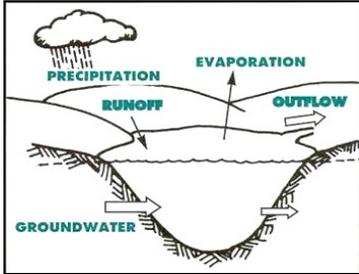
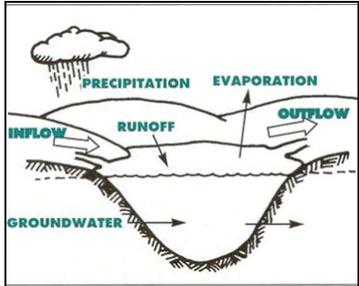


## Four Types of Lakes

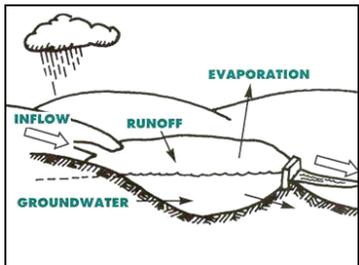
**1. SEEPAGE LAKE** - a natural lake fed by precipitation, limited runoff and groundwater. It does not have a stream outlet.



**2. GROUNDWATER DRAINAGE LAKE** - a natural lake fed by groundwater, precipitation and limited runoff. It has a stream outlet.



**3. DRAINAGE LAKE** - a lake fed by streams, groundwater, precipitation and runoff and drained by a stream.



**4. IMPOUNDMENT** - a manmade lake created by damming a stream. An impoundment is also drained by a stream. Maple Lake and Ackley Lake are impoundment lakes. These fill up with sediments fast.



## **Spring 2011—Update on Lake Saving Efforts**

Over the winter months, the Village Council of the Village of Paw Paw, the Maple Lake Association and the Maple Lake and Natural Resources Committee have been actively preparing for 2011 Maple Lake saving efforts. The activities include:

- Permit for aeration in two areas of Maple Lake.
- Permits for dredging of sediments in Maple Lake and the LaCantina Basin.
- Aquatic weed control via chemical application and harvesting. Harvesting is accomplished by cutting (tops of plants) and suction (pulling out by roots).

### Update on Permits:

The aeration permit was approved by the State of Michigan. The dredging permits are still working their way through the approval process (4-4-11). The aeration contractor, Lake-Savers, Inc. (Richland, Michigan) will begin laying out the sinkable air hoses and air diffusers in the two target areas of Maple Lake - the south basin and Turtle Bay. The goal is to have the system installed and operating by May 1, 2011. This is a three year contract with first year costs of \$34,000 (rounded). The Village and Maple Lake Association are funding this effort. Aeration works in areas where there is a high percentage of 'organics' (plant debris) in the sediment or on the bottom of a lake. The method adds dissolved oxygen so the 'good bugs' (micro-organisms) can survive and multiply while eating their fill of the organic materials. This reduces the depth of the layer of sediment and organics. Lakes where this has been used have seen remarkable results. But, every lake is different, especially lakes that are man-made (impoundments) like Maple Lake. If aeration works well in the target areas, aeration may be added elsewhere in the lake in future years.



## **Aren't there State or Federal Grants that could pay to remove the sediments or eliminate weeds?**

State and Federal government agencies considers sediment removal and weed control as a local 'maintenance' issue. So, no, grants monies are rarely available for these 'maintenance' issues. Funds are available to prevent sediment and nutrient loading as well as shoreline stabilization. The Village is pursuing applicable grants to assist with funding.

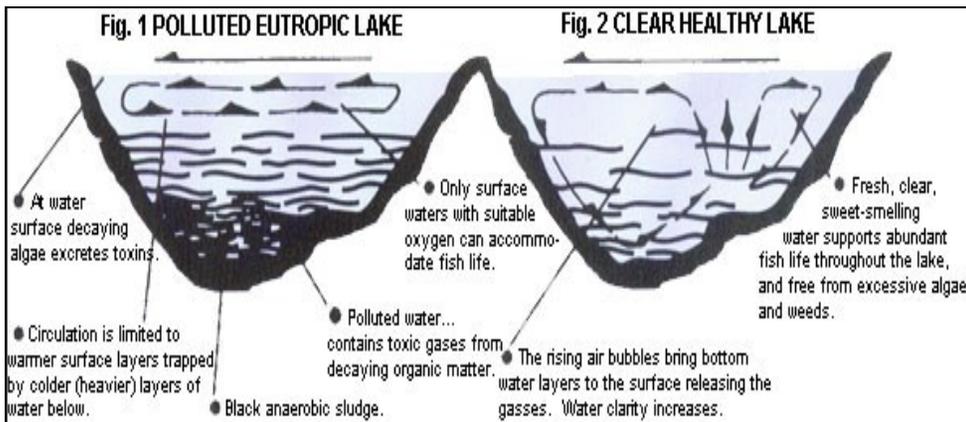
By whatever name, the system works. Just as 'good bugs' help break down garden compost, these aquatic 'good bugs' will break down the organic material in the sediment. Aeration adds air at the sediment level so the good bugs have enough oxygen while they feast.

Village manager Larry Nielsen said, "where aeration will be used, the organics make up as much as 56% of the sediment. This means there is a great amount of food for the good bugs to eat. We just have to make sure they have enough air (dissolved oxygen) while they do their thing."

Findings from other places aeration has been used conclude: 1) Where just good bugs were added they soon died out because there was not enough air to help keep them alive; 2) In lakes were just oxygen was added there was some evidence of a reduction in the depth of sediment; and 3) The best results were found when aeration was installed and good bugs were added.

**Controlling Weeds**

The Maple Lake Association will be doing state approved chemical weed control on the lake again this year in an attempt to control Eurasian milfoil and other weeds in the lake. This is a highly regulated and typical method used on many inland lakes to control aquatic plants. In some areas where chemicals will not or cannot be used, weed harvesting will be implemented. Harvesting of weeds will be done by two methods. First, by cutting weeds in deeper water areas using the Village's weed cutter. The Village weed cutter has been overhauled for operation this summer. The cutter works like a farm combine cutting weeds below the surface and hauling them out of the water. Second, the Village will use a suction harvester. This will also be operational this summer. The suction harvester works by sucking the weeds out of the sediment by their roots. This method will be employed in shallower areas of the lake and operated by workers in the water.



**It is the right thing to do!**

The environment is worth caring about. For too long the sediment build up in Maple Lake has been left unaddressed. We now know more and more the connection between loss of wetlands and sediment and nutrient loading in the Paw Paw River. We know sediments are the biggest polluter of our waters. We know we have a responsibility to protect and restore our environment.

Because Maple Lake and Briggs Ponds are impoundments, we have to work even harder to maintain the quality of the lake. We need to get better at doing this this because the lake is important to everyone. We need to be environmental stewards.

If protecting and restoring the environment is not enough reason, think about the aesthetic and economic reasons.

**Protecting Property Values**

Most recognize Maple Lake has a long history and affects the community greatly. The lake is important to Paw Paw for its aesthetic value and because of its importance to the survivability of businesses in the community.

Water adds value to property. Property values are higher around the lake. Property values around Maple Lake are significant and worth protecting. Based on 2010 equalization reports of taxable values, the 135 properties around the lake properties pay around \$470,000 in total taxes to support local schools, the fire department, police agencies, ambulance services, library services, senior services and road improvements.

Studies have found a direct correlation between property values and the quality of water. Thus, should Maple Lake's water quality continue to decline, it is only a matter of time before tax receipts also decline. This may force either cuts in services or increases of taxes on all property owners. The need to be proactive about these lake saving efforts are, therefore, vital to the overall community.

When we think of Paw Paw, we think of Maple Lake. It is a part of the Village's identity. It is part of our history and our future. When we think of Maple Lake, it is often in the past tense. But, saving the Lake requires one to think of the future!

