

Conservation Genetics within the US Forest Service: From Quaking Aspen (*Populus tremuloides*) to Rocky Mountain Bristlecone Pine (*Pinus aristata*)

Valerie D. Hipkins

USDA Forest Service, National Forest Genetics Laboratory, 2480 Carson Rd., Placerville, CA 95667, 530/622-1609, Fax: 530/622-2633, Email: vhipkins@fs.fed.us.

The National Forest Genetics Laboratory (NFGEL) provides genetic testing and information for integrated solutions to on-the-ground problems faced by natural resource managers and policy makers. Solutions are provided for public agencies, non-government organizations, and private industries across the United States, often spanning geographical and organizational boundaries. As part of the National Forest System, the laboratory has a strong partnership with the Pacific Southwest Research Station, both of the USDA Forest Service. NFGEL works closely with land managers to provide key genetic information that is relevant and timely for management decisions. Society's ability to establish and sustain healthy forests and rangelands—especially in the face of current pressures such as habitat fragmentation, climate change, and degraded ecosystems—requires an understanding of genetics. Information about genetics helps assess past, current and future biological changes, and provides implications for management options in the future. NFGEL uses state-of-the-art technology to address genetic conservation and management of all plant species using various laboratory techniques including DNA analyses. The lab provides baseline genetic information, determines the effect of management on the genetic resource, supports genetic improvement programs, and contributes information in the support of conservation and restoration programs, especially those involving native and TES (threatened, endangered, and sensitive) species. This presentation will discuss in some detail our work to look at 1) the clonal structure of quaking aspen in the western United States, and 2) the conservation of Rocky Mountain bristlecone pine in Colorado.