

swarm



— **for reducing dissolved nutrients**

**Pond
Healer
Remedies**



Nutrients are essential to 'fuel' the aquatic ecosystem by supporting phytoplankton which sustain zooplankton, fish and higher animals. However, when they are present in excess they make water *eutrophic*, and vulnerable to prolific growth of algae ('green water', blue-green and filamentous) and nuisance weeds.

Problem-causing algae in ponds and lakes usually bloom if the ecosystem is not in balance. The excess nutrients responsible can enter the water from run-off from agricultural land or septic tanks, decomposing plant and animal matter, fish waste, uneaten angler's baits and droppings from waterfowl.

swarm is our trade name for a product that has been developed and used over the last 26 years, mostly in the USA. **swarm** is a blend of active bacteria that consume nutrients, thus reducing the scope for blooms of algae and weeds. The key feature of **swarm** is that **the active bacteria are delivered in vast numbers, and alive**. It is therefore applied as a ready-made, dominant life form, *thus removing any uncertainty of the growth and establishment of the bacteria if delivered in dormant 'seed' form*.

Because the **swarm** bacteria perform the role of nutrient scavengers, they may be thought of as *probiotics*, keeping the aquatic ecosystem balanced. **swarm** contains no pathogenic (disease-causing) bacteria, is safe in use, and does no harm to the environment. Although billions of active bacteria are supplied, they cause no significant turbidity of the water. The microbes in the formulation are selected in part because of their high specific rates of nitrogen and phosphorus consumption compared with those naturally occurring in the aquatic environment. By comparison with most similar species they have a high activity rate over a broad temperature range, making **swarm** a good, workable product. Whilst the microbes compete very effectively for nutrients, they also have another important capability. Included in the formulation are microbes that decompose organic wastes, such as accumulated sludge. *This can be expected to result in the added benefit of a progressive reduction in organic deposits in the lake.*

Treatment can begin once the water temperature has risen to 10°C in the spring, favourable to the proliferation of the bacteria. Ideally, this is timed to pre-empt the growth of algae. It is applied in 2 or 3 doses during the growing season, according to the pressures of temperature and available sunlight for that year.

Please note that this is not an *off-the-shelf* product, and is produced to order, with a minimum quantity (enough to treat 1 acre / 0.4 Hectares). It contains no disease-causing bacteria, only aquatic bacteria that take up dissolved nutrients, with added bacteria to breakdown organic matter.

We can offer an application service by fully-qualified personnel from a boat, should it be required (*price on on application*).

swarm is complemented by a wide range of other remedies. Our approach to pond and lake management is to consider and treat the symptoms of the problems. However, we also like *to consider and treat the causes*, and aim to create an ecological balance, if possible. If you are uncertain about the water quality problems in your lake, we offer a site visit service. We inspect, assess, take and analyse samples and produce a report. This includes a suggested programme of management and remedies.

see over for some examples of results

Please contact us for further information, or refer to our web site.



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Some *swarm* results in 2009:

Whilst *swarm* cannot be expected to deliver the same, decisive effects as the biocidal products that are now banned, some spectacular results have been achieved nonetheless, *and it is environment-friendly*

These are a few of the accounts given by our customers and contractors:

- * After treating a 7½ acre, council-controlled boating lake, previously choked with filamentous algae by May, algae didn't grow, and the water remained gin-clear for the season. The boat house Manager declaring that the condition of the lake was, "The best he has seen it in 30 years !"
- * After treating a 4 acre lake afflicted with blue green algae, the lake manager proclaimed: "The swarm worked brilliantly!! I still have algae but very acceptable. For some reason, the fish fed like crazy for 3-4 weeks after treatment?! Well done – great product!"
- * After treating a 6 acre lake with a severe algal bloom (blue-green and mixed) polluted by mud from an up-stream forest, the lake cleared within 2 weeks of treatment, and was fine afterwards
- * After treating an intensive coarse fishery, with a difficult *microcystis* (blue green algae) bloom, the bloom subsided (without disappearing completely), but the lake is in the best condition for years (according to regular anglers) and the fish have remained healthy, and feeding. The lake managers have used swarm as the start of a comprehensive 'over-haul' program (including mud remediation) recommended by Spirex Aquatec.