

Studying the health of Suttle Lake

By **Jim Cornelius**
News Editor

A monitoring buoy in Suttle Lake has gathered its first partial season of data on lake conditions.

Volunteers recently removed the NexSens CB-450 data buoy from the water to store it for the winter. It will go back into the lake once winter conditions slide into spring, so that key data can be collected to help shape how the Forest Service manages the lake toward reintroduction of sockeye salmon.

The buoy is equipped with a number of sensors to gather measurements on conditions affecting the lake's food web and salmon stocks. According to Dan Kelly of Environmental Monitor, these include a Lufft WS501 weather sensor; Hydrolab DS5 sonde and two LI-COR sensors tracking photosynthetically active radiation (PAR). The weather sensor logs data on air temperature, humidity, barometric pressure, wind and global solar radiation. The sonde is outfitted to track temperature, conductivity, pH, dissolved

oxygen and pigments. An LI-190R measures PAR above water, while an LI-192 tracks it below the surface to a depth of five feet.

All of the sensors are powered by three 10-watt solar panels and send measurements to a NexSens data logger housed within the buoy. The logger is equipped with cellular telemetry to broadcast real-time measurements to managers at the High Lakes Aquatic Alliance Foundation.

An impetus behind the project is a noted decline in the size of kokanee caught in the lake.

In 2003 the kokanee — a land-locked cousin of the sockeye — measured about 18 inches as adults, but in 2016 adults were found to be only five to six inches long. The buoy will help provide vital information as to why this is happening, and (hopefully) help correct it.

Frank Conte, a retired USO limnology professor is the founder of the organization. Conte and HLAAF members and partners put a great deal of effort, money, engineering and dedication into creating the monitoring buoy.

Dave Huni has been volunteering as a technical consultant for the project. He told *The Nugget* that the measurements taken by the buoy can, "tell you what kind of runoff (is going) into the lake" and provide information on algae growth and food sources for fish.

Volunteers will also trawl for fish and "look at real-life measurements in the fish and the algae and compare that with what the data is."

The buoy didn't go into the lake until July 7 this year, and the volunteers took it out at the end of September. Huni said that the group wants to get the buoy in the lake for a "full growing season" next year — April through September. The monitoring may go on for several years.

"Three years would give us a good picture on what different things are going on, one way or another," Huni said.

Efforts to save sockeye salmon got into high gear around 2012 with the removal of dams and other objects that were blocking sockeye from reaching Suttle Lake, like the culverts that were under Road 12. Forest Service fishery biologist Nate Dachtler and his crew modified several of the obstructions and other features that prevented salmon from reaching the lake.

Sockeye salmon, aka red salmon, or blueback salmon, is an anadromous fish found in the northern Pacific Ocean and rivers such as the Columbia. Native peoples and the European-American pioneers depended on them for food.

They can grow to three feet in length and must spawn

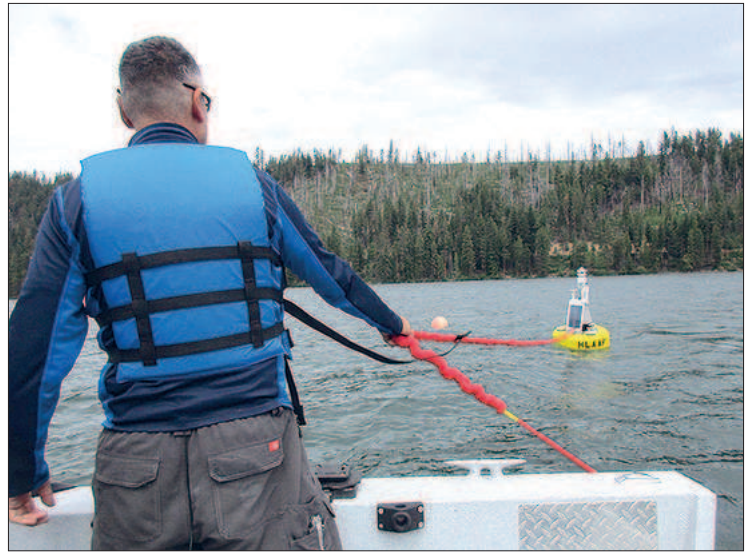


PHOTO BY CONRAD WEILER

Retrieving the HLAAF buoy from Suttle Lake.

in freshwater lakes, streams and rivers where they remain until they are ready to migrate to the ocean. Sockeye use patterns of well-lit, open surface waters in the lake, away from the shore. This is the main photosynthetic body of the lake. Because sockeye can change their position in the water column, also adjusting timing and length of feeding and choice of prey to minimize the likelihood of predation, it is vital to understand

these factors — which the HLAAF monitoring buoy helps to do.

Sockeye, unlike other species of Pacific salmon, feed extensively on zooplankton, organisms drifting in the lake. Individual zooplankton are usually microscopic, but some, such as copepods and aquatic insect larvae, as well as flying adult insects and shrimp, are larger and visible

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PHOTO BY CONRAD WEILER

The Suttle Lake buoy provides data directly to volunteers.

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Put Thanksgiving Lessons to Work in Your Financial Plans

Thanksgiving is almost here. Over the years, this holiday has taken on a variety of meanings, most of them centered on family, caring and sharing. You can carry these same values past Thanksgiving into your daily life — and you can certainly incorporate them into your financial strategies for taking care of your loved ones. So, here are a few suggestions:

- **Protect your family.** If something were to happen to you, could your family pay the mortgage? Could your children still afford to go to college someday? To protect your family's current lifestyle and long-term goals, you may well need to maintain adequate life and disability insurance. Your employer may offer these types of protection as employee benefits, but the coverage might be insufficient for your needs. Consequently, you might need to supplement your employer-paid insurance with additional policies.

- **Invest in your children.** If you have young children, and you'd like to see them go to college someday, you may want to start putting money away toward that goal. You can save and invest for college in a variety of ways, but one popular method is through a 529 plan, which offers high contribution limits and potential tax advantages. Plus, a 529 plan gives you significant control and flexibility — if you establish a plan for one child, but he or she decides not to go to college, you can name another child as the recipient.

- **Be generous.** You don't have to be a millionaire to make meaningful financial gifts to your family. For example, if you have grown children, consider helping them fund their IRAs. You can't contribute directly to a child's IRA, but you can write checks to your children for that purpose — though, of course, they are then free to do whatever they want with the money. It's not always easy for a young person to "max out" on an IRA, which has an annual contribution limit of \$5,500 for workers under 50, so any help you can give your children in this area should be greatly appreciated.

- **Safeguard your own financial independence.** Almost certainly, one of the most undesirable outcomes you can imagine is to become financially dependent on your grown children. Even if you save and invest diligently throughout your working years, you could still be vulnerable to financial dependency if you need an extensive period of long-term care, such as a nursing home stay. These costs can be enormous, and Medicare typically pays only a small percentage, and usually for just a limited time. To protect your financial freedom, you should explore ways of addressing long-term care costs. A financial professional can explain those alternatives that may be appropriate for your situation.

- **Communicate your wishes to your family.** At some point in your life, you will need to draw up your estate plans, which could include a will, a living trust, a durable power of attorney, a healthcare directive and other documents. To be fair to your children and other family members, and to avoid hurt feelings, you should clearly communicate your plans and your wishes while you are still around.

Thanksgiving means more than turkey and football. And if you can successfully apply the lessons of this holiday to your financial plans, both you and your family will have reason to be thankful.

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