

Pond Ecology



A Brief Summary of a Natural Pond Ecosystem

Any body of fresh water will maintain a healthy, balanced ecosystem without the addition of filters, chemicals or other equipment.

All elements of the pool will co-exist in delicate harmony, the water being clean and healthy, not necessarily 'gin' clear.

The basis of the ecosystem is the dissolved nutrients within the water itself. These will be a result of decaying leaf matter, minerals from the water's source and other naturally occurring elements.

Initially, air-borne algae spores will colonise this nutrient rich water and grow very rapidly into the single celled plants responsible for green water. Although unsightly, this is a totally natural process and harmless. The green colour is a result of the chlorophyll in the plants and being green means they are photosynthesising, turning those nutrients into plant mass and oxygen.

As higher plants such as water lilies, free floating weeds and other aquatic species are introduced, they will compete with the algae for the nutrients in the water and gradually starve them out of existence, the pond water turning clear.

A more developed form of algae, known as blanket weed may also form. This is a filamentous variety and again is unsightly but extremely healthy, fixing oxygen into the water and providing a

haven for beetles, dragonfly larvae and all manner of other creatures.

As the pond matures, the higher plants will become dominant and blanket weed and other algae will be less common, although it is highly unlikely they will be totally eliminated as they are such successful and prolific plants.

During the maturing process animals will also start to colonise. Starting with very small insects such as Daphnia, the water flea they will gradually increase until the highest of the aquatic animals, fish, will appear.

Without human interference, the pond will have evolved into a delicately balanced ecosystem. Fish and other higher species will be living on naturally occurring food, their numbers kept in check by the actions of predators, such as the heron.

Although sensible numbers of fish are acceptable and add interest to a pond remember that decorative Koi carp are high maintenance and strictly for keen hobbyists. Surface feeders such as Shubunkin, Orfe and Rudd are much easier to look after and help control midges and mosquitoes. Avoid too many 'bottom feeders' such as tench as they make the water cloudy.

Water fowl add another interesting dimension to a lake or pond but think twice before introducing any. You may find that a greater number than desired may fly in and stay. They eat aquatic plants and make a terrible mess of the water's edge – killing grass through compaction, causing erosion and their faeces can be a health

hazard. To dissuade them, do not construct an island in your lake or pond. Predators such as foxes will then act as a good deterrent.

Interference in this process will always result in an imbalance. If fish stocks are artificially increased there will be insufficient naturally occurring food and important algae eating species will be consumed, so allowing the algae to breed and turning the water green. The addition of fish food will have a similar effect as the nutrients from the food enter the water, either directly as the food pellets dissolve or indirectly after being eaten by the fish. This excess of nutrients and depletion of micro organisms will provide food for the algae.

In a garden pond, the introduction of external filters and ultra violet lamps will assist in reversing the process but will never be as efficient as the natural processes described above.

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