Ponds are a big part of Pennsylvania’s rural landscape. Whether natural or built for fire protection, aesthetics, livestock, or irrigation, ponds provide their owners with a unique ecosystem to be managed on their property. To keep them functioning properly, ponds do require some regular management. Below is a checklist of items to consider for keeping your pond in shape throughout the year.

**Water Quality**
- Test pond water
  - pH—important for fish habitat and herbicide use
  - Hardness—important for herbicide use
  - Bacteria—important if the pond is used for swimming
  - Nitrates and phosphorus—excess levels can lead to nuisance aquatic plant growth

There are no standards set for pond water, but recommendations are in place depending on the pond’s primary use. Penn State offers pond water testing through its Agricultural Analytical Services Laboratory. More information can be found at [https://agsci.psu.edu/aasl/water-testing/pond-and-lake-water](https://agsci.psu.edu/aasl/water-testing/pond-and-lake-water).

**Pond Area and Flow**
- Calculate pond surface area—use GPS or Google Maps to help
- Estimate pond volume in acre-feet (acre-ft)
- Calculate pond residence time—$226 \times \frac{\text{volume in acre-ft}}{\text{overflow rate in gallons per minute}}$
- Check the pond outlet/overflow pipe for any debris or blockage
- Check the spillway for debris or erosion

**Sediment and Nutrients**
Are sediment/nutrients entering the pond?
- Yes—consider buffer strips, a sediment pond, and controlling sources of nutrient runoff
- No—continue to monitor, especially during storm runoff events

For more information on riparian buffers, visit [https://extension.psu.edu/riparian-buffers-pennsylvanias-best-solution-for-protecting-its-waters](https://extension.psu.edu/riparian-buffers-pennsylvanias-best-solution-for-protecting-its-waters).
Banks and Dams
- Check banks and dam areas for erosion and damage—no signs of animal burrows or other holes
- Trim smaller vegetation as needed
- Leave large trees in place on dams and banks for stability

Aquatic Plants
- Identify any nuisance aquatic plants and decide on a control plan
- Identify any invasive aquatic plants and decide on a control plan
- Apply for a permit to apply aquatic herbicides if this is part of your control plan

For more information on aquatic plants, including invasives, visit https://extension.psu.edu/water/pond-management/aquatic-plants-and-algae.

For information on permits to apply aquatic herbicides, visit https://extension.psu.edu/permit-requirement-for-use-of-an-aquatic-herbicide-in-ponds.

Fisheries and Wildlife
Inspect pond area for wildlife damage:
- Muskrat burrows along the bank
- Beavers cutting trees
- Excessive waterfowl

Fish and aquatic life are diverse and healthy:
- Yes
- No—consider water quality testing, monitor runoff, monitor predatory birds

Safety and Structures
- If fences are present, check for damage
- Lifesaving devices (buoys, life rings, etc.) are present if the pond is used for swimming
- Inspect any docks or piers for damage
- If installed, pond aeration systems are in proper working order
- If present, the dry hydrant for fire protection can be easily accessed and is undamaged