Long-Term Forest Ecosystem Research: A Programmatic View

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Long-term research provides the building blocks of knowledge needed to address natural resource and environmental issues. "Long-term" has frequently been considered to span decades with a time frame that usually encompasses at least one generation of scientists and frequently two or more generations. In the rich history of forest science, the origin of long-term studies can be found in many different forms, ranging from a dedicated lifetime of investigation by a single or small group of scientists on specific topics to large interdisciplinary studies of forest ecosystems comprised of collaborative partnerships between universities, federal and state agencies, and other institutions. Scientific advances in many specific disciplines of forest science (e.g., forest genetics, biometrics, etc.) are well established over time, but interdisciplinary forest ecosystem studies are of more recent origin (20–40 years).

The ushering in of the 21st century coincides with the centennial celebration of the US Forest Service Experimental Forests and Ranges (EFRs). The current network of 81 EFRs has provided a significant core of information on long-term patterns and processes for a diverse array of forest and grassland ecosystems. Lugo et al. (2006) provide an overview of long-term research at EFRs and highlights some of the past, present, and potential future contributions of EFRs to address environmental and natural resource issues. Celebrations commemorating milestones of existence have been initiated at many EFRs along with vignettes that feature select sites and success stories both at the national (USFS 2009) and station level (Southern Research Station 2009). Site-specific activities are also planned; for example, in Nov. 2009 the Coweeta Hydrologic Laboratory in North Carolina will host a Science Symposium celebrating 75 years of research. This event will complement research findings documented for the first 50 years of research at the Laboratory (Swank and Crossley 1988).

The watershed-based EFRs are of special interest because water resources and forest management issues have strong historical links. A synthesis of forest and wildland watershed lessons learned over the past century highlights the importance and contributions of long-term research across different regions of the country (Lee and Stednick 2004). The first several decades of land-use and hydrologic research at sites like Coweeta, Hubbard Brook, Fernow, and H.J. Andrews provided a solid foundation for forest ecosystem studies at a watershed scale. Subsequently, pio-
the socioeconomic and environmental factors that drive land-use change in the southern Appalachians and the ecological consequences of those changes. Further details of the development of long-term ecological research at Coweeta are given by Swank et al. (2002).

By all measures, forest ecosystem research conducted by watershed-based EFRs and their collaborators over the past 20–40 years has been successful. Findings have had a significant impact on many forest management and environmental issues. We predict that the value of long-term research will only increase in the coming years. For example, watershed-based EFRs will increasingly rely on to provide baseline comparative information to detect and predict ecosystem responses to climate and landscape change, impacts on water resources, carbon and nutrient cycles, and other ecosystem goods and services. In addition, long-term research sites have long played a role in educating and training future ecosystem scientists. The hundreds of students trained and educated at long-term research sites such as the EFR and LTER networks occupy research and policy positions in federal and state agencies across the United States and research teaching positions in universities across the globe. The return investment in research, education, and training at long-term research sites has been substantial, and we contend that their contribution to addressing the challenges of the 21st century will be even more valuable in the upcoming years.

**Literature Cited**


Timothy La Farge's review of the essay until they GET IT. Unfortunately, that was not the case with Timothy La Farge's review of The Bridge at the Edge of the World by James Speth (June 2009 issue). La Farge's main criticism is that Speth's arguments are not backed up with valid scientific findings, yet the only claim he criticizes is the now well-founded and (nearly) universally supported finding that climate change is being caused by increased greenhouse gas emissions. I simply cannot believe that JofT continues to give credence to such marginal contrarian viewpoints. Nothing else La Farge discusses in his review has any credibility, and as such it is basically useless. I have no quarrel with La Farge's own professional expertise and accomplishments as a plant geneticist or even his personal beliefs about climate change. If enough SAF members continue to write letters to the editor expressing such viewpoints, then I have no problem seeing them published as such. However, I expect more of a book review. I realize book reviews are not necessarily peer-reviewed scholarly works, but allowing the publication of such a review is a deliberate editorial decision that reflects poorly on the Journal and on SAF as a professional organization.

**LETTERS**

"Forest Health"

I have been reading the *Journal of Forestry* since 1974 and never have I read an article that pleased me more than that produced by Kenneth F. Raffa et al. in the July/August 2009 issue. This piece should be copied and shoved under every forester's desk glass, it should be taped to the dashboards of their trucks, fastened to the outside of their hard hats, glued to their saddle horns. They should be forced to memorize the essay until they GET IT. I am hoping that soon I will see another piece by Raffa and his crew explaining the proper use of the terms "forestry" and "restoration." It is discouraging to read and hear foresters using the broadly inclusive terms "forestry" when they are referring only to forest exploitation or logging and "restoration" when they surely must realize that we cannot restore very much at all. That is nature's job over time.

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A Basically Useless Book Review

I appreciate the book reviews in *Journal of Forestry* because I don't have time to look over the many new titles published every month. Having respected professionals provide their feedback and insight helps me decide which books are worth taking a look at and which are not worth a second glance. Unfortunately, that was not the case with Timothy La Farge's review of The Bridge at the Edge of the World by James Speth (June 2009 issue). La Farge's main criticism is that Speth's arguments are not backed up with valid scientific findings, yet the only claim he criticizes is the now well-founded and (nearly) universally supported finding that climate change is being caused by increased greenhouse gas emissions. I simply cannot believe that JofT continues to give credence to such marginal contrarian viewpoints. Nothing else La Farge discusses in his review has any credibility, and as such it is basically useless. I have no quarrel with La Farge's own professional expertise and accomplishments as a plant geneticist or even his personal beliefs about climate change. If enough SAF members continue to write letters to the editor expressing such viewpoints, then I have no problem seeing them published as such. However, I expect more of a book review. I realize book reviews are not necessarily peer-reviewed scholarly works, but allowing the publication of such a review is a deliberate editorial decision that reflects poorly on the Journal and on SAF as a professional organization.

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