The presence of sediment is one of the most obvious characteristics of small streams. Sediment has several forms and sources, but of greatest concern in stream and river sediment problems are the fine inorganic particles that either flow with the current (causing turbidity) or that are deposited on the streambed (causing loss of benthic productivity and fish habitat). Such sediment is widespread and pervasive, occurring to some extent in all streams.”—Thomas F. Waters (1995)

“Obvious effects of ... anthropogenic erosion and sediment deposition include loss of agricultural soils, decreased water-retention capacity of forest lands, increased flood frequency, and rapid filling of reservoirs. Less obvious, however (and until recently largely ignored), is sedimentation in small streams that affects biotic communities, reduces diversity of fish and other animal communities, and lowers the productivity of aquatic populations.”—Thomas F. Waters (1995)

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The Otter Tail River flows through numerous lakes and reservoirs. Partly as a result of sedimentation in these quiescent water bodies, the river has low suspended-sediment concentrations.

Land-use practices that do not abate rapid runoff of water can impair water quality by increasing suspended sediment in streams in two ways.

First, runoff erodes bare soils, which contributes sediment to streams. Second, higher streamflows associated with runoff events will more readily erode sediments from the channel and streambanks. The relative importance of these two sources of sediment is unknown for streams in the Red River Basin Study Unit.

Figure 13. The Pembina River at Walhalla, North Dakota, had the highest suspended-sediment concentrations in all of the sampled streams. At the highest concentration, the river was carrying about 30,000 tons of sediment per day. The Snake River near Alvarado, Minnesota, is typical of central subregion streams.

A high-flow event has deposited sediment on the flood plain (foreground) and on the lower part of the concrete structure separating these two culverts on Two Rivers near Northcote, Minnesota.