

## To Bathe in the Lake -- or Not!

As many people nostalgically think of the lakes and ponds in their youth, and perhaps the cottage or camp their families frequented, the remembrance of bathing the lake or pond comes to mind. So, is it "OK" to bath in the lake?

The answer is NO, it is not acceptable. The reason is that the introduction of chemical compounds accelerates the aging of the lake. Many soaps have phosphates that actually fertilize alga, leading to algal blooms, or have other chemicals that slowly pollute the lake water.

Water is made up of molecules; each is composed of 2 hydrogen atoms bound to 1 oxygen atom. Every time something is added to the water, the water loses some of its purity and becomes a dilute solution with the additives.

For example, many shampoos include in their formula more or less the following: water, sodium laureth sulphate, sodium lauryl sulphate, cocamidopropyl betain, aloe barbadensis extract, chamomile (*Anthemis nobilis*) extract, passionflower (*Passiflora incarnata*) extract, cocamide MEA, dihydroxypropyl PEG-5 linoleaminum chloride, fragrance, citric acid, propylene glycol, sodium chloride, DMDM hydantoin, Iodopropynyl butylcarbamate, FD&C Yellow No.5, D&C Orange No.4. Ext, D&C Violet No.2. Considering that Lake Sunapee alone has over 900 households on the lake, it is undesirable for potentially large amounts of these additives to be introduced into the lake ecosystem unnecessarily.

What if you consider yourself a "responsible" bather and use an eco-product like Dr. Brunner soap? Well, from the Dr. Brunner website, the soap ingredients are the following: fair trade & organic coconut oil (fair trade and organic are nice, but does nothing for the lake), palm kernel oil (no orangutan habitats are harmed); palm, olive, hemp and jojoba oils; potassium hydroxide, sodium hydroxide (NaOH - "none remains in final product"- where does it go?), citric acid (non-GMO, again nice but...), tocopherol (for a longer shelf life), sea salt, water. Further, Dr. Brunner admits that water acts as a binder for ingredients. (I rest my case.)

Brunner soaps also include fragrances: peppermint oil (for tingle), mentha arvensis, a field mint, lavandin and lavender extracts, eucalyptus oil, tea tree extract, benzaldehyde from cassia flowers; rose fragrance, a blend of natural essential oils, including geranium oil, davana oil, eucalyptus oil, rose otto oil, orange oil and rose oil; lime, lemon, and/or orange oils.

So, how many oils, acids, dyes, and chemicals should we unnecessarily put into the lake? Imagine the water molecules being attached to by these non-lake molecules. These natural or unnatural ingredients will all be left behind in the lake after one's bathing. All of these were not previously present in the water. With regard to the soap and shampoo fragrances, the compounds are aromatic, and can affect wildlife, including insects in unpredictable ways.

So, rather than bathing in the lake, how about a good old-fashioned swim? Sans soap.