"AERATION"- What different kinds there are. What it can do. What it can't do.

When most people hear "aeration" it usually invokes an image of bubbles rising up freely in a waterbody, or a "fountain" spraying a mist of water onto a pond. They usually think: good, now there will be more oxygen in the water so the lake won't be "dead". There are *dozens* of "aeration" approaches which can be very effective. The key to success is to understand the *nature of your lake*, identifying what is *"wrong"* as well as what is *"right"*, and performing an "aeration" process that works in concert with biological, chemical, and physical processes in your lake. Sometimes "anaerobic aeration" (where the goal isn't even to reach a measurable dissolved oxygen concentration) is "best" (not all oxygen loss is "bad"). Sometimes the goal isn't even putting oxygen into water, but rather managing *how the thermocline forms*. Sometimes the "best" approach is to aerate only the cold water at the bottom, without mixing it into the surface water. Sometimes aeration can effectively be driven by solar energy or water power. Sometimes other methods are much better than any "aeration". And sometimes the "best" approach is that "bubbler or fountain" that most people immediately think of. My presentation will introduce the various ways that "aeration" can be useful for cost-effective lake management, in a variety of different lake ecosystem types.

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