

whereas runoff and stream water often bring in excessive amounts of nutrient phosphorous and other material. Excessive phosphorous creates the overabundances of plants and other organic matter that cause oxygen problems for fish. Obviously, runoffs from barnyards, pastures, and fertilized or eroding cropland are nutrient sources to be avoided. Fertilized lawns and gardens are other sources. Even stream water that appears clear and "pure" often carries far more nutrient into a pond—where plants take it up—than it flushes out.

Precautions may also be needed with seepage and spring water. Such water is sometimes too low in dissolved oxygen for fish as it

emerges from the ground. It may also be too high in carbon dioxide. Various methods of aeration can alleviate these problems—perhaps at considerable added cost. Excessive amounts of iron and, as it occurs in some places in the Upper Peninsula, copper dissolved in the water can also be unfavorable for fish. Have the water tested before investing in a pond fed by wells, springs or seepage—unless presence of fish in the same water supply shows its suitability.

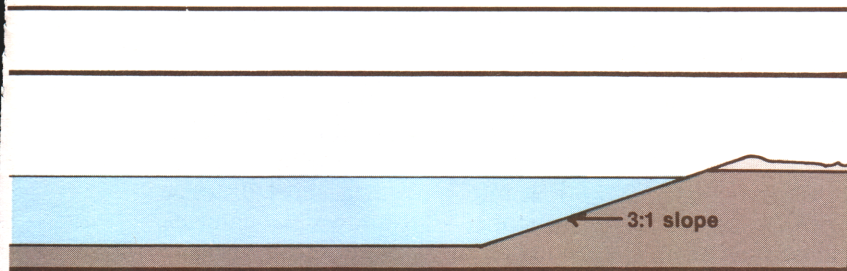
Designing for Control of Aquatic Plants

While a moderate amount of rooted aquatic plants may benefit

fish in a pond, their overabundance impedes fishing and certain managements. Plant overabundance sooner or later creates unfavorable conditions for fish. Much can be done in design and construction to make a pond less subject to this problem.

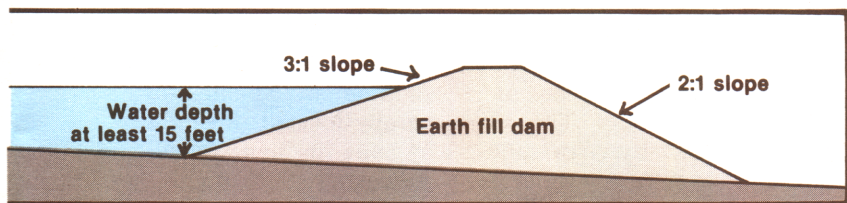
Rooted aquatic plants need light and nutrients, and they grow best on rather level pond beds. Therefore, they can be kept in check by structuring the pond so that (1) inflow of nutrients is minimized, (2) much of the bottom is too deep and dark for plants, and (3) the shallow, well-lit side slopes are steeper than plants "like."

One way to minimize nutrient inflow is to locate the pond where little land slopes toward it so little

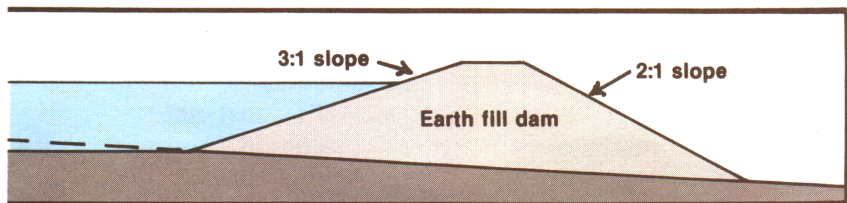


Three types of pond construction.

Excavated or dug pond



Impounded pond



Combination impoundment and excavation