Eastern red cedar trees are becoming a nuisance tree, growing where they are not wanted. But instead of removing and wasting the trees, a University of Nebraska-Lincoln graduate student is trying to simplify a way to use the material for good.

Adam Smith, a first-year natural resource sciences graduate student, is conducting research that could help people throughout Nebraska use eastern red cedar trees in a non-wasteful and even helpful way.

Smith, who graduated from UNL in 2009 with a bachelor's degree in fisheries and wildlife, is attempting to estimate the volume of woody material a property has available for biomass utilization purposes, often in the form of woodchips and used as a heating fuel, based on the height and diameter of the trees on the property.

When Smith began his job at the Nebraska Forest Service as the forestry project coordinator, he saw an opportunity to assist landowners in using unwanted red cedars as an economic resource.

"The alternative to woody biomass utilization is to pile the trees and destroy them, when they could be a source of income," Smith said.

After selecting forest inventory points throughout the state, Smith collected data on the location, species, diameter and height of trees at these points. Research by Tala Awada, professor and interim director of the School of Natural Resources, is used to estimate the mass of red cedar trees per cubic foot. The estimate of tree mass per cubic foot and Smith's volume estimate together will determine the total weight of each tree and therefore estimate total available woody material in the area.

Smith gathered data from across the state and saw a noticeable difference between regions. Although more moisture in eastern Nebraska makes it easy for the trees to establish rapidly in the region, red cedars also can grow in harsh conditions. In western Nebraska, this allows the trees to outgrow other vegetation struggling with hot, dry conditions. Since there is more available land in the west, the trees have more space to grow as well.

“If the trees have the opportunity to get a foothold, they will,” Smith said. “And the current drought conditions offer the perfect opportunity for these trees to continue expanding.”

Smith’s research will give professionals the opportunity to calculate how much woody material is available to be used as biomass fuel and offer landowners help in finding a market for it. According to Smith, the landowner can benefit not only from the profit from selling the wood, but also can reclaim the land where the red cedars had been growing.

“An outdoorsman will appreciate the ability to walk through the grasslands of Nebraska again,” he said.