

RIVER SEGMENTS

- Seg 1 - Headwaters to M-72
- Seg 2 - M-72 to Smithville (M-66)
- Seg 3 - Smithville (M-66) to M-115 Bridge
- Seg 4 - Hodenpyl Dam to Red Bridge (Coates Hwy)
- Seg 5 - Tippy Dam to M-55 Bridge
- Seg 6 - North Branch Manistee River
- Seg 7 - Bear Creek
- Seg 8 - Pine River

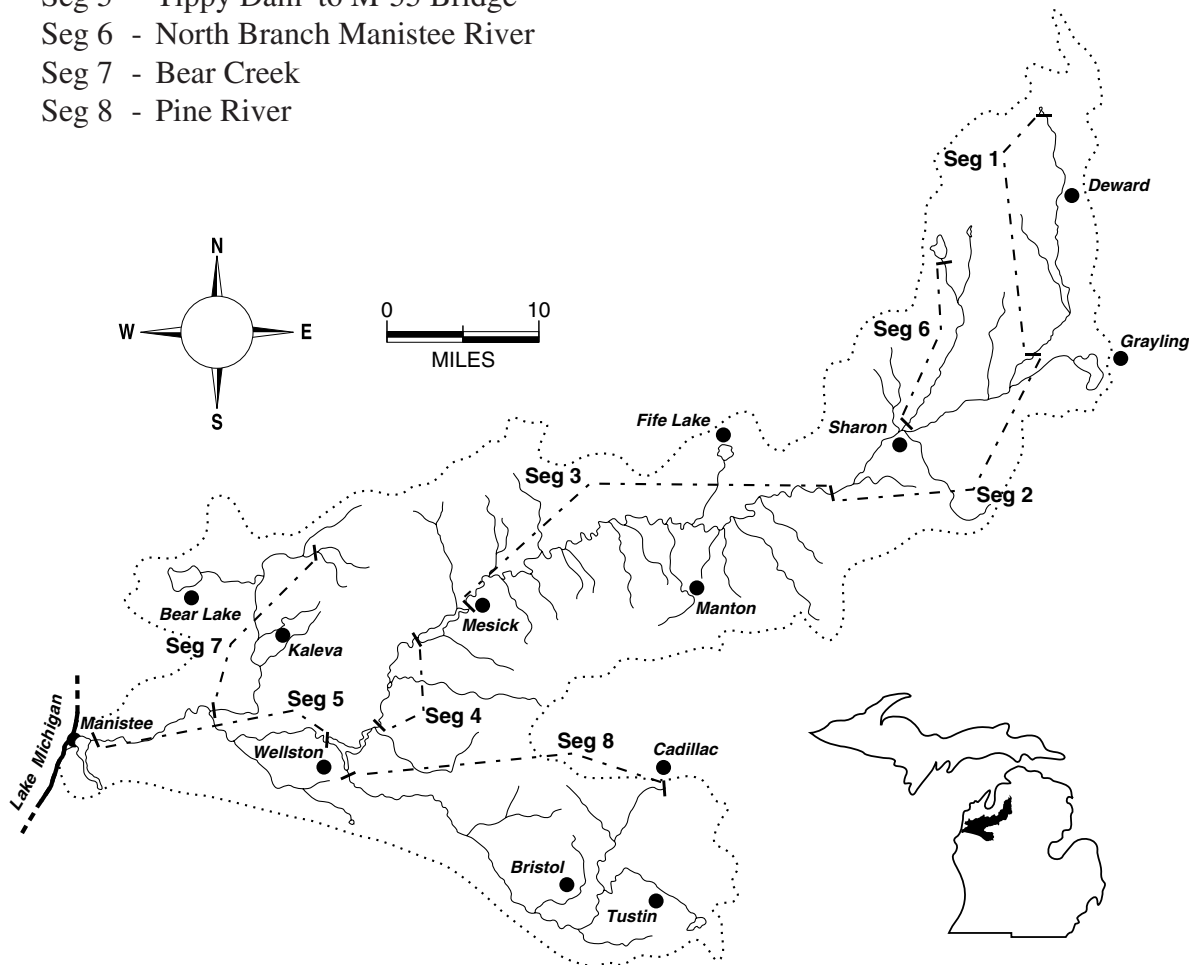


Figure 1.-The Manistee River watershed in northwestern lower Michigan.

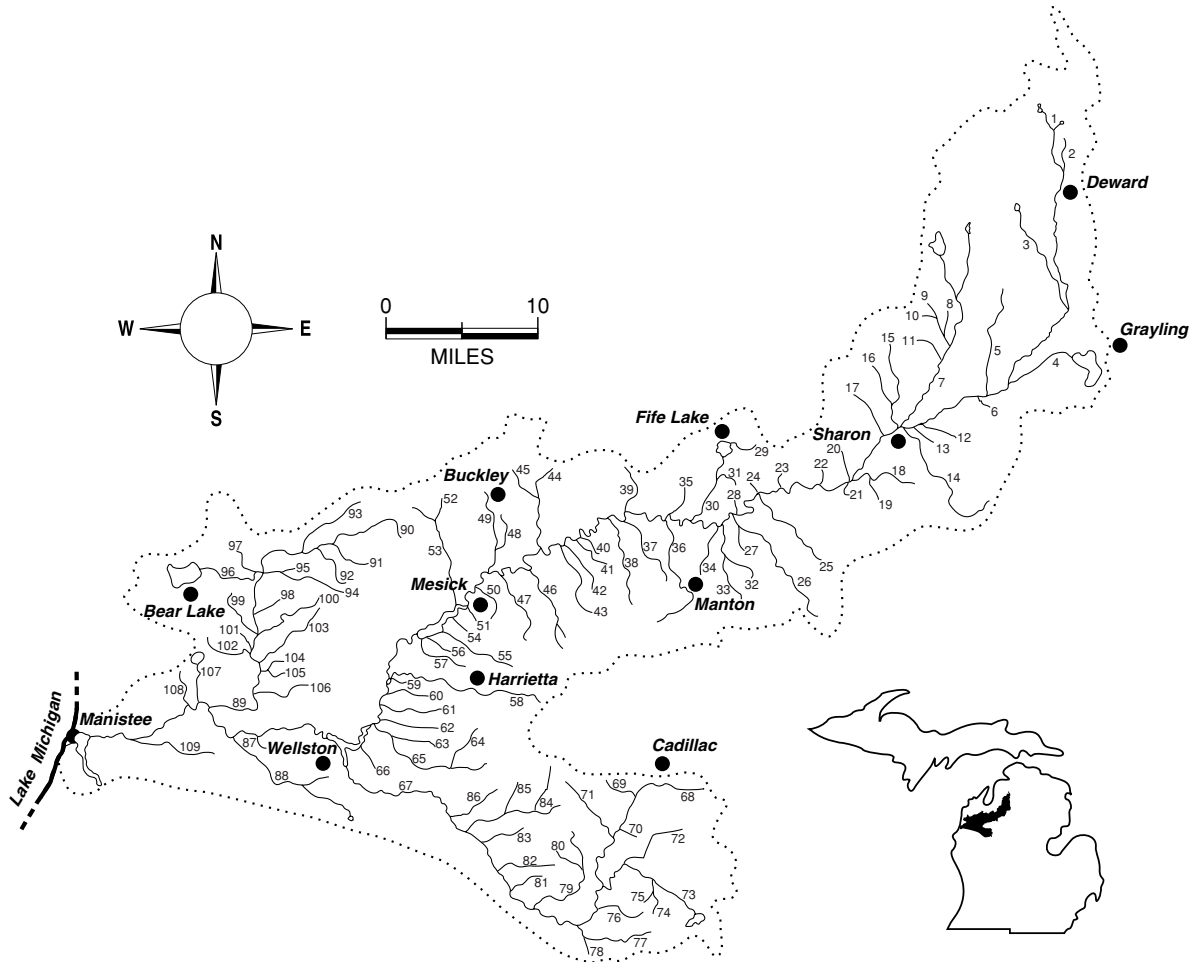


Figure 2.—Major tributaries of the Manistee River.

1. Deer Lake Outlet
2. Frenchman's Creek
3. Goose Creek
4. Portage Creek
5. Black Creek
6. Clear Creek
7. North Branch Manistee
8. Flowing Well Creek
9. Morrison Creek
10. Collar Creek
11. Sands Creek
12. Devil Creek
13. Little Devil Creek
14. Cannon Creek
15. Pierson Creek
16. Willow Creek
17. Maple Creek
18. Little Cannon Creek
19. Silver Creek
20. Waterhole Creek
21. Filer Creek
22. Nelson Creek
23. Spring Creek
24. Bourne Creek
25. Ham Creek
26. Hopkins Creek
27. Voice Creek
28. Bridson Creek
29. Fife Lake Inlet
30. Fife Lake Outlet
31. Gould Creek
32. Golden Creek
33. Morrisy Creek
34. Chase Creek
35. Walton Outlet
36. Manton (Cedar) Creek
37. Buttermilk Creek
38. Silver Creek
39. Sands Creek
40. Apple Creek
41. Blind Creek
42. Filer Creek
43. Soper Creek
44. Anderson Creek
45. West Branch Anderson Creek
46. Adams Creek
47. Cole Creek
48. East Branch Wheeler Creek
49. Wheeler Creek
50. Burkett Creek
51. Preston Creek
52. Cotton Creek
53. Fletcher Creek
54. Cripple Creek
55. Small Creek
56. Tar Creek
57. Seaton Creek
58. Slagle Creek
59. Dead Creek
60. Cedar Creek
61. Arguilla Creek
62. Hinton Creek
63. Sands Creek
64. Johnson Creek
65. Peterson Creek
66. Snyders Creek
67. Pine River
68. North Branch Pine River
69. Spalding Creek
70. Sixteen Creek
71. Fairchild (Negro) Creek
72. East Branch Pine River
73. Rose Lake Outlet
74. Edgett Creek
75. Diamond Lake Outlet
76. Sprague Creek
77. Beaver Creek
78. Little Beaver Creek
79. Coe Creek
80. Dyer Creek
81. Sellars Creek
82. Silver Creek
83. Elm Creek
84. Poplar Creek
85. Dowling Creek
86. Hoxie Creek
87. Sylvan Creek
88. Pine Creek
89. Bear Creek
90. First Creek
91. Second or Hatches Creek
92. Third Creek
93. Dutchman Creek
94. Lemon Creek
95. Healy Lake Outlet
96. Little Bear Creek
97. Green's Creek
98. Halls Creek
99. Arner Creek
100. Big Beaver Creek
101. Williamson Creek
102. Little Beaver Creek
103. Cedar Creek
104. Chicken Creek
105. Podunk Creek
106. Boswell Creek
107. Chief Creek
108. Sickie Creek
109. Claybank Creek

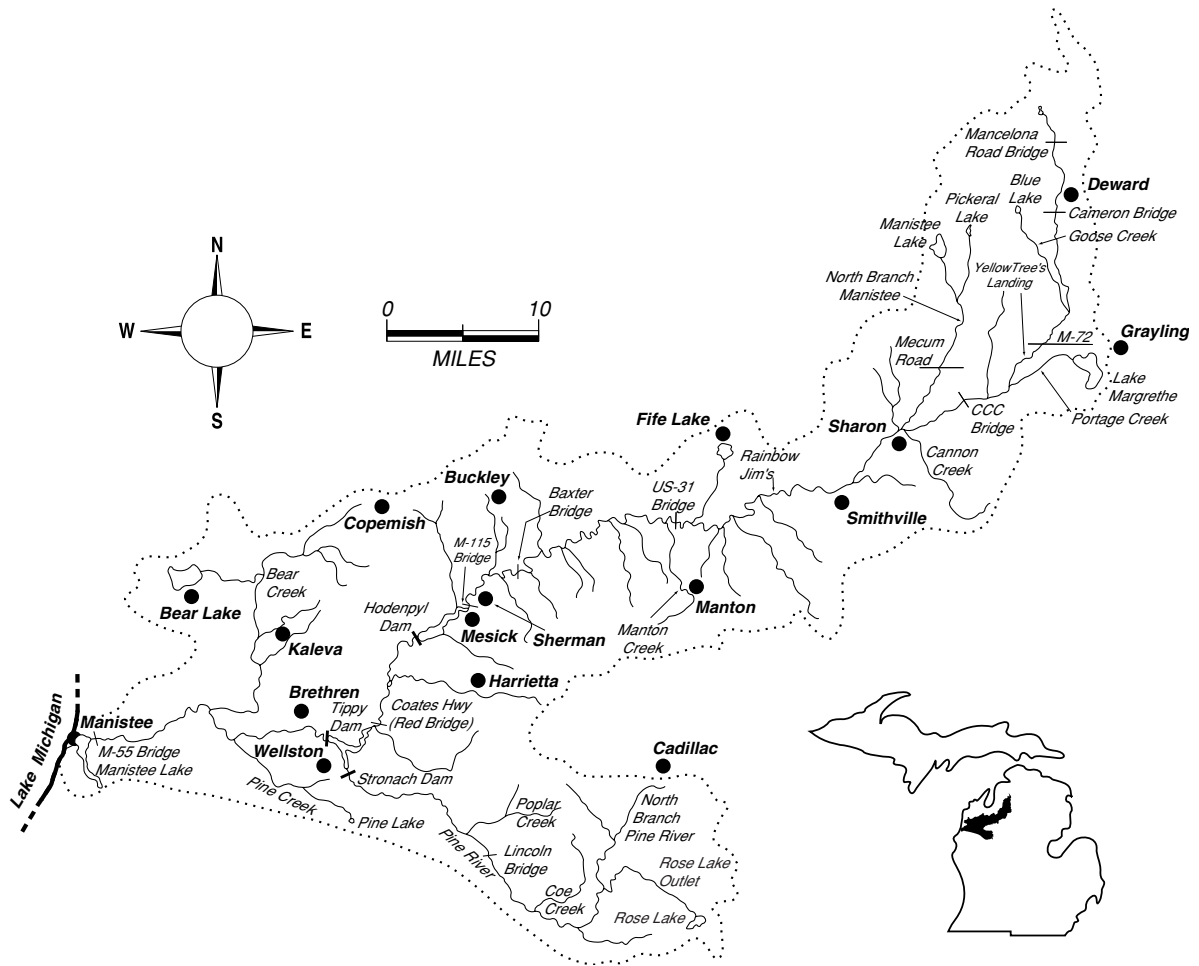


Figure 3.—General sites within watershed.

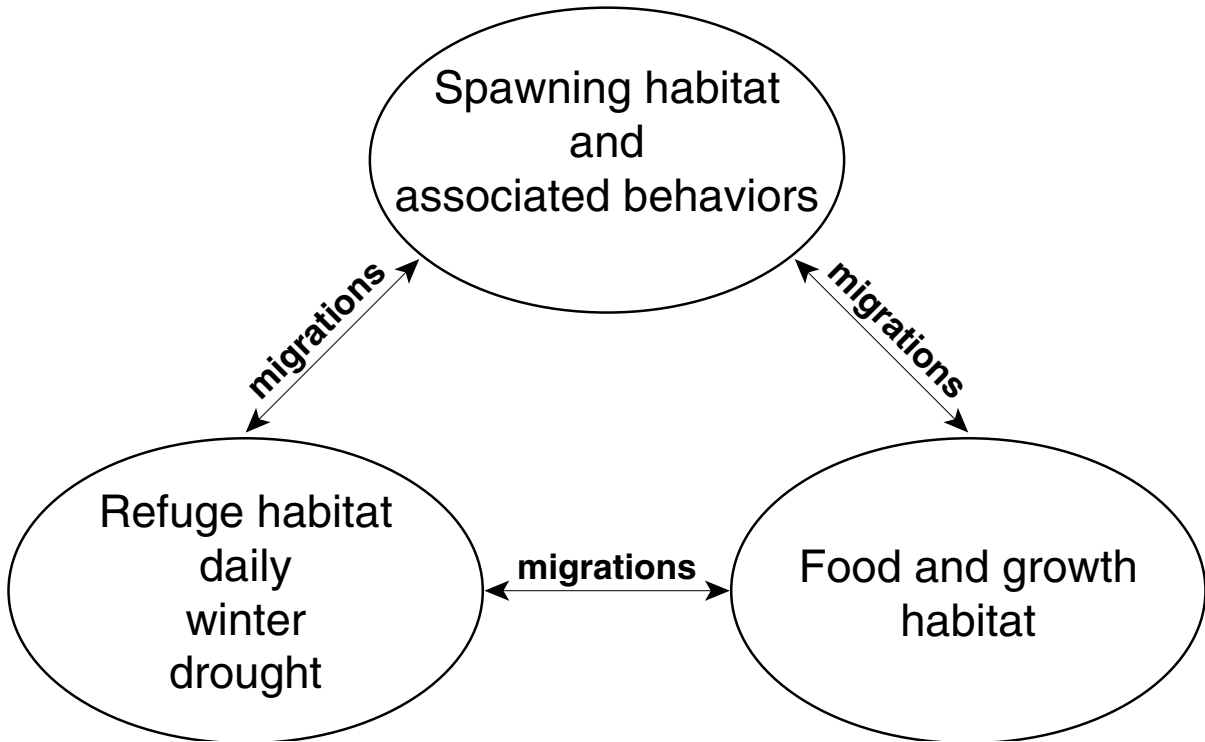


Figure 4.-The basic life cycle of stream fish with respect to habitat use (adapted from Schlosser 1991).

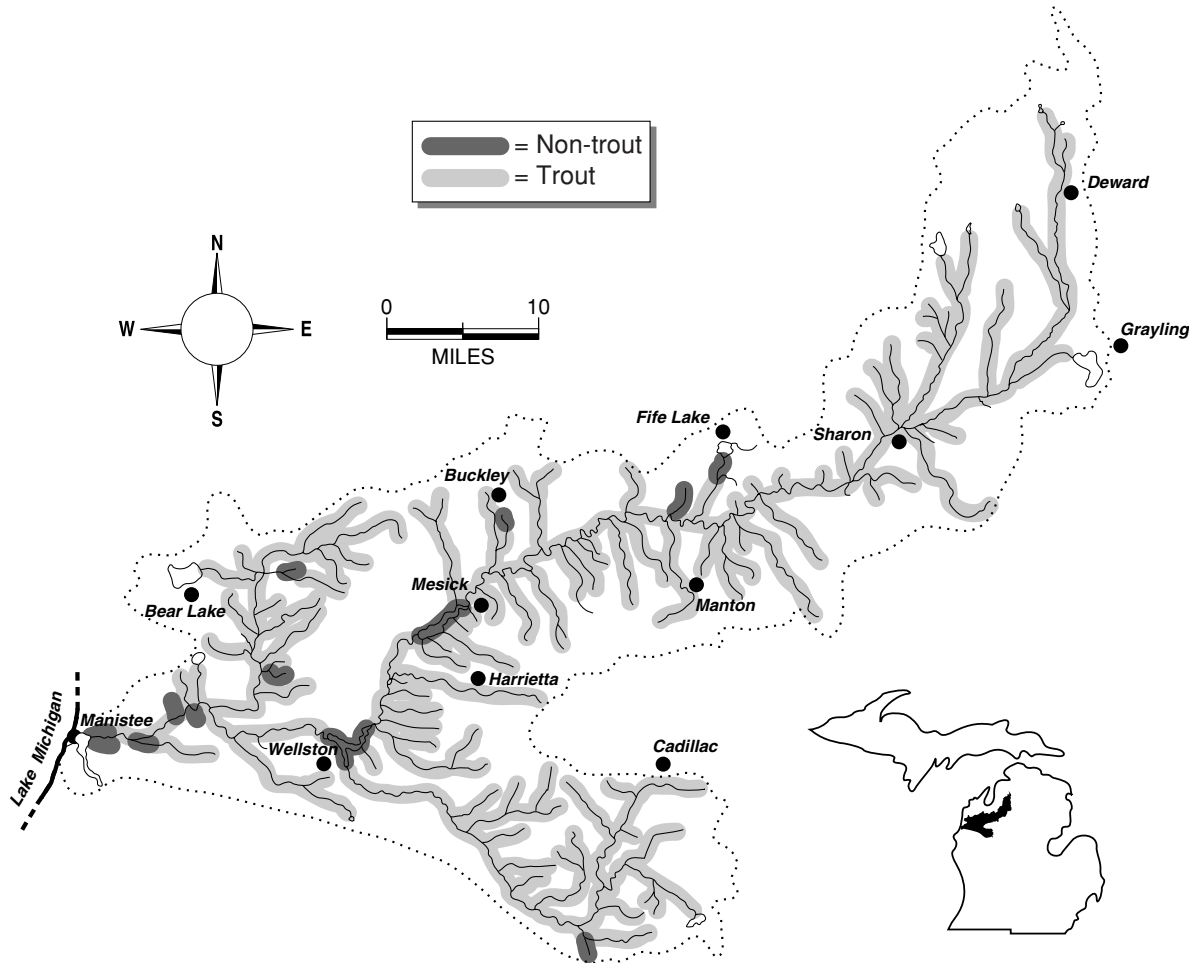


Figure 5.—Designated trout streams in the Manistee River watershed. Data from Michigan Department of Natural Resources, Fisheries Division.

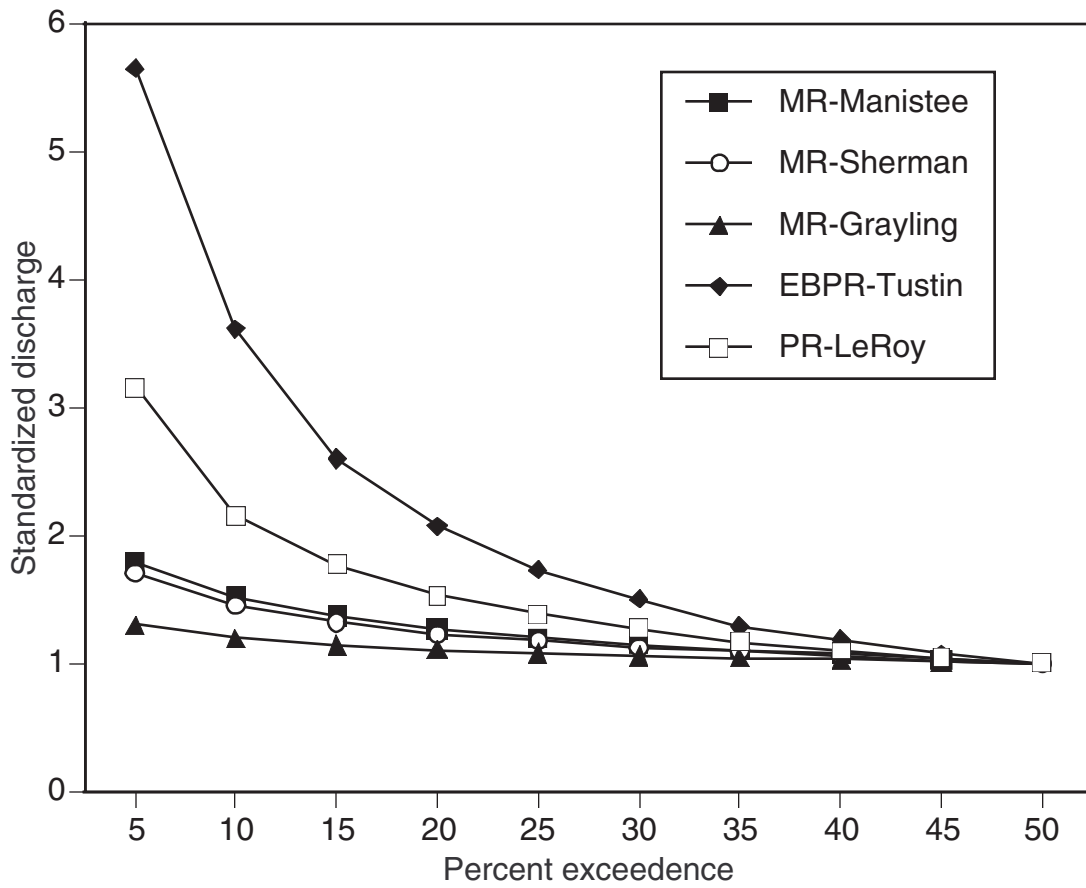


Figure 6.–Flow duration curves for selected sites on the Manistee and Pine Rivers. Information from United States Geological Survey for period of record.

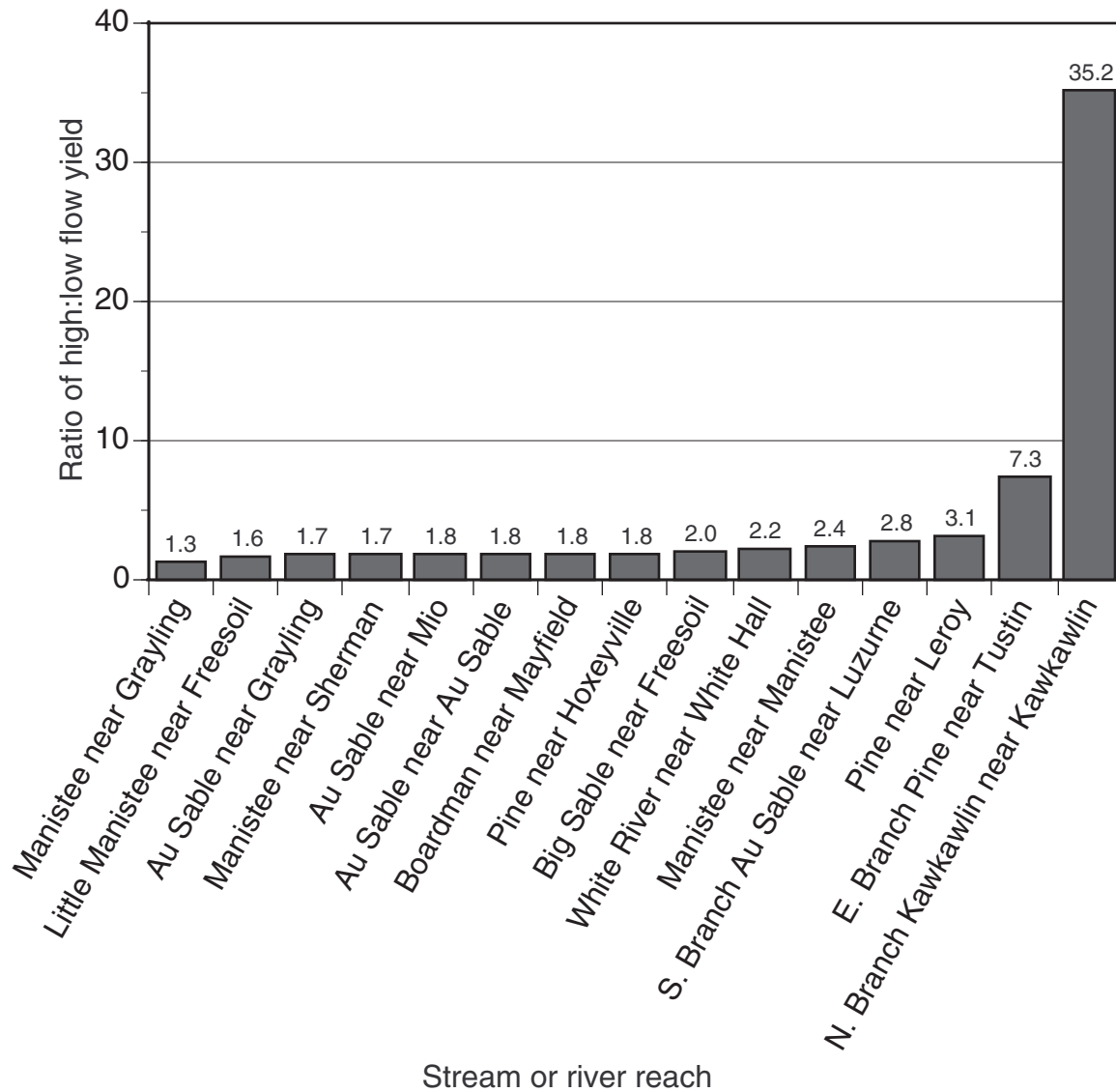


Figure 7.—Ratio of high:low flow yields for selected Michigan rivers. Data from Michigan Department of Natural Resources, Fisheries Division.

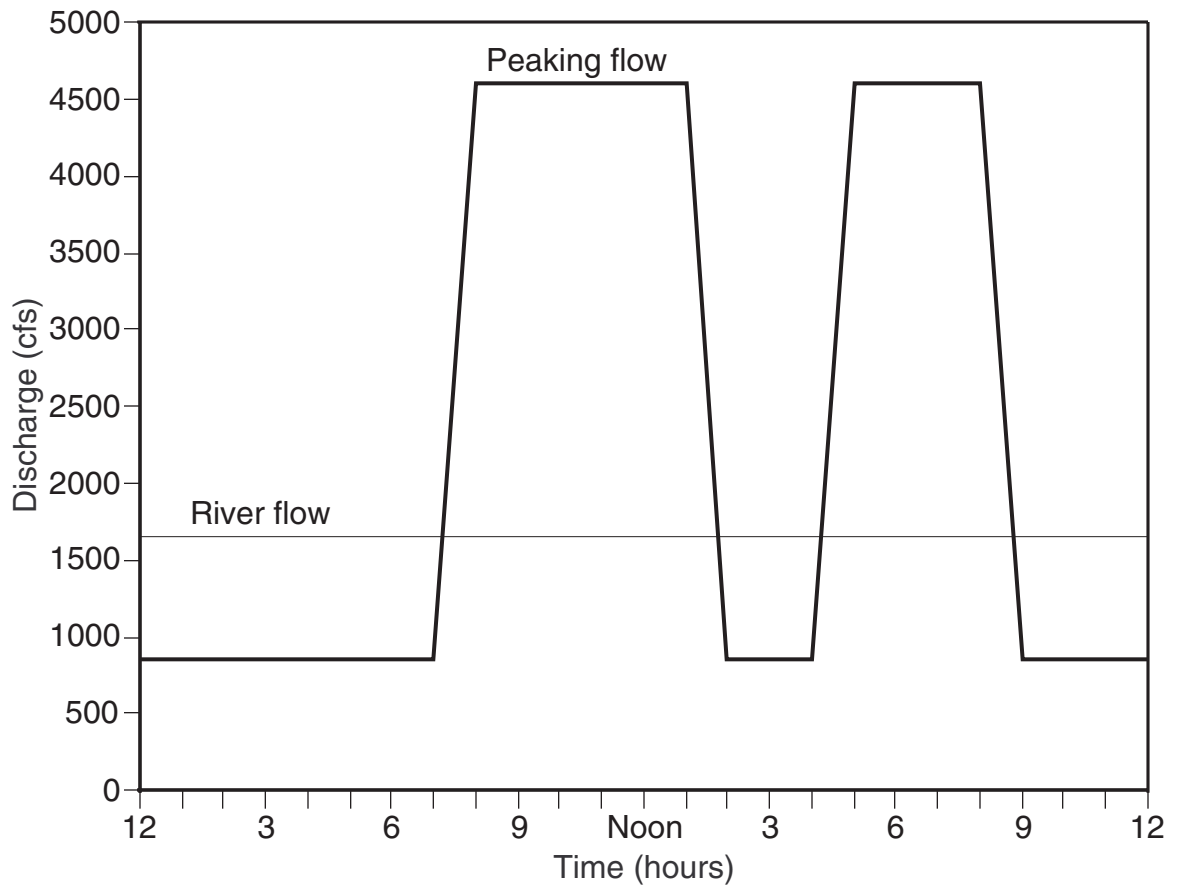


Figure 8.-Typical daily peaking flow pattern at Tippy Dam.

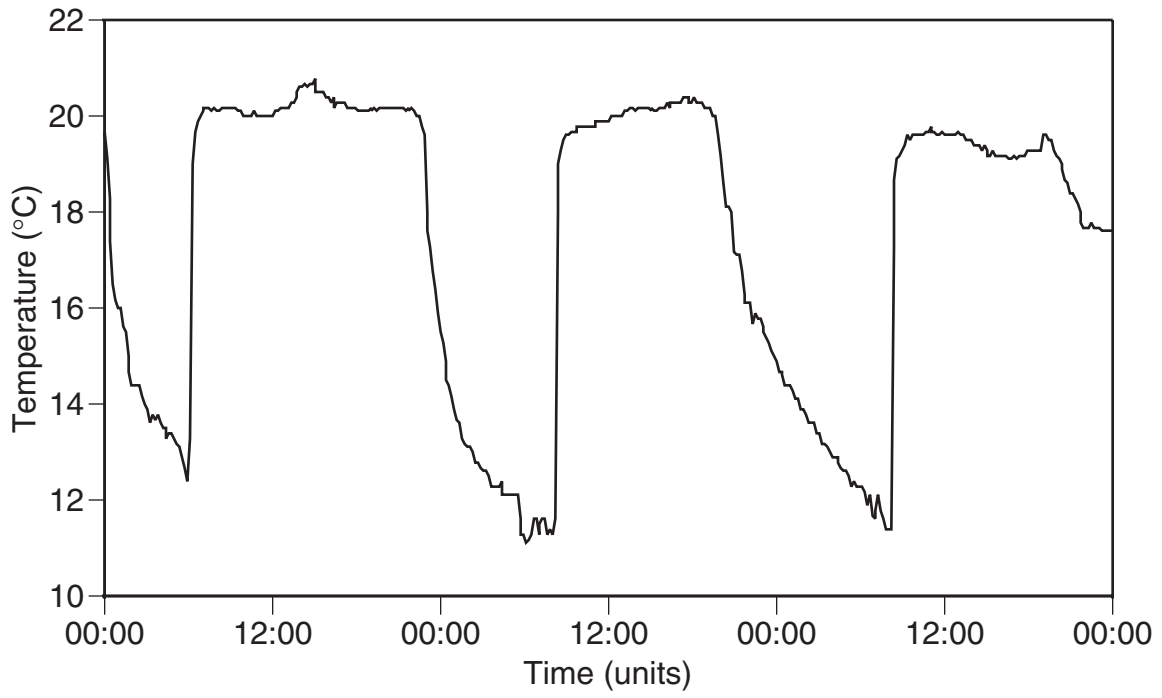


Figure 9.-Temperature patterns at Alcona peaking project on the Au Sable River, Michigan.

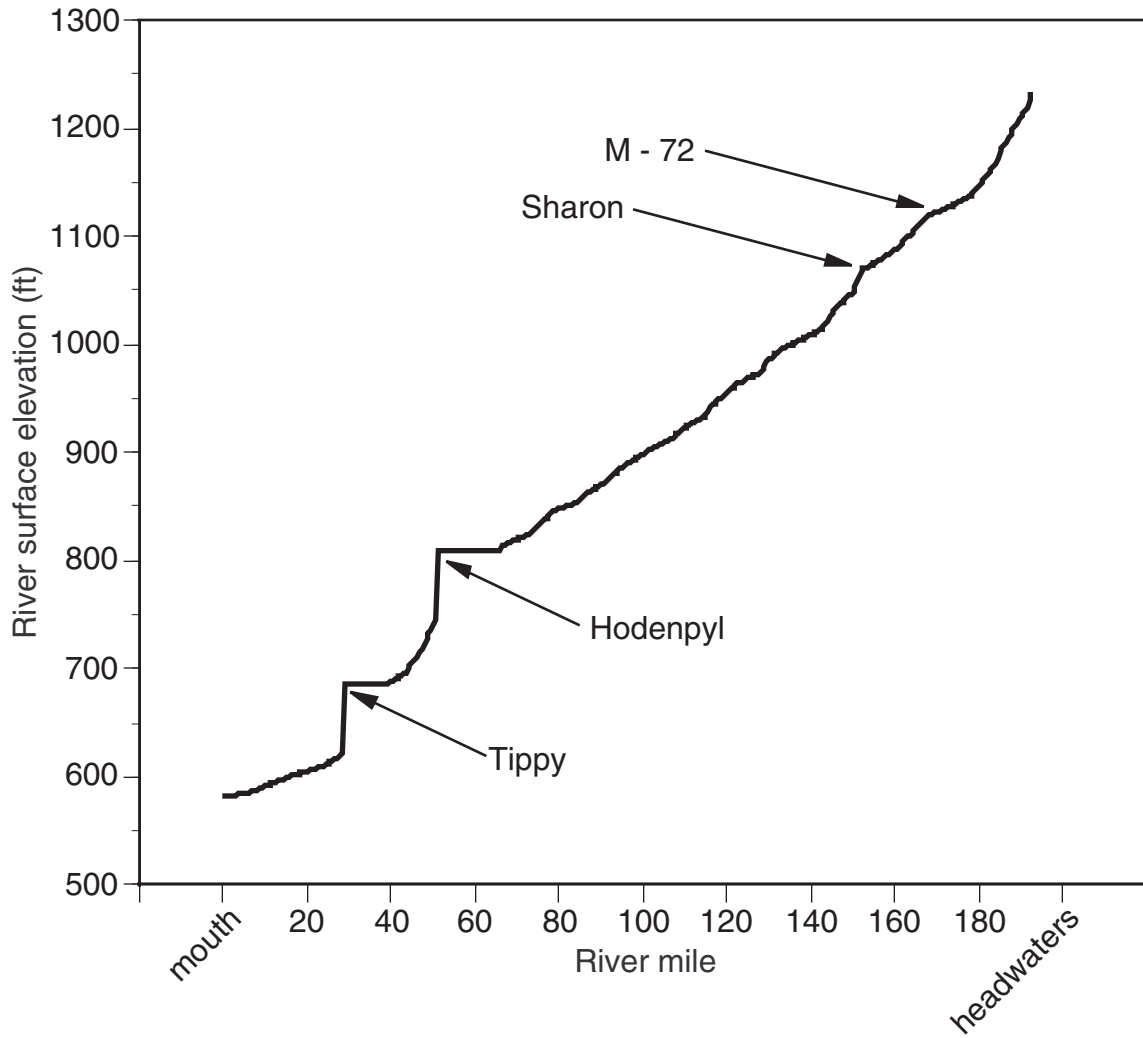


Figure 10.—Gradient (elevation change in ft/mi) of the Manistee River.

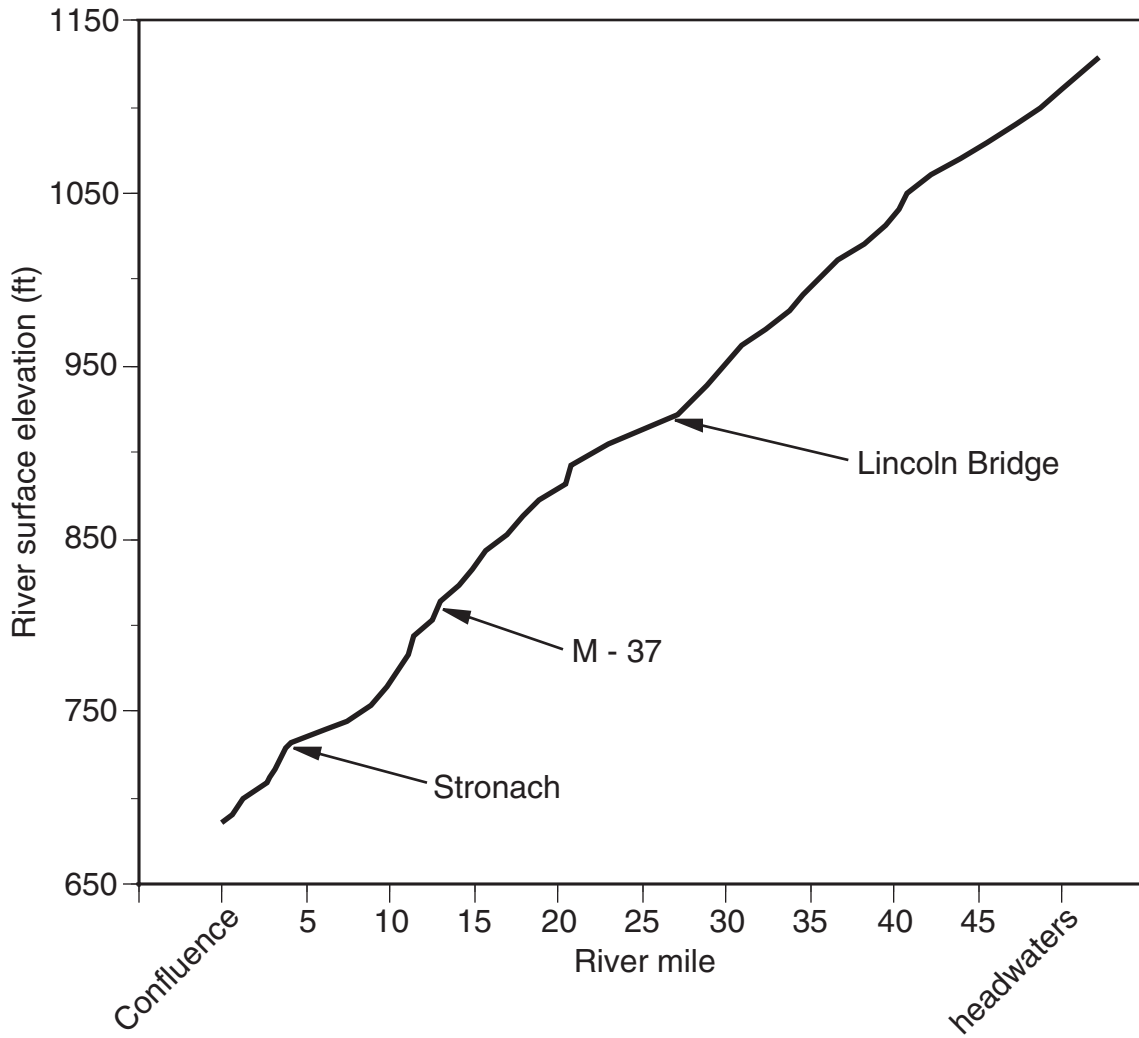
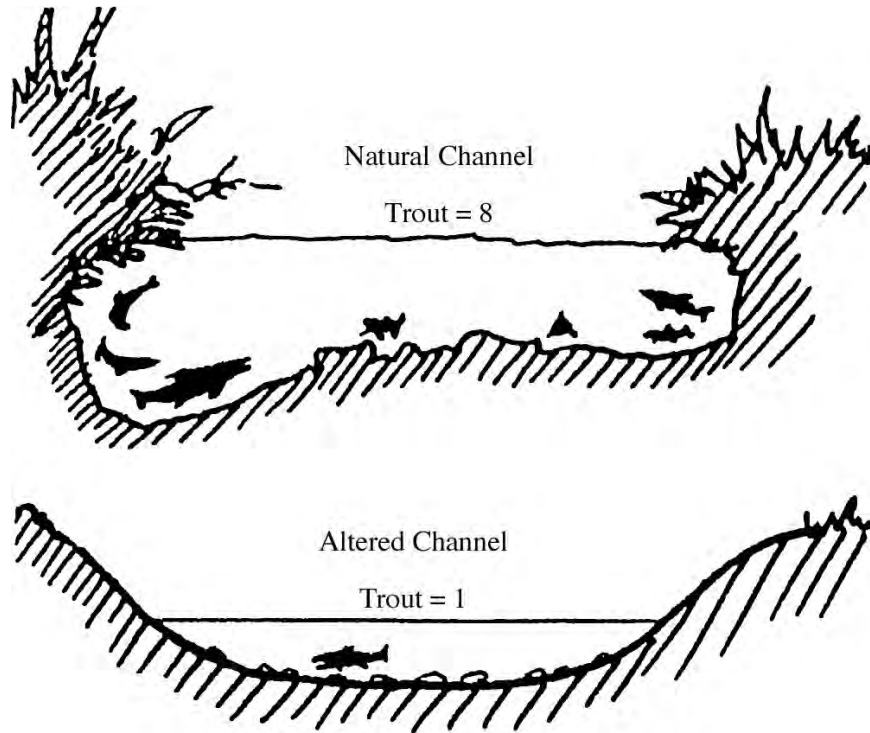
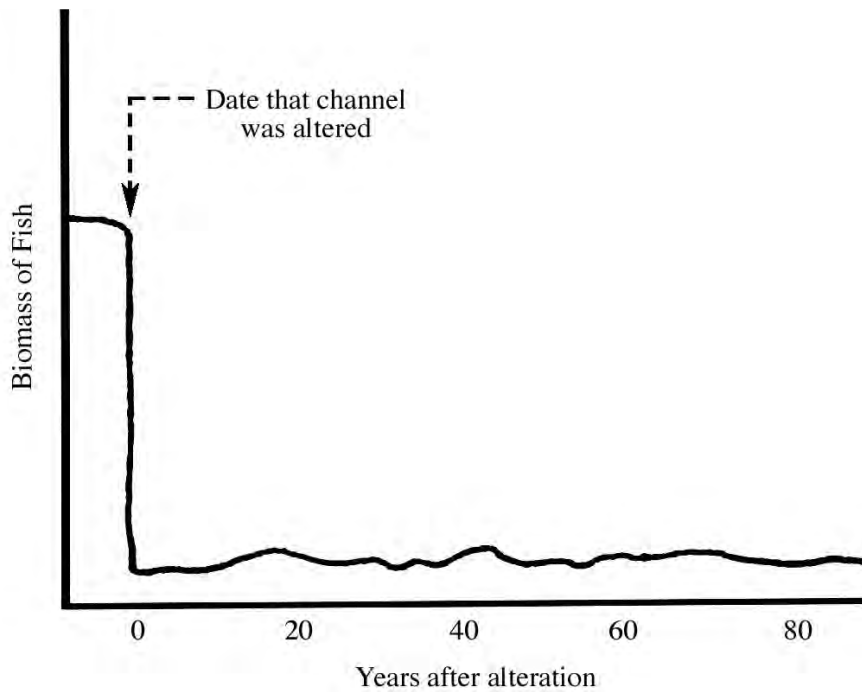


Figure 11.—Gradient (elevation change in ft/mi) of the Pine River.



In Idaho streams, undisturbed channels held 8 times greater biomass of trout on the average.



Over 80 years after channelization, biomass of fish remains 80 to 90 percent below original levels.

Figure 12.—Natural and altered channel-cross sections and trout biomass (from Gebhards 1973).

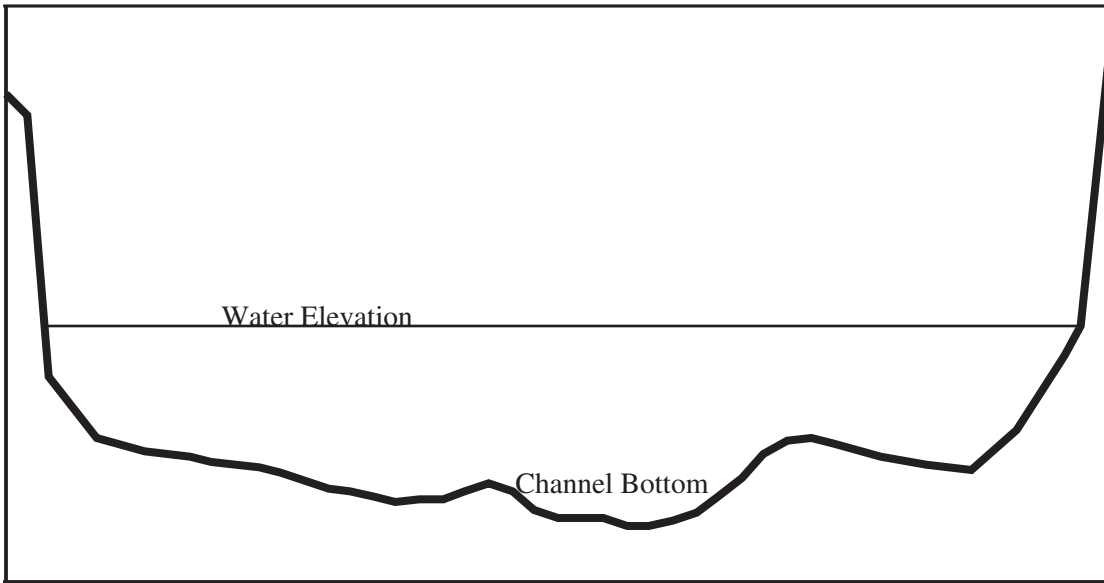


Figure 13a.—Degraded mainstem channel-cross section below Tippy Dam.

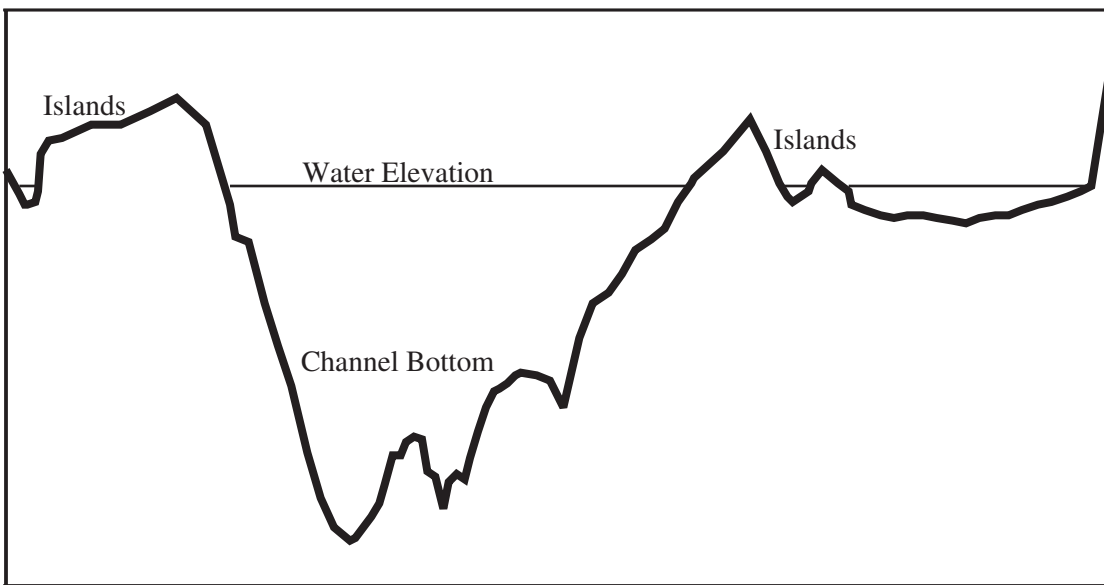


Figure 13b.—Aggraded mainstem channel-cross section below Tippy Dam.

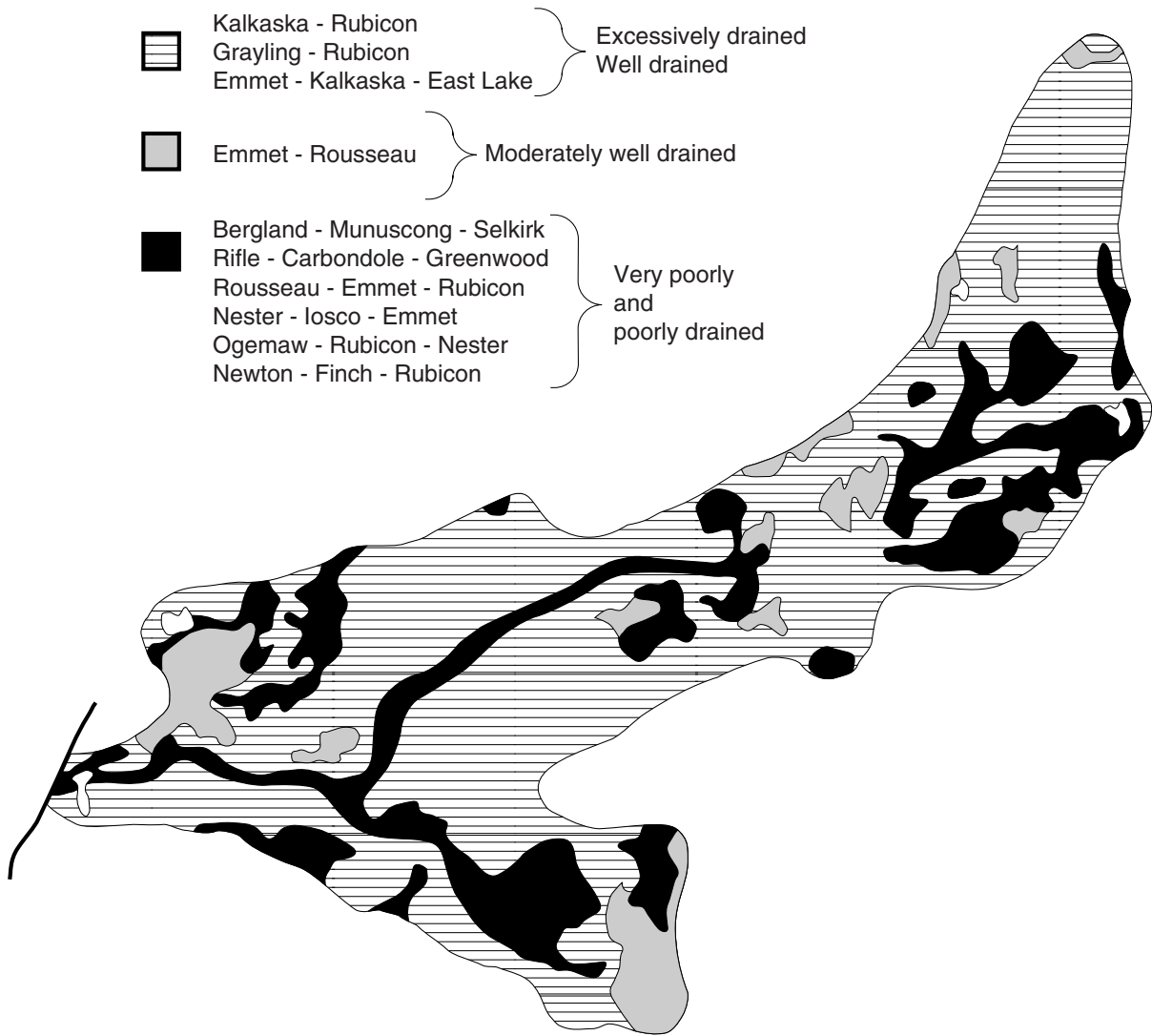


Figure 14.—Soil associations in the Manistee River watershed. Source: U.S. Department of Agriculture, U.S. Forest Service, Manistee River Wild and Scenic River Final Study Report and Environmental Impact Statement.

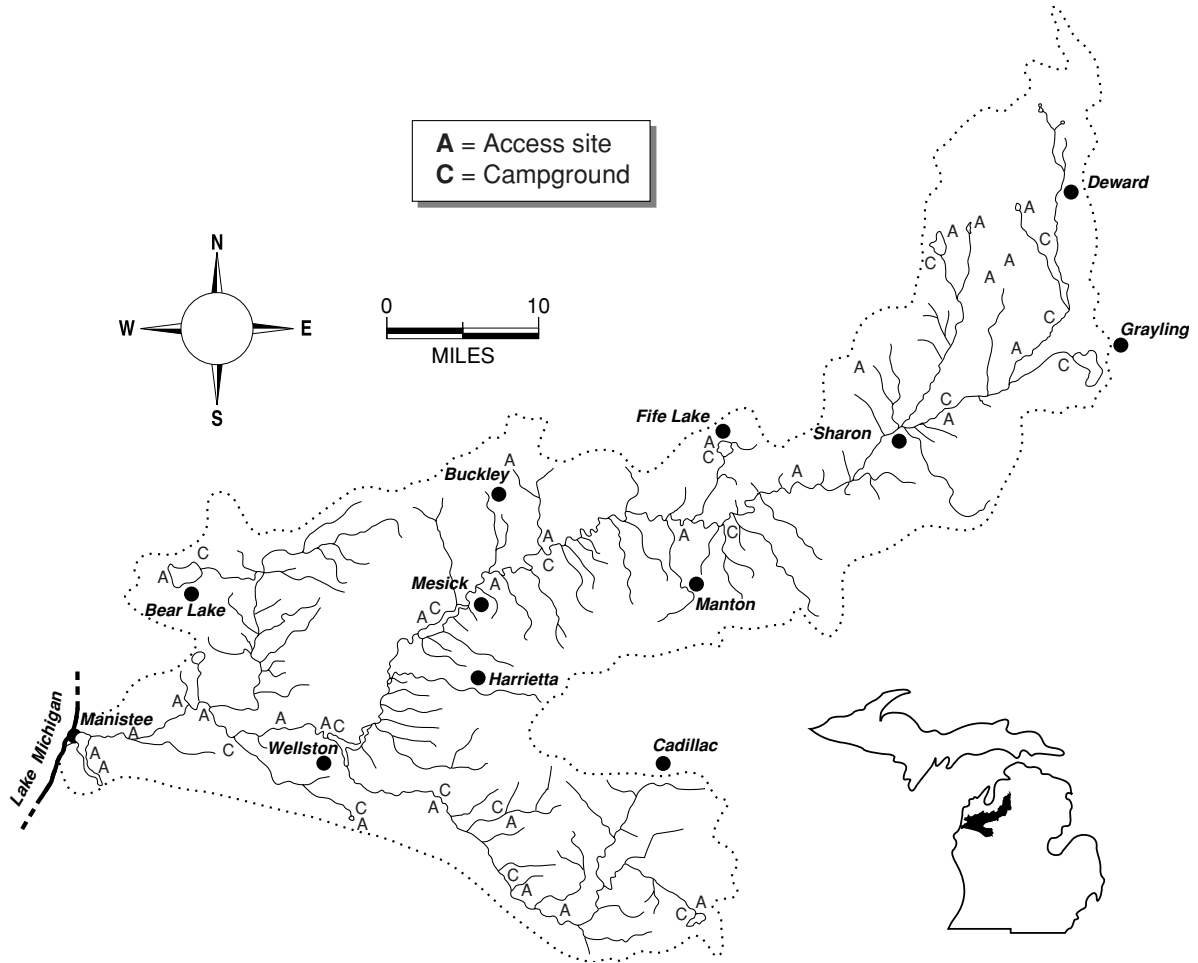


Figure 15.—Public access site and campground locations in the Manistee River watershed. Data from Michigan Department of Natural Resources, Parks and Recreation and United States

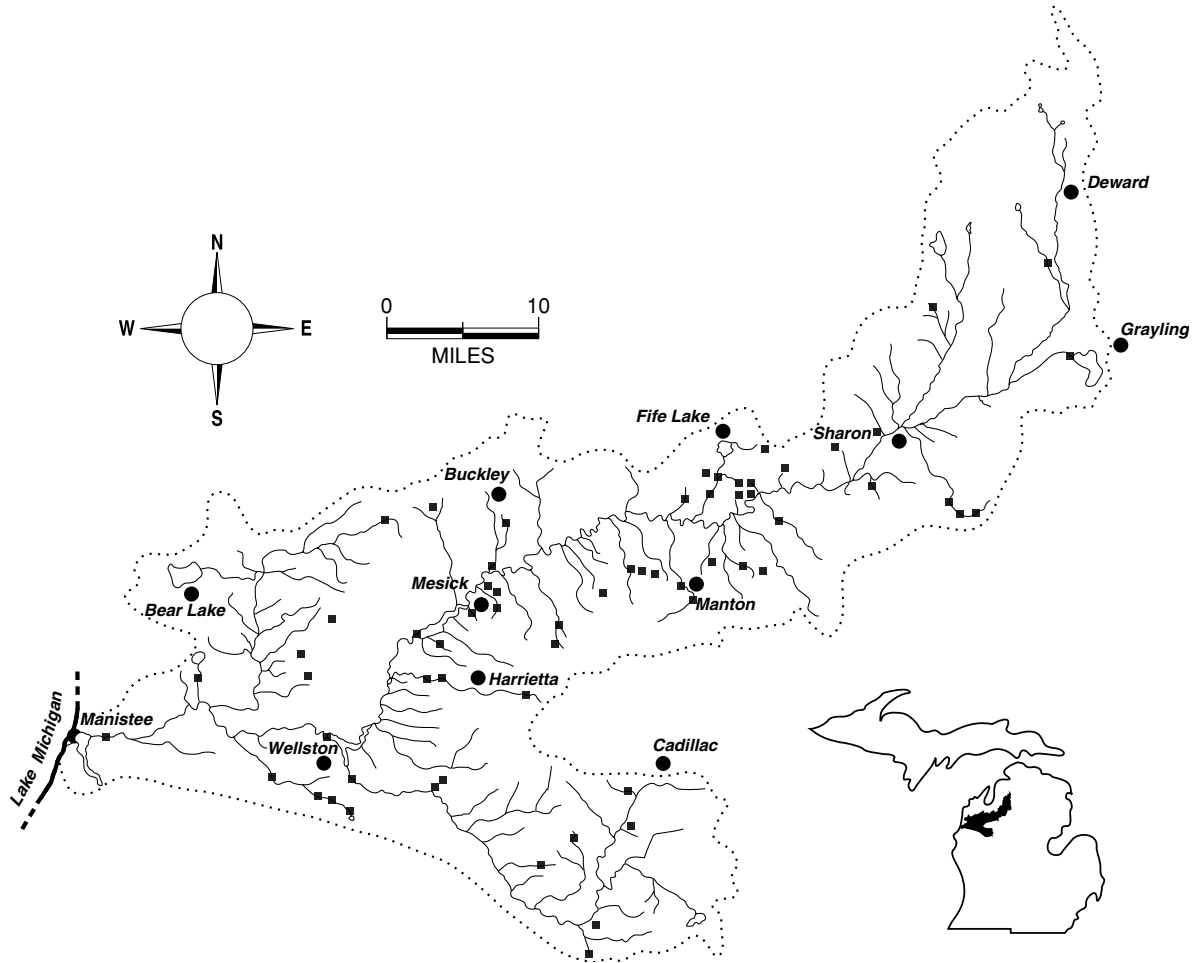


Figure 16.—Location of dams in the Manistee River watershed.