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SUNY Program Is First to Earn SAF NREM Accreditation

By Steve Wilent

The bachelor of science in natural resources management (NRM) program at the State University of New York's College of Environmental Science and Forestry (SUNY-ESF) became the first program of its kind in the nation to receive SAF accreditation in January.

"This accreditation acknowledges that our program meets national standards in the education of natural resource professionals," said David Newman, professor and chair of SUNY-ESF's Department of Forestry and Natural Resources Management. "We are the first program to be accredited under these new standards, which are designed specifically for programs dealing with the management of natural resources and ecosystems."

SUNY-ESF's forest resources management and forest ecosystem science bachelor of science degree programs also are accredited by SAF, as is its master of forestry degree program. These three programs were recently reaccredited. ESF's forestry program has been accredited by SAF since 1935.

Accreditation of university forestry programs has been a cornerstone of SAF's service to the profession for 80 years. The first accreditation standards were adopted by the SAF Council in 1935 and since then have been revised about every 10 years, to assure that professional foresters continue to meet contemporary needs. The *SAF Accreditation Handbook* (www.safnet.org/education/programs.cfm) states that accreditation is valuable because it:

- Provides a structured mechanism to assess, evaluate, and improve forestry

David Newman, professor and chair of the Department of Forest and Natural Resources Management at the State University of New York's College of Environmental Science and Forestry, oversaw the recent accreditation by SAF of the college's bachelor of science in natural resources management program. CREDIT: SUNY ESF

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Research Matters: How Do Diameter Caps Affect Forest Resources?

By Steve Wilent

Ask a forester what he or she thinks of diameter caps—prohibitions on cutting trees larger than a given dbh—and you'll probably get a thoughtful response that concludes with "but as a forester, it's like tying one of my hands behind my back," or words to that effect. Nonetheless, diameter caps are often proposed by individuals and groups concerned about retaining large mature and old-growth timber and associated wildlife habitat. Since 1994, for example, the so-called eastside screens have prohibited the harvesting of most trees

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Untreated (a.) and post-treatment (b.) ponderosa pine stands in the southwestern United States. The transition from current to desired condition and the resulting changes in structure, composition, and function are the primary goals of landscape-scale collaborative efforts to restore forest ecosystems, such as the Four Forests Restoration Initiative in northern Arizona. CREDIT: A.J. Sánchez Meador

Forest Trends Receives $1M MacArthur Award

By Steve Wilent

Forest Trends, a Washington D.C.–based international nonprofit organization, recently was named one of nine organizations to receive the 2015 MacArthur Award for Creative and Effective Institutions from the John D. and Catherine T. MacArthur Foundation. Each of the nine organizations received $350,000 to $1 million. Forest Trends received $1 million.

The foundation gives the award to organizations that "conduct important work, generate provocative ideas, reframe the debate, and provide new ways of looking at persistent problems." The award is intended "to help position these organizations for long-term growth and impact."

Forest Trends, which was formed in 1999 by leaders from conservation organizations, forest products firms, research groups, multilateral development banks, private investment funds, and philanthropic foundations, has a four-fold mission: "to expand the value of forests to society; to promote sustainable forest management and conservation by creating and capturing market values for

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21 inches DBH or larger on millions of acres of Forest Service land east of the Cascade Mountain crest in Oregon and Washington.

How do diameter caps affect forest health and wildfire risk reduction treatments? In an article in the March edition of the *Journal of Forestry*, Andrew J. Sánchez Meador, Kristen M. Waring, and Elizabeth L. Kalies describe their use of computer-based models to provide some answers. In the abstract of "Implications of Diameter Caps on Multiple Forest Resource Responses in the Context of the Four Forests Restoration Initiative: Results from the Forest Vegetation Simulator," the authors explain that they "used the most commonly proposed prescription for the Four Forest Restoration Initiative in northern Arizona to explore the implications of diameter caps for multiple resource responses through the use of model simulations. We found that implementing progressively smaller caps in southwestern ponderosa pine may result in relatively similar live tree densities, canopy cover, and large snag densities, but higher basal areas, mean tree size, torching indices, and scenic beauty with lower water yield and herbaceous production. When diameter-cap scenarios are compared, tradeoffs exist, and no single metric is suited for overall scenario evaluation."

The Four Forest Restoration Initiative (4FRI) encompasses 2.4 million acres on four national forests. The first stewardship contract awarded to date calls for thinning and fuels-reduction treatments on 300,000 acres over 10 years. 4FRI's Large Tree Retention Strategy calls for retaining large post-settlement trees greater than 16 inches DBH.

I recently spoke with Sánchez Meador, the paper's lead author, about the study and its implications for forest managers and stakeholders in the Southwest and elsewhere. Meador, an SAF member and an assistant professor at Northern Arizona University's School of Forestry, is program director of biometrics and forest management at the university's Ecological Restoration Institute.

Why did you pursue this line of inquiry?

The ponderosa pine ecosystem, the main ecosystem in the Four Forests Restoration Initiative area, historically was heterogeneous and contemporarily is more homogenous. My dissertation work focused on quantifying that spatial pattern, and one of the things I found was that if you go out and look at a stand today, you'll see that the largest youngest trees—the trees established after widespread railroad logging, overgrazing, and fire suppression—are in the middle of the openings that were historically where the majority of our species diversity occurred—grasses, forbs, shrubs, and so on. That got me thinking about some of the nontraditional effects of our treatments. If you go into a stand and do fuels reduction, the largest of the youngest trees that you're going to leave, under a diameter cap, are exactly where you don't want them to be, if you're trying to re-create structural heterogeneity.

A Four Forests Restoration Initiative project underway on the Flagstaff Ranger District, Coconino National Forest, Arizona. CREDIT: US Forest Service

Here in the Southwest, we've been dealing with the diameter-cap issue for a long time, starting in the 1990s. With the 4FRI, it morphed into what the Forest Service and the stakeholder group call the Large Tree Retention Strategy, but basically, there were certain interest groups that didn't want large trees to be cut. So diameter caps are something we have to deal with. How is that affecting multiple objectives? And what effects do treatments have, with and without diameter caps?

Largely speaking, as most foresters know, if you just look at one metric, such as trees per acre, you can use a variety of treatments that achieve that target. But when you start looking at integrating multiple resource objectives, which is what the Multiple-Use Sustained-Yield Act mandates for all federal lands, it becomes more complicated. All of a sudden, metrics like basal area start to fall apart in terms of their ability to quantify the success or failure of a treatment.

Foresters often feel limited by diameter caps, so in a way, your paper is preaching to the choir. Were you trying to reach other groups?

I often try to make the point that using a single metric, which even foresters tend to do, can be problematic. Some might use canopy cover or basal area to quantify success. So I was trying to remind the choir that often we need multiple metrics to evaluate success. At the same time, I was hoping to catch the larger stakeholders—municipalities that are concerned with wildland fire, environmental groups, state and Native American land managers, private landowners, industry. The paper lays out why foresters, specifically those working for federal agencies, might be a little bit apprehensive about diameter caps. We're being asked to juggle multiple objectives, but the 16-inch cap, which is primarily what we deal with here in the Southwest, causes a lot of problems, especially with respect to the tradeoff between wildfire hazard and wildlife habitat.

What are some of the limitations of using the Forest Vegetation Simulator [FVS] for this kind of analysis?

We talk about some of those in the paper. With these arid, fire-dependent ponderosa pine ecosystems, the spatial heterogeneity in the system is what gives us a wildfire hazard buffer. Because FVS is a spatially implicit model, it just doesn't do the best job of modeling the true observed effects of something like a group selection harvest or some type of patchy mosaic thinning. That's one big drawback, but one big plus is that FVS is the primary simulation tool for federal foresters, silviculturists, fuels managers, and wildlife biologists. We wanted to stick with the tools that they would likely use during the National Environmental Policy Act (NEPA) process to evaluate treatment alternatives and make decisions.

You've probably heard the old saying that all models are wrong, but some of them are useful. Models are never meant to tell the forester or land manager what to do; they are meant to help advise the forester or land manager about their options. Sure, there are inherent limitations with models, but they are largely not an issue unless people start believing that treatment A versus treatment B results in a one-foot change in flame length, or something of that nature.

Did anything surprise you in doing the research and running the models for this paper?

The results of using a 30-inch cap and a 12-inch cap were very different, of course, but it surprised me that the simulations with intermediate caps didn't really differ all that much. If we're talking about small diameter caps or large diameter caps, that's a good to discussion to have, because there are some real tradeoffs and benefits at play. But the difference between a 16-inch cap and an 18-inch cap is splitting hairs.

The other thing that was a little bit surprising is how insensitive basal area is. As I get older, I find myself despising certain metrics, and the two that don't really tell us much of anything are basal area and canopy cover. But those are the primary metrics that collaboratives and stakeholder groups use—we've been giving them those metrics for years, so those are the metrics that they understand the most. Largely speaking, those metrics are some of the most insensitive to the types of treatments that we're doing. That could be a function of FVS and the non-spatially explicit manner in which it models things, but this paper did make me come to the conclusion that, when people ask me what metric is best, I ought to start off by saying, well, it's not canopy cover or basal area. I now tend to lean toward some of the composite metrics, such as diameter distribution, which is a forester's best friend, but which the layperson doesn't really understand. FS

The paper discussed in this article is available in the March edition of the Journal of Forestry *and is online at www.eforester.org/publications/jof/index.cfm.*