



Figure 4.70 Pond edges.

where Q = volume, ft^3/s

H = head, ft (The height is taken from a position $4 \times H$ from the face of the weir.)

P = height of the water over the weir, ft

L = the length of the weir, ft

G = 32.17, universal gravity constant

Note that cubic feet per second can be converted to gallons per minute by multiplying by 448.831.

Pumps

Pond pumps come in two general types: small submersible pumps and larger centrifugal pumps located outside the pond. The centrifugal pumps are capable of moving more water, but they generate enough noise that they must be located away from the pond. They must also be protected from the weather. This requires additional plumbing. It may be necessary to use such a system to operate a large water feature. Submersible pumps are more common for smaller ponds. These pumps are located within the pond itself, often in conjunction with a filtration system. Care should be taken to locate the pump out of sight; even though it is located underwater, submersible pumps are often still visible, which can detract from the overall pond effect.

In sizing pumps for ponds or pools, it is important to remember how water is moved by pumps. The pressure of the atmosphere at sea level is approximately