

What is a good fish pond?

Based on interviews with fish pond owners/farmers, representatives from different organisations such as environmental NGO, farmers unions, local authorities, fish traders, local inhabitants, and by participation at stakeholder meetings, an analysis about the perceptions, knowledge, and use of fish ponds was carried out in two study areas in France (Dombes, Forez). In addition, more than 140 fish ponds were studied to evaluate changes in aquatic plants (richness, cover), phytoplankton (richness, biomass), and richness in dragonflies and macroinvertebrates in relation to water quality.

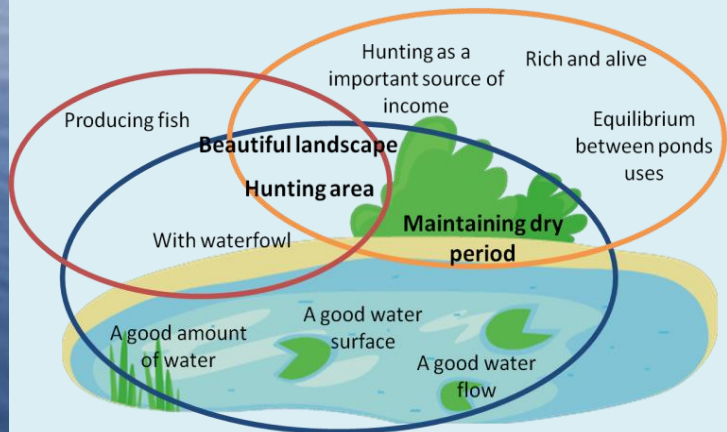


The majority of fish pond owners/farmers express a “traditional vision” of the use of ponds integrating fish production, the importance of “a dry period” (a year without water in the pond) and hunting. Few fish farmers and fish traders have a more restricted view of ponds as a tool for fish and waterfowl production.

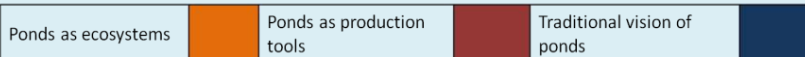
Representatives from environmental NGOs and fish farmer unions see ponds as ecosystems emphasizing the importance of biodiversity.

Local inhabitants see fish ponds as places for fish production, leisure, and as part of a beautiful landscape.

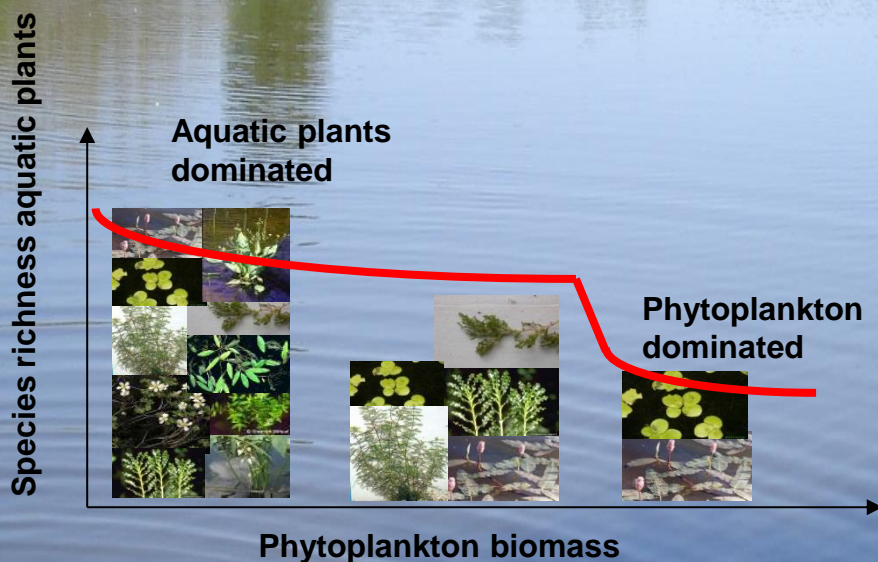
The question **what is a good fish pond for you**, is answered differently by different types of stakeholders, and is often directly linked to their uses of ponds.



Perceptions categories



To have a good fish pond which responds best to most stakeholders' visions, it is important to have good fish production and at the same time biodiversity conservation, the latter being also an important natural resource for fish production. Therefore, a major objective is to get a good equilibrium between aquatic plants and phytoplankton (algae) in cover and diversity. Too much phytoplankton reduces aquatic plant species richness and cover significantly, and can lead to algae blooms and reduced fish production.



To achieve the objective of an equilibrium between aquatic plants and phytoplankton, different management options are available:

- Prolonged "dry period" of 2-5 weeks after fish harvest: better mineralisation of organic matter in sediments and decrease of high nutrient concentrations in water afterwards.
- Integration of a dry year after 3-5 years of fish production: increase of diversity of species due to perturbation.
- Liming: better mineralisation of organic matter in sediments.
- Development of structural heterogeneity of fish ponds: creating different shoreline habitats, winding shoreline, and shallow zones <0.5 m.
- Corrective fertilisation: unbalanced state of the pond is often due to extreme N:P ratio with a shortage of phosphate (sometimes) or nitrate (often). Lower ratios (<7) lead to cyanobacteria blooms. Small inputs of nitrate can balance this ratio.

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