"Lakespert" – The Devil's Element

Steve Lundt, CLM

Did you know phosphorus has been called the devil's element? I had no clue until I started my summer read. Most people enjoy an easy, soppy beach novel, but not this lakespert. I have settled nicely into a historical summary of how phosphorus has impacted the world – from world wars to harmful algal blooms. The book is titled *The Devil's Element*, by Dan Egan.

I've read most of this book from the comforts of my front porch during an unusually wet June here in Denver. Phosphorus has been on my mind since my early years in grad school. I now find myself enjoying a good read about phosphorus, learning new details about this DNA builder that was first discovered by a seventeenth-century alchemist. Did you know that human bones and then Peruvian guano-encrusted islands were used as important phosphorus sources for growing food during the industrial revolution? I certainly have a more worldly view and appreciation of that phosphorus-laden runoff heading down my street toward the storm drain.

Every summer we are reminded that our lakes (even rivers and ocean bays) struggle to support human uses thanks to mismanagement of this life-creating element. On one hand, it seems like we are losing the battle on a global scale with these ever-larger algal blooms. On the other hand, I have seen local improvements in water quality thanks to better stormwater and wastewater treatment. At best, I feel optimistically worried about the future of our lakes and planet. From my summer read, I know we are smart enough to understand the causes of troublesome algal blooms. Yet, humans refuse to make good choices and do the right thing. *The Devil's Element* has shown me that it is even bigger than water quality. Food production and military unrest around phosphorus reserves will ultimately control just how many lives we are talking about when it comes to how deadly phosphorus can be.

My aquatic focus on phosphorus and the triggering reaction that it causes in lakes is just one small part of the overall problem with this biological accelerant. The devil's element is a finite resource. Humans have done a great job of wasting it away and sending it straight to the ocean via our rivers. My realization is that NALMS and the lake management community need to think beyond their lakeshore and watershed boundaries and work more on a global scale. This includes food production (we don't need 1.4 billion pounds of cheese stored in the U.S.), eating habits (eat less meat), geopolitical issues (Morocco and the 'blood phosphate" issues), mining practices (up to 50 percent of what is mined gets wasted), and private businesses (Tide used to be 50 percent phosphorus by weight and Biz was 74 percent). Maybe we should change it up – think locally, act globally.

David Schindler changed the detergent world 50 years ago while raising a family in a tent next to Lake 227. We need something similar for the agricultural and wastewater world. Phosphorus recovery, whether on the farm or in the city, can protect our waters, avoid conflicts, and help feed the world.

Phosphorus recovery dropping into a bin at a wastewater treatment plant that serves 2.2 million people. This phosphorus will be repurposed instead of sent down river.

On that note, enjoy your summer reading and may your bloom season be short.

Steve Lundt, Certified Lake Manager, has monitored and worked to improve water quality at Barr Lake (Denver, Colorado) for the past 19 years. Steve is active with the Colorado Lake & Reservoir Management Association and is a past Region 8 director for NALMS and an active member since 1998.