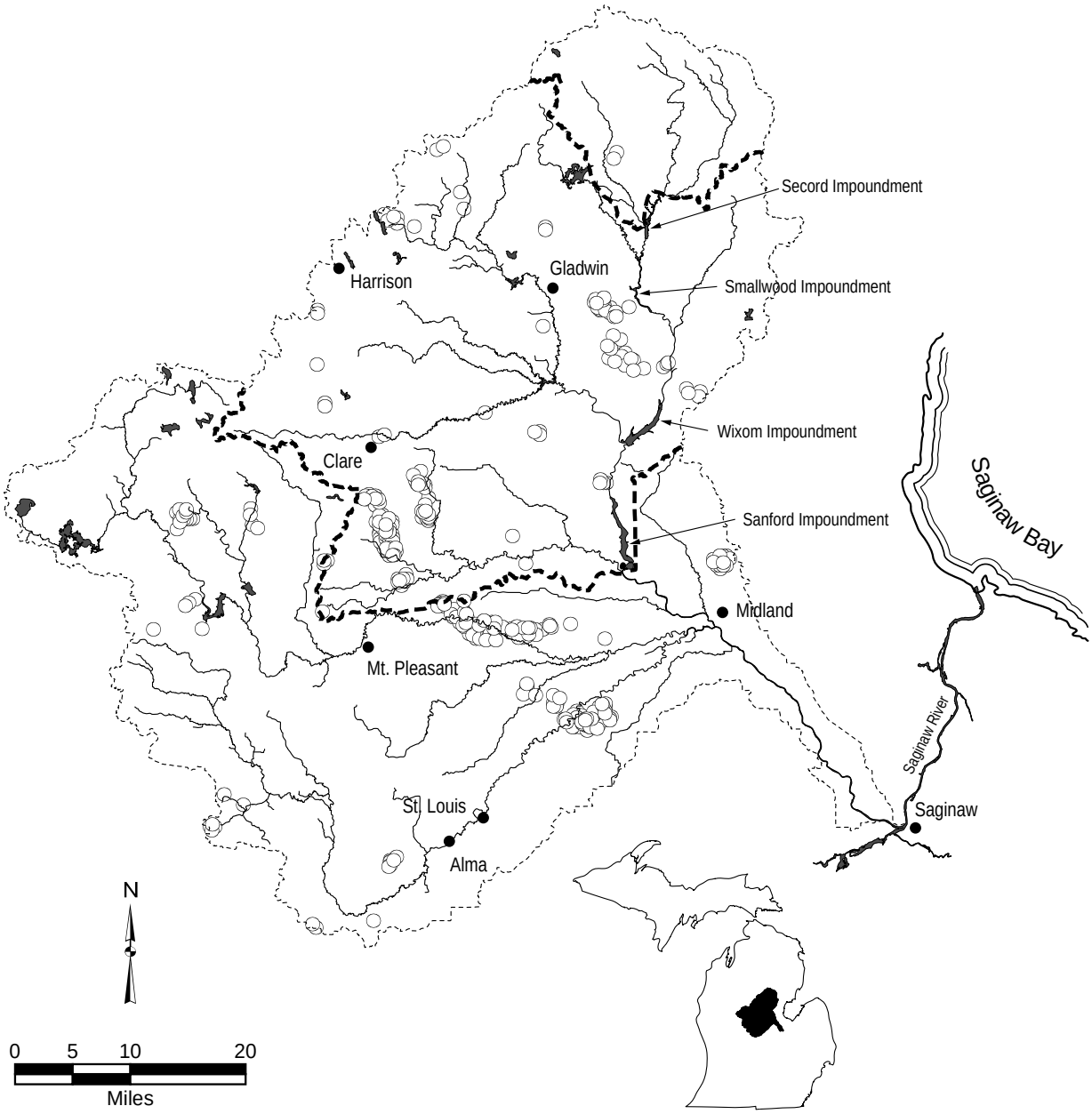

Figure 22.–Oil and gas well operations within the Tittabawassee River watershed.

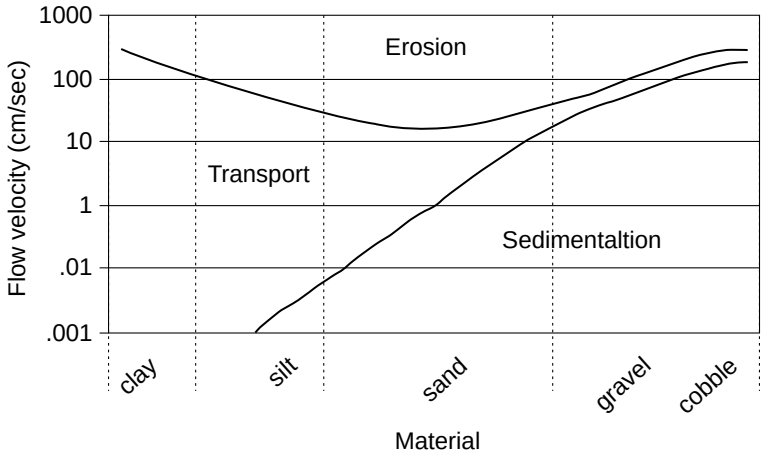

Figure 23.–Flow velocities at which various soil materials are eroded, transported, or sediment (from Hjulstrom 1935). Material size increases along the X axis with clay materials the smallest and cobbles the largest.

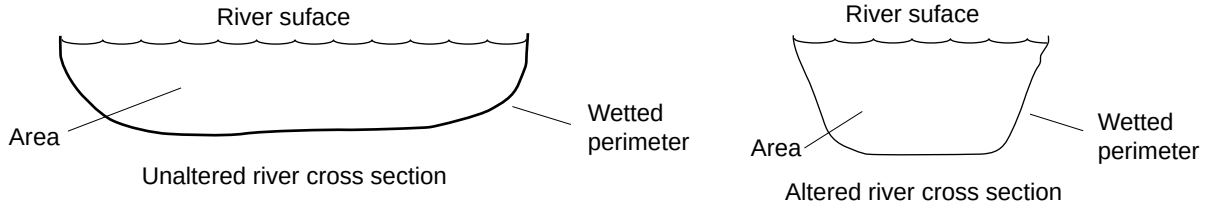

Figure 24.–Unaltered and altered river cross sections (from Wiley and Gough 1995). Unaltered cross section is typical of natural rivers while altered cross section is typical of county drains which have been dredged and straightened.

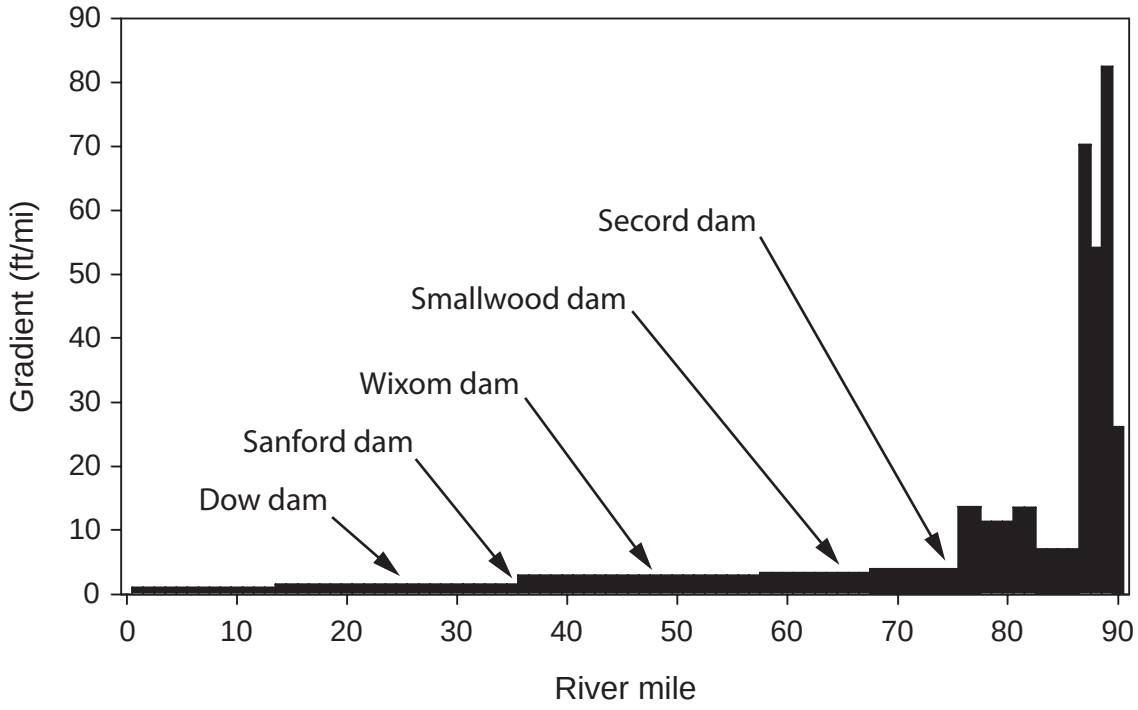

Figure 25.–Main stem Tittabawassee River channel gradient per river mile and location of major dams.

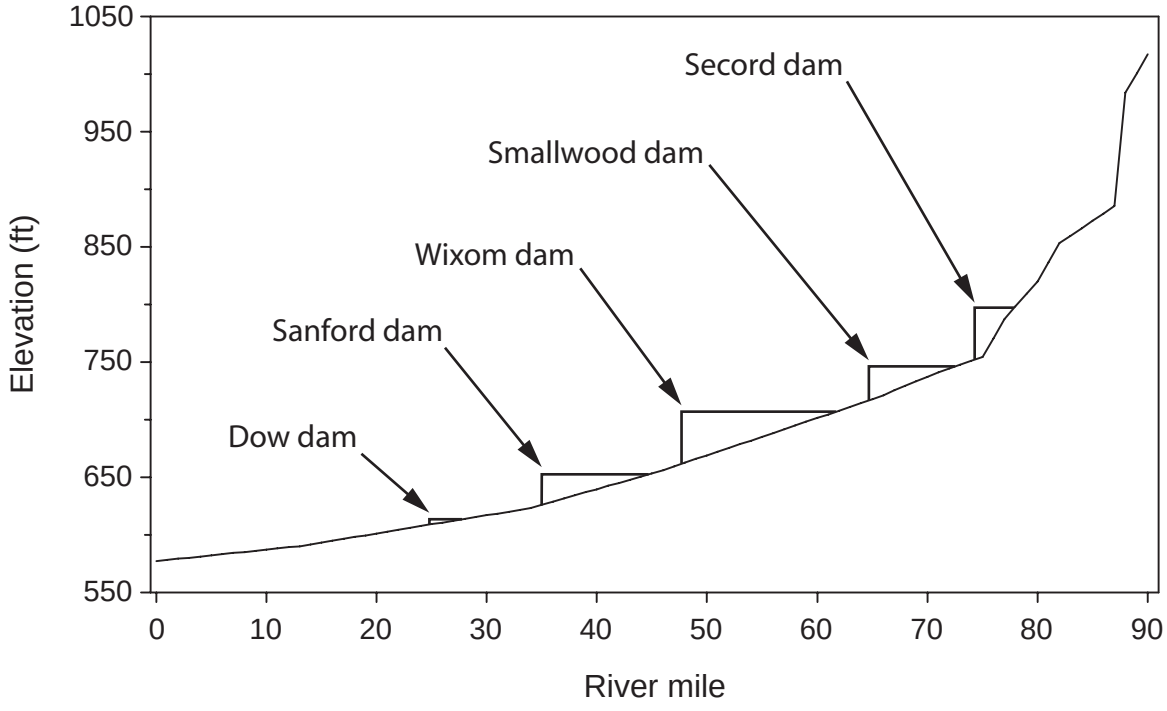

Figure 26.–Main stem Tittabawassee River channel elevation per river mile and location of major dams.

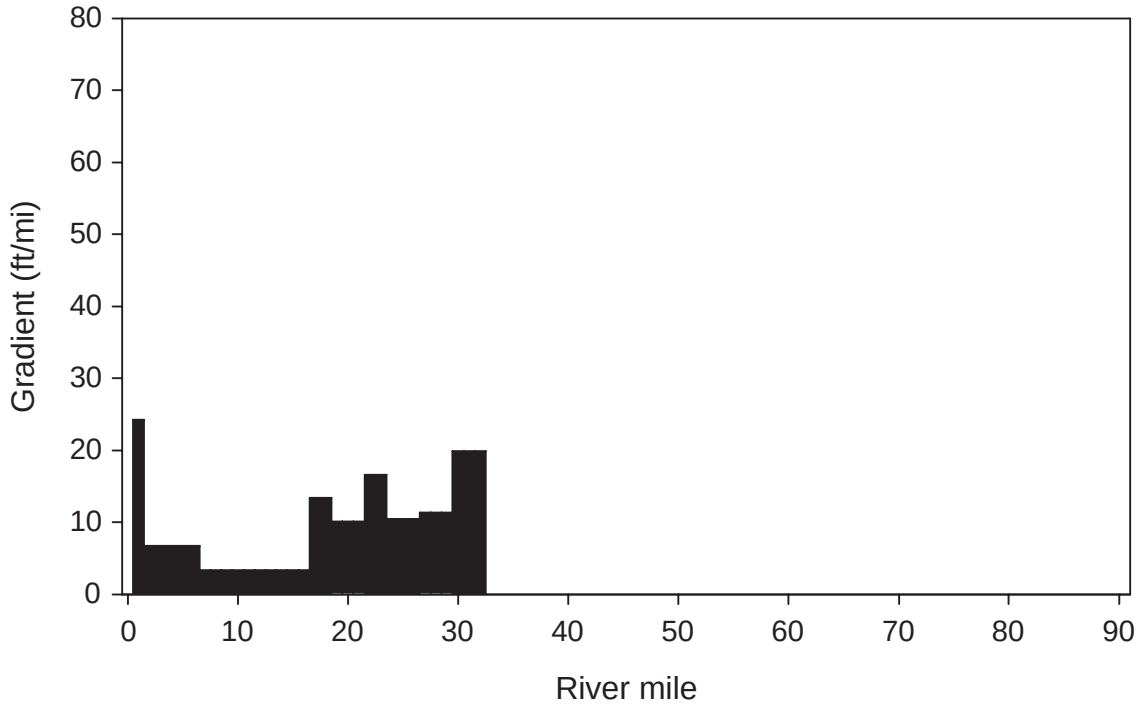

Figure 27.–Tobacco River channel gradient per river mile.

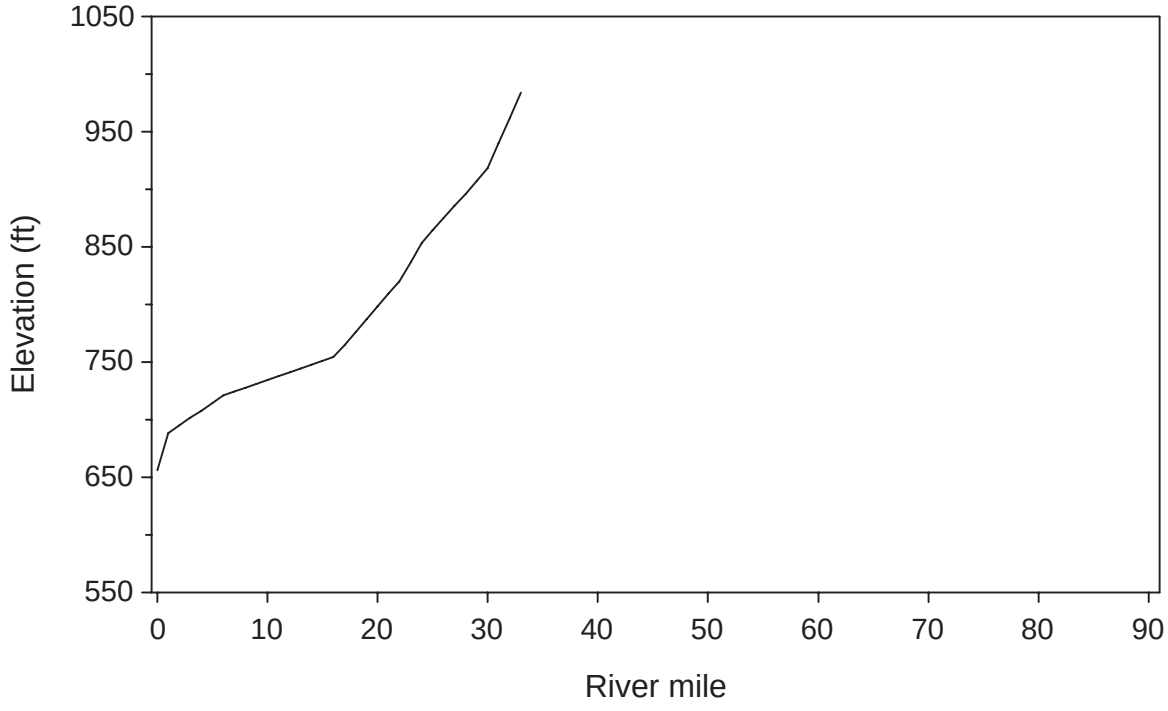

Figure 28.–Tobacco River channel elevation per river mile.

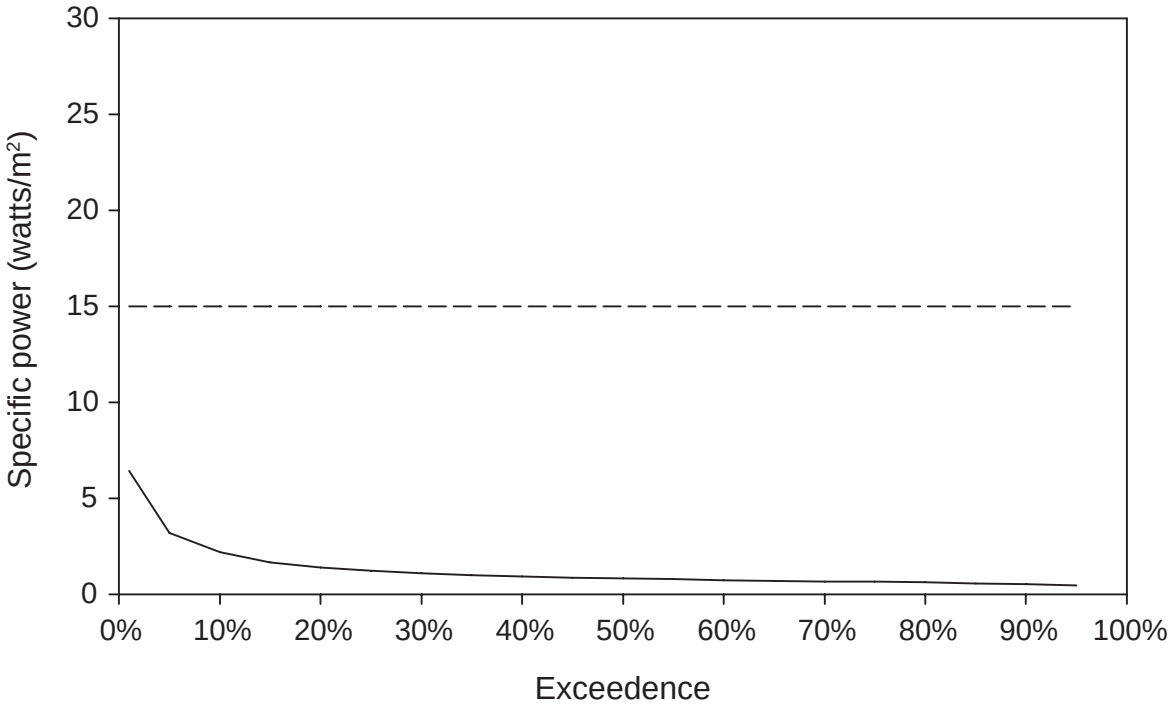

Figure 29.–Specific power for the Tobacco River at Beaverton. Dashed line indicates the specific power (15 watts/m^2) at which the channel of a river flowing through sand becomes dynamic.

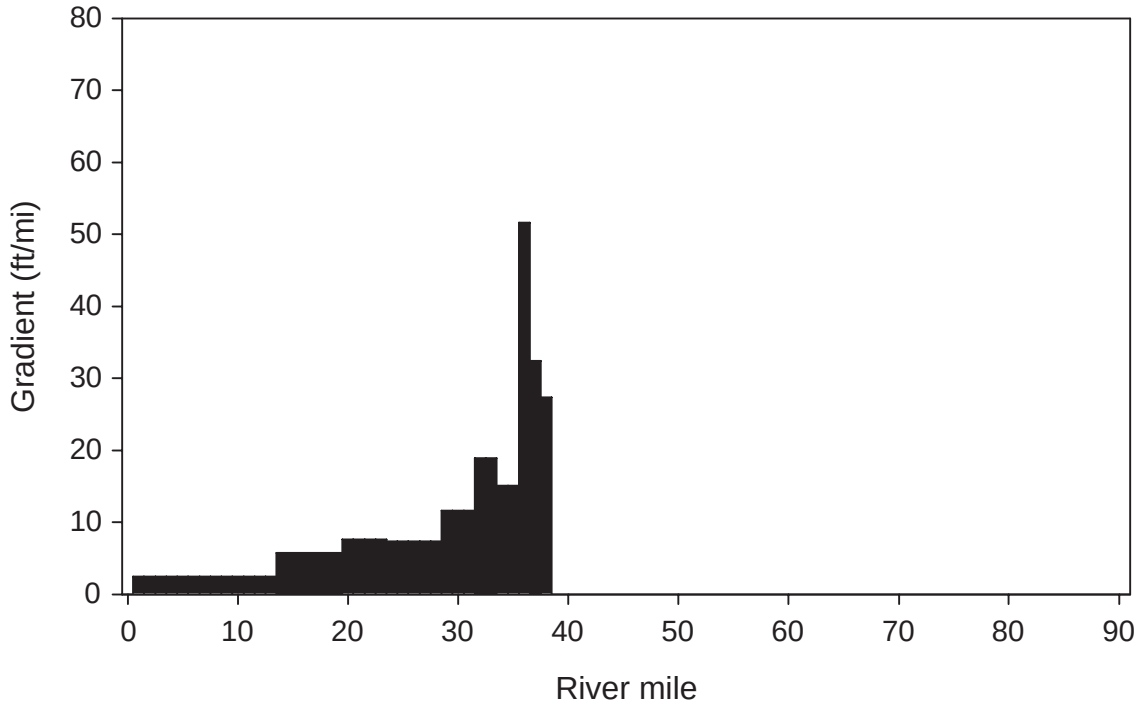

Figure 30.–South Branch of the Tobacco River channel gradient per river mile.

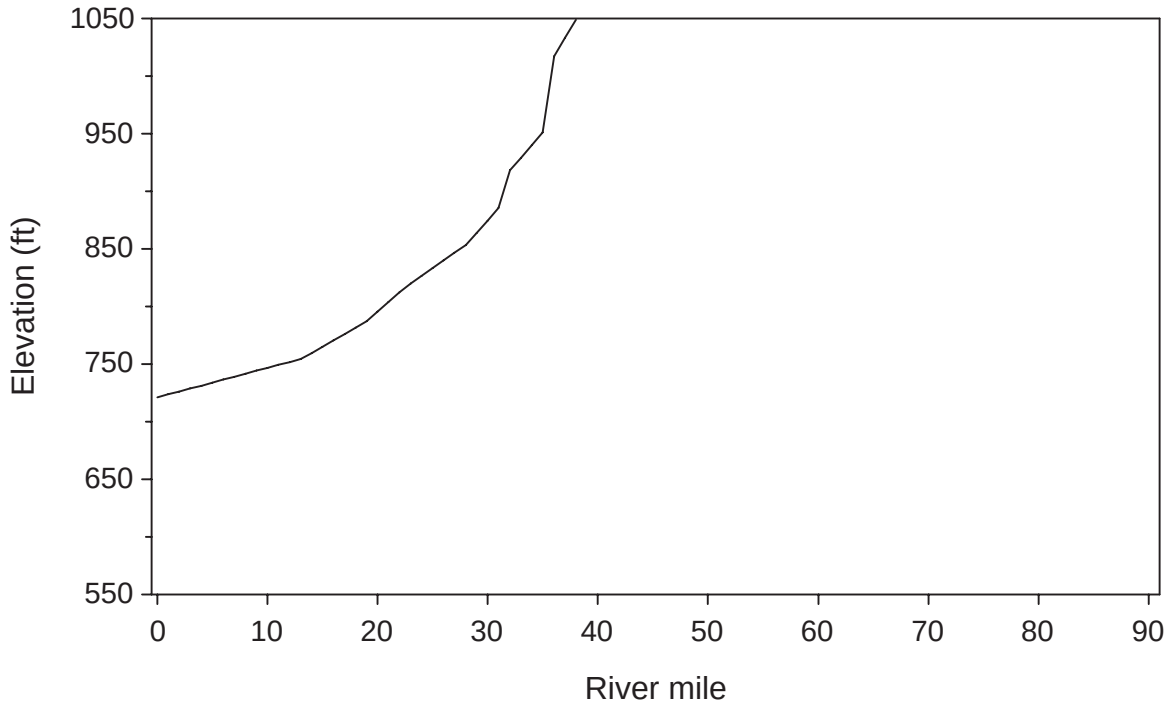

Figure 31.–South Branch of the Tobacco River channel elevation per river mile.

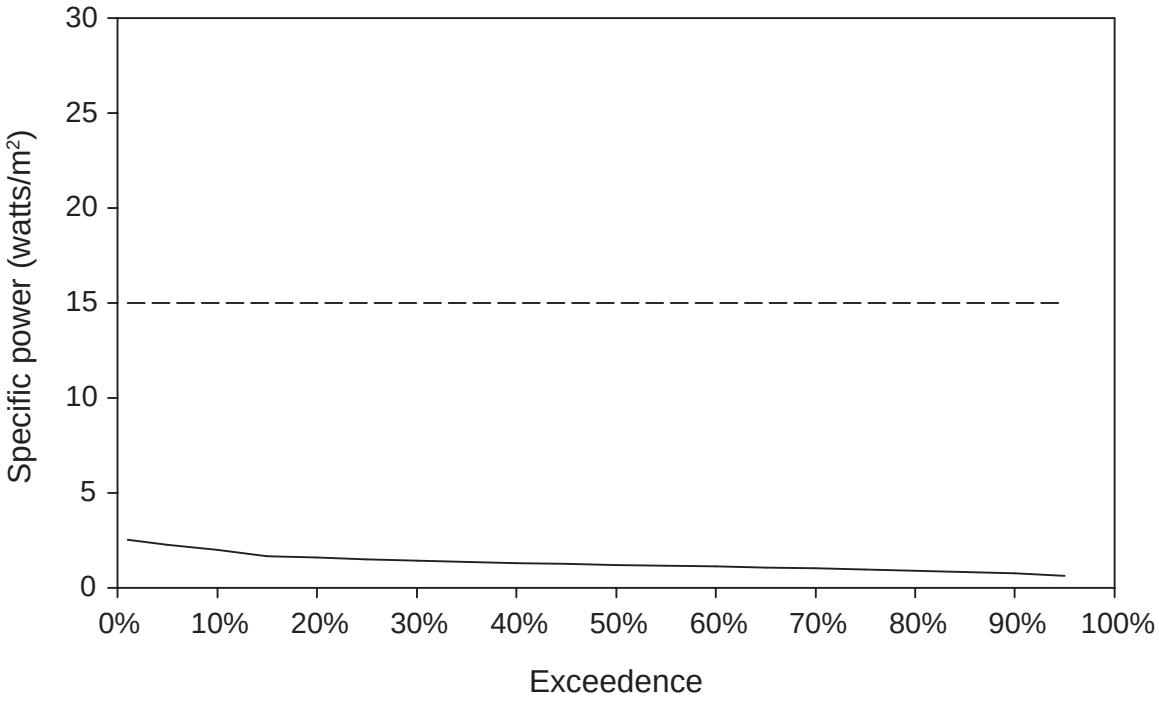

Figure 32.–Specific power for the South Branch of the Tobacco River near Beaverton. Dashed line indicates the specific power (15 watts/m^2) at which the channel of a river flowing through sand becomes dynamic.

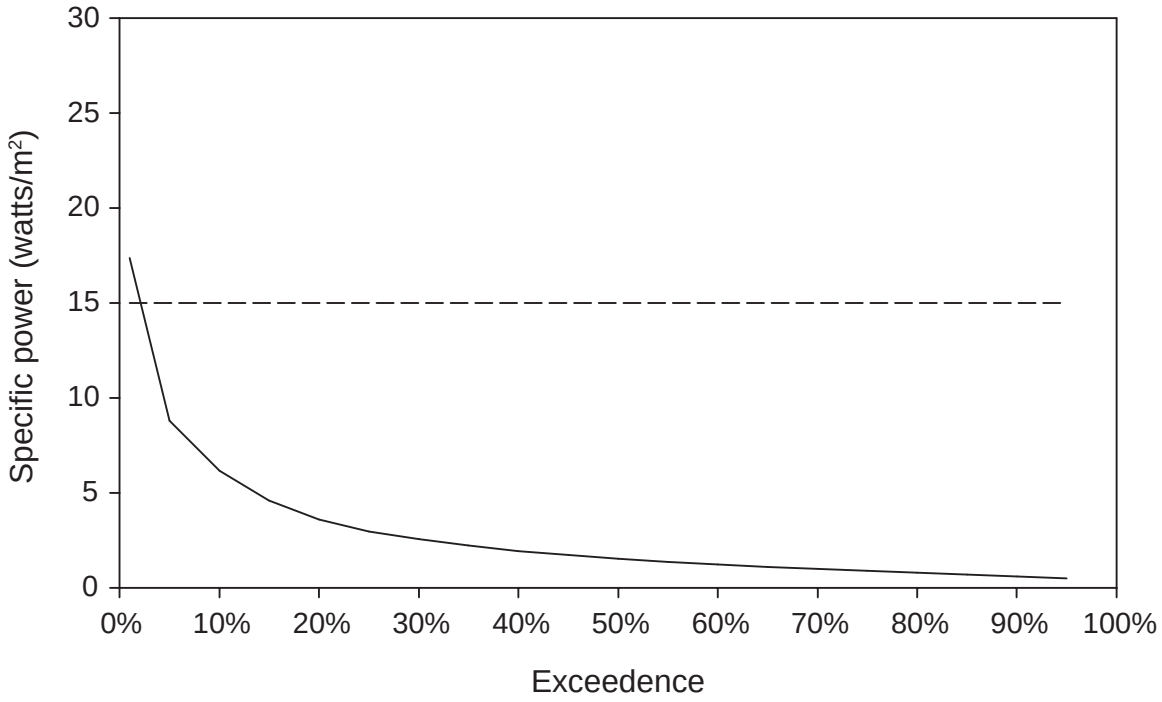

Figure 33.–Specific power for the Tittabawassee River at Midland. Dashed line indicates the specific power (15 watts/m^2) at which the channel of a river flowing through sand becomes dynamic.

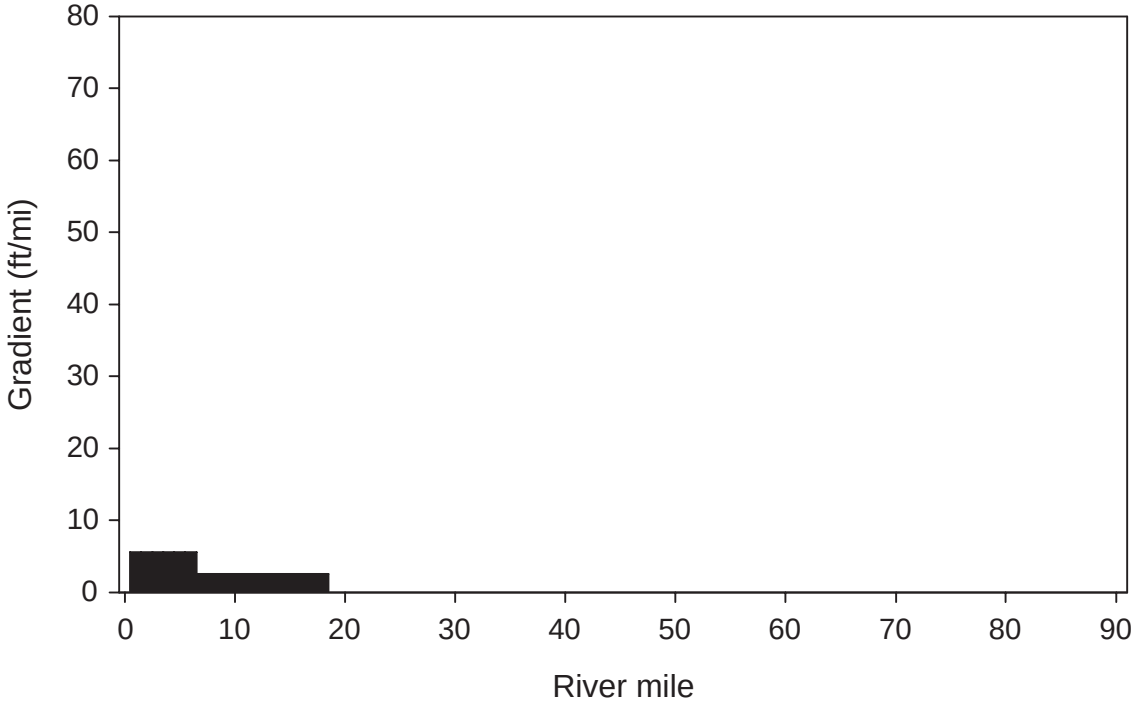

Figure 34.–Salt River channel gradient per river mile.

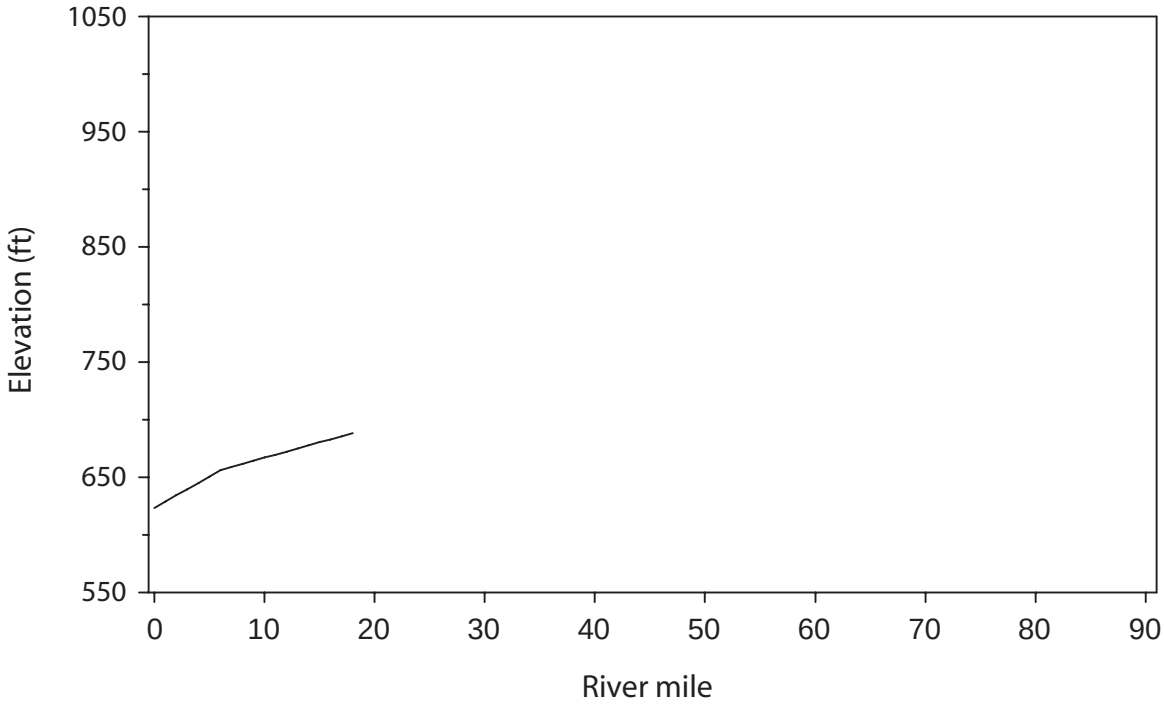

Figure 35.–Salt River channel elevation per river mile.

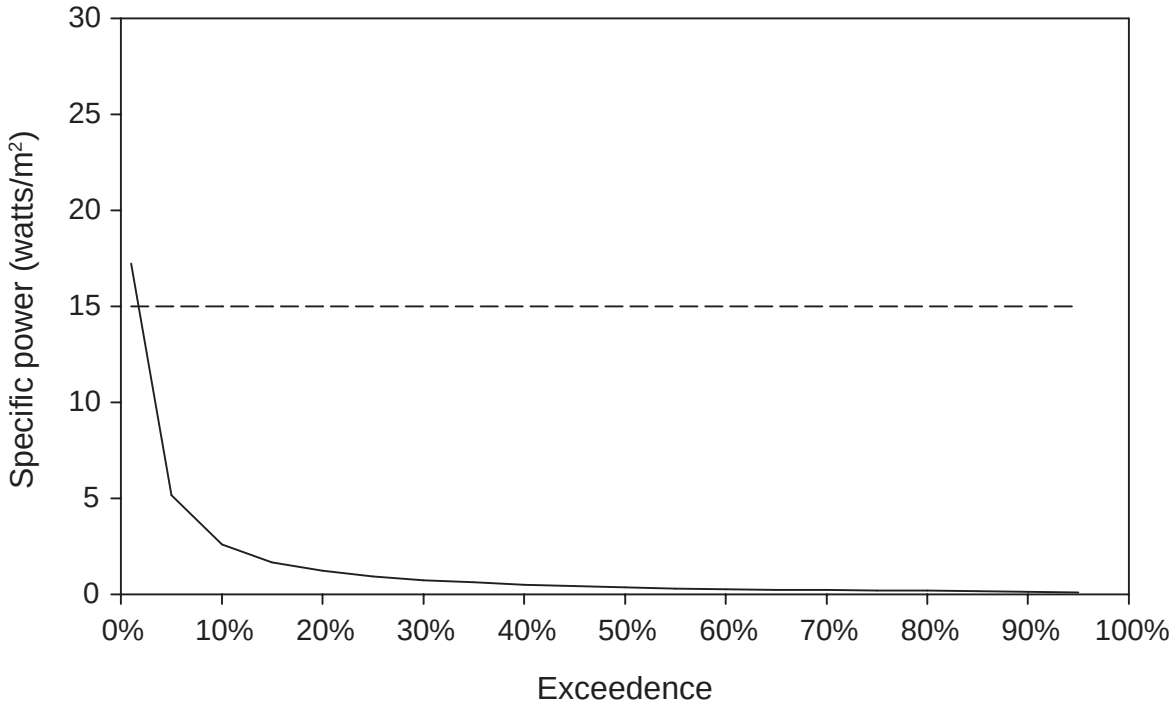

Figure 36.–Specific power for the Salt River near Beaverton. Dashed line indicates the specific power (15 watts/m^2) at which the channel of a river flowing through sand becomes dynamic.

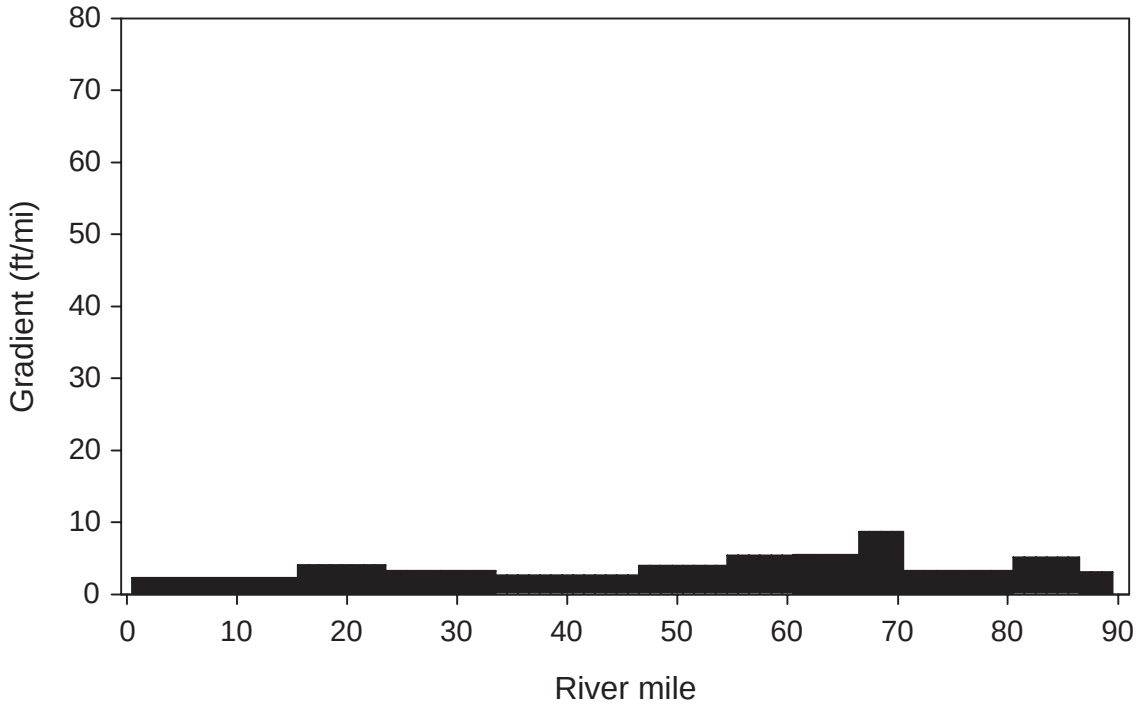

Figure 37.–Chippewa River channel gradient per river mile.

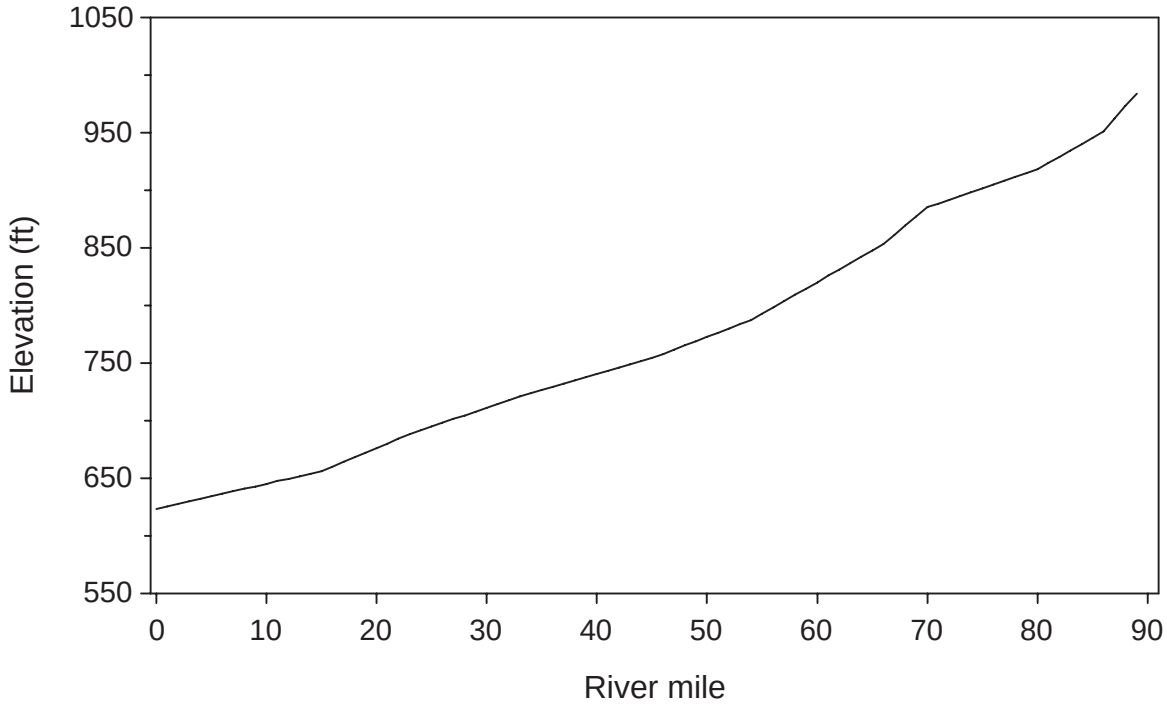

Figure 38.–Chippewa River channel elevation per river mile.

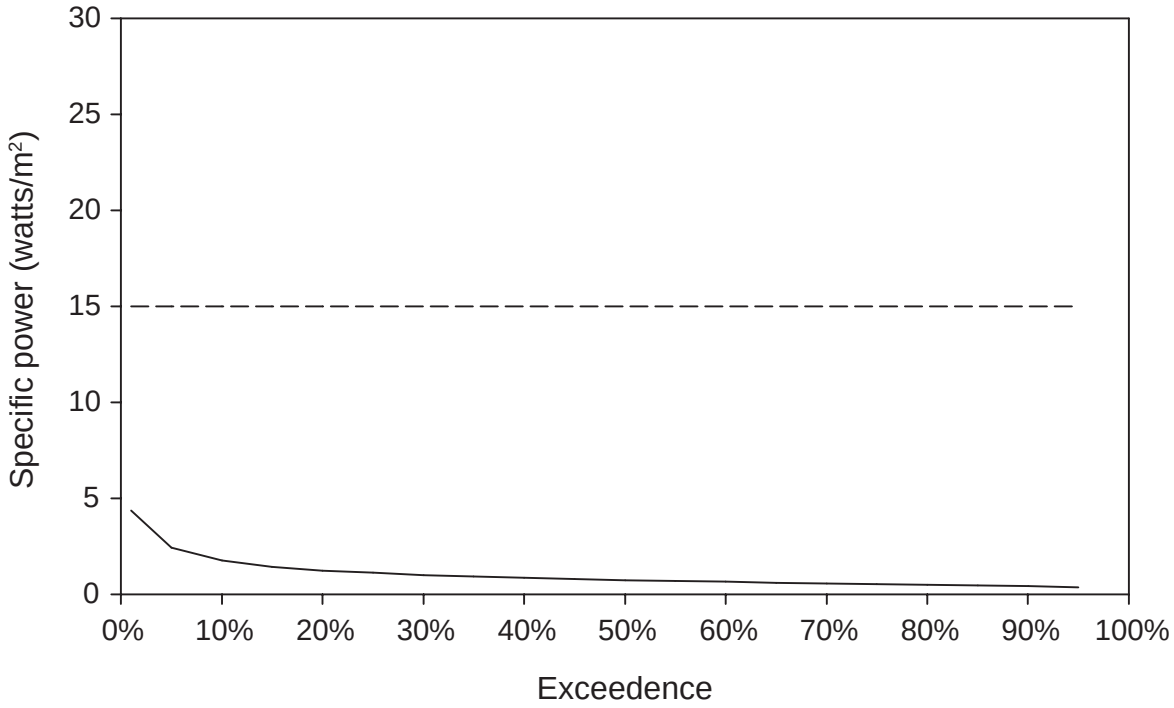

Figure 39.–Specific power for the Chippewa River near Mt. Pleasant. Dashed line indicates the specific power (15 watts/m^2) at which the channel of a river flowing through sand becomes dynamic.

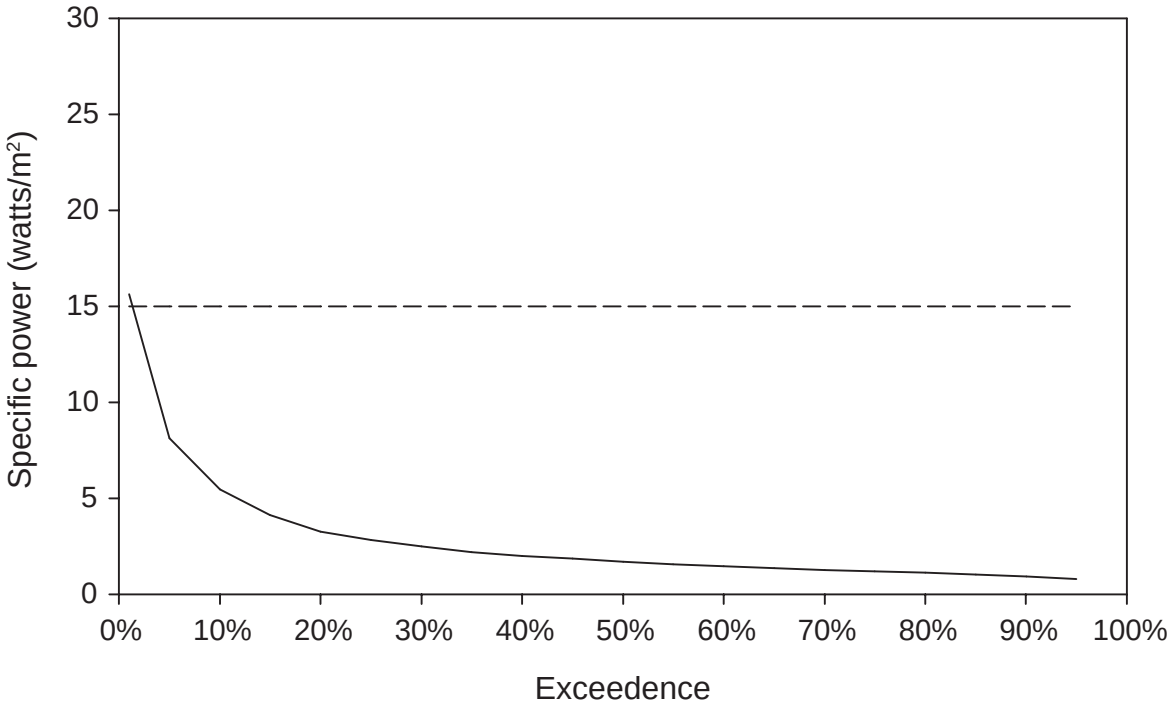

Figure 40.–Specific power for the Chippewa River near Midland. Dashed line indicates the specific power (15 watts/m^2) at which the channel of a river flowing through sand becomes dynamic.

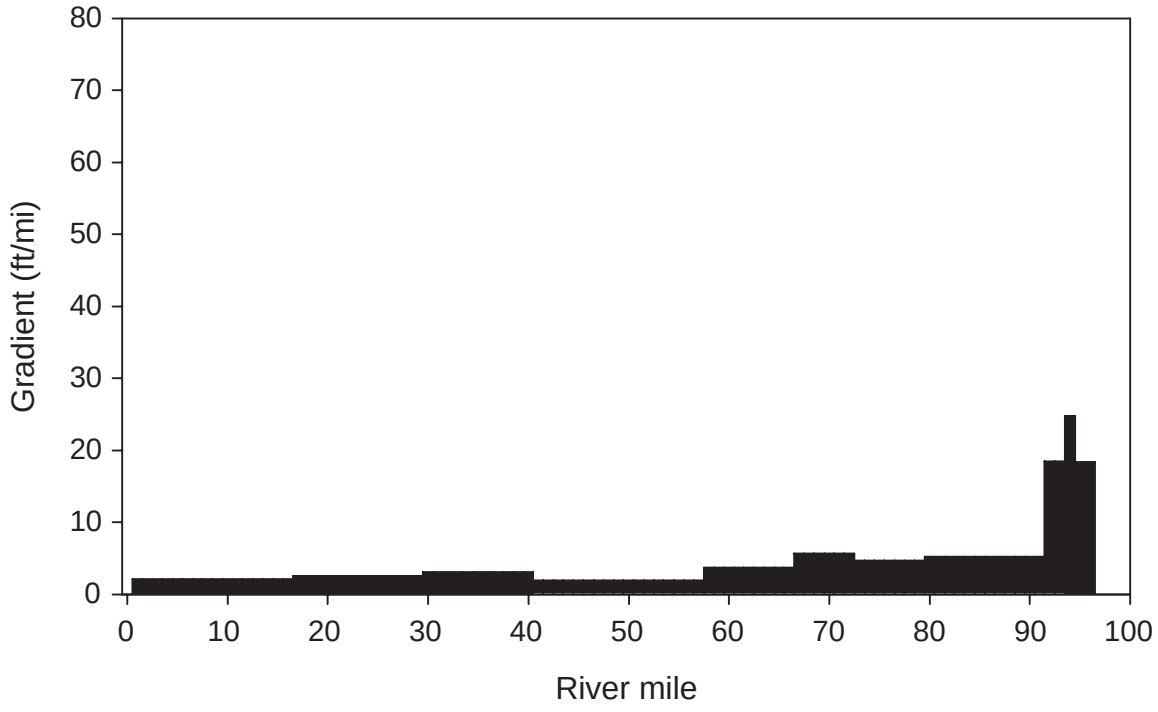

Figure 41.–Pine River channel gradient per river mile.

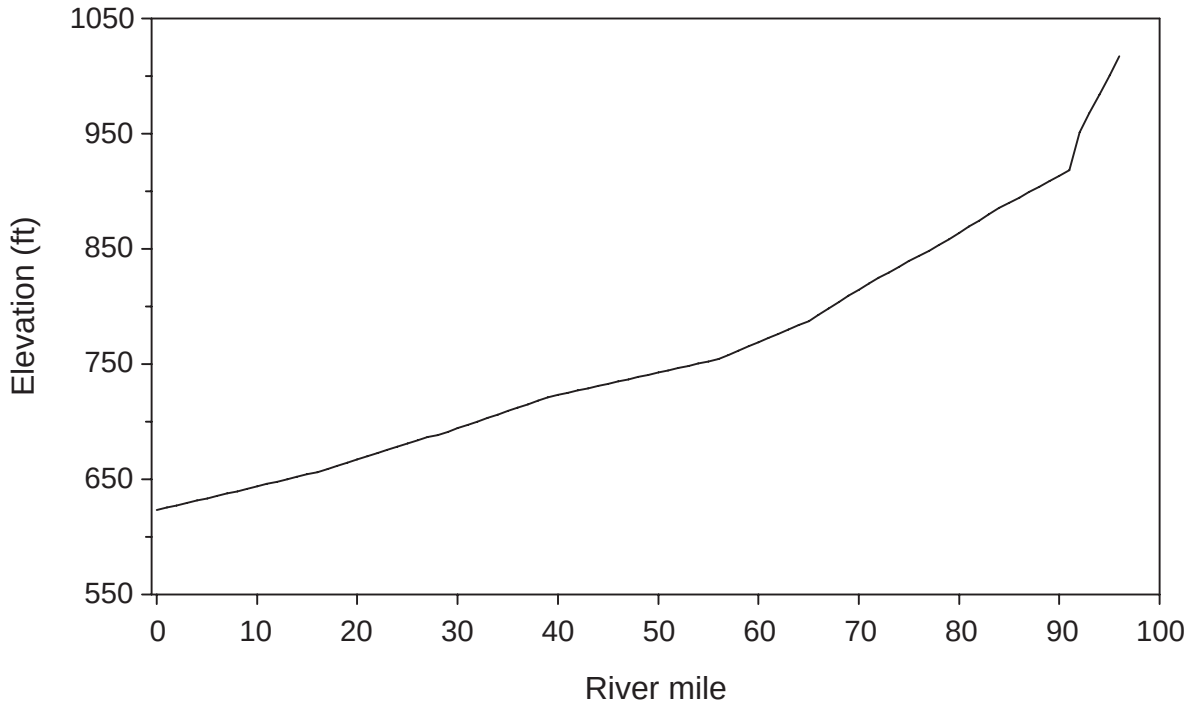

Figure 42.–Pine River channel elevation per river mile.

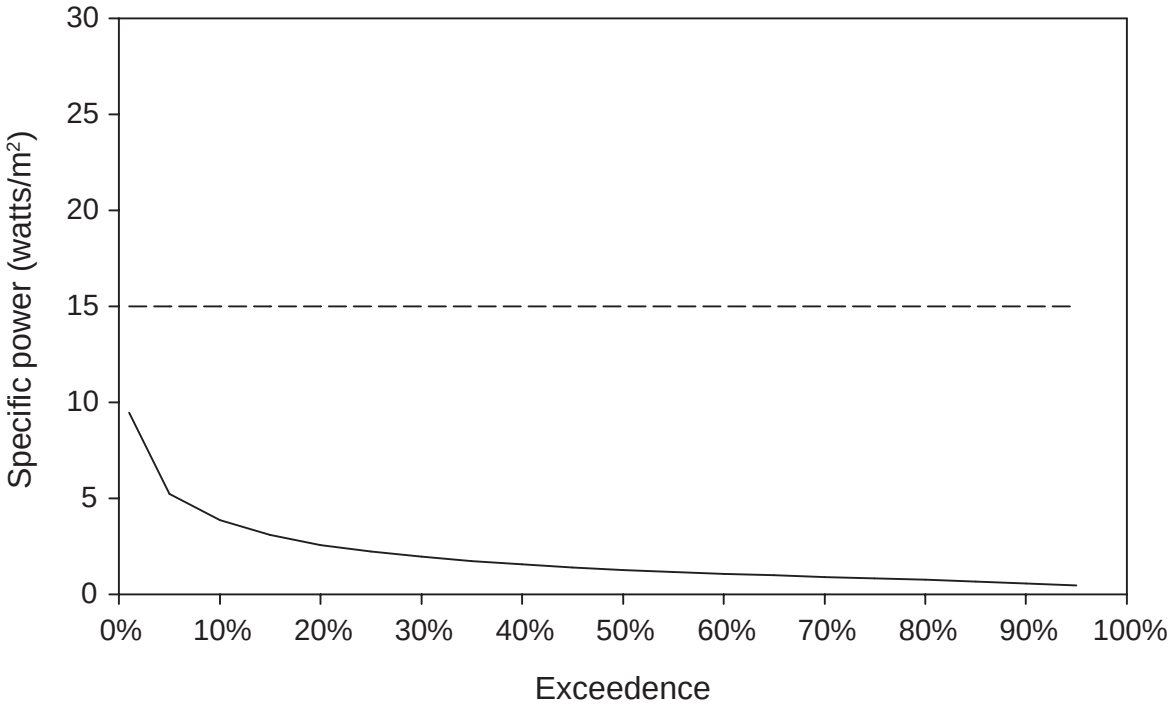

Figure 43.–Specific power for the Pine River at Alma. Dashed line indicates the specific power (15 watts/m^2) at which the channel of a river flowing through sand becomes dynamic.

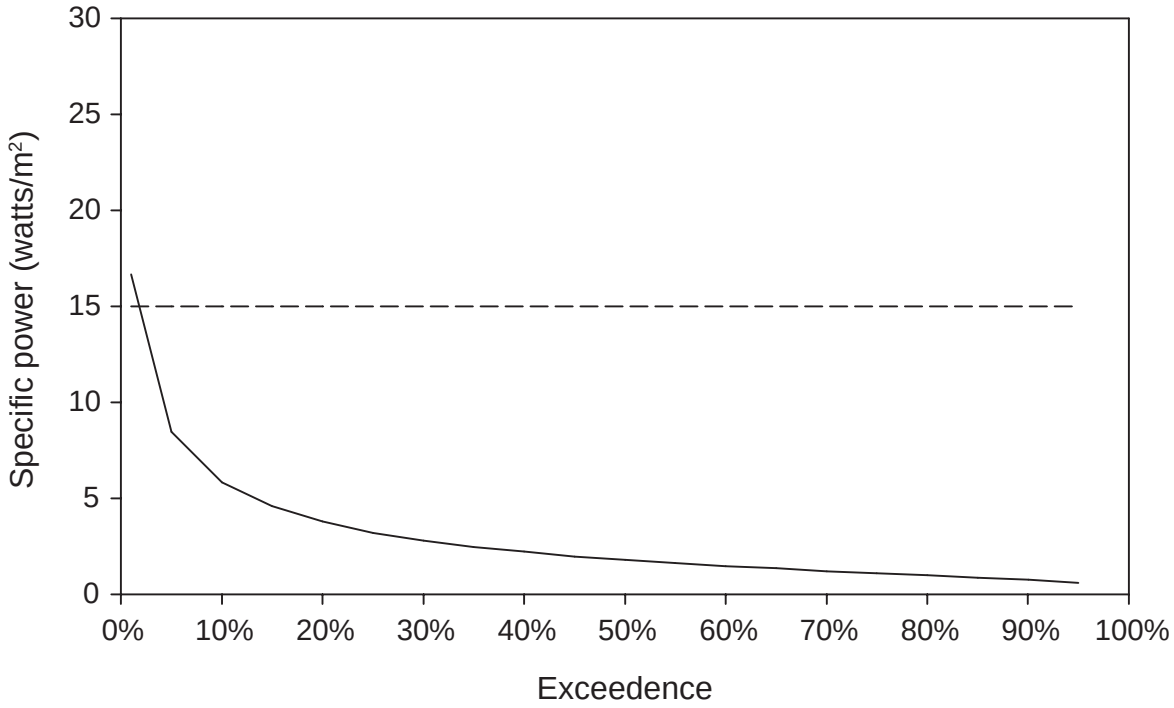

Figure 44.–Specific power for the Pine River near Midland. Dashed line indicates the specific power (15 watts/m^2) at which the channel of a river flowing through sand becomes dynamic.

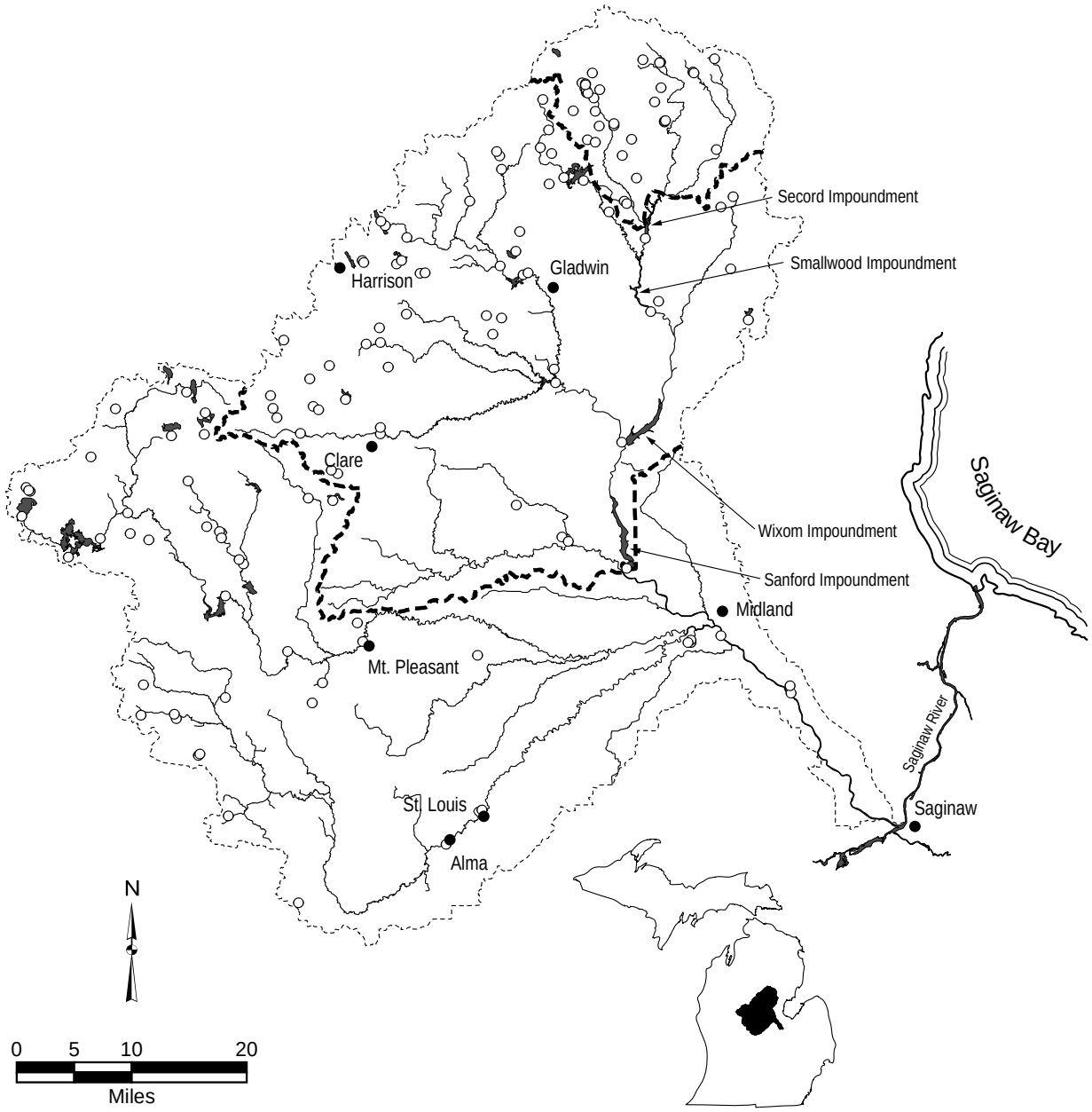

Figure 45.–Dams and water control structures in the Tittabawassee River watershed.

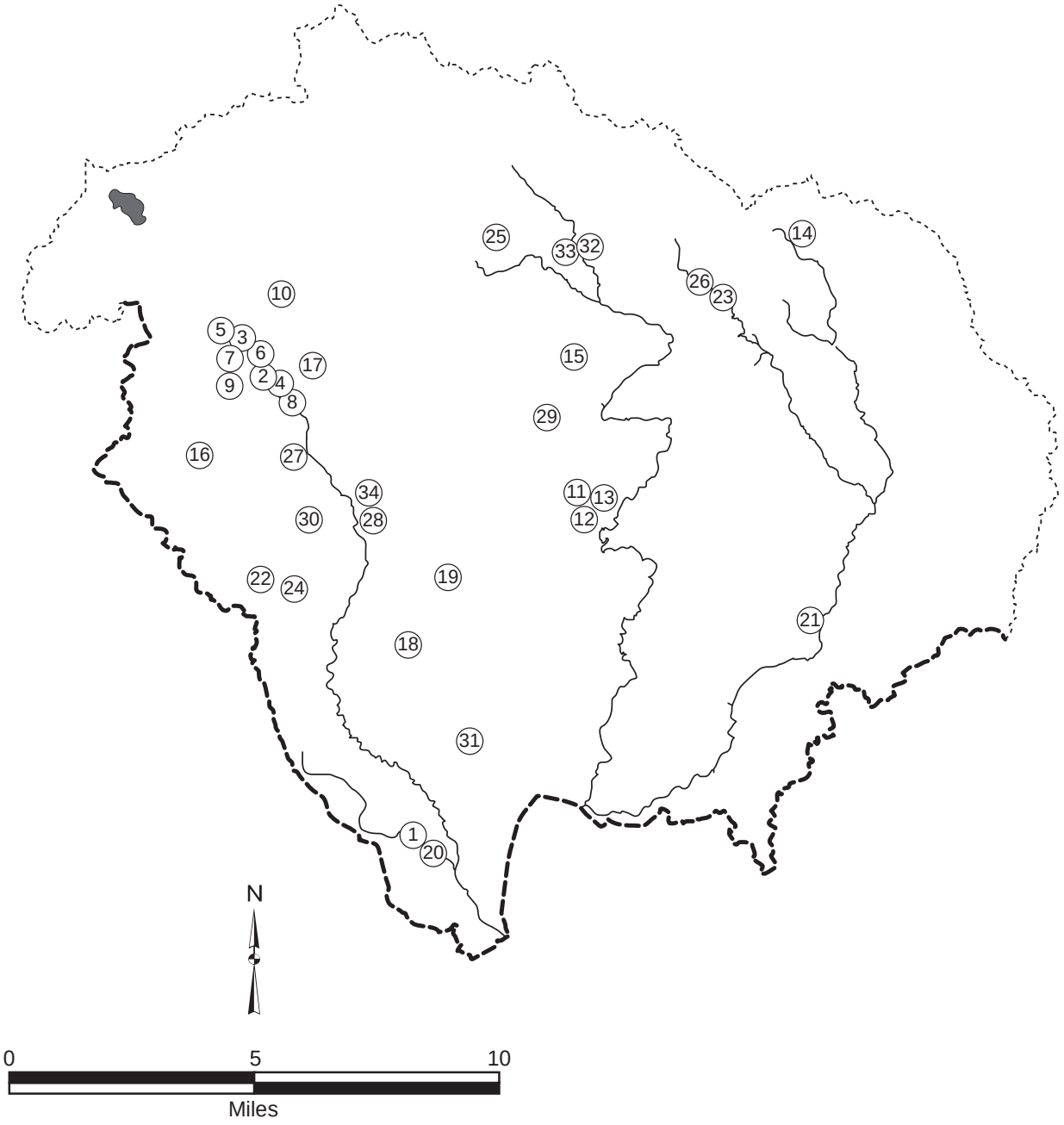

Figure 46.–Dams located within the headwaters segment of the Tittabawassee River watershed. See Table 18 for dam names and descriptions.

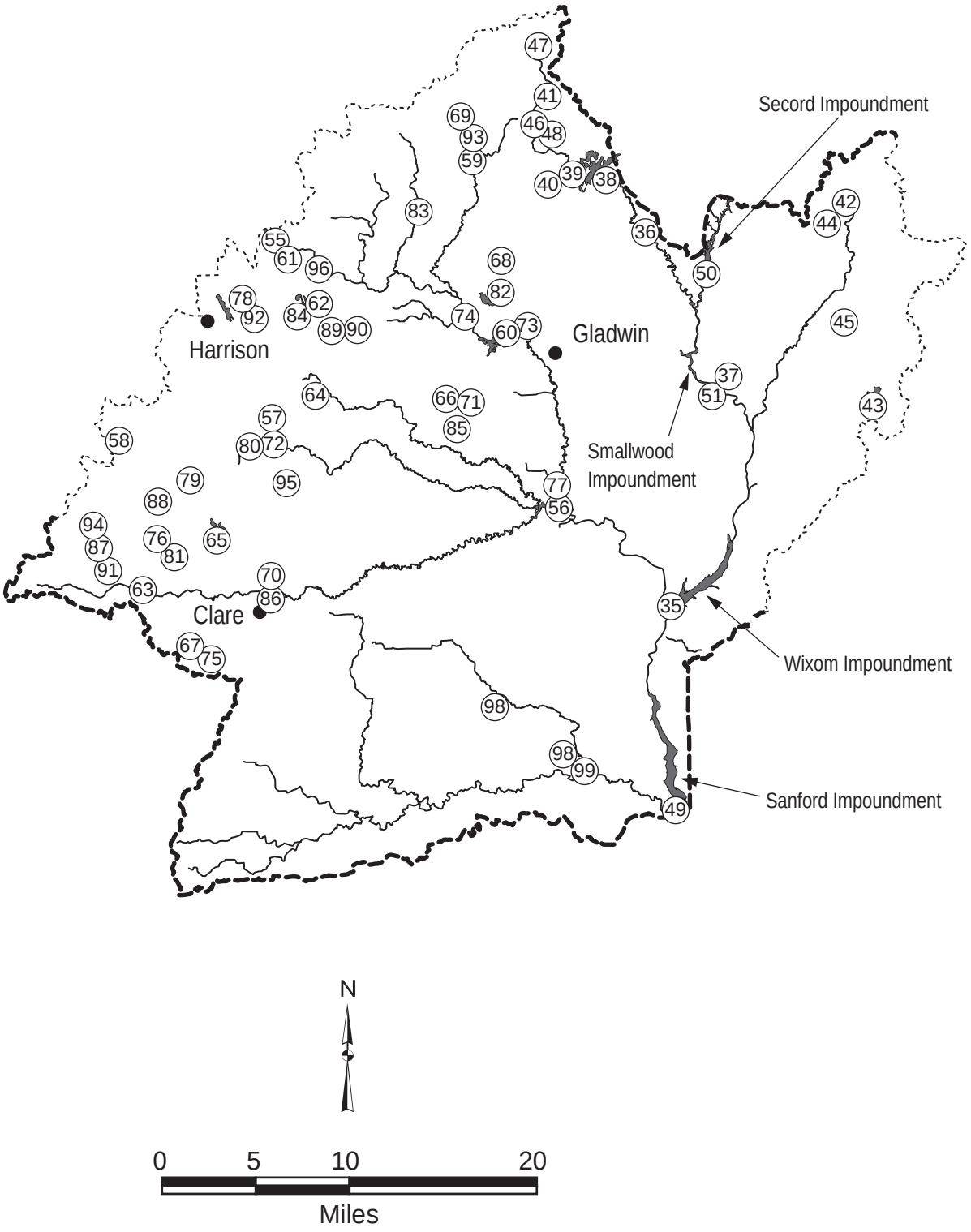

Figure 47.–Dams located within the middle segment of the Tittabawassee River watershed. See Table 18 for dam names and descriptions.

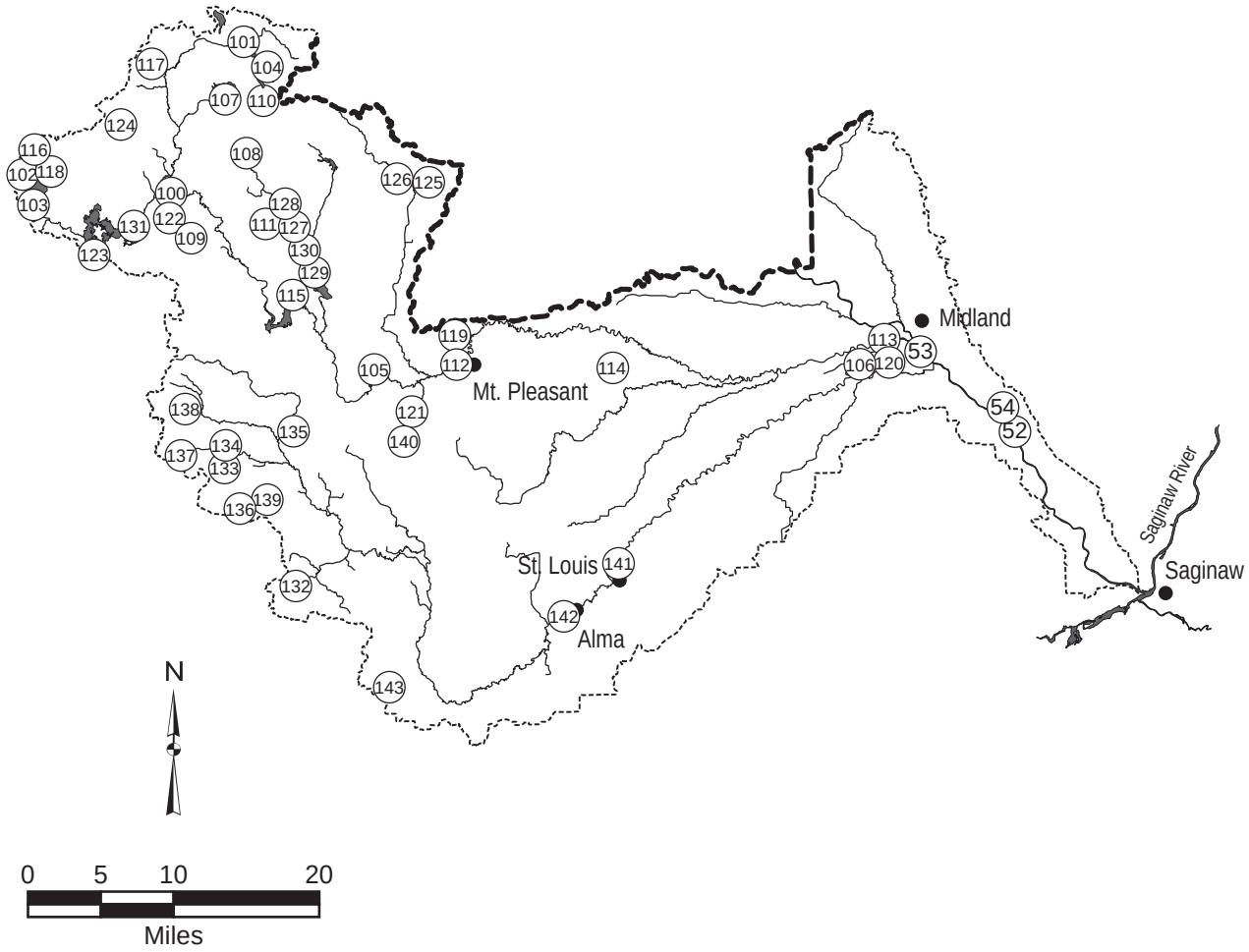

Figure 48.–Dams located within the mouth segment of the Tittabawassee River watershed. See Table 18 for dam names and descriptions.

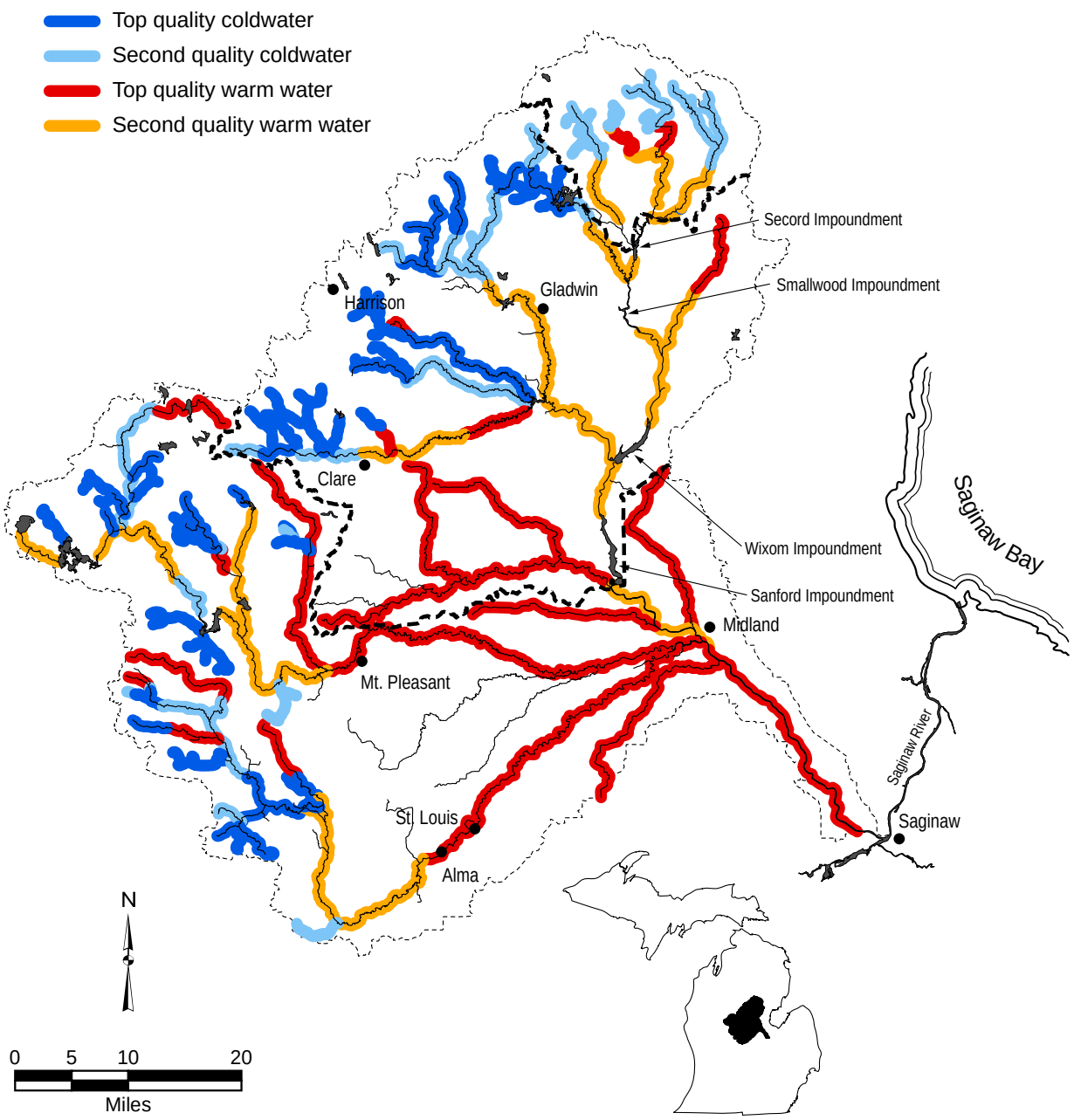

Figure 49.–Water quality within the Tittabawassee River watershed.

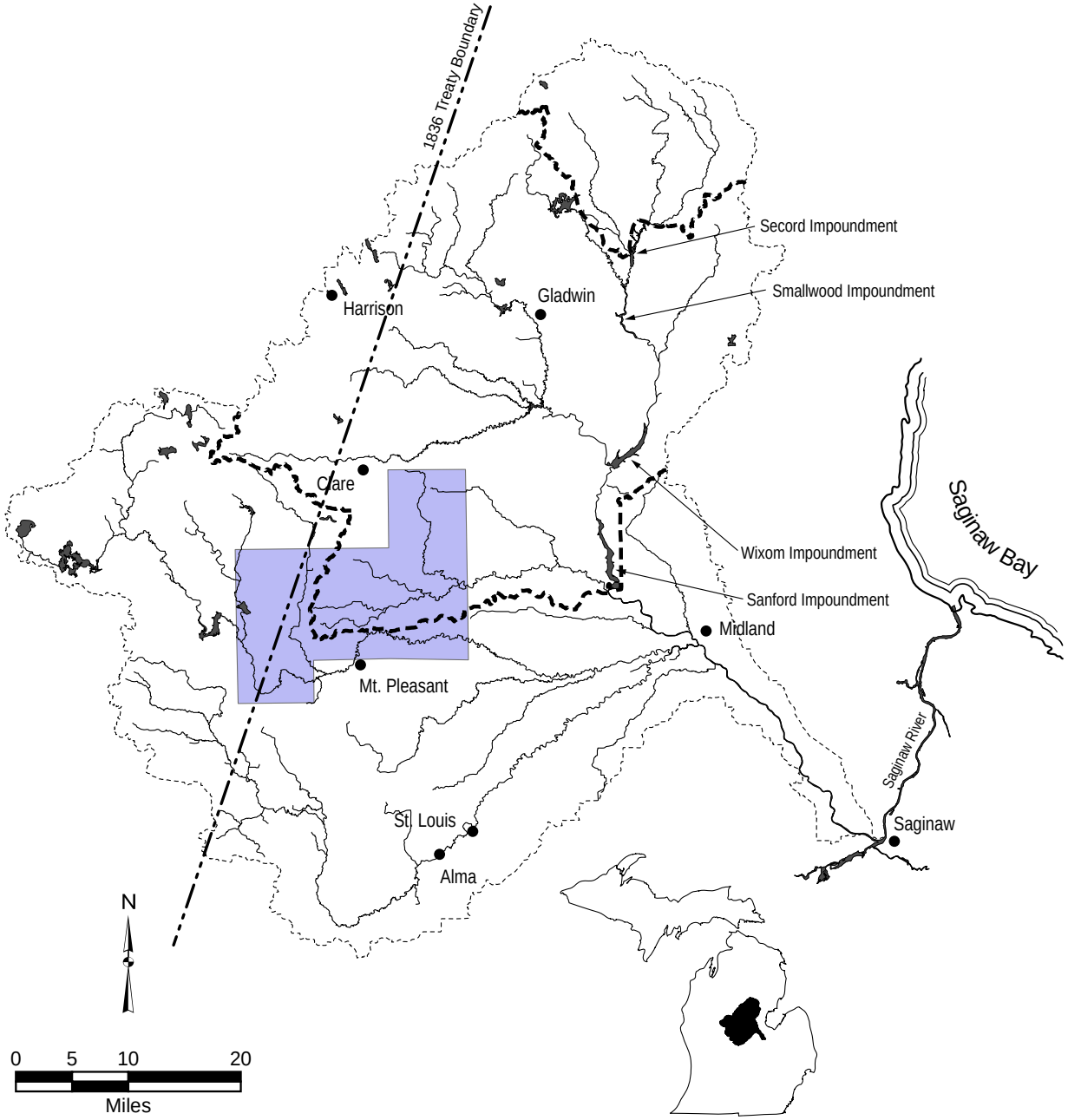

Figure 50.–Isabella Indian Reservation, Treaty of 1855, and location of the 1836 Treaty boundary within the Tittabawassee River watershed.

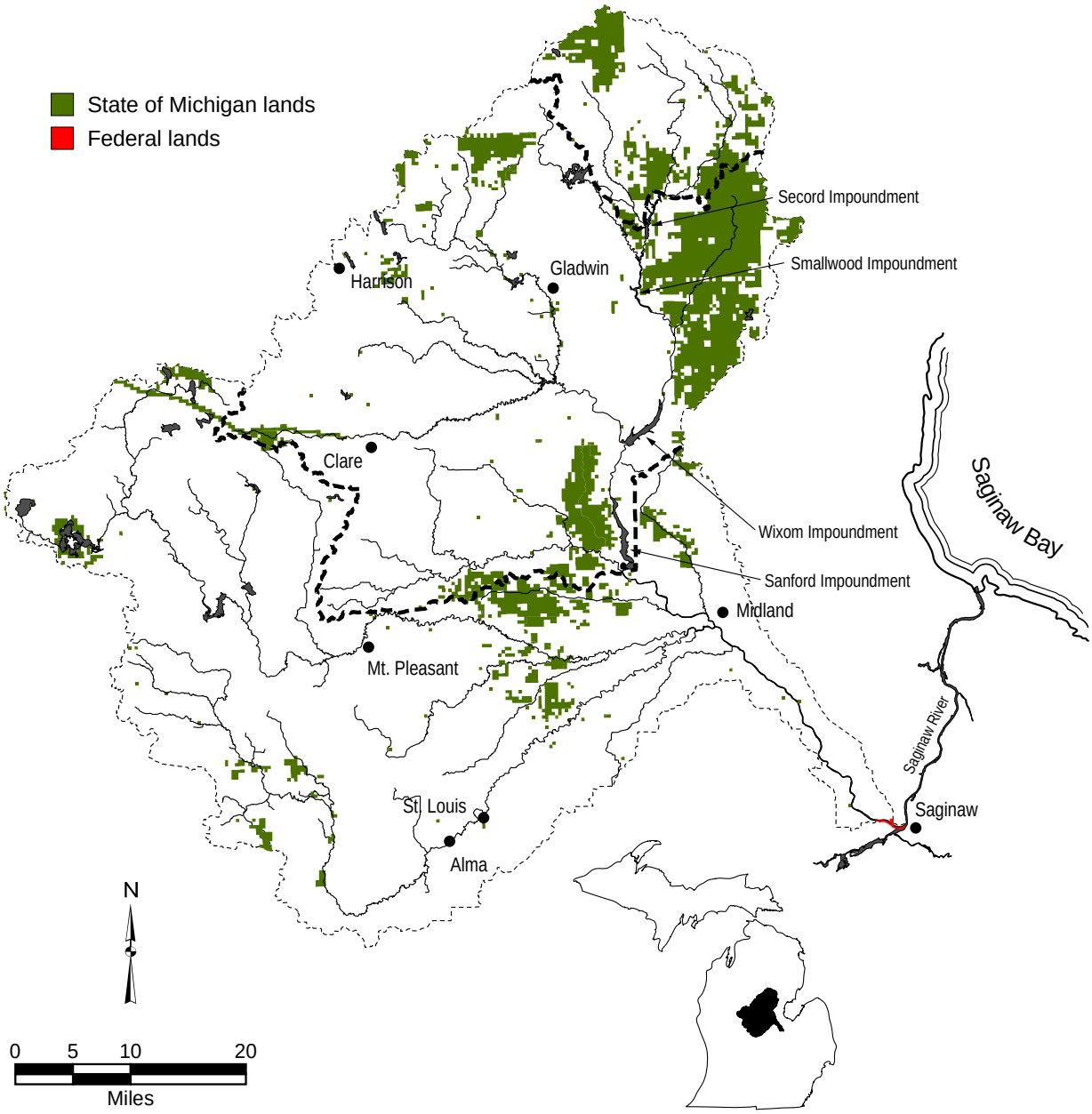

Figure 51.–State of Michigan and federal lands within the Tittabawassee River watershed.