If you're angling for a better fishing hole, check out these tips on maintaining your farm pond. BY ALAN CLEMONS

Applying Amendments

Autumn and winter are the best times for application of agricultural lime, which neutralizes alkalinity. Fertilizers applied in spring and summer then have a better shot at helping microscopic phytoplankton, the basis for the food chain.

Smith says a swimming pool test kit can show alkalinity and water hardness. Test in the afternoon to avoid inaccurate readings from morning plankton blooms, and test regularly to establish baseline numbers. Anything below 6.0 indicates acidic water and the need for agricultural lime; 6.0 to 9.5 pH is optimum for fish production and fertilizer optimization.

Creating Structure

Structure along the bottom of a lake—such as channels, humps, ridges or dropoffs—adds variable depth. If building from scratch, or if your pond is drained or low in autumn, create structure by adding loads of gravel, sand or dirt to form ridges and humps.

Be sure to include shallow areas 3 to 6 feet deep for spawning. Also, shallow areas generally produce good results for bass, bream and catfish, while deeper water provides refuge in hotter and colder months.

Adding Cover

Cover can be sunken Christmas trees or brush piles, concrete or rock rubble, tree stumps or even grocery carts. Avoid the thought of "if that's good, more must be better," or you could end up with too much cover.

Sink hardwood limbs or whole trees secured with concrete blocks. Unlike dense cedars or pines, hardwoods have good interstitial space that allows fish to move around more freely. All wood cover, however, promotes the growth of algae, which in the right amount is a critical link in any pond's food chain.

Vertical cover is beneficial, too. One way to create it is by mixing a quick-setting concrete like Quikrete® into a 5-gallon bucket. Fill the bucket halfway and add a variety of lengths of limber PVC pipe into it to set. Once sunk, the pipe will provide cover higher in the water column but not snag lures. Also, you can create vertical cover when the water is low by driving different lengths of wooden stakes or plastic pipe into the pond bottom about 6 to 10 inches apart and 6 to 8 feet deep.

Using Aquatic Plants

Pond owners may have one or more of four types of aquatic vegetation: emergent, submergent, floating and algae. Aquatic plants can provide habitat for fish, fry and insects, as well as food.

However, some plants, such as water primrose, lily pads or water willow, can overpopulate and require manual removal or use of herbicides. Check state, provincial and federal laws about use of chemicals. Contracting with a certified specialist may be necessary and more effective.

As a rule of thumb, aquatic plants affecting more than a third of the pond's acreage are problematic, due to the chance of oxygen depletion once the vegetation dies and decays. With no oxygen, fish could die.

Accordingly, some pond specialists suggest avoiding any vegetation, because it's easy for plants to get out of control. They use part of your fertilization, too, which means phytoplankton and fish aren't getting the full benefit.

If you insist on growing aquatic vegetation, sterile grass carp can eat it and help keep it controlled. These triploid carp, referring to their genetic makeup that prohibits reproduction, may live 10 to 15 years, and are native to Asia but also are found in northern Europe, the U.S. and some areas of Canada. Carp are considered invasive in Canada, however, and are prohibited in some provinces.

Overall, private lake management in Canada and other northern locales isn't as intensive during the short summer window, says Jerry Smitka, a biologist formerly with the Ontario Ministry of Natural Resources. Accordingly, vegetation management in private lakes is not as much of a concern.

"Controlling aquatic vegetation is not largely undertaken because in most situations it is not needed," Smitka says of Canadian waters. "In cases where excessive vegetation is a problem, we would consider trying to make changes with a reduction in the flow of nutrients into the water body or by making it deeper, if possible." FL