ELECTRIC CHAINSAWS: Toys or Serious Forestry Tools?

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In 2011, I moved into a brand new sustainable home in Redstone Canyon above Horse Tooth Reservoir. My home is super insulated and heated by a solar hot water radiant floor system. I am connected to the Poudre REA electric grid but produce 10-15 % more electricity through solar photovoltaic collectors than I actually use.

Redstone Canyon has a very active forest wildfire mitigation program with individual homeowners actively cutting on their own property and also joining together every winter to cut strategically along roadways in the canyon. In these common areas, we provide the sweat equity ("*burn calories, not trees!")* and we have been able to obtain Colorado State Forest Service grants to have slash that we drag to the roads chipped and sprayed back on the land.

In the Spring of 2011, one of the areas that we mitigated was an area along a community roadway just below my new house. Without that mitigation effort, I have no doubt that the High Park fire would have destroyed my home. As a wildlife and forest ecologist, I have not just a professional but a personal interest in wildfire mitigation and in selecting the best tools to use.

I have used gas powered chainsaws for years but have always disliked their disadvantages including having to keep gas on hand; having to pull-start them, especially on cliffs or in deep snow; and adjusting engines, especially in freezing temperatures! Twenty years ago, I tried out battery powered chainsaws then on the market and found them to be "toys," at least from the perspective of serious woods work. Electric cord chainsaws were better but totally impractical for forest work.

In 2011, however, I noticed that the Stihl had developed a lithium battery powered chainsaw and I decided to try it out a 12-inch blade 36-volt model after much kidding from fellow sawyers and I was amazed at its performance. The chain is narrower than a gas equivalent and the saw was well designed to take advantage of the greater torque of its electric motor. The weight of the chainsaw was 7 pounds without battery or 10.8 pounds with battery and the run time with intensive cutting of 38 minutes. For those who need to favor their backs with less chainsaw weight, there is a nifty battery belt that holds the battery and a cord from the belt then plugs into the saw. The saw has been a pleasure to use because of its weight and rapid cutting ability. Another benefit has been noise reduction to the sound level of a sewing machine. Because the saw is either on or off and is simply started with a switch, it is also a joy to use on cliffs and steep hillsides. Chains are very easy to replace and the electric motor is self-contained and does not require tune-ups. A side benefit is to be able to make fun of your fellow sawyers using gas chainsaws

by asking them what that rope is hanging off their chainsaws. The lithium ion batteries are capable of being recharged in less than 30 minutes. I was pleased enough with the saw that I invested in four batteries allowing me at least half a day of active cutting without recharging. I have been very pleased with Stihl because they maintain good dealerships with repair shops. Maintenance involves cleaning which is easy for the operator to do and purchase of chain sprockets that are easily replaced at Stihl shops. Although batteries are not inexpensive, they show no evidence of reduction of power or run time after six years of heavy use. Without gas engine maintenance and the cost of gasoline and tune-ups, I estimate the overall cost of running and maintaining the saw equals that of a gas-powered saw by the third year and then falls after that.

There is another major advantage because Stihl also makes trimmers, blowers, poles saws and even lawn mowers that run on the same battery system of 32 volts. At this point, I have a 14-inch chainsaw, a pole saw that can extend 12 feet, two trimmers, and a blower all using the same batteries. All have been excellent investments.

I decided last year to convert to all electric tools for wild fire mitigation because the number of excellent lithium battery powered options. I needed a bigger chainsaw and was able to find an 80 volt 18-inch saw made by Green Works. They also make an 80-volt trimmer that using the same battery that is excellent for heavy brush cutting as well as an 80-volt yard mower also using the same battery and recharger. I have been very pleased with these tools. The 18-inch chainsaw is large and powerful enough to cut any trees as necessary on my property. I have also been able to convert a Polaris Ranger ATV to electric power with lithium batteries similar to a model that the Special Forces is using in Afghanistan. It is powerful enough to clear driveways with a snow blade and is an outstanding work vehicle with 1-wheel, 2-wheel, and 4-wheel drive choices and quiet enough for outstanding wildlife observation. In addition, the lithium batteries are estimated to be good for about 6,000 recharges.

Although I am connected to the electric grid, I have battery back-up and emergency circuits. Thus, I have full use of my lithium powered tools and vehicle under emergency conditions. These tools and the vehicle seem to require much less maintenance and I am very pleased from safety, financial, and environmental perspectives not to be using gasoline to power them. I like to say that my energy supplier is 93 million miles away and has been a reliable supplier for the last 4.5 billion years!

I hope this article has been helpful in outlining the tremendous advantages of lithium powered tools for wildlands fire mitigation. I have had good luck with Stihl and Green Works but there are now an ever-increasing number of lithium battery powered tools available. As with any choices these days, I advise careful review of the quality and power of the tools available. It is also important to make sure that you have access to a local shop where parts and repairs can be made. Best wishes and go electric!