
209	Little Falls	8/22/79	.08	154		
214	Wall	9/6/78	.12	0		
		8/21/79	.30	60		
215	Cloverleaf	9/6/78	.84	27		
216	Cloverleaf	9/6/78	.01	9		
		8/21/79	.02	139		
218	Wednesday	9/7/78	0	0		
219	Tuesday	9/6/78	0	0		
220	Unnamed	9/6/78	0	0		
228	Renie	8/23/79	.02	3,650		
229	Heidi	8/23/79	.04	341		
231	Burnt Bacon	8/23/79	.07	130		
232	Tiel	8/23/79	1.16	417	23	D. middendorffiana
234	Hidden	8/31/76	5.13	3,596	428	D. shoshone
					3,168	D. middendorffiana
235	Swede	8/31/76	2.05	1,470	34	D. shoshone
					205	D. middendorffiana
236	Golden	9/6/78	17.95	3,135	527	D. middendorffiana
237	Jasper	9/6/78	-	-	-	D. shoshone
						D. middendorffiana

Table 3. Plankton samples from lakes in the Clarks Fork River drainage of the Beartooth Mountain Range (cont.)

Location code[1]	Name of lakes	Sample date	Volume of plankton cc/m^3	Number/m^3 of zooplankton	Number/m^3 of large zooplankton	Species of large zooplankton
237	Jasper (cont.)	8/24/79	6.00	1,268	933	D. shoshone
					335	D. middendorffiana
238	Unnamed	9/7/78	0	0		
242	Lonesome	8/24/79	.10	838	20	D. shoshone
245	Albino	9/1/76	.34	0		
		9/7/78	.11	22	11	D. shoshone
		8/24/79	.09	38		
246	Line	6/27/76	4.62	5,960		
		6/29/78	1.00	718		
		7/6/79	23.50	18,668		
	Upper Sheepherder, Wyoming	3/6/76	11.0	1,199	1.199	D. pulex

[1] See Figure 1 for locations.

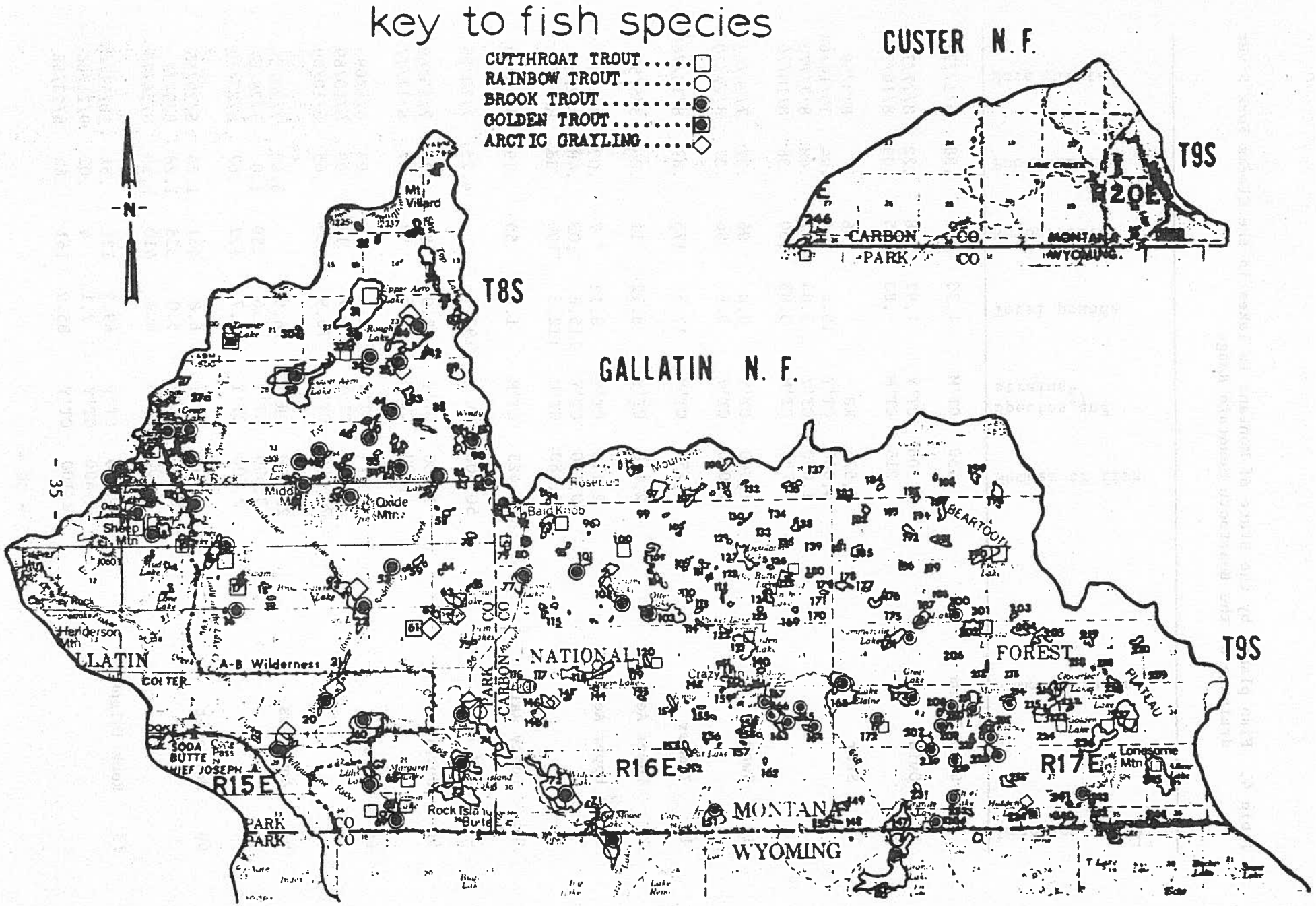

Figure 3. Distribution of sustaining and managed fisheries in the Clarks Fork River drainage, Montana.

Table 4. Fish plants by the State of Montana in lakes in the Clarks Fork River drainage of the Beartooth Mountain Range

Location code[1]	Name of lakes	Number of fish	Species and strains[2]	Total pounds	Number/acre	Pounds/acre	Date planted
5	Schoolmarm	450	CT'M	1.73	150	.58	8/17/77
11	Ovis	500	CT'Y	1.92	58	.22	8/27/70
		215	CT'M	.83	25	.09	8/10/76
14	Star	5,575	RB		706		8/3/59
		4,060	CT'Y	15.4	514	1.94	10/14/64
		1,000	CT'Y	3.84	127	.49	8/27/70
		790	CT'M	3.03	100	.38	8/10/76
17	Swamp	1,000	CT'Y	3.8	96	.37	7/26/67
		1,000	CT'Y	3.8	96	.37	8/27/70
18	Zimmer	4,550	CT'M	17.5	175	.67	8/10/76[3]
29	Lower Aero	2,110	CT'Y	8.12	11	.04	8/5/59
31	Upper Aero	2,110	CT'Y	8.12	7	.03	8/5/59
		30,100	CT'Y	115.8	103	.40	8/2/69
		29,180	CT'M	112.3	100	.38	8/10/76
33a	Leaky Raft	425	CT'M	1.63	50	.19	8/10/76
39	Sky Top	50,000	GR	192.3		4.25	7/20/55
54	Surprise	1,300	CT'Y	5.0	183	.70	7/23/68
		1,700	CT'M	6.5	99	.97	8/17/77
60	Kersey	675	CT'Y	2.6	6	.02	4/4/69
		2,000	CT'Y	7.7	17	.07	6/10/69
		20,000	CT'Y	76.9	169	.65	6/10/69
63	Aquarius	20,000	GR	76.9		6.62	7/20/55
		3,000	CT'Y	11.6	259	1.0	7/28/67
		2,000	CT'Y	7.7	172	.67	8/27/70
66	Margaret	1,760	CT'Y	6.8	451	1.74	8/29/55
		1,320	CT'Y	5.0	338	1.28	8/9/72
		1,600	CT'M	6.2	410	1.59	8/24/78
73	Rock Island	18,000	CT'Y	69.2	131	.51	10/11/65
		5,400	CT'Y	2.1	4	.02	9/21/66
		22,100	CT'Y	85.0	161	.62	8/23/66

Table 4. Fish plants by the State of Montana in lakes in the Clarks Fork River drainage of the Beartooth Mountain Range (cont.)

Location code[1]	Name of lakes	Number of fish	Species and strains[2]	Total pounds	Number/acre	Pounds/acre	Date planted
73	Rock Island (cont.)	11,000	CT'Y	42.3	80	.31	7/29/67
		21,115	CT'Y	81.2	154	.59	7/24/68
		15,000	CT'Y	57.7	109	.42	8/27/70
		10,560	CT'Y	40.6	77	.30	8/9/72
		5,400	CT'M	20.8	39	.15	8/27/74
		13,700	CT'M	52.7	100	.39	7/77
79	Leo	3,120	CT'Y	12.0	367	1.4	7/23/68
84	Picasso	2,200	CT'Y	8.5	272	1.04	8/4/71
92	Ouzel	1,100	CT'Y	4.2	314	1.2	8/5/71
		400	CT'M	1.53	114	.43	8/17/77
93	Lake of the Clouds	2,360	CT'M	9.07	100	.38	8/10/76
100	Lake of the Winds	10,052	GT		247		9/26/56
		4,000	CT'M	15.4	98	.40	8/17/77
103		456	RB		7		1/17/56
104	Rock Tree	2,510	CT'Y	9.65	139	.53	7/23/68
121	Jorden	2,110	CT'Y	8.12	59	.23	8/10/59
		4,000	CT'Y	15.4	111	.42	7/28/67
124	Anchor	1,044	CT'Y	4.01	87	.33	8/10/66
125	Big Butte	7,500	CT'Y	28.9	339	1.3	7/30/68
138	Unnamed	1,000	CT'Y	3.85	131	.51	7/26/67
146	Cliff	10,000	GR	38.56		2.1	7/20/55
190	Flat Rock	10,000	CT'Y	38.5	271	1.04	7/23/68
		8,000	CT'M	30.8	216	.08	8/24/78
198	Forsaken	3,700	CT'M	14.2	121	.46	8/17/77
202	Crystal	8,500	CT'Y	32.7	309	1.19	8/1/68
		4,000	CT'M	15.3	145	.55	8/24/78
215	Cloverleaf	3,000	CT'Y	11.5	41	.16	7/29/67
216	Cloverleaf	18,282	CT'M	82.0	249	1.12	9/8/75

Table 4. Fish plants by the State of Montana in lakes in the Clarks Fork River drainage of the Beartooth Mountain Range (cont.)

Location code[1]	Name of lakes	Number of fish	Species and strains[2]	Total pounds	Number/acre	Pounds/acre	Date planted
223	Cloverleaf	11,444	CT'M	80.0	156	1.09	9/8/75
236	Golden	7,052	CT'Y	27.1	144	.55	8/1/68
237	Jasper	7,040	CT'Y	27.1	128	.49	8/27/68
		7,200	CT'M	27.1	131	.49	8/27/74
245	Albino	2,110	CT'Y	8.11	54	.21	8/5/59
		4,000	CT'Y	15.3	102	.39	7/28/67
		7,920	CT'M	30.5	202	.78	8/27/74
		8,060	CT'M	31.0	206	.79	8/10/75
		8,000	CT'M	30.8	204	.79	8/24/78
246	Line	2,500	CT'Y	9.6	532	2.0	9/10/58
		500	CT'Y	1.9	106	.40	8/2/69
		500	CT'Y	1.9	106	.40	8/27/70
		600	CT'M	2.3	128	.49	8/21/77

[1] See Figure 1 for locations.

[2] CT'M = McBride cutthroat trout, CT'Y = Yellowstone cutthroat trout, GR = arctic grayling, GT = golden trout

[3] Also planted with CT'Y about 1968.

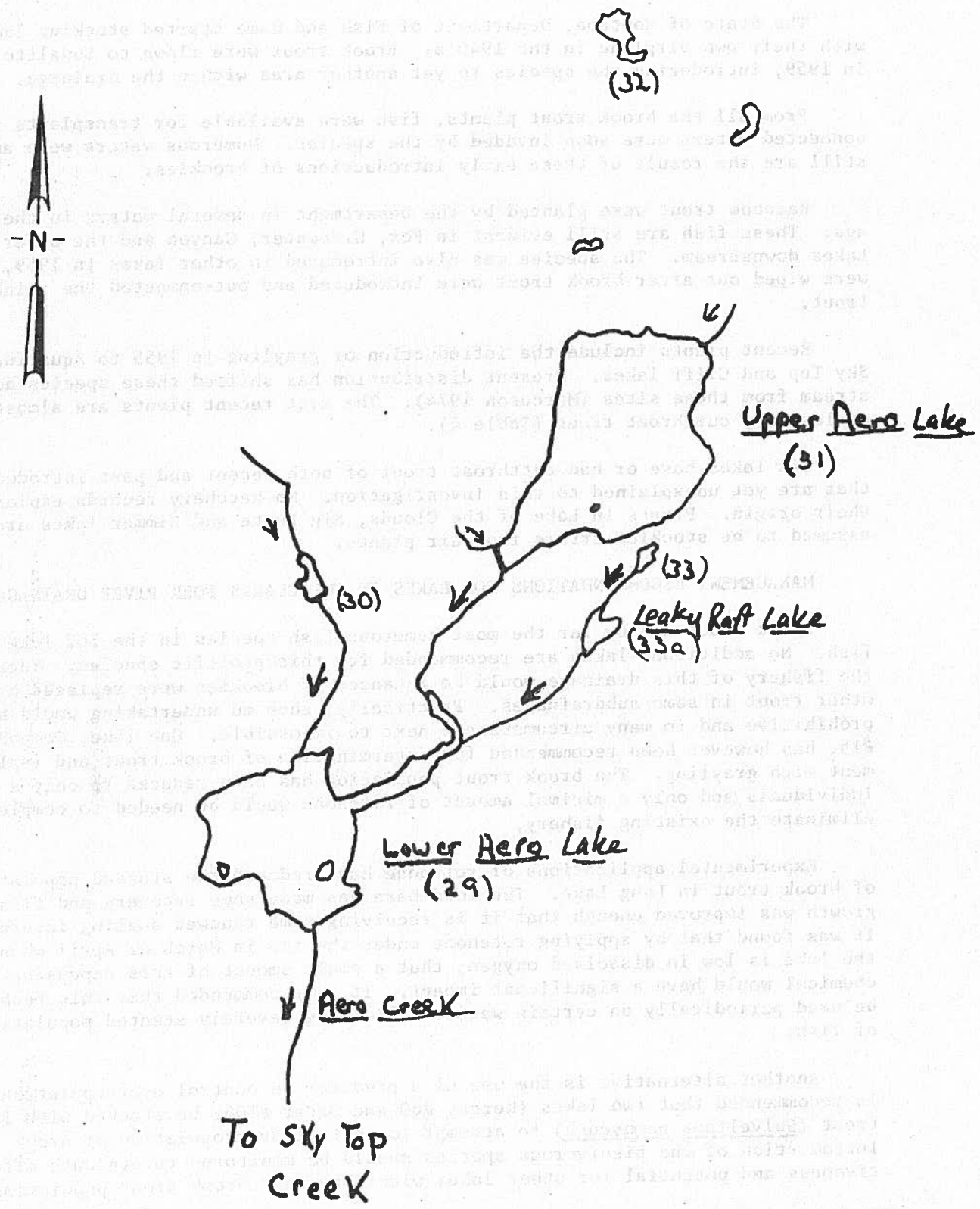

Figure 4. Aero Lakes in the Clarks Fork River drainage, Montana.

The State of Montana, Department of Fish and Game started stocking lakes with their own airplane in the 1940's. Brook trout were flown to Sodalite Lake in 1959, introducing the species to yet another area within the drainage.

From all the brook trout plants, fish were available for transplants and connected waters were soon invaded by the species. Numerous waters were and still are the result of these early introductions of brookies.

Rainbow trout were planted by the Department in several waters in the drainage. These fish are still evident in Fox, Widewater, Canyon and the other Crazy Lakes downstream. The species was also introduced in other lakes in 1959, but were wiped out after brook trout were introduced and out-competed the rainbow trout.

Recent plants include the introduction of grayling in 1955 to Aquarius, Sky Top and Cliff lakes. Present distribution has shifted these species downstream from these sites (Marcuson 1974). The most recent plants are almost exclusively cutthroat trout (Table 4).

Six lakes have or had cutthroat trout of both recent and past introductions that are yet unexplained to this investigation. No hatchery records explain their origin. Plants in Lake of the Clouds, Big Butte and Zimmer lakes are assumed to be stocking errors from air plants.

MANAGEMENT RECOMMENDATIONS FOR LAKES IN THE CLARKS FORK RIVER DRAINAGE

Brook trout are by far the most numerous fish species in the 102 lakes with fish. No additional lakes are recommended for this prolific species. Ideally, the fishery of this drainage would be inhanced if brookies were replaced by other trout in some subdrainages. Practically, such an undertaking would be prohibitive and in many circumstances next to impossible. One lake, Companion #15, has however been recommended for extermination of brook trout and replacement with grayling. The brook trout population has been reduced to only a few individuals and only a minimal amount of rotenone would be needed to completely eliminate the existing fishery.

Experimental applications of rotenone have reduced the stunted population of brook trout in Long Lake. The food base has made some recovery and fish growth was improved enough that it is receiving some renewed angling interest. It was found that by applying rotenone under the ice in March or April when the lake is low in dissolved oxygen, that a small amount of this expensive chemical would have a significant impact. It is recommended that this technique be used periodically on certain waters containing severely stunted populations of fish.

Another alternative is the use of a predator to control overpopulation. It is recommended that two lakes (Kersey #60 and Otter #103) be stocked with lake trout (Salvelinus namaycush) to attempt to control overpopulation of brook trout. Introduction of the piscivorous species should be monitored to evaluate effectiveness and potential for other lakes with "stunted" brook trout populations.

It is not to be implied that brook trout are wholly undesirable in Beartooth waters. First, little can be done to alter their overwhelming presence and second, they provide considerable angling opportunity and camp fare. It is regrettable that they were not confined to closed lake systems which would have provided ample recreation for this species.

At present, grayling reside solely in two lakes and in combination with other species of fish in seven lakes. Grayling do not occur in any other drainage areas of the Absaroka-Beartooth Study Area. The status of grayling does not appear to be endangered, but efforts to find suitable habitat to disperse distribution is advisable (Marcuson 1974). Isolated populations of grayling exist in Cliff and Lower Cliff lakes. The latter lake is only a pond environment and winterkills regularly, but is restocked by recruitment from Cliff Lake upstream. Investigations in 1974 revealed four isolated populations; Sedge and Dollar lakes have since acquired cutthroat trout from Aquarius Lake.

The remaining lakes with grayling (Figure 3) have had continued declines in number. One may be hard pressed to find a grayling in the lower Broadwater system. Where once grayling were the dominant fish in size and number in Fox and Widewater lakes, they now occupy a subdominant role.

Because of declining numbers of grayling, availability of suitable habitat and special concern status, I recommend they be stocked in the following lakes: Companion, Swamp, Wiedy, Mosquito (Figure 5), Little Washtub, Indian Knife, Skeeter, Spaghetti and Burnt Bacon lakes (Table 5).

In fewer waters but with fair population abundance in the Clarks Fork River drainage are rainbow trout. No lakes have isolated fisheries with this being the only species. I recommend two lakes, Marsh #19 (Figure 5) and Gallery #96 (Figure 6) be stocked with this species to add some angling diversity and attraction to geographic areas not readily used by people.

With the exception of 1920's introductions of brook trout in the Clarks Fork drainage, the next fish species introduced was the golden trout. During the summer of 1938 an unknown number of golden trout fry were stocked in Jasper Lake. These fish were original from Cottonwood Lakes, California shipped via the National Fish Hatchery in Bozeman, Montana. These fish matured and subsequently invaded Golden Lake (hence, its name) and Hidden Lake downstream. On September 26, 1956 a transplant of goldens from Sylvan Lake was stocked in Lake of the Winds. These fish provided a unique fishery in Lake of the Winds (Figure 5) until 1970 they died out as 14-year-old fish. At present, only a remnant population of goldens exist at Hidden Lake. This small population coexist with cutthroat trout.

A study of this species revealed that the golden trout status statewide in Montana and nearby states is almost nonexistent. By legislative action in California, no golden trout eggs were to be shipped out of California after 1939 (McCloud 1943).

It was also learned that goldens were long-lived fish, that natural reproduction occurred in outlet streams, with gravels containing less that 1% of silt-sized materials along shoal areas under the influence of moving outlet water (Marcuson - Montana Outdoors in press). A search of suitable habitat for goldens in the Absaroka-Beartooths revealed few vacant niches. The lakes with the most suitable habitat in the study area appear to be in the Desolation to Jorden Lake chain of seven lakes (Figure 8). Better areas exist in the Martin to Robin (Whitcomb Lake on new Forest Service map) (Figure 9) lake chain, but this ideal water is saturated with brook trout.

I recommend goldens be stocked in Picasso, Rock Tree and the above-mentioned waters above Jorden Lake (Table 5). If the species fails in these lakes, they could be managed for cutthroat trout waters.

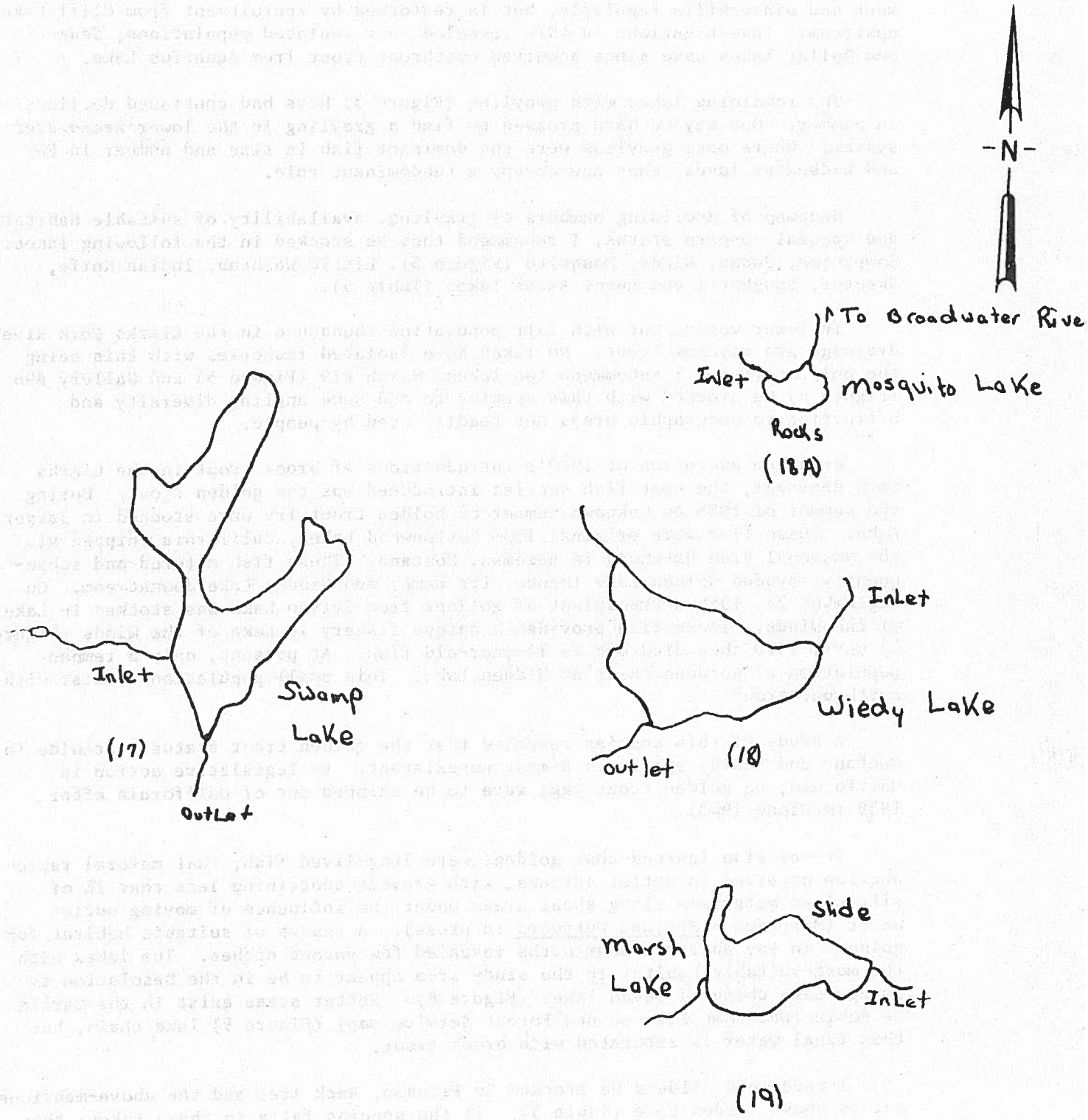

Figure 5. Map of Swamp, Wiedy, Marsh and Mosquito lakes in the Clarks Fork drainage, Montana.

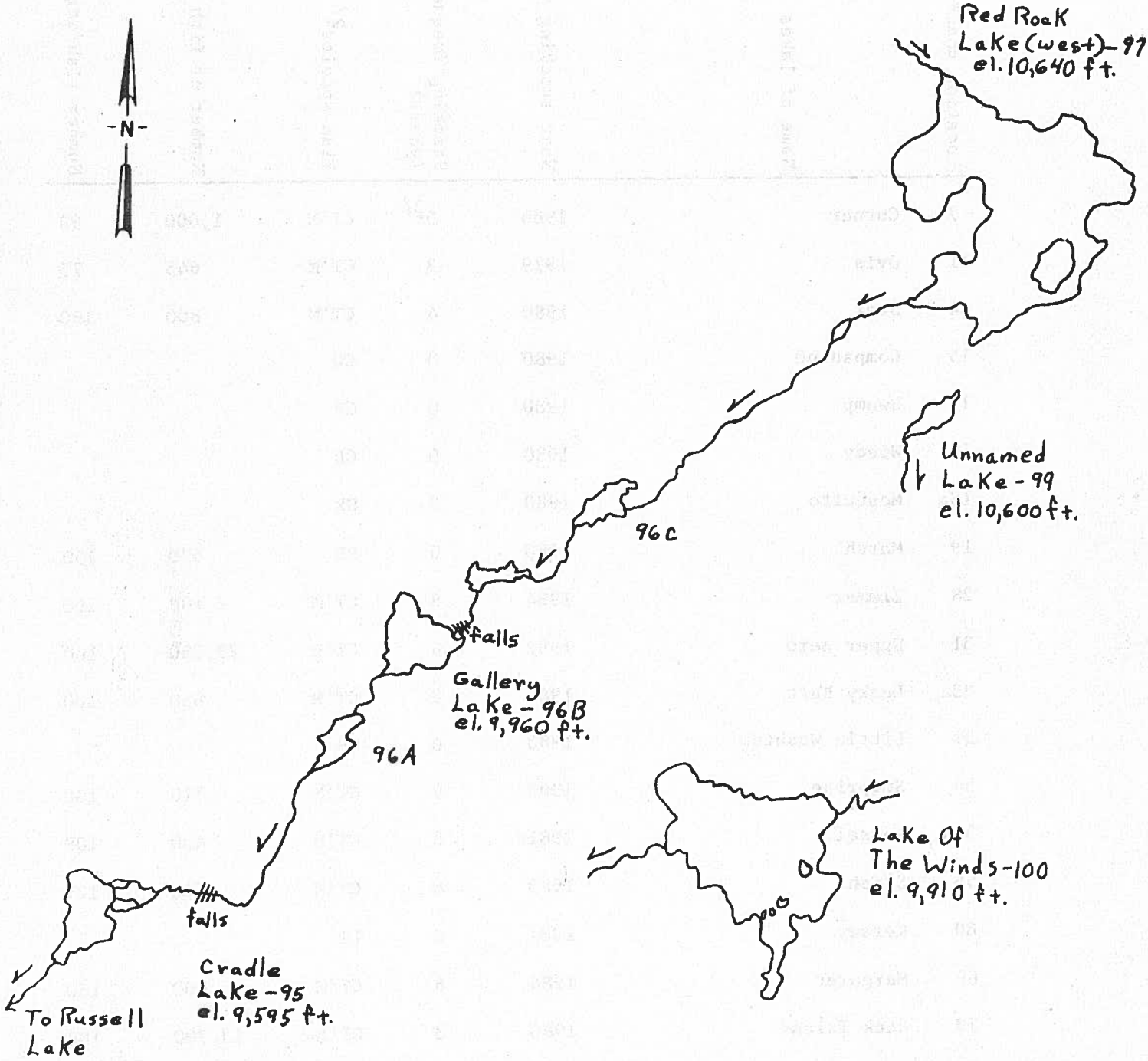

Figure 6. Chain of lakes between Red Rock and Russell lakes in Clarks Fork drainage, Montana.

Table 5. Fish stocking proposals for lakes in the Clarks Fork River drainage of the Beartooth Mountain Range

Location code[1]	Name of lakes	Next stocking year	Stocking frequency (years)	Fish species[2]	Number of fish	Number fish/acre
7	Corner	1980	0[3]	CT'M	1,000	90
11	Ovis	1979	3	CT'M	645	75
14	Star	1980	4	CT'M	800	100
15	Companion	1980	0	GR		
17	Swamp	1980	0	GR		
18	Wiedy	1980	0	GR		
18a	Mosquito	1980	0	GR		
19	Marsh	1980	0	RB	570	150
28	Zimmer	1984	8	CT'M	2,600	100
31	Upper Aero	1982	6	CT'M	29,180	100
33a	Leaky Raft	1984	8	CT'M	850	100
51	Little Washtub	1980	0	GR		
54	Surprise	1985	8	CT'M	710	100
54a	Weasel	1981	8	CT'M	400	108
55	Stash	1983	8	CT'M	400	129
60	Kersey	1981	0	LT		
66	Margaret	1984	6	CT'M	600	150
73	Rock Island	1980	3	CT'M	13,700	100
84	Picasso	1980	0	GT		
89	Stephanie	1982	8	CT'M	2,780/ 1,390	200/ 100
91	Mermaid	1982	8	CT'M	680	100
92	Ouzel	1984	6	CT'M	400	114

Table 5. Fish stocking proposals for lakes in the Clarks Fork River drainage of the Beartooth Mountain Range (cont.)

Location code[1]	Name of lakes	Next stocking year	Stocking frequency (years)	Fish species[2]	Number of fish	Number fish/acre
93	Lake of the Clouds	1982	6	CT'M	3,500	148
96	Gallery	1980	0	RB		
100	Lake of the Winds	1985	8	CT'M	4,070	100
103	Otter		0	LT		
104	Rock Tree	1980	0	GT		
110	Triangle	1979	8	CT'M	1,000	159
113	Indian Knife	1980	0	GR		
125	Big Butte	1980	0	GT		
127	Desolation	1980	0	GT		
149	Skeeter	1980	0	GR		
150	Spaghetti	1980	0	GR		
158	Hipshot	1979	8	CT'M	1,000	104
190	Flatrock	1986	8	CT'M	7,400	200
198	Forsaken	1985	8	CT'M	4,575	150
200	Alp	1979	8	CT'M	300	107
202	Crystal	1986	8	CT'M	2,750	100
208	Trail	1979	8	CT'M	710	100
215	Cloverleaf (Figure 7)	1983	8	CT'M	1,850	100
216	Cloverleaf	1983	8	CT'M	2,400	100
223	Cloverleaf	1987	8	CT'M	3,100	100
231	Burnt Bacon	1980	0	GR		

Table 5. Fish stocking proposals for lakes in the Clarks Fork River drainage of the Beartooth Mountain Range (cont.)

Location codes[1]	Name of lakes	Next stocking year	Stocking frequency (years)	Fish species[2]	Number of fish	Number of fish/acre
235	Swede	1980	8	CT'M	1,180	100
236	Golden	1986	8	CT'M	5,000	102
237	Jasper	1982	8	CT'M	6,850	125
245	Albino	1983	4	CT'M	7,840	200
246	Line	1983	4	CT'M	705	150

[1] See Figure 1 for location.

[2] CT'M = McBride cutthroat; GR = arctic grayling; RB = rainbow trout; EB = brook trout; GT = golden trout.

[3] 0 = one time plant; other numbers signify repetition in years.

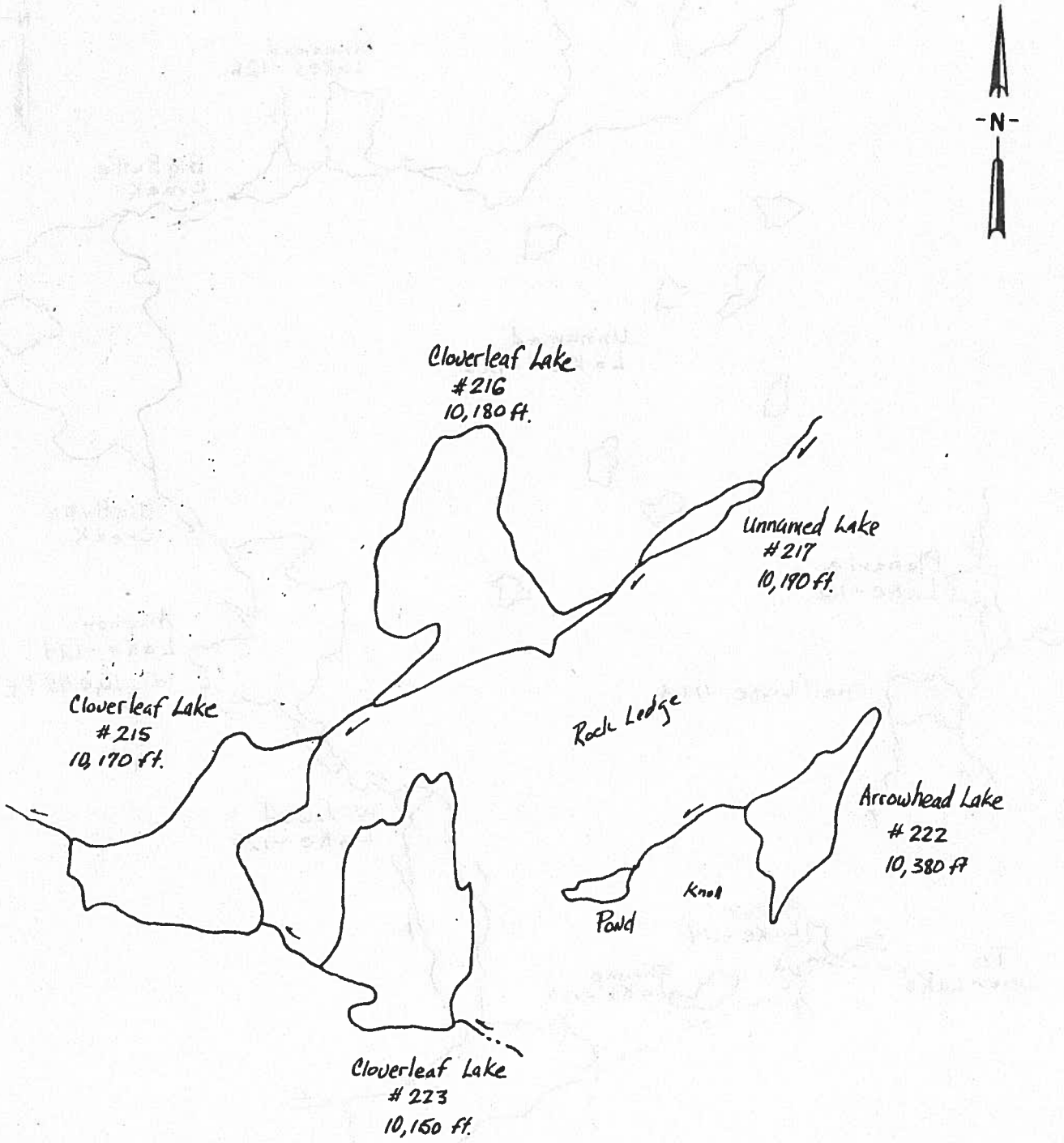

Figure 7. Map of Cloverleaf Lakes in the Clarks Fork River drainage, Montana.

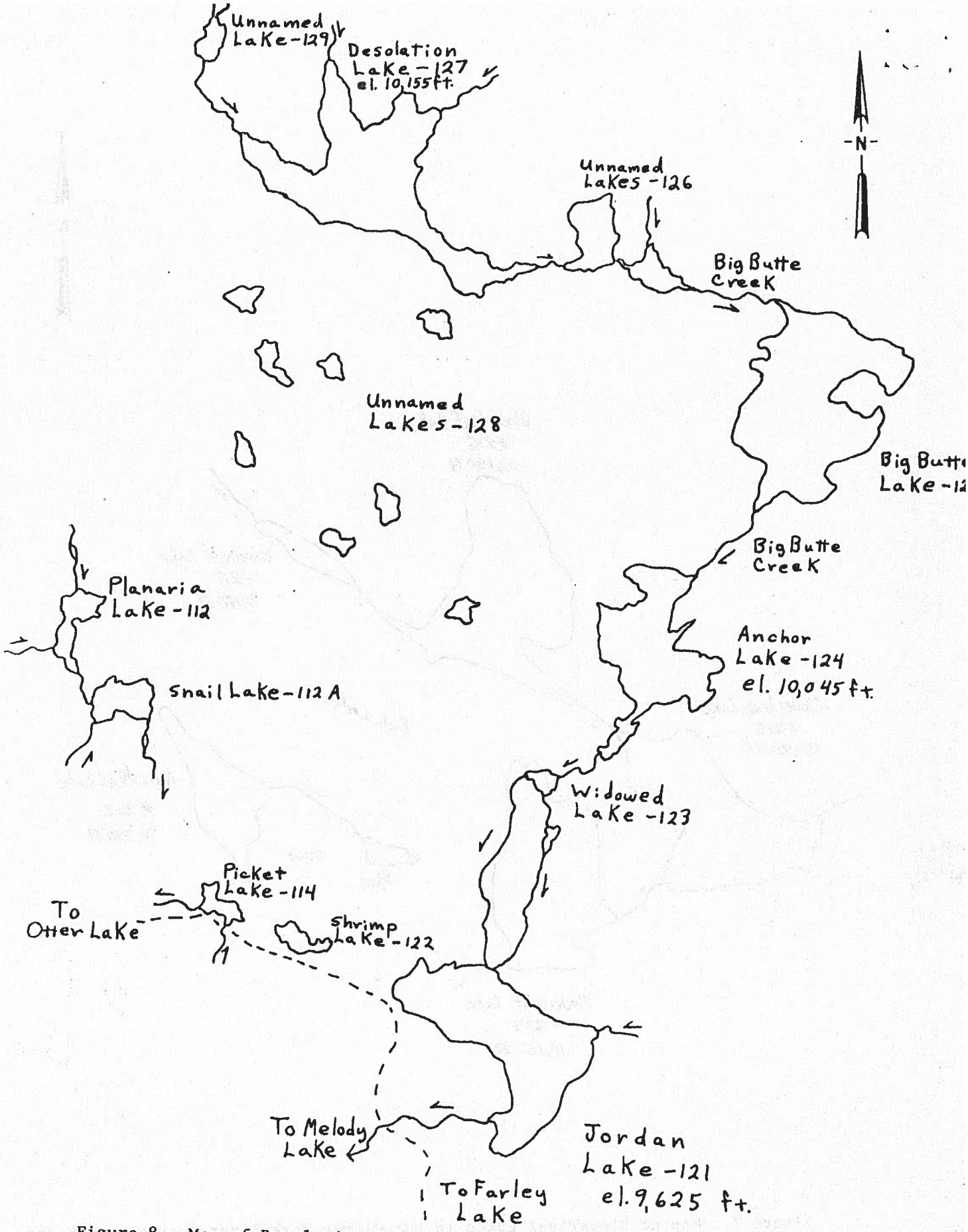

Figure 8. Map of Desolation Lake to Jordan Lake chain in Clarks Fork River drainage, Montana.

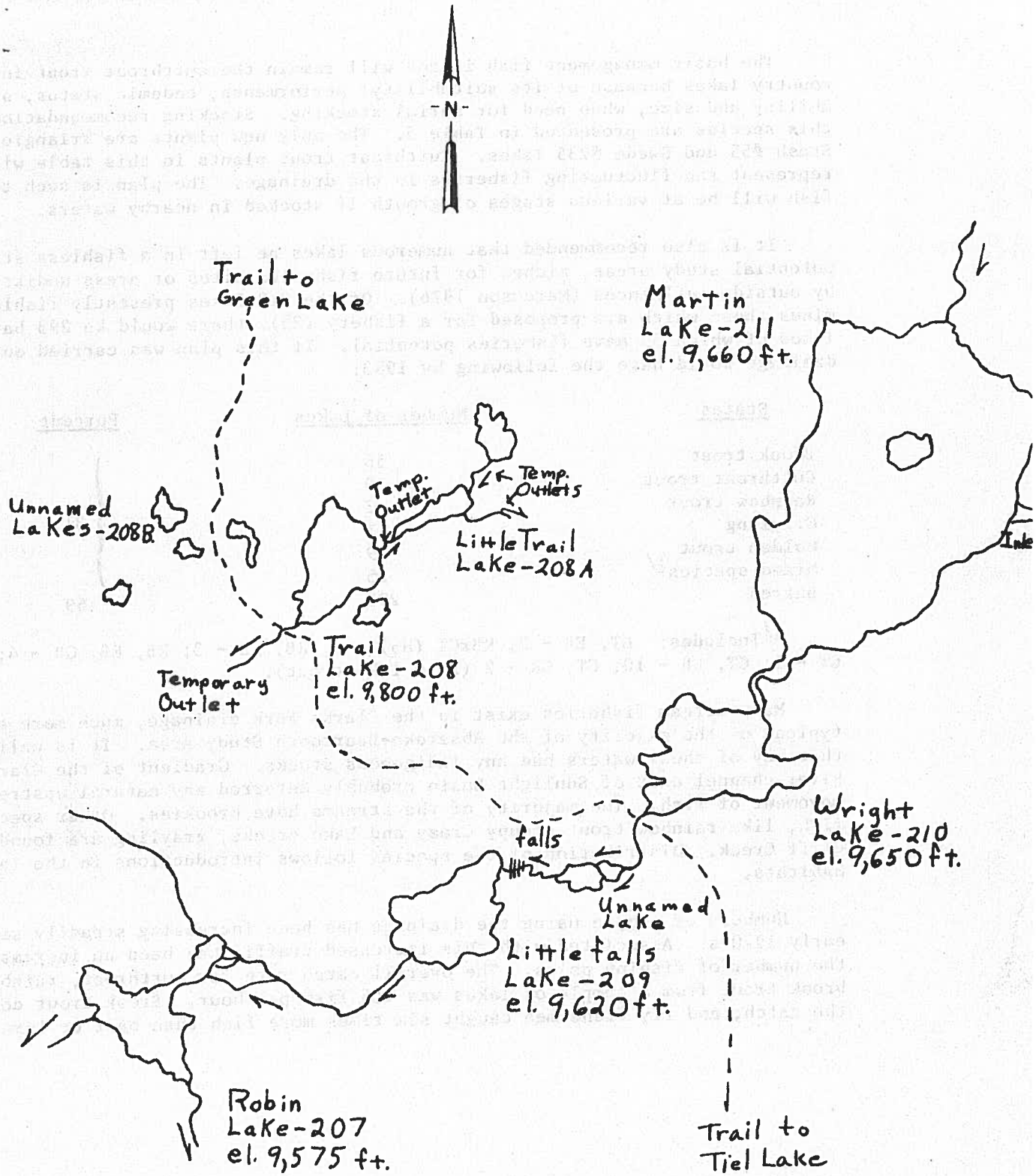

Figure 9. Chain of lakes downstream from Martin Lake in Clarks Fork River drainage, Montana.

The basic management fish is and will remain the cutthroat trout in high country lakes because of its suitability, performance, endemic status, availability and size, when need for aerial stocking. Stocking recommendations for this species are presented in Table 5. The only new plants are Triangle #110, Stash #55 and Swede #235 lakes. Cutthroat trout plants in this table will represent the fluctuating fisheries in the drainage. The plan is such that the fish will be at various stages of growth if stocked in nearby waters.

It is also recommended that numerous lakes be left in a fishless state as potential study areas, niches for future fisheries sites or areas undisturbed by outside influences (Marcuson 1976). Of the 318 lakes presently fishless minus those which are proposed for a fishery (25), there would be 293 barren lakes of which 52 have fisheries potential. If this plan was carried out, the drainage would have the following by 1983:

Status	Number of Lakes	Percent
Brook trout	56	
Cutthroat trout	30	
Rainbow trout	2	
Grayling	11	31
Golden trout	9	
Mixed species[1/]	25	
Barren	293	69

[1/] Includes: LT, EB - 2; RBxCT (H_2) - 3; RB, EB - 3; RB, EB, GR - 4; GT, CT - 1; CT, EB - 10; CT, GR - 2 (LT = lake trout).

Many stream fisheries exist in the Clarks Fork drainage, much more so than typical of the majority of the Absaroka-Beartooth Study Area. It is unlikely that any of these waters had any indigenous stocks. Gradient of the Clarks Fork River channel east of Sunlight Basin probably deterred any natural upstream movement of fish. The majority of the streams have brookies. Other species of fish, like rainbow trout occupy Crazy and Lake creeks, grayling are found in Cliff Creek. Distribution of the species follows introductions in the lentic habitats.

Numbers of people using the drainage has been increasing steadily since the early 1970's. Associated with this increased traffic has been an increase in the number of fishing poles. The overall catch rate for cutthroat, rainbow and brook trout from a sample of lakes was 1.5 fish per hour. Brook trout dominated the catch, and fly fishermen caught six times more fish than bait or lure users.

LITERATURE CITED

Bishop, C. G. 1967. Inventory of waters of the project area. D-J Job Prog. Report F-20-R-11, Mont. Dept. of Fish and Game, 8 pp.

Kent, R. and L. Pechacek. 1972. A fisheries survey of lakes and streams in the Clarks Fork drainage of the Yellowstone River drainage in Wyoming. Fish. Tech. Report No. 18, Wyo. Game and Fish Comm., 135 pp.

Marcuson, P. E. and C. G. Bishop. 1970. Inventory of waters of the project area. D-J Job Prog. Report F-20-R-14, Mont. Dept. of Fish and Game, 12 pp.

_____. 1971. Inventory of waters of the project area. D-J Job Prog. Report F-20-R-15, Mont. Dept. of Fish and Game, 10 pp.

_____. 1972. Inventory of waters of the project area. D-J Prog. Report F-20-R-16, Mont. Dept. of Fish and Game, 11 pp.

_____. 1974. Inventory of waters of the project area. D-J Job Prog. Report F-20-R-17 & 18, Mont. Dept. of Fish and Game, 11 pp.

Marcuson, P. E. 1974. Beartooth grayling study. D-J Job Prog. Report F-20-R-18, Mont. Dept. of Fish and Game, 18 pp.

Marcuson, P. E. and C. G. Bishop. 1975. Inventory of waters of the project area. D-J Job Prog. Report F-20-R-19, Mont. Dept. of Fish and Game, 21 pp.

_____. 1976. Inventory of waters of the project area. D-J Job Prog. Report F-20-R-20, Mont. Dept. of Fish and Game, 24 pp.

Marcuson, P. E. 1976. Wilderness area fisheries. Trans. Amer. Fish. Soc. Spec. publ., Mgmt. of Wilderness Area Waters, 23 pp.

_____. 1980. Alpine lakes in Montana. Mont. Outdoors, Special Issue, State of Mont., Dept. of Fish, Wildlife and Parks (in press).

McCloud, G. 1943. Golden trout propagation in California. Calif. Fish and Game, 29(4): pp. 191-195.