Designing, Constructing and Stocking a Fish Pond

This page provides some guidance and offers suggestions for planning, building and stocking a fish pond. Additional brochures and publications with detailed information on this subject are available through the Regional and Headquarters offices of the Wyoming Game and Fish Department and your local Natural Resource Conservation Service office.

Pond Design and Construction

- Soils should be tested to determine if they are capable of holding water. Soils with clay, clay and loam, or sandy loam are best. Soils with limestone, shale or sand and gravel should be avoided because they will allow seepage.

- The dam should be constructed with a well-built spillway to allow control of flood waters. It is desirable to install an overflow structure with a bottom drain in the pond. The ability to drain a pond provides options sometimes necessary to properly manage water and fish in a small pond.

- As a general rule, the deeper the better. The pond should be no less than one acre with at least 24% of the surface area being more than 15 feet deep. This will help keep water levels stable and minimize winter-kill and evaporation during the summer. Ponds with a constant flow-through generally provide better conditions for fish survival.

- There should be grassy or wooded barrier strips between the pond and cultivated areas to reduce pond siltation and possible pollution from runoff. Steeper slopes demand greater buffer strips.

- Water quality is important to fish production and survival and includes many factors. Consider having your water tested to make sure it is compatible with your goals and objectives. Some factors to consider include: pH level, alkalinity, amount of dissolved gases such as oxygen, heavy metal concentration, acidity, total dissolved solids, nutrient levels and turbidity.

- If the primary source of water is from a well, water should be aerated to assure adequate dissolved oxygen content and dispersal of other gases. This can be accomplished by discharging the water over a short run of rocky substrate that creates turbulence before entering the pond. However be mindful of potential soil erosion in the area from the well to the pond.

- Fences should be erected to exclude livestock. Livestock tend to congregate around ponds, trampling the edges, causing the banks to erode and muddy the water, degrading water quality and limiting the diversity and health of vegetation around the impoundment.

- New water impoundments should not be stocked with fish immediately after filling. It is best to wait a few months to a year before stocking to allow the water to clear, aquatic

life such as plankton to become established and the pond and soils to stabilize and vegetate. Ponds constructed in the spring can usually be stocked by the following fall, but waiting until the next spring will avoid potential stress to fish over-wintering the first year.

- Transplanting live fish from other water to your pond without a permit is illegal. This practice can also severely damage your pond by introducing diseases and unwanted fish species that may prevent the creation of a desirable sport fishery.

Habitat Considerations

- Ponds and reservoirs should be constructed with an irregular shoreline. This helps reduce wind and water erosion along the banks, which will prolong the life of the impoundment. Irregular shorelines and varying depths also provide a diversity of habitat conditions for various life stages of fish and aquatic organisms.

- Consider adding boulders or clusters of natural woody debris, such as tree trunks anchored into the deepest portion of your pond before filling. These features can provide cover for various life stages of fish and increase the habitat for a natural food base, such as insects. Keep any underwater structure well below the surface water elevation to avoid accidents with any surface activities, such as boating or fishing.

- Extensive shallow areas (less then three feet) should be avoided when constructing your pond because they encourage growth of aquatic vegetation, cause oxygen depletion during winter, and may emit unpleasant odors.

- Some aquatic vegetation in your pond is good for fish cover and forage production. Too much can contribute to fish mortality and make your pond unsightly. Minimize excessive vegetation growth by limiting the contribution of nutrients that enter your pond from adjacent areas of livestock use and fertilized fields. Supplemental feeding of fish and waterfowl should be avoided due to the added nutrients that can be introduced into the water.

Stocking Fish

- Trout are the best fish to stock in Wyoming. Trout do well when water temperature does not exceed 70 degrees Fahrenheit. Rainbow trout are generally the best trout to stock due to their availability from approved private hatcheries, their adaptability to pond conditions their relative ease for anglers to catch. Where water temperatures exceed 70 degrees Fahrenheit, bass may be an option. Bass and other sunfish are prone to excessive natural reproduction so they can overpopulate and become a nuisance.

- The number of trout to stock in a pond depends on the size of fish and the size of the pond. Fingerling (2-3 inches) trout are stocked at a rate up to 200 per surface acre, while larger trout (7-9 inches) are stocked at 100 per surface acre or less. We do not

recommend stocking forage minnows with trout. They introduce unnecessary competition for food such as insects and plankton.

- Trout should be stocked before June 15 or after September 15. Trout do not reproduce in most small ponds so periodic restocking will be necessary to replenish the fish removed by anglers. If angler harvest is moderate to high, annual stocking may be required. If fish harvest is low, stocking every two to three years may be sufficient. Stocking fish in the spring or early summer allows them more time to adapt to stressful winter conditions.

- The rate for fingerling largemouth bass is generally 200-300 per surface acre and larger bass (6-8 inches) can be stocked at 100-150 per surface acre. Stocking too many fish in a pond will slow fish growth and produce less than desirable results to anglers. It is a good idea to stock a forage fish such as fathead minnows when managing your pond for bass. Fathead minnows can be stocked at a rate of 1,000 per surface acre.

Permits and Licenses

- All anglers fishing in private or public waters of Wyoming must abide by WGFD fishing regulations. Exceptions are waters where fishing preserve or landowner fishing regulations apply, as explained below.

- A landowner can apply to have his or her pond designated as a landowner fishing pond if it meets certain criteria. If the pond has this designation, the landowner and the landowner's spouse, children and grandchildren can fish in the pond without a license. Fish may be taken by legal means only and there is no creel limit for these individuals.

- A fishing preserve license may be obtained on artificial or man-made bodies of water not exceeding 100 acres in size, lying wholly within the boundaries of privately owned lands permitting the owner to provide fishing facilities to anglers. The licensee may charge a fee for fishing; or if a club, impose dues. A fishing license is not required, but a receipt must accompany all fish leaving the premises.

- A free permit is required from the WGFD to stock fish. The purpose of this permit is to ensure only trout from certified disease-free sources and fish compatible with other species in the drainage are being stocked in Wyoming. Release of non-permitted fish is a violation of regulations and subject to a substantial fine. Your local fisheries manager can assist you with selecting the species and approved sources of fish for purchase.

- Applications for private fish stocking, Landowner Fishing Pond, or Fishing Preserve designation can be obtained by calling the WGFD headquarters in Cheyenne (1-800-842-1934 or 1-307-777-4600), your local regional office, or via the website at http://gf.state.wy.us/.

- The Wyoming Game and Fish Department will stock fish in private ponds where public fishing is permitted and stocking is warranted. The Department also has a program to leave public access to qualifying waters under our Private Lands/Public Wildlife

initiative. Landowners can receive up to $1,200 per year for public access depending on the size of the impoundment or stream. Generally, we look for sites near public roads to minimize impact on your operations. For more information, please contact your local game or fish biologist or game warden.

- Additional information on permits required for constructing a pond can be found at http://www.nwo.usace.army.mil/html/od-rwy/Wyoming.htm. For information regarding water rights, and what you are entitled to do with water found on your property, please contact http://seo.state.wy.us/wrdb/index.asp