Cooperative Extension Program
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Aquaculture/Fisheries

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Arkansas Farm Pond Management Calendar

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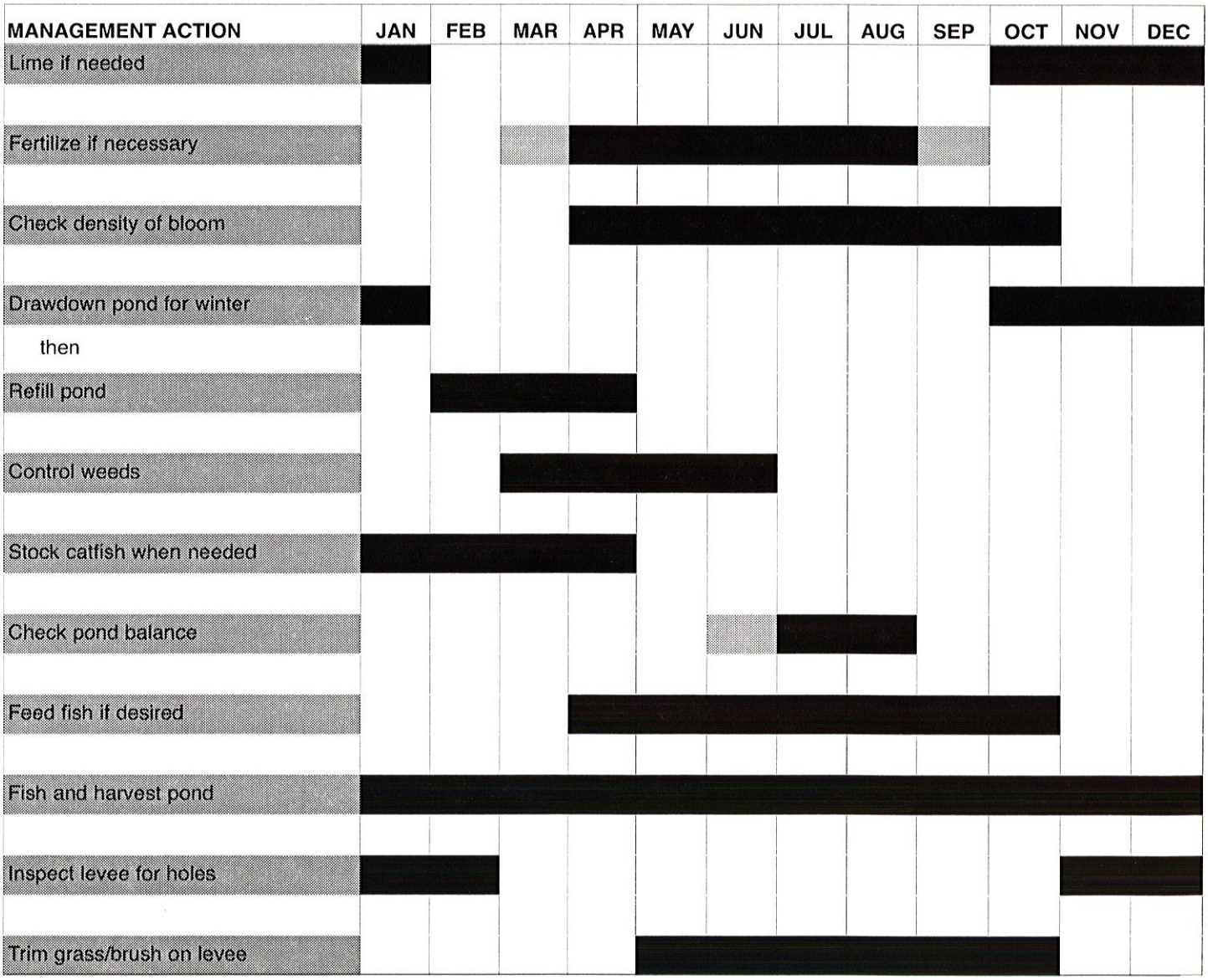
Small Impoundments

Although managing a small pond or lake is a year-round effort, timing is often critical to the success of individual management practices. Use the pond management calendar below to help plan your management strategies. Keep in mind that some management strategies are not required every year, and some may not be appropriate for your pond. Descriptions of each management action below can be found inside this fact sheet



Lime if Needed

Liming provides major benefits if you are growing sportfish in a pond in an area with acid soils. Limestone reduces the acidity of the bottom soils and makes nutrients more available. This is important if you plan to fertilize to increase fish production. If the soils on pastures or fields near your pond require lime, the pond would likely benefit from liming as well.

The best time to lime is in the fall and winter. To find out if your pond would benefit from agricultural limestone, contact your county Extension office to have the total alkalinity of your pond water tested. If it is below 20 mg/L, liming would be beneficial to the fish population. The lime requirement is determined by soil testing. In general, ponds that need lime will require at least one ton per acre. An application of agricultural limestone typically lasts for three to four years, depending upon the amount of water flow through the pond.

All lime is not the same. Make sure to use only agricultural limestone in ponds with fish populations. Other forms of lime (hydrated, slaked or quick) can be used to lime empty ponds before fish are stocked, but if they are used in filled ponds, they cause the pH to increase dramatically, which will kill the fish.

Fertilize if Desired

A fertilization program can greatly increase the fish production in fishing ponds. Adding nutrients stimulates the growth of the microscopic plants (algae) that feed the small animals that feed the fish. Fertilization can increase fish production by three to four times, resulting in more and bigger fish in properly managed ponds.

Carefully considering whether or not your pond would benefit from a fertilizer program is important. Once a fertilization program is started, it should be continued each year because the total weight of fish in the pond will increase, and the fish will come to depend upon the additional food resulting from fertilization. Ponds that already receive nutrients from the watershed usually do not need additional nutrients. Do not fertilize ponds that are fed commercial feed; ponds that are muddy or weedy; ponds with existing dense plankton blooms; ponds where the fish population is out of balance; or ponds that have excessive water flow.

If you decide to fertilize, begin applications in the spring when the water warms above 65 degrees Fahrenheit, usually early March. This timing promotes the growth of algae before rooted aquatic weeds can become established. Once a fertilization program is started, it should be maintained throughout the growing season. Fertilization should be discontinued when water temperatures fall below 60 degrees Fahrenheit, usually in September.

Check Density of Bloom

After the initial fertilizer application, see how the pond responds to the added nutrients. The water should develop a greenish or green-brown color within a week or so. Allow at least one week, preferably two, between applications in order to monitor the results of each addition.

Periodically measure how dense the algae bloom is so that you can decide whether or not to fertilize the pond again. A good way to measure bloom density is to use a pie tin nailed to the bottom of a yardstick. Lower your pie tin into the water until it just disappears from view and then raise it until it can just be seen again. Measure the depth. In farm ponds, a depth between 18 and 24 inches is ideal. If the bloom is thicker than this (depth reading less than 18 inches), don't fertilize. If it is greater than 24 inches, apply fertilizer.

Drawdown Pond for Winter Then Refill Pond

An excellent management technique to prevent or correct overcrowding of bluegill in ponds is the drawdown, where the water level in the pond is lowered to about one-half the original volume in mid fall. This concentrates the bluegill so that the bass can more readily eat them. Other benefits include allowing shoreline vegetation to grow during the winter, which when flooded in the spring provides shelter to newly hatched fish. Also, winter drawdowns help control certain aquatic weeds by exposing them to freezing conditions. Allow the pond to refill before the following spring.

Control Weeds

Chemical control of aquatic weeds should be the last resort in weed management, but when necessary, start in the spring before weeds get out of hand. Make sure to accurately identify the problem weed, since herbicides vary greatly in their effectiveness for different species.

Spot treatments of weedy areas usually can be accomplished without problems. When whole pond treatments are required, actually measuring the pond

area is important. To visually estimate the area of a pond is amazingly difficult, even for "experts," but it is necessary to get an accurate estimate so that herbicide dosage can be calculated correctly. Some herbicides are unsuitable for spot treatment, so check the label.

Decomposition of weeds killed by herbicides removes oxygen from the water and can even result in a fish kill, especially in the summer months. When using a fast-acting herbicide, treating only a section (up to a quarter of the pond area) at a time will reduce the chances of oxygen problems. Unless the herbicide is intended for whole pond application, treating only a portion of the weeds at a time allows affected weeds to decompose before the next application.

Stock Catfish if Desired

Catfish must be restocked periodically because they do not reproduce successfully in balanced ponds. Keep records of your catfish harvest and restock when needed. For ponds with abundant bass, stock 6- to 8-inch catfish. This will ensure that they are not eaten by bass shortly after stocking.

Check Pond Balance

For best fishing, fish populations should be in balance. A basic understanding of what is being caught can help keep track and identify problems with the fish population.

One method to evaluate the bass and bream population is to capture some of the young fish using a seine. The best time to do this is in mid-May to late June after the bass and bluegill have spawned. Using a 20-foot seine (4 to 5 feet deep with 3/8-inch mesh), make three to five semicircular passes in shallow areas of the pond and record what you catch. Allow the seine to arch so that the fish cannot easily swim around it. The fish caught in the seine hauls provide information on the reproductive success of the fish in the pond and also help determine if there are unwanted species present.

A well-balanced pond will have many recently hatched bluegill less than 2 inches, some intermediate size (2-4 inches) bluegill and some recently hatched largemouth bass (1-4 inches). If there are no or few recently hatched bluegill, many intermediate size bluegill and no recently hatched largemouth bass, the pond is likely overpopulated with bluegill. In this case, the best course of action is to harvest as many bluegill as possible, use the winter drawdown described above and stock 20-30 largemouth bass per acre (8-12 inches). If this does not work, the best course of action may be to drain or poison the pond and start over.

Conversely, if you catch in the seine many recently hatched bluegill, very few or no intermediate size bluegill and very few or no recently hatched largemouth bass, you may have a problem with bass overpopulation. In this case, try to remove about 35 pounds of largemouth bass (12 inches or less) per acre in a single year. This reduces the competition for food among the remaining bass resulting in increased growth the following years.

Feed Fish if Desired

Many species of fish, including catfish and bluegill, will eat prepared feeds. Predators like largemouth bass and crappie will not eat these feeds but will profit indirectly. Feed consumed by bluegills and minnows is turned into young fish that are food for predators. Thus, a feeding program increases the production of many kinds of fish allowing for higher stocking densities and faster growth. Feed is particularly beneficial in lakes and ponds where the production of natural food is limited by low nutrients or other water quality problems.

Use a floating feed and only feed what the fish will consume in 5-10 minutes. Do not feed if you fertilize your pond. The choice of feeds is an important one. Foremost, selecting quality feed that is formulated specifically for fish is important. The least expensive and most appropriate feeds for most ponds are those labeled for catfish and that contain at least 28 percent protein. Higher protein levels are more expensive and unlikely to produce more fish. Do not use feeds designed for other animals. The nutrient requirements of dogs are different from those of fish, and improper feeds may make the fish sick.

Fish and Harvest Pond

Fishing is fun, but harvesting bass and bluegill is also a very important management action for a healthy pond. In new ponds, it is important not to harvest bass until the third year when they reach 12-14 inches in length. Overharvesting bass at this stage in a pond's life can put the predator:prey equilibrium out of balance and ruin a pond.

Once harvest begins in the third year, harvest 10-15 pounds of bass per acre in infertile ponds, 20-25 pounds in naturally fertile ponds and more if the pond is fertilized or fed. Remove bass that are 13 inches or less, and release all fish 13-16 inches as they are aggressive feeders and will help maintain stable bream populations.

Spread bass harvest throughout the fishing season. Also, keep accurate records of your harvest, as these records will be your guide to future management efforts. Typically, sunfish harvest should be 4-5 times higher than bass (i.e., harvest 4-5 pounds of sunfish for every pound of bass). It is very difficult to overharvest sunfish, but underharvesting sunfish can quickly lead to problems. When in doubt, keep it!

Inspect Levee for Holes

Winter is the best time to identify problems with the levee because the vegetation dies back and makes holes and damage more visible, and because the pond may be drawn down for management. This is also a good time to add fish habitat or renovate older structures.

Trim Grass/Brush on Levee

Although some vegetation around the pond helps control erosion and provides habitat for wildlife, cut the vegetation on the levee periodically to prevent brush and trees from growing. Tree roots weaken the levee and increase the likelihood of leaks, as well as encourage muskrats, beavers and snakes to take up residence.

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