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Fire history and forest structural change in the Spring Mountains

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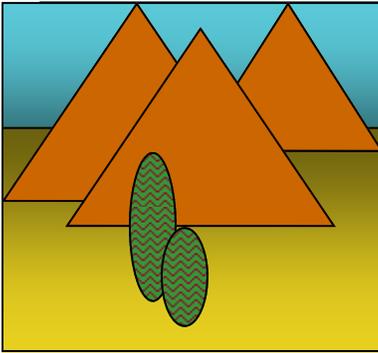
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Mojave Applied Ecology Notes is a newsletter published quarterly by the UNLV Desert and Dryland Forest Research Group. We specialize in working with resource managers to address key information needs for management through applied research. Submissions to the editor are welcome. We reserve the right to edit all article submissions.

Fire history and forest structural change in the Spring Mountains

Scott Abella

Since early 2006 we have been working to develop a partnership with the Spring Mountains District of the Humboldt-Toiyabe National Forest to provide science support for understanding fire history and forest structural changes in support of ecologically based management strategies. We teamed up with the Ecological Restoration Institute (ERI) at Northern Arizona University and the University of Arizona Tree Ring Lab to deliver a workshop on March 6, 2008 at the interagency office in Las Vegas, Nevada. On September 16-18, we again teamed up with colleagues at ERI to conduct a preliminary field assessment of forest change at 10 sites in ponderosa pine and mixed conifer forests on the north side of the mountains. Our ERI colleagues on the field assessment included three retired U.S. Forest Service employees who collectively have over 103 years of experience with the Forest Service in the Southwest.

Our fieldwork was designed as a rapid assessment to illustrate the types of information that could be provided by our proposed project. Field observations suggested that some stands were historically dominated by ponderosa pine, but possibly through intense past pine cutting and fire suppression, are now dominated by fire-intolerant species. However, other sites showed less evidence of historically frequent fire and potentially less evidence of the dramatic forest structural and species compositional changes that have occurred over the past 100 years at some sites. Forests even within a given elevational belt in the Spring Mountains are a unique “jumble” of several different forest types, apparent fire regimes, and dynamic states of structure and composition.

On several sites, including ones very close to private holdings, we suspected that forest health is continuing to deteriorate (due to unnaturally high tree densities), with extreme hazardous fuels

and potential fire behavior. Our observations only scratched the surface, and further work is required to understand the fire regimes and forest changes of the Spring Mountains. Such information would provide both educational resources and support for management activities.



Large ponderosa pine surrounded by fire-intolerant small trees. On this site, it is unclear whether pine replacement is due to suppression of frequent surface fire or is part of a natural cycle in between more intense fire in a mixed severity fire regime.