

Aspen Management Options



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Conventional treatments to stimulate aspen regeneration are widely available (e.g., Shepperd et al. 2008), although we now know that a strong sprouting response is not enough to protect from post-treatment browsers. In order to sustain aspen on the landscape land stewards are adopting "resilience management" strategies. In essence, this entails preserving options. Where fire was historically an important regenerative tool in seral aspen, judicious use of selective harvest practices and prescribed and wildlife fire management may be invoked. A key component of resilience management means understanding ecological function: not all aspen stands are alike in terms of their ecology and earlier human impacts. Treating aspen as a "one-size-fits-all" prospect may cause irreversible damage. Thus, locally-based knowledge, current science, ongoing monitoring, course correction (where necessary), and institutional support—all key elements of "adaptive management"—provide a recipe for resilience.

The complexity of resilience management will require multiple perspectives if they are to be successful.

These approaches will become particularly important with the advent of climate warming in the West. Changing climates are expected to bring two opposing elements into the resilience equation for aspen: 1) warming temperature may cause decreases in suitable aspen habitat as these communities move upslope, and 2) expected increases in fire frequencies and extents may provide opportunities (at least temporarily) for aspen expansion or recolonization.

Further Reading

- Gray, L. K., T. Gylander, M. S. Mbogga, P.-y. Chen, and A. Hamann. 2011. Assisted migration to address climate change: recommendations for

aspen reforestation in western Canada. *Ecological Applications* 21:1591-1603.

- Hanna, P. and D. Kulakowski. 2012. The influence of climate on aspen dieback. *Forest Ecology and Management* 274:91-98.
- Kulakowski, D., M. W. Kaye, and D. M. Kashian. 2013. Long-term aspen cover change in the western U.S. *Forest Ecology and Management* 299:52-59.
- Rehfeldt, G. E., D. E. Ferguson, and N. L. Crookston. 2009. Aspen, climate, and sudden decline in western USA. *Forest Ecology and Management* 258:2353-2364.
- Rogers, P. C., C. Eisenberg, and S. B. St. Clair. 2013. Resilience in Quaking Aspen: recent advances and future needs *Forest Ecology and Management* 299:1-5.
- Rogers, P. C., S. M. Landh?usser, B. D. Pinno, and R. J. Ryel. 2014. A Functional Framework for Improved Management of Western North American Aspen (*Populus tremuloides* Michx.). *Forest Science* 60:345-359.
- Shepperd, W., P. C. Rogers, D. Burton, and D. Bartos. 2006. Ecology, management, and restoration of aspen in the Sierra Nevada. RMRS-GTR-178, U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fort Collins, CO.