

# POSTFIRE SUCCESSION IN AN ADIRONDACK FOREST\*

SUSY SVATEK ZIEGLER

**ABSTRACT.** Landscape diversity has increased with the surprising postfire establishment of aspen at upper elevations (700–945 meters above sea level) in the High Peaks of Adirondack Park in upstate New York. Tree seedlings returned quickly to the charred slopes west of Noonmark Mountain after an accidental fire consumed the forest in 1999. Aspen stands have replaced the spruce-fir-birch forests in the burned area even though mountain paper birch is expected to colonize burned sites at these elevations. Environmental conditions, historical events, and unique circumstances help explain why quaking aspen and bigtooth aspen rather than paper birch blanket the burned mountainside. Climate change over the past century to warmer, wetter conditions may have fostered this marked shift in species composition. In the unburned firebreak that people cleared to contain the flames, pin cherry has regenerated from seeds stored in the soil for nearly a century. The history of pin cherry on the site suggests that large fires or severe windthrow may have been more common in the region than was previously documented. *Keywords:* Adirondack Park, aspen, fire, New York State, spruce-fir forest, vegetation change.

Aspen forests, with spring green leaves early in the growing season and dazzling gold foliage in autumn, contrast with the loden green forests of spruce and fir on the steep slopes west of Noonmark Mountain in the High Peaks Region of upstate New York's Adirondack Park. The incongruous aspen stands near Noonmark are the result of unanticipated vegetation succession that I have monitored since fires scorched the area in 1999. To better understand patterns of postfire forest reestablishment, I sought to answer these questions: When would trees return to the site, and what tree species would establish after the fire? Would the seedlings be shade-intolerant pioneers such as paper birch, which covers many of the slopes that burned in the early twentieth century? Would the species colonize the site one at a time, or would several species establish soon after the fire? If the latter, would early- and late-successional species coexist on the recently burned mountainside?

This opportunity to study postfire succession in the High Peaks was unusual because forest fires in northern New York and New England reportedly have been infrequent (Fahey and Reiners 1981; McMartin 1994; Lorimer and White 2003; Pederson and others 2004). Charles Cogbill's analysis of land surveys from 1796 to 1825 indicated that fire may have burned a given area in the western Adirondacks only once every thousand years or so before Europeans settled the region (Cogbill, unpublished data; see Ziegler 2004). The detailed 1817 lotting survey of the Roaring

---

\* I thank Peter Grube, Thomas Martin, Thomas Wahl, Stuart Buchanan, Richard Dixon, Angus Bright, Dick Ziegler, Thomas Ziegler, Tom Svatek, Martha Svatek, Wendy Svatek, Rachel Jamison, Kenneth Adams, Andreas Brede-Buchenau, Charles Cogbill, Ray Curran, Lee Frelich, Mark Lindberg, Neil Pederson, J. Morgan Varner, Doug Pribyl, Joel Nelson, Julia Rauchfuss, Max Handler, Jerold Pepper, John Fraser Hart, and the anonymous reviewers. A Grant-in-Aid of Research, Artistry, and Scholarship from the Graduate School of the University of Minnesota helped me launch my research. I dedicate this article to the memory of M. Virginia Biggy, educator extraordinaire.

✦ DR. ZIEGLER is an assistant professor of geography at the University of Minnesota, Minneapolis, Minnesota 55455.