

Another kind of sequestration

To be among forests as grand as those at Redwood National and State Parks is a rare treat for most of us. I've had the pleasure of this experience a couple of times and I enjoy being reminded of it by our cover photo and the related article. Naturally I marvel at the size of these behemoths, but the architecture of the species also strikes me as peculiar and wondrous. What structure supports such tremendous weight, resists breaking, survives most fires, and facilitates growth commonly to heights of 200–300 feet? How do the internal hydraulics overcome what must be nearly nine atmospheres of pressure to transport water and nutrients from the forest floor to the uppermost branches? What ecological niches are made possible by leaves and limbs lofted so high aboveground? Science, of course, has answers for these questions and for many more that not only provide basic information about our natural world but also link that information to resource management actions and affect conservation policy.

One question I never thought to ask is the subject of our cover article: What is the ability of the coast forest to sequester carbon, and how do we go about estimating it? This riddle is both practical and symbolic as resource managers, scientists, and policymakers look for a silver lining on the cloud of climate change. As you know, atmospheric carbon dioxide concentrations and temperatures are rising. One way to slow this process is to prevent carbon from entering the atmosphere by withdrawing it and storing it. Considering the vast amounts of vegetation, organic soils, wetlands, and other carbon-containing resources in parks and protected areas, these places are profoundly involved in carbon sequestration and can be managed to help preserve the carbon stocks. This ecological service is particularly acute at Redwood National and State Parks where the forest ecosystem stores carbon as densely as almost any place on Earth and has the potential to do more as second-growth forests continue to undergo restoration there. This is yet another awe-inspiring aspect of a very unusual forest, and the story of estimating this capability is equally fascinating.

—Jeff Selleck, Editor