



Water and Sand

Muskegon River Hydrology

By Jerry Garman

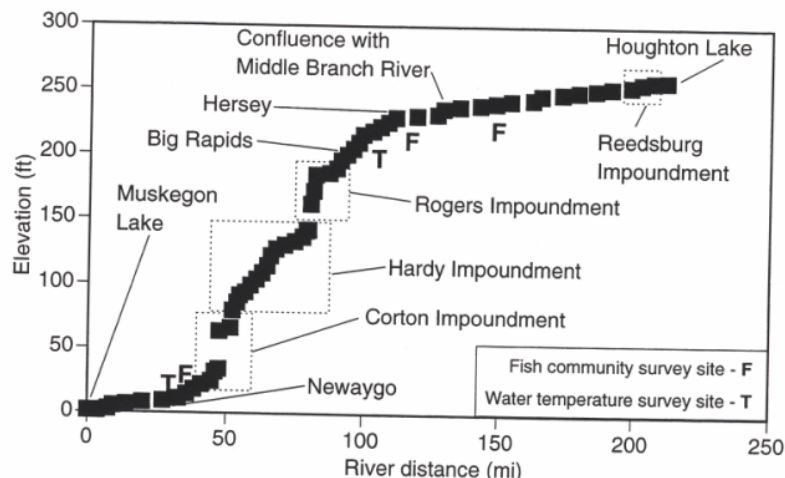
One of the ways the Muskegon River Watershed works is by transferring water from high points to low points. Water in the form of rain and snow falls throughout the Watershed and moves downward over and through the soil, as it seeks its eventual outlet in Lake Michigan. As it flows downhill the water moves soil and forms channels, and in certain places, generates electricity. The movement of water and the work that it does, make up the underlying physical foundation of the Watershed (its hydrology). It is on this foundation that the water and soil chemistry, the plants, animals and bacteria, and the people do what they do.

In our Watershed, the soil consists of sands, gravels, clays and other particles. Sand is especially prevalent. Huge glaciers placed the soils here. They scraped the Canadian bedrock and transported the scrapings (the "till") to what became our Watershed. This giant bulldozing action took place until about 10,000 years ago. Note that in geologic time, 10,000 years is just a few minutes, making our Watershed quite young indeed.

As the water flows over and through the glacial till, it moves it and digs out channels. In some places, where the Watershed is relatively flat and the soils are easily transported, the channels are in constant flux, eroding one bank and creating another. In other places, where the land drops more steeply, the water cuts deeper channels that change more slowly.

These processes are not likely to change. We are able to and constantly do make small changes in any specific location, but a large scale change of the fundamental hydrology would not occur short of an engineering project that would rival any in the world (e.g., building a new Chicago in Osceola and Mecosta Counties – in short not likely and certainly not welcome).

Therefore, we need to learn to live with what we have been given (blessed, to those of us that love the Muskegon River). We need to recognize that it is in our own interest to minimize our impacts on the hydrology of the Watershed. This will not be easy, and it will certainly threaten our beliefs and values. It will require us to think about new ways to build roads and buildings, and accept that the movement of water and sand is a natural function of what we love.



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