

## The Blue-Green Algae Problem

Every year here in Northern California, there are reports of dog illness, deaths, and occasionally, people sickened from blue-green algae blooms in the waterways used for recreation. The same algae blooms impact native wildlife, including fish, in ways we are just beginning to understand. Blue-green algae is naturally-occurring and is actually a cyanobacteria in an endosymbiotic relationship, with their production of cyanotoxins the reason for our concern.

In Mendocino County, the South Fork of the Eel River is noted to be especially impacted, with the cause often called out to residential and farming/ranching activity. Private ponds are often named as the culprit. There may be some truth to concerns over private ponds as a source as these are often the first basins rain flushes into as it begins its journey to the sea.

In my personal experience I had a similar experience with a new pond we created on our property. After a couple years of existence we started getting blue-green algae blooms that would get especially thick and objectionable as the summer season wore on. One could say this was the result of diminishing volume and concentrated nutrients. Water plants and fish were tried, in succession, but the problem persisted.

During the same period, we were working with improving the soil health of our (organic) food gardens and orchards, learning about the hidden biota of native soils and their impacts on plant growth. Working with transplanting native trees we discovered how much better the plants did when some native soil duff was brought in and mixed with the tree's soil – a handful was often all that was needed to impart good growth response. This led us to create a rough soil 'inoculants' that included various forest duffs, commercial soil mycelium, yeasts, and garden compost. The response was amazing. Shortly after that period, probiotics for the human body started appearing in which we realized that a similar biotic construct exists for our own health as well.

Looking back at our pond's continuing algae blooms, one day I came across a 'probiotic' pond treatment in the DripWorks catalog<sup>1</sup>. This was developed for pond clarity, and based on our experiences with soil and human health, I thought I would give it a try. A small, lunch-sized bag, costing maybe \$30, tossed into the middle of the pond and allowed to dissolve and settle<sup>2</sup>. We didn't see much difference that year (it was late), but ever since then, no algae blooms, vibrant mosquito fish populations, not to mention native frogs (and of course, bullfrogs) and birds, etc. No further 'treatments' have been undertaken, nor were necessary.

What we came to realize was that, like our (organic) gardens and the need to enhance the soil biota, the creation of a pond needs to also be 'finished' with the seeding of pond biota to achieve a natural balance.

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<sup>1</sup> PondGuys is another source we've since come across.

<sup>2</sup> Our pond is ~3/4 acre foot, or ~245,000 gallons.

Will this help the rivers downstream from our scattered ponds? And are these ponds really the source of the blue-green algae blooms? These are questions that need to be explored. Since the river basins in this region receive relatively short bursts of prodigious rainfall, it is likely that the basins are scoured of much of the residual biota. Having the ponds feeding the rivers biotically-balanced overflow would seem to be a benefit. Where river stagnation (and the threat of blue-green algae) is high, treating those areas may also have benefit.

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