

**2013 Annual Report**  
to the USDA Forest Service  
under Sponsor Award #10-DG-11031600-050/#13-DG-11031600-081 for 2013  
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Submitted by:

W. W. Covington

Ecological Restoration Institute  
Northern Arizona University

P. O. Box 15017 • Flagstaff • AZ • 86011  
Tel 928-523-7854 • Fax 928-523-0296 • Email [Kathleen.Mitchell@nau.edu](mailto:Kathleen.Mitchell@nau.edu)

## **Summary**

This report presents an integrated and coordinated series of actions for \$2.4 million awarded to the ERI in Fiscal Years 2013 and 2014 under CFDA 10.694, Southwest Forest Health and Wildfire Prevention for the third and fourth years in a 5-year domestic grant.

The information provided herein reflects our annual progress as of 6/30/2014.

All of the activities (deliverables) summarized in this report respond to land manager and stakeholder requests and needs. The deliverables are informed by best available science and scientific evidence which is translated into the language and product appropriate for the target audience. The ERI actively delivers information using a variety of approaches that includes individual and group presentations and discussions, to printed and electronically accessible fact sheets, short technical reports, longer white papers and management reports, and peer reviewed archival literature.

**Annual Report to the USDA Forest Service  
for 2013 & 2014**

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# USFS FY13 Plan of Work - Deliverables

## FY13 Plan of Work

<b>Project 1: Science Support for Collaborative Restoration and Conservation from the Local to the Landscape Scale</b>	
<b>Deliverable</b>	<b>Status</b>
<b>1.1) Provide Support for the Four Forest Restoration Initiative (4FRI), a Collaborative Forest Landscape Restoration Act project.</b>	
<p><b>a.</b> 1 Report on technical assistance for science and monitoring</p>	<p>a. Technical Assistance</p> <ul style="list-style-type: none"> <li>✓ Waltz, A. Webinar Support. CEQ Pilot Study: Approaches to Forest Restoration &amp; Planning the 4Forest Restoration Initiative (4FRI). August 21, 2013</li> <li>✓ Waltz, A. Participate in panel for NM CFRP Technical Advisory Committee - Monitoring Review. September 4, 2013</li> <li>✓ Lauren-Bernstein, E. Initiated formation of and serve on the Multi-party Monitoring Board for 4FRI. Nov., 2013 through present date and ongoing, 2 hrs/wk.</li> <li>✓ Sensibaugh, M., Greco, B. Provided science-related input to the 4FRI Planning team through meetings, phone calls and personal contacts. Coconino NF S.O. FY2013</li> </ul>
<p><b>b.</b> 1 Report on leadership and administrative assistance to steering committee</p>	<p>b. Leadership and administrative assistance</p> <ul style="list-style-type: none"> <li>✓ Waltz, A. 4FRI Collaborative: Small group leadership, meetings 2X/month. Ongoing.</li> <li>✓ Support for 4FRI Stakeholder Group/Steering Committee: coordination, agendas, minutes. 8 hrs/week, ongoing.</li> <li>✓ Lauren-Bernstein, E. Support for 4FRI Stakeholder Group/Steering Committee: coordination, agendas, minutes. 8 hrs/week, ongoing.</li> <li>✓ Lauren-Bernstein, E. At USFS request, assembled CFLR 4FRI annual report data (matched and leveraged funds) for FY13. June, 2013. 20 hrs</li> <li>✓ Vosick, D. 4FRI Co-chair for 6 month term.</li> <li>✓ Vosick, D. Staff support and coordination for 4FRI Stakeholder's Annual trip to Washington, D.C. January 6-10, 2014.</li> </ul>
<p><b>c.</b> Report on IT support for the 4FRI Website and BASECAMP (an online collaborative work space), Website and Administration</p>	<p>c. Leadership and administrative assistance</p> <ul style="list-style-type: none"> <li>✓ BASECAMP administration for 4FRI Stakeholder Group. Ongoing.</li> </ul>

## USFS FY13 Plan of Work - Deliverables

<p><b>1.2) Provide support on science and technical support for other CFLR pilots and emerging projects</b></p>	
<p><b>a.</b> Provide support and coordinate monitoring across landscape scale restoration projects. Deliverable: 1 Report on activities</p> <p><b>b.</b> In cooperation with other entities, coordinate a regional CFLR workshop</p> <p><b>i.</b> Planning</p> <p><b>ii.</b> Proposed date: October 2-4 in Phoenix, Arizona</p>	<p><b>a.</b> Support and Coordination</p> <ul style="list-style-type: none"> <li>✓ Waltz, A. CFLRP National Monitoring Network: “Who’s Afraid of the Big Bad Desired Conditions.” Webinar series organized by Waltz and west-side team. May 13, 2013. 100 attendees</li> <li>✓ Waltz, A. 4FRI Presentation to Region 6 CFLRP Conference. April 1-2, 2014</li> <li>✓ Waltz, A. NM CFRP Technical Advisory Committee - Proposal Review. April 7-11, 2014</li> </ul> <p><b>b.</b> Coordinate regional CFLR workshop</p> <ul style="list-style-type: none"> <li>✓ Waltz, A. and E. Lauren-Bernstein. Organized and facilitated R2/R3 Workshop, Montrose CO. October 28-October 30, 2013 The Workshop Report can be found at : <a href="http://www.nationalforests.org/conservation/learning/collaborative-forest-landscape-restoration-program-in-arizona-new-mexico-and-colorado">http://www.nationalforests.org/conservation/learning/collaborative-forest-landscape-restoration-program-in-arizona-new-mexico-and-colorado</a></li> </ul>
<p><b>1.3) Identify and coordinate scientists in the West who are willing to provide scientific support for landscape-scale restoration</b></p>	
<p><b>a.</b> Identify science needs across CFLR projects</p> <p><b>b.</b> Identify scientists</p>	<p><b>a.</b> Waltz, A. See Attached Needs Assessment based on input from CFRLP Workshop Participants. <a href="#">Link to Needs Assessment</a></p> <p><b>b.</b> See Spreadsheet of Science Network. These individuals cooperate and/or collaborate with the ERI and CFLRP projects to deliver science support for landscape scale restoration. The ERI originally envisioned creating a program of ERI funded “affiliated scientists” to support landscape scale projects. The intention was to build applied science capacity by financially supporting individual scientists in lieu of creating additional institutes at other universities as mentioned in PL108-317. However, lack of funding makes creation of a formal affiliated scientist program impossible. <a href="#">Link to Spreadsheet</a></p>

## USFS FY13 Plan of Work - Deliverables

<b>Project 2: Evidence-Based Conservation</b>	
<b>Deliverable</b>	<b>Status</b>
<b>2.1) Evidence-based review of best available science to inform the Forest Service and partners in implementing the new Forest Planning Rule</b>	
<p><b>a.</b> Deliverable: Evidence-based review of best available science</p>	<p>a. Kalies, E.L., W. Covington. 2014. Where's the evidence? Using best available scientific information in forest management decision-making. Submitted to Journal of Forestry (ERI #156).</p>
<b>2.2) Respond to management questions</b>	
<p><b>a.</b> Deliverable: Synthesis of the literature to understand understory responses to treatments in ponderosa pine and related woodlands which have shrubby understory vegetation. This was requested by the Prescott National Forest and stakeholders</p> <p><b>b.</b> Deliverable: Synthesis of literature related to understanding the relationship between restoration treatments, resilience and climate change</p> <p><b>c.</b> Deliverable: Report to be delivered to requestor and published on the web</p>	<p>a. Abella, S.R., J. Springer. Effects of Tree Cutting and Fire on Understory Vegetation in Mixed Conifer Forests: a Systematic Review. 2014 (ERI #157) Abella, S.R., and J.D. Springer. 2014. Fact Sheet: Effects of Tree Cutting and Fire on Understory Vegetation in Mixed Conifer Forests. ERI Fact Sheets. Ecological Restoration Institute, Northern Arizona University. 3 p.</p> <p>b. Kalies, E.L., E. Haubensak. 2014. A Meta-Analysis of Management Effects on Forest Ecosystem Carbon. ERI #158)</p> <p>c. Evans, A.M. 2014. 2013 Wildfire Season: An Overview, Southwestern U.S. Ecological Restoration Institute and Southwest Fire Science Consortium, Northern Arizona University. 12 p. <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/asoc/D2014008.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/asoc/D2014008.dir/doc.pdf</a></p>

## USFS FY13 Plan of Work - Deliverables

<b>Project 3: Monitoring and Evaluation for Adaptive Ecosystem Management</b>	
Deliverable	Status
<b>3.1) Publications and related outputs from Re-measurement of LEARN sites</b>	
<p><b>a.</b> Preparation for field season.</p> <p><b>b.</b> Manuscript for publication describing relative effectiveness of burn-only and evidence-based restoration treatments in affecting potential fire behavior, fuels, stand structure, and understory plant community in a high-elevation ponderosa pine forest (A-S Mineral).</p> <p><b>c.</b> Manuscript for publication describing differences between burn-only and evidence-based restoration treatments in terms of overstory tree mortality and regeneration patterns, with implications for long-term composition changes in a dry mixed-conifer forest (Lower Middle Mountain (Pagosa), San Juan).</p> <p><b>d.</b> Fact sheets (2) summarizing results and implications of <del>FY13</del> FY12 LEARN analyses.</p>	<p>a. Completed.</p> <p>b. Roccaforte, J.P., Huffman, D.W., Chancellor, W.W., Crouse, J.E., Stoddard, M.T., Fulé, P.Z. (In submission) 2014. Forest structure, fuels, and potential fire behavior dynamics following ponderosa pine restoration treatments, Apache-Sitgreaves National Forests, USA. Pending submission to Forest Ecology and Management. ERI#55</p> <p>c. Stoddard, M.T., A. Sánchez Meador, P. Fulé, J. Korb. (Pending Submission). 2014. 5-year post-restoration treatment conditions and simulated forest trajectories under alternative climate scenarios of a southwestern dry/warm mixed-conifer forest. Pending submission to Forest Ecology and Management. (ERI # 159)</p> <p>d. Fact Sheets</p> <ul style="list-style-type: none"> <li>✓ Springer, J.D. Fact Sheet: Ecology of Rusby's milkvetch (<i>Astragalus rusbyi</i>), a rare endemic of northern Arizona ponderosa pine forests. February, 2014 (ERI# 153) <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014010.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014010.dir/doc.pdf</a></li> <li>✓ Springer, J.D. Fact Sheet: Long-term responses of <i>Penstemon clutei</i> (Sunset Crater beardtongue) to root trenching and prescribed fire: clues for population persistence. February, 2014 (ERI# 154) <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014013.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014013.dir/doc.pdf</a></li> </ul>

## USFS FY13 Plan of Work - Deliverables

<b>3.2) Mixed Conifer Outputs</b>	
<p>a. Preparation for field season</p> <p>b. Deliverable: Progress report on tree spatial pattern reconstruction</p> <p>c. Deliverable: Field visits with local agency staff and stakeholders</p> <p>d. Deliverable: Fact sheet describing research results and restoration implications of historical tree spatial patterns</p>	<p>a. Accomplished August, 2013.</p> <p>b. Accomplished June, 2014. <a href="#">Link to report</a></p> <p>c. Dr. Andrew Sánchez Meador presented an oral presentation (also attached) titled “Characterizing reference conditions and vegetation dynamics in warm/dry mixed-conifer forests” which covered preliminary results of this study and management implications. In attendance were seven staff associated with the Peaks Ranger District and/or the Forest Watershed Protection Project. <a href="#">Link to presentation</a></p> <p>d. Rodman, K., and Sánchez Meador, A.J. 2014. Characterizing Spatial Reference Conditions in Southwestern Warm/Dry Mixed-Conifer Forests. ERI Fact Sheets. Ecological Restoration Institute, Northern Arizona University: Flagstaff, AZ. 3 p. <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014023.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014023.dir/doc.pdf</a></p>
<b>3.3) A study plan (developed in cooperation with land managers) to test different restoration treatments for post-wildfire landscapes</b>	
<p>a. Study plan and implementation planning (3) (\$800K additional)</p> <p>b. Re-measurement of planting in previous wildfire area. Deliverable: Fact Sheet</p>	<p>b. Ouzts, J.R., and T.E. Kolb. 2014. Fact Sheet: Genetic Considerations for Restoring Forests of the Southwest After Severe Disturbance. ERI Fact Sheets. Ecological Restoration Institute, Northern Arizona University: Flagstaff, AZ. 4 p. <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014026.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014026.dir/doc.pdf</a></p>
<b>3.4) Not included</b>	
<b>3.5) Outputs from wildlife monitoring of species relevant to needs assessment</b>	
<p>a. Deliverable: Report on activities</p> <p>b. Deliverable: Fact sheets from published work from FY 2013 (Fort Valley/squirrels and MV/habitat use)</p>	<p>a. In progress as of 12/1/13.</p> <p>b.i. Kalies, E.L., Fact Sheet: Stand Structure and Breeding Birds: Implications for Restoring Ponderosa Pine Forests. February, 2014. <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014011.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014011.dir/doc.pdf</a></p> <p>b.ii. Yarborough, R.F. Fact Sheet: Summer Habitat Use by adult Female Mule Deer in a Restoration-Treated Ponderosa Pine Forest. February, 2014 <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014007.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014007.dir/doc.pdf</a></p>



## USFS FY13 Plan of Work - Deliverables

<b>Project 4: Understanding and Solving the Economic, Social and Political Issues and Opportunities of Ecological Restoration</b>	
Deliverable	Status
<b>4.1) Report assessing increases in understanding of novel funding approaches for achieving forest restoration and wildfire risk reduction.</b>	
<p><b>a.</b> Provide technical support to implement the Flagstaff Watershed Protection Project (FWPP) that authorized \$10 million in bonding authority to plan for and implement treatments designed to protect Flagstaff's municipal water supply and prevent post-fire flooding. Deliverable: Report on activities to support implementation</p> <p><b>b.</b> Coordinate in partnership with the University of Arizona and the Arizona Watershed and Forest Investment Fund a one-day workshop focused on implementers exploring how to implement novel funding approaches</p> <p style="margin-left: 20px;"><b>i.</b> Plan event</p> <p style="margin-left: 20px;"><b>ii.</b> Deliver workshop</p>	<p>a. Technical Support</p> <ul style="list-style-type: none"> <li>✓ Vosick, D. Helped coordinate and facilitate the second monitoring workshop for FWPP. April 30, 2013. 20 participants.</li> <li>✓ News release about recent efforts on the Flagstaff Watershed Protection Project. High resolution photos are on the FWPP Flickr page at: <a href="http://www.flickr.com/photos/flagstaffwatershedprotection">http://www.flickr.com/photos/flagstaffwatershedprotection</a></li> <li>✓ Huffman, D., M. Sensibaugh and E. Lauren-Bernstein. Provided assistance to the FWPP team to develop the monitoring plan. Monitoring plan is complete.</li> </ul> <p>b. In partnership with the Salt River Project, the University of Arizona, The Nature Conservancy and others the Ecological Restoration Institute planned and delivered a summit and a one-day workshop designed to explore mechanisms for increasing restoration capacity through public/private partnerships.</p> <ul style="list-style-type: none"> <li>✓ Covington, W.W. "A Practical Imperative for Arizona's Forests and Watersheds". October 3-4, 2013. Workshop entitled: Finding Solutions: Restoration Investment Strategies for Arizona's Forests and Watersheds. Scottsdale Arizona. 300 participants.</li> <li>✓ Vosick, D. Presentation. "What have we learned?" Investing in Restoration: Arizona's Forests and Watersheds Summit. May 1, 2014. Phoenix, Arizona. 112 attendees at the discussion.</li> </ul>
<b>4.2) Not included (\$800K additional)</b>	
<b>4.3) Analyze the relationship of fuels treatment, restoration and wildfire on real estate values</b>	
<p><b>a.</b> <del>Deliverable: manuscript submitted for journal publication and either a white paper or fact sheet summary for general audiences. (2)</del></p>	<p>In August, 2013 ERI discovered that the economist slated to "analyze the relationship of fuels treatment, restoration and wildfire on real estate values" was no longer available to perform this deliverable. The R3 program office declined on a suggested replacement (Economic Analysis of Owl Habitat) but recommended that the \$s originally anticipated for this deliverable (\$6,200) be moved to Project 6 to include details on how the additional \$s in Project 6 would be utilized. ERI was approved to eliminate deliverable 4.3a and replace it with a new deliverable, 6.1d.</p>

## USFS FY13 Plan of Work - Deliverables

<b>Project 5: State, Tribal and Private Forestry – The All Lands Approach</b>	
Deliverable	Status
<p><b>5.1) Co-chair the Exploratory Committee for the Arizona Prescribed Fire Council</b></p> <p><b>a.</b> Deliverable: Report on assistance</p>	<ul style="list-style-type: none"> <li>✓ Greco, B. Co-Chair of AZ State Prescribed Fire Council Development Team. Monthly.</li> <li>✓ Greco, B.; On July 11, 2013 Bruce facilitated a meeting of an exploratory collaborative group, to form an Arizona Prescribed Fire Council. He was elected Chairman of the Council (November 2, 2013) and has completed the following:               <ul style="list-style-type: none"> <li>• Conducted monthly meeting and conference calls since August 2013 involving approximately 50 groups and organizations across Arizona.</li> <li>• Facilitated development of a website for the Council (ERI has developed &amp; managed the website)</li> <li>• Provided several presentations and filled multiple information requests for science publications.</li> </ul> </li> </ul>

<b>Project 6: Services to the Intermountain West</b>	
Deliverable	Status
<b>6.1) Provide support to Forest Service and Department of Interior Land Managers with program planning and implementation</b>	
<p><b>a.</b> Deliverable: Report on technical assistance to Forest Service and Department of Interior land managers</p>	<p>a. Technical Assistance</p> <ul style="list-style-type: none"> <li>✓ Greco, B. Met with Coconino National Forest to review Revised Draft Forest Land Management Plan. Flagstaff, AZ. 8/8/13</li> <li>✓ Sensibaugh, M. Met with Coconino National Forest to review Flagstaff Watershed Protection Project Data Collection. Flagstaff, AZ. 8/20/13</li> <li>✓ Greco, B., Conducted Field Trip for A-S Forest Leadership Team &amp; Staff, and members of the Natural Resources Working Group (NRWG) to show results of HRV data collection on the Larson Restoration Project, Black Mesa RD, A-S NF. September 10, 2013. 17 participants.</li> <li>✓ Sensibaugh, M., Greco, B., Assisted in a USFS hosted field trip to the Pineleno Mountains to view Restoration and</li> </ul>

## USFS FY13 Plan of Work - Deliverables

<b>Project 6: Services to the Intermountain West</b>	
<b>Deliverable</b>	<b>Status</b>
	<p>Managed Fire implementation options. September 16-17, 2013. 9 participants.</p> <p>✓ Waltz, A., Sensibaugh, M., Greco, B. Participated in a Field Trip with the USFS, Safford RD, Coronado NF, to evaluate Restoration Demonstration sites. September 19-20, 2013. 12 participants.</p> <p>✓ Greco, B. Met with Coronado NF-Safford RD to discuss the Pinaleno Ecosystem Restoration Project. Safford, AZ 9/19/13</p> <p>✓ Huffman, D., Sanchez-Meador, A., Greco, B., Field trip to Mogollon RD, Coconino NF to meet with USFS Staff regarding Mixed conifer LEARN study; September 26, 2013. 10 participants.</p> <p>✓ Greco, B., D. Huffman, A. Sanchez Meador. Field Trip &amp; Meeting with Coconino National Forest on the Mixed Conifer LEARN. Happy Jack, AZ. 9/26/13</p> <p>✓ Huffman, D., Sensibaugh, M., Crouse, J. and Greco, B. Presentation to the Apache-Sitgreaves N.F. (ASNF) Leadership Team. "ERI Research Results on the ASNF in 2012-2013". Springerville, AZ., October 12, 2013. 22 participants.</p> <p>✓ Greco, B. Field trip Pinaleno Ecosystem Restoration Project. Coronado National Forest, Safford, AZ 10/16/13</p> <p>✓ Greco, B. Presentation at the White Mountain Land Trust Scenario Planning Workshop. Safford, AZ 11/13/13</p> <p>✓ Greco, B., A. Waltz, M. Sensibaugh. USFS Restoration Field Trip. Coronado National Forest, Safford, AZ. 11/20-21, 2013</p> <p>✓ Greco, B. Meeting &amp; Field Trip with Apache County Board of Supervisors, Apache County, AZ. 11/22/13</p> <p>✓ Huffman, D., Sensibaugh, M., and Greco, B. Presentation to the USFS Mogollon Rim Ranger District, Coconino N.F. on the Proposed Mixed conifer LEARN Study for the Mogollon Rim Area. Blue Ridge, AZ., December 10, 2013. 12 participants.</p> <p>✓ Sensibaugh, M., Greco, B., Joint field trip to view Mexican Spotted Owl (MSO) habitat and design a Rapid Assessment (RAP) for the Prescott NF. Bradshaw RD, Prescott NF.</p>

## USFS FY13 Plan of Work - Deliverables

<b>Project 6: Services to the Intermountain West</b>	
<b>Deliverable</b>	<b>Status</b>
<p><b>b.</b> Deliverable: Report on Rapid Assessments provided to Forest Service and DOI managers</p> <p><b>c.</b> Deliverable: Report on workshops provided to Forest Service and DOI managers</p> <p><b>d.</b> <u>Meet</u> with three Forest Supervisors to outline the process for an updated needs assessment discussion with the Forest Leadership Team, and to validate ERI's science delivery and support strategy with each forest. <b>Deliverable</b> summary of</p>	<p>January 28, 2014. 5 participants.</p> <ul style="list-style-type: none"> <li>✓ Sensibaugh, M., Greco, B., Participated in a field trip to view Mexican Spotted Owl (MSO) management areas. Bradshaw RD, Prescott NF. January 28, 2014. 5 participants</li> <li>✓ Huffman, D., Sensibaugh, M., Greco, B., Participated in a field trip with Coconino NF employees to identify LEARN study plots. Mogollon Rim RD, Coconino NF. April 7, 2014. 6 participants.</li> <li>✓ Sensibaugh, M., Greco, B. Co-lead in a field trip with Coronado NF Staff &amp; Leadership to examine managed fire sites on the Clifton &amp; Alpine RD's, Apache-Sitgreaves NF. April 24-25, 2014. 16 participants.</li> </ul> <p><b>b. Rapid Assessment</b></p> <ul style="list-style-type: none"> <li>✓ Sensibaugh, M., B. Greco, W. Chancellor and M. Stoddard. "Larson Forest Restoration Project Historic Range of Variation (HRV Reference Conditions) Assessment Report. October, 2013 <a href="#">Link to Document</a></li> <li>✓ Greco, B. Monitoring Report: 2012 Monitoring of the Eagar South Unit – Ecological Restoration Treatments. Springerville Ranger District, Apache – Sitgreaves NF. September 5, 2013 <a href="#">Link to Document</a></li> </ul> <p><b>c. Workshops</b></p> <ul style="list-style-type: none"> <li>✓ Greco, B. and M. Sensibaugh. Rim Lakes Ecosystem Restoration Project Workshop to the Apache-Sitgreaves NF Black Mesa RD. Overgaard, AZ. 7/19/13. 17 attendees</li> <li>✓ Greco, B. and A. Waltz. 4FRI Bridge Monitoring Workshop to Apache-Sitgreaves NF/NRWG. Eagar, AZ. 8/14/13. 11 attendees.</li> </ul> <p><b>d. Meet with Forest Supervisors</b></p> <ol style="list-style-type: none"> <li>1. Greco, B., Met with Coconino NF Supervisor, Earl Stewart on January 13, 2014. Flagstaff, AZ. Meeting objectives included:             <ul style="list-style-type: none"> <li>✓ Reviewed current ERI research and support activities on the forest</li> <li>✓ Discussion of emerging issues, needs &amp;</li> </ul> </li> </ol>

## USFS FY13 Plan of Work - Deliverables

<b>Project 6: Services to the Intermountain West</b>	
<b>Deliverable</b>	<b>Status</b>
<p>needs assessment, and science delivery and support strategy.  <b>Added as approved replacement to discontinued deliverable 4.3a.</b></p>	<p>opportunities</p> <ul style="list-style-type: none"> <li>✓ Agreement on future ERI focus and/or possible support for FY2014, which include the following:               <ul style="list-style-type: none"> <li>• Participate with forest &amp; RMRS to develop strategic restoration plan for Long Valley &amp; Ft. Valley Experimental forests</li> <li>• Mixed-Conifer (M-C) research(in MSO Areas) for Flagstaff Watershed Protection Project</li> <li>• M-C LEARN study initiation on the Mogollon Rim RD</li> <li>• Explore options to conduct a RAP on the Landmark-Mahan Restoration Project</li> <li>• Provide Evidence-based Restoration workshop for the FLT.</li> <li>• Attend selected FLT meetings to report on science delivery of ERI research</li> </ul> </li> </ul> <p>2. Greco, B., Sensibaugh, M., Met with Kaibab Forest Supervisor, Mike Williams on January 30, 2014. Williams, AZ. Meeting objectives included:</p> <ul style="list-style-type: none"> <li>✓ Reviewed current ERI research and support activities on the forest</li> <li>✓ Discussion of emerging issues, needs &amp; opportunities</li> <li>✓ Agreement on future ERI focus and/or possible support for FY2014, which include the following:               <ul style="list-style-type: none"> <li>• Contact Williams &amp; Tusayan District Rangers to offer a basic Restoration and research workshop/briefing to the new District Rangers.</li> <li>• Participation in a FLT meeting (also possible joint FLT meeting with the Coconino FLT) to inform them regarding ERI research, delivery format &amp; assistance with science integration in planning activities.</li> <li>• Explore possible RAP in Mixed Conifer type on North Kaibab RD.</li> <li>• Provide possible field trip with forest staff to visit ERI research sites.</li> </ul> </li> </ul> <p>3. Greco, B., Met with Apache-Sitgreaves NF Supervisor Jim Zornes on February 18, 2014, Springerville, AZ .</p>

## USFS FY13 Plan of Work - Deliverables

<b>Project 6: Services to the Intermountain West</b>	
<b>Deliverable</b>	<b>Status</b>
	<p>Meeting objectives included:</p> <ul style="list-style-type: none"> <li>✓ Reviewed current ERI research and support activities on the forest</li> <li>✓ Discussion of emerging issues, needs &amp; opportunities</li> <li>✓ Agreement on future ERI focus and/or possible support for FY2014, which include the following:               <ul style="list-style-type: none"> <li>• ERI lead on development of the Bridge Projects Monitoring Plan</li> <li>• Priority need for ERI to continue participation at the Natural Resource Working Group as a science provider</li> <li>• ERI participation on the White Mountain Stewardship Monitoring Board</li> <li>• ERI assistance in development of the Economic Assessment and final report for the White Mountain Stewardship contract</li> <li>• Continued participation in FLT meetings to provide science update</li> <li>• ERI lead potential field trip to A-S research sites and the Mineral LEARN</li> <li>• ERI capacity to accomplish the Upper Rocky Arroyo Restoration Project RAP</li> <li>• ERI conduct a field trip for FLT &amp; staff to research sites on the Larson Restoration Project RAP, Black Mesa RD</li> <li>• Potential involvement of ERI to complete a RAP for the Escudilla East Restoration Project in late 2014 or 2015</li> </ul> </li> </ul>

## USFS FY13 Plan of Work - Deliverables

<b>Project 6: Services to the Intermountain West</b>	
<b>Deliverable</b>	<b>Status</b>
<p><b>6.2) Provide Web support for ERI, SWERI, 4FRI and Parashant Partnership</b></p> <p><b>a.</b> Deliverable: Report on technical support for ERI, SWERI and 4FRI websites</p>	<ul style="list-style-type: none"> <li>• Ecological Restoration Institute. 2013. ERI December 2013 Newsletter. Ecological Restoration Institute, Northern Arizona University, 8p. <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014005.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014005.dir/doc.pdf</a></li> <li>• Ecological Restoration Institute. 2014. ERI Spring/Summer 2014 Newsletter. Ecological Restoration Institute, Northern Arizona University, 15p. <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014025.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014025.dir/doc.pdf</a></li> </ul>
<b>6.3) Translate biophysical and social-political-economic information for affected entities</b>	
<p><b>a.</b> Deliverable: Editorial support for 1 white paper</p> <p><b>b.</b> Deliverable: Editorial support for 2 working papers</p> <p><b>c.</b> Deliverable: 8 fact sheets</p>	<p>6.3.a: Egan, D., E. Nielsen. 2014. The History of the Four Forest Restoration Initiative: 1980s-2010. Ecological Restoration Institute, Northern Arizona University. 27 pp. <a href="#">Link to document</a></p> <p>6.3bi Gaylord, M.L. 2014. Impact of Forest Restoration Treatments on Southwestern Ponderosa Pine Tree Resistance to Bark Beetles. ERI Working Paper No. 30. Ecological Restoration Institute and Southwest Fire Science Consortium, Northern Arizona University: Flagstaff, AZ. 9 p. <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014014.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014014.dir/doc.pdf</a></p> <p>6.3bii Gaylord, M.L. 2014. Climate Change Impacts on Bark Beetle Outbreaks and the Impact of Outbreaks on Subsequent Fires. ERI Working Paper No. 31. Ecological Restoration Institute and Southwest Fire Science Consortium, Northern Arizona University: Flagstaff, AZ. 7 p. <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014027.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014027.dir/doc.pdf</a></p> <p>6.3.c. Fact Sheets</p> <ul style="list-style-type: none"> <li>i. Springer, J.D. Fact Sheet: Ecology of Rusby’s milk vetch (<i>Astragalus rusbyi</i>), a rare endemic of northern Arizona ponderosa pine forests. February, 2014 (ERI# 153) <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014010.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014010.dir/doc.pdf</a></li> <li>ii. Springer, J.D. Fact Sheet: Long-term responses of</li> </ul>

## USFS FY13 Plan of Work - Deliverables

<b>Project 6: Services to the Intermountain West</b>	
<b>Deliverable</b>	<b>Status</b>
	<p>Penstemon clutei (Sunset Crater beardtongue) to root trenching and prescribed fire: clues for population persistence. February, 2014 (ERI# 154)  <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014013.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014013.dir/doc.pdf</a></p> <p>iii. Fulé, P. 2014. Fact Sheet: Unsupported inferences of high-severity fire in historically dry forests of the western United States: response to Williams and Baker.  <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014030.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014030.dir/doc.pdf</a></p> <p>iv. Abella, S.R., and J.D. Springer. 2014. Fact Sheet: Effects of Tree Cutting and Fire on Understory Vegetation in Mixed Conifer Forests. ERI Fact Sheets. Ecological Restoration Institute, Northern Arizona University. 3 p.  <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014029.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014029.dir/doc.pdf</a></p> <p>v. Kalies, E.L., Fact Sheet: Stand Structure and Breeding Birds: Implications for Restoring Ponderosa Pine Forests. February, 2014.  <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014011.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014011.dir/doc.pdf</a></p> <p>vi. Yarborough, R.F. Fact Sheet: Summer Habitat Use by adult Female Mule Deer in a Restoration-Treated Ponderosa Pine Forest. February, 2014  <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014007.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014007.dir/doc.pdf</a></p> <p>vii. Rodman, K., and Sánchez Meador, A.J. 2014. Characterizing Spatial Reference Conditions in Southwestern Warm/Dry Mixed-Conifer Forests. ERI Fact Sheets. Ecological Restoration Institute, Northern Arizona University: Flagstaff, AZ. 3 p.  <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014023.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014023.dir/doc.pdf</a></p> <p>viii. Lucas, A.M., Kim, Y.S., Davis, E.J., Moseley, C. 2014. The Impacts of the Woody Biomass Utilization Program in Eastern Arizona. ERI Fact Sheets. Ecological Restoration Institute, Northern Arizona University: Flagstaff, AZ. 2 p.  <a href="http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014016.dir/doc.pdf">http://library.eri.nau.edu/gsd/collect/erilibra/index/assoc/D2014016.dir/doc.pdf</a></p>



## USFS FY13 Plan of Work - Deliverables

<b>6.4) Initiate and facilitate knowledge services and science support through workshops, field trips, filling information requests and presentations</b>	
<p><b>a.</b> Deliverable: Report on workshops for affected entities</p>	<p>a. Workshops</p> <ul style="list-style-type: none"> <li>✓ Vosick, D. Assisted with the coordination and facilitation of the second Flagstaff Watershed</li> <li>✓ Greco, B. AZ Prescribed Fire Council Workshop. Phoenix, AZ. July 11, 2013. 18 attendees</li> <li>✓ Greco, B. AZ Co-Op Extension Service Strategic Planning Workshop requested by the University of Arizona. Flagstaff, AZ. September 11, 2013. 26 attendees.</li> <li>✓ Greco, B. Malapai-Borderlands Collaborative Workshop-Presentation. Requested by The Nature Conservancy in Tucson. Douglas, AZ. September 20-21, 2013. 40 attendees.</li> <li>✓ Sensibaugh, M., Greco, B., Panel participants in Restoration and Fire Collaborative Meeting for the Tonto NF Land Management Plan Revision Workshop. Payson, AZ. January 23, 2014. 13 participants.</li> <li>✓ Sensibaugh, M., Greco, B., Participants representing Best-Science Providers, Tonto NF Land Management Plan Revision Workshop. Phoenix, AZ. 82 participants. March 6, 2014.</li> </ul>
<p><b>b.</b> Deliverable: Report on field trips for affected entities</p>	<p>b. Field Trips</p> <ul style="list-style-type: none"> <li>✓ Vosick, D. Field Tour of Gus Pearson for the National Associate of Counties Western Interstate Region. Flagstaff, AZ. May 21, 2013. 20 participants</li> <li>✓ Lauren-Bernstein, E. Field Tour of Gus Pearson and Fort Valley Projects for Mick Stevens and Australian foresters. Flagstaff, AZ. July 12, 2013</li> <li>✓ Covington, W.W. and D. Vosick. Tour of the Schultz Fire for Senator Jeff Flake and other government officials in cooperation with Coconino County. August 22, 2013. 25 participants.</li> <li>✓ Covington, W.W. and D. Huffman. Tour of Gus Pearson and Fort Valley for leadership at the Salt River Project. August 23, 2013. 15 participants.</li> <li>✓ Roccaforte, J.P. and E. Lauren-Bernstein. Field tour and ecological restoration discussion with Society of American Foresters (SAF) and Association of Mexican Professional Foresters (AMPF) at GPNA restoration site, Flagstaff, AZ. October 11, 2013. 80 participants.</li> <li>✓ Greco, B., Participated in a field trip for Apache County Board of Supervisors to fuel treatment sites in Apache</li> </ul>

## USFS FY13 Plan of Work - Deliverables

<p><b>c.</b> Deliverable: Report on presentations and information requests for affected entities.</p>	<p>County, Arizona. November 22, 2013. 16 participants.</p> <ul style="list-style-type: none"> <li>✓ Vosick, D. Field Tour for German McCloy Fellows in Urban Affairs coordinated with Paul Summerfelt (City of Flagstaff and Dick Fleishman (USFS). Tour of the Gus Pearson Natural Area, Flagstaff, AZ. March 18, 2014. 8 participants.</li> <li>✓ Greco, B. Assisted Apache County Natural Resource Staff with a field trip to examine Restoration treatments, prescribed fire and WUI fuel treatment projects in Apache County, Arizona, for elected officials and the public. April 29, 2014. 22 participants</li> <li>✓ Vosick, D. Field Tour of Gus Pearson and Fort Valley Projects. Flagstaff, AZ. May 19, 2014. 5 participants</li> <li>✓ Vosick, D. Field Tour for Visitors from the Indonesian Ministry of Home Affairs. Tour of the Gus Pearson Natural Area, Flagstaff, AZ. May 24, 2014. 6 participants</li> <li>✓ Waltz, A. Field trip planning and facilitation assistance with 4FRI addressing canopy cover/openness metrics and desired conditions with Stakeholder Group. June, 2014. 12 total hrs</li> </ul> <p>c. Presentations and Information Requests</p> <ul style="list-style-type: none"> <li>✓ Greco, B. As a member of the White Mountain Stewardship Monitoring Board, Bruce attended recurring monthly meetings and provided numerous presentations and responses to data requests (Approximately 10 separate responses). Apache-Sitgreaves NF. FY2013</li> <li>✓ Lauren-Bernstein, E. At USFS request, assembled CFLR 4FRI annual report data (matched and leveraged funds) for FY13. June, 2013. 20 hrs.</li> <li>✓ Sensibaugh, M. As a Greater Flagstaff Forest Partnership (GFFP) Board Member, Mark provided numerous requests for information, data &amp; support through meetings, calls &amp; field trips. (Approximately 10 responses). Flagstaff, AZ. FY2013</li> <li>✓ Greco, B., Participation in monthly Natural Resources Working Group Meetings, Apache-Sitgreaves NF.</li> <li>✓ Vosick, D. Information request regarding FWPP. Kris Kiefer. April 22, 2013</li> <li>✓ Vosick, D. Information request regarding “Good Neighbor” policy. Kris Kiefer. April 23, 2013</li> <li>✓ Vosick D. Request for assistance for a presentation on the Schultz Fire. Lucinda Andreani. April 29, 2013.</li> <li>✓ Vosick, D. Request for information on systematic reviews.</li> </ul>
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## USFS FY13 Plan of Work - Deliverables

	<p>Tom Runyon. April 30, 2013.</p> <ul style="list-style-type: none"> <li>✓ Vosick D. Request for assistance with the problem of MgCL application and tree mortality on behalf of the Coconino County Supervisors. Helped them find an expert. Marlene Gaither. May 1, 2013.</li> <li>✓ Vosick, D. Request for information on the Schultz Fire and the efficacy of fuel treatments. Rob Davis. May 15, 2013.</li> <li>✓ Vosick D. Request for information for information about restoration work on the Coronado National Forest. Referred to Greco. Paul Summerfelt. May 6, 2013</li> <li>✓ Vosick D. Request for photos by the Forest Service. 2 provided. May 7, 2013</li> <li>✓ Vosick D. Request for information on treatment costs. Scott Miller. May 8, 2013.</li> <li>✓ Kim, Y-S. Presentation on the economics of treatments to the National Association of Counties WIR conference. May 23, 2013.</li> <li>✓ Vosick, D. Request for information on fire policy and declining fuels budgets. Nick Riccardi. June 12 and 17, 2013.</li> <li>✓ Vosick, D. Elaboration on results from the Schultz Fire Full Cost Accounting Report. Lynn Jones. June 14, 2013.</li> <li>✓ Vosick, D. Request for information about the Efficacy of Treatments report. Jacqueline Emanuel. July 29, 2013.</li> <li>✓ Vosick, D. Presentation to the Congressional Research Service on the results of the Efficacy of Treatments study. July 29, 2013. 25 Congressional staff members.</li> <li>✓ Vosick, D. Information request regarding the 4FRI contract. Clint Chandler. August 1, 2013.</li> <li>✓ Vosick, D. Question about 4FRI NEPA. Kris Kiefer. August 26, 2013.</li> <li>✓ Vosick, D. Request for information concerning Coconino County response to fire problem. Jessica Lage. August 25, 2013.</li> <li>✓ Greco, B. Presentation made to the Natural Resources Working Group (NRWG) on “Bridge Projects Monitoring Framework”. Eagar, AZ., September 3, 2013. 35 participants</li> <li>✓ Greco, B. Presentation to the WMS Monitoring Board. Springerville, AZ. September 17, 2013. 9 attendees</li> <li>✓ Greco, B. Presentation to the 4FRI Bridge Monitoring Working Group-Chairman. Springerville, AZ. September</li> </ul>
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## USFS FY13 Plan of Work - Deliverables

	<p>25, 2013</p> <ul style="list-style-type: none"> <li>✓ Vosick, D. Request for information about the Schultz Full Cost Accounting study. Lauren Gardner. October 2, 2013</li> <li>✓ Greco, B. Presentation made to the White Mountain Land Trust Scenario Planning Workshop. “Restoration and Human Influences in Fire-Adapted Ecosystems of the Southwestern U.S.: Problem Solving for the Future”. Show Low, AZ., October 13, 2013. 24 participants.</li> <li>✓ Vosick, D. Objective review of HR1526. Lucy Murfitt. October 30, 2013.</li> <li>✓ Vosick D. Advice and request for assistance on behalf of the Upper Verde River Watershed Protection Coalition. John Munderloh. November 4 and 22, 2013. After one meeting referred him to other experts in Arizona due to our lack of capacity. Vosick, D. Referral to someone who can characterize the wood supply on the Mogollon Rim. Herb Hopper. November 22, 2013</li> <li>✓ Greco, B. Presentation made to the Natural Resources Working Group (NRWG) on “An Update on Bridge Projects Monitoring Framework”. Show Low, AZ., November 19, 2013. 30 participants.</li> <li>✓ Vosick, D. Request for review and location of pictures and other sources for a book on Ponderosa Pine. Carl Fiedler. December 3, 2013.</li> <li>✓ Greco, B. Presentation made to the Apache County Board of Supervisors, December meeting, on “Restoration and Research in Apache County Arizona”. St. Johns, AZ., December 17, 2013. 40 participants.</li> <li>✓ Waltz, A. and Greco, B. presentation made to members of the 4FRI Planning Team on Science needs for the 4FRI Analysis Area DEIS. Flagstaff, AZ., January 13, 2014. 7 participants</li> <li>✓ Vosick, D. Request for citations supporting pre-settlement population numbers of ponderosa pine. Sue Sitko. January 13, 2014.</li> <li>✓ Vosick, D. Request for projected employment at full 4FRI operation. January 16, 2014.</li> <li>✓ Greco, B. Presentation made to the Arizona Prescribed Fire Council on the “Status of Prescribed Fire and Managed Wildfire in Arizona”. Statewide meeting, Flagstaff, AZ., January 17, 2014. 30 participants.</li> <li>✓ Greco, B. Presentation made to the Natural Resources Working Group (NRWG) on “Bridge Projects Monitoring</li> </ul>
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## USFS FY13 Plan of Work - Deliverables

	<p>Framework”. Eagar, AZ., January 21, 2014. 30 participants</p> <ul style="list-style-type: none"> <li>✓ Greco, B. Presentation made to the 4FRI monthly Meeting on the progress of the A-S Bridge Projects Monitoring Plan. Pinetop, AZ., January 22, 2014. 45 participants.</li> <li>✓ Greco, B., Detailed request for data and information from Jim Youtz, R-3 USFS.</li> <li>✓ Vosick, D. Request for objective review of O and C proposal. Lucy Murfitt. February 1, 2014.</li> <li>✓ Vosick, D. Request for information about post-fire tree planting guidelines. Joanna Allhands. February 10, 2014.</li> <li>✓ Vosick, D. Referred to A. Begley. Request for information examining state versus federal land management costs. February 19, 2014.</li> <li>✓ Vosick, D. Request to clarify 4FRI budget needs. Liz Archuleta and Jerry Nabours. February 20, 2014.</li> <li>✓ Vosick, D. Question regarding Fire Borrowing legislation. Brandon Loomis. February 24, 2014.</li> <li>✓ Greco, B., Presentation made to the Statewide Arizona Prescribed Fire Council at the Fostering Resilience in SW Ecosystems Workshop on the role of the Council in fostering prescribed fire in Arizona. Tucson, AZ. February 27, 2014. 46 participants.</li> <li>✓ Vosick, D. Request for advice on doing appraisals of the value of biomass on state lands. Bill Boyd. March 5, 2014</li> <li>✓ Lauren-Bernstein, E. Presentation, “A Race Against Time: Forest Restoration in the American Southwest” given to the U.S. Green Building Council. Phoenix, AZ. April 1, 2014. 35 participants.</li> <li>✓ Greco, B. Presentation made to the Natural Resources Working Group (NRWG) on “The Final Bridge Projects Monitoring Framework”. Show Low, AZ., April 15, 2014. 30 participants</li> <li>✓ Kalies, E.L. 2014. Multiple public education talks on the topic: Forests Under Fire. SECU Daily Planet at the NC Museum of Natural Sciences, Raleigh, North Carolina. March 6 , March 25, April 17, April 24. Approximately 25 attendees.</li> <li>✓ Springer, J. <i>Restoring the plant community in southwestern forests</i>. Desert Botanical Garden, Tempe, AZ. February 10, 2014. Approximately 100 in attendance</li> <li>✓ Vosick, D. Presentation to the Society of American</li> </ul>
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## USFS FY13 Plan of Work - Deliverables

	<p>Foresters. <i>4FRI: The Good, the Bad, and the Ugly</i>". Flagstaff, AZ. March 13, 2014. 25 in attendance.</p> <ul style="list-style-type: none"> <li>✓ Vosick, D. <i>Flagstaff Watershed Protection Project</i>. Co-Presentation with Earl Stewart and Paul Summerfelt to the Wildland Fire Leadership Council. Washington, D.C. April 9, 2014. Approximately 40 in attendance.</li> <li>✓ Vosick, D. Review of Fuel Treatment Effectiveness in Idaho forests. Jay O’Laughlin. April 1, 2014.</li> <li>✓ Vosick, D. <i>The Four Forests Restoration Initiative: The Economic Benefits of a Restored Forest</i>. Coconino County Planning Committee, Flagstaff, AZ. April 24, 2014. 25 in attendance.</li> <li>✓ Waltz, A. Presentation and Panel at the Museum of Northern AZ Seminar Series. April 30, 2014</li> <li>✓ Waltz, A. Presentation at Flagstaff Leadership Science Day. May 8, 2014</li> <li>✓ Waltz, A. Crowne Family Presentation. Chicago, IL, June 4, 2014</li> </ul>
<p><b>6.5) Educate the General Public</b>  <b>a.</b> Deliverable: 2 Newspaper articles</p>	<ul style="list-style-type: none"> <li>• Covington, W.W., D. Roberts, and L. Fisher. 2013. “Saving Arizona’s threatened landscape.” My Turn Editorial. <i>The Arizona Republic</i>. November 22, 2013.  <a href="http://www.azcentral.com/opinions/articles/20131124forest-thinning-arizona-threatened-landscape.html">http://www.azcentral.com/opinions/articles/20131124forest-thinning-arizona-threatened-landscape.html</a></li> <li>• When the Arizona Republic needed experts and objective information for a series of four articles entitled “In Harm’s Way” they made numerous requests for information and interviews from the ERI. The articles appeared in the December 1-4, 2013 edition of the paper.</li> <li>• Vosick, D., P. Summerfelt, E. Stewart. 2014. Coconino Voices: Local watershed thinning a national example. <i>Arizona Daily Sun</i>: Flagstaff, AZ. April 25, 2014.  <a href="http://azdailysun.com/news/opinion/columnists/coconino-voices-local-watershed-thinning-a-national-example/article_cafa8f46-cc49-11e3-8ea3-0019bb2963f4.html">http://azdailysun.com/news/opinion/columnists/coconino-voices-local-watershed-thinning-a-national-example/article_cafa8f46-cc49-11e3-8ea3-0019bb2963f4.html</a></li> </ul>

## USFS FY13 Plan of Work - Deliverables

<p><b>6.6) Examine and test new approaches to provide knowledge support and services.</b></p> <p><b>a.</b> Examine, evaluate, and report on different continuing education and information delivery formats.</p>	<ul style="list-style-type: none"> <li>✓ ERI Newsletter Impact Assessment, December 2013</li> <li>✓ ERI Newsletter Impact Assessment. Final</li> <li>✓ The Outreach and R&amp;D Groups have met with the Forest leadership Team (FLT) of the Apache-Sitgreaves NF (ASNF) twice (March 6, 2013; November 12, 2013) to present results of research finding on the ASNF. Science research topics and priorities were validated during these meetings, and ERI has responded to all science requests made by the FLT. Copies of the studies and finding were delivered to the FLT &amp; staff during these presentations.</li> <li>✓ Outreach followed up with the Forest Supervisor (Jim Zornes) quarterly, to update him on research progress and publications. These meetings are used to validate service &amp; support commitments to the forest and progress of research work.</li> <li>✓ Outreach conducted a field trip (September 10, 2013) for the A-S NF personnel to the Larson Ecosystem Restoration Project to examine Evidence Based restoration plots where we had collected HRV data for the project. The USFS personnel were able to have a "hands-on" experience of collecting historic data and we compared the results to the science research findings from on-going research on the forest. The field trip and objectives were well received and additional workshops &amp; field trips have been requested by the forest.</li> <li>✓ As reported under Project 6.1d, Outreach met with Forest Supervisors to design a tailored approach to delivering science research to meet the needs of each forest.</li> </ul>
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<b>Project 7: Duty 5 under the ACT. Provide annual progress reports</b>	
<b>Deliverable</b>	<b>Status</b>
<p><b>7.1)</b> Complete annual progress report on June 30, 2013 and June 30, 2014</p>	<ul style="list-style-type: none"> <li>✓ Complete through 9/30/13.</li> <li>✓ Complete through 6/30/2014</li> </ul>

# USFS FY14 Plan of Work - Deliverables

## FY14 Plan of Work

<b>Project 1: Science Support for Collaborative Restoration and Conservation</b>	
<b>Deliverable</b>	<b>Status</b>
<b>1.1) Provide Support for the Four Forest Restoration Initiative (4FRI), a Collaborative Forest Landscape Restoration Act project</b>	
<p>a) Report on technical assistance for science and monitoring. This includes: small group leadership, assistance to help incorporate the adaptive management and monitoring plan into the final EIS, and monitoring plan implementation planning</p> <p>b) Summarize in a Fact Sheet lessons learned about leadership and administrative assistance to the 4FRI steering committee</p> <p>c) Report on IT support for the 4FRI Website and BASECAMP (an online collaborative work space), Website and Administration</p>	<ul style="list-style-type: none"> <li>• All deliverables in progress under funding received 5/1/2014</li> </ul>
<b>1.2) Provide scientific and technical support for other CFLRP pilots and emerging projects</b>	
<p>a) Deliverable: Report on activities to support the national CFLRP monitoring network</p> <p>i. The ERI will assist the CFLRP National Monitoring Network to hold (3) webinars in partnership with National Forest Foundation addressing monitoring barriers and lessons learned among all 23 funded CFLRP sites.</p> <p>ii. ERI staff will initiate and coordinate a Region 2 and 3 CFLRP Monitoring Network (outcome from R2/R3 CFLRP workshop) with (6) conference calls planned. Goals are shared lessons learned regarding adaptive management and monitoring plans and coordination of cross-site communication with the development of ecological indicator reports.</p> <p>b) Deliverable: Report on support for the national 5-year monitoring report</p>	<ul style="list-style-type: none"> <li>• All deliverables in progress under funding received 5/1/2014</li> </ul>



## USFS FY14 Plan of Work - Deliverables

<p>required by Congress under the Collaborative Forest Landscape Restoration Act.</p> <p>i. ERI staff will participant with USFS Washington Office CFLRP Coordinator to develop and finalize a template for the CFLRP National Ecological Indicator (for 5-yr reporting) and roll out the template utilizing the CFLRP National Monitoring Network.</p>	
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### ***Project 2: Information Analysis to Assist Evidence-Based Conservation***

Deliverable	Status
<p><b>2.1) Complete one review based on information needs identified on page 50-51 in “Restoring Composition and Structure in Southwestern Frequent-Fire Forests: A science-based framework for improving ecosystem resiliency” (RMRS GTR-310) using an established analytical framework</b></p>	
<p>a) Deliverable: A systematic review addressing an information need. The review will be published to the ERI web site and delivered to practitioners.</p>	<ul style="list-style-type: none"> <li>• All deliverables in progress under funding received 5/1/2014</li> </ul>

### ***Project 3: Ecological Monitoring and Evaluation for Adaptive Management***

Deliverable	Status
<p><b>3.1) Develop and initiate new LEARN study in a mixed-conifer forest on the Coconino National Forest (Build from FY13)</b></p>	
<p>a) Work with Coconino National Forest to develop treatment alternatives and study questions</p> <p>b) Summarize baseline data and provide to agency staff</p> <p>c) Summarize reference conditions and present findings in journal article, conference, or workshop</p>	<ul style="list-style-type: none"> <li>• All deliverables in progress under funding received 5/1/2014</li> </ul>

## USFS FY14 Plan of Work - Deliverables

<b>3.2) Quantify reference conditions for spatial patterns in warm/dry mixed conifer forests on the Coconino National Forest</b>	
<ul style="list-style-type: none"> <li>a) One manuscript for peer-reviewed publication</li> <li>b) Workshop and/or field visit for agency staff and interested stakeholders (e.g., 4FRI, Salt River Project, US Fish and Wildlife Service, Arizona Game and Fish, state and local government)</li> </ul>	<ul style="list-style-type: none"> <li>• All deliverables in progress under funding received 5/1/2014</li> </ul>
<b>3.3) Wildlife responses to restoration and hazardous fuels reduction treatments</b>	
<ul style="list-style-type: none"> <li>a) Cancelled as the result of reduced funds</li> <li>b) Report on pretreatment conditions and progress of the Flagstaff Watershed Protection Project (FWPP) wildlife monitoring</li> <li>c) Cancelled as the result of reduced funds</li> </ul>	<ul style="list-style-type: none"> <li>• All deliverables in progress under funding received 5/1/2014</li> </ul>

### ***Project 4: Understanding and Solving the Economic, Social, and Political Issues and Opportunities of Ecological Restoration***

Deliverable	Status
<b>4.1) Actions and a case study to increase understanding of innovative funding approaches for achieving forest restoration and wildfire risk reduction.</b>	
<ul style="list-style-type: none"> <li>a) Provide technical support to implement innovative funding streams.               <ul style="list-style-type: none"> <li>i. Deliverable: Report on activities to support implementation</li> </ul> </li> <li>b) Compile a case study of local government and the Forest Service working together to leverage funding. In particular identify the essential components for successful partnerships including: appropriate and efficient financial instruments to transfer funds, mechanisms for establishing and executing appropriate roles and responsibilities and other details that will assist other communities replicate successful partnerships.               <ul style="list-style-type: none"> <li>i. Deliverable: Case Study</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• All deliverables in progress under funding received 5/1/2014</li> </ul>

## USFS FY14 Plan of Work - Deliverables

<b>4.2) Analyze the relationship of fuels treatments and restoration on real estate values.</b>	
a) Deliverable: Manuscript for publication b) Deliverable: Fact Sheet	<ul style="list-style-type: none"><li>All deliverables in progress under funding received 5/1/2014</li></ul>


### **Project 5: State, Tribal and Private Forestry - The All Lands Approach**

Project eliminated April, 2014

### **Project 6: Services to the Intermountain West**

<b>Deliverable</b>	<b>Status</b>
<b>6.1) Provide support to federal land managers with treatment planning and implementation</b>	
a) Deliverable: Report on actions to support project assessments, data collection, treatment design, and use of best available science by federal land managers to achieve desired conditions and outcomes. i. 7 Field Trips  ii. 2 Rapid Assessments (RAPS) presently planned on the Apache-Sitgreaves and Prescott National Forests. We are engaged in early discussions to establish a restoration treatment demonstration area on the Coronado National Forest	i. Field Trips  ✓ Sensibaugh M, Stoddard M. Field trip and discussions with USFS Coronado NF (Safford Ranger District) personnel on the PERP (Hospital Flats) ERI demonstration mark and RAP. May 19-21. Pinaleno Mtns.  ii Rapid Assessments (RAPS) – in progress

## USFS FY14 Plan of Work - Deliverables

<p>iii. We anticipate providing a combination of 10 total services based on previous and anticipated demand that may include: workshops, technical assistance, science support and presentations</p>	<p>iii. Services</p> <ul style="list-style-type: none"> <li>✓ Greco, B., Sensibaugh, M., Meeting and presentation to USFS A-S Personnel &amp; public participants regarding a Rapid Assessment request from A-S FLT on the Upper Rocky Arroyo Restoration Project, Lakeside, AZ, May 8, 2014. 9 participants</li> <li>✓ Greco, B., Presentation “Bridge Projects Monitoring Plan” to the Natural Resources Working Group (NRWG), Eagar, AZ. May 13, 2014 32 participants</li> <li>✓ Greco, B., Developed a Monitoring and Adaptive Management Plan for the A-S “Bridge Restoration Projects”. Springerville, AZ. May 13, 2014 Link:              Bridge Monitoring Plan_FINAL.docx</li> <li>✓ Greco, B., Presentation on “The White Mountain Stewardship Project: Ten-year Report” to the NRWG, Show Low, AZ June 17, 2014 27 participants</li> <li>✓ Sensibaugh M., Meeting and presentation(s), Greater Flagstaff Forest Partnership (GFFP); monthly meetings, 7-12 participants</li> <li>✓ Sensibaugh M., Meeting and discussion about permits and implementation of the Mogollon Rim LEARN project, Mogollon District and Coconino NF, June 9, 2014, 4 participants</li> <li>✓ Sensibaugh M., meeting and presentation with Ben DuBois on the Prescott NF to coordinate details for the first RAP Trip, 6/10-14, Prescott, AZ. June 10, 2014.</li> </ul>
<p><b>6.2) Assist with USFS forest planning and implementation</b></p>	
<p>a) Deliverable: Report on actions to support forest planning, implementation, and integration of best available science in FLMP revisions. Specific support to be provided to the Apache-Sitgreaves, Tonto, Coconino and Kaibab Forest Plan revisions</p>	<ul style="list-style-type: none"> <li>✓ Greco, B., Assisted Tonto NF Forest Plan Revision Team by Presenting “Ecological Restoration and Fire: A Historical Perspective” at a public meeting in Payson, AZ May 21, 2014 140 participants</li> </ul>
<p><b>6.3) Provide Web support for ERI, SWERI, 4FRI</b></p>	
<p>a) Deliverable: Report on</p>	<ul style="list-style-type: none"> <li>• All deliverables in progress under funding received 5/1/2014</li> </ul>

## USFS FY14 Plan of Work - Deliverables

technical support for ERI, SWERI and 4FRI websites	
<b>6.4) Translate biophysical and social-political-economic information for affected entities</b>	
a) Deliverable: Editorial support for 1 white paper b) Deliverable: Editorial support for 2 working papers c) Deliverable: 8 fact sheets	<ul style="list-style-type: none"> <li>• All deliverables in progress under funding received 5/1/2014</li> </ul>
<b>6.5) Initiate and facilitate knowledge services and science support through field trips, filling information requests, and presentations for affected entities</b>	
a) Deliverable: Report on actions to educate and support affected entities <ul style="list-style-type: none"> <li>i. 5 Field Trips</li> <li>ii. 10 Presentations, this is an estimate based on previous demand</li> <li>iii. 10 Information requests, this is an estimate based on previous demand</li> </ul>	<ul style="list-style-type: none"> <li>i. Field Trips</li> <li>ii. Presentations             <ul style="list-style-type: none"> <li>✓ Greco, B., Video interview by The International Wood Culture Society to provide education on “Ecological Restoration of Ponderosa Pine and the Natural Role of Fire” to an International audience. May 15, 2014 Link: <a href="http://www.woodculturetour.org/DestinationContentVideo.cfm?spots=147">http://www.woodculturetour.org/DestinationContentVideo.cfm?spots=147</a></li> </ul> </li> <li>iii. Information Requests             <ul style="list-style-type: none"> <li>✓ Greco, B., Information request for ERI Fire Fact Sheet. The Nature Conservancy, Flagstaff Office. May 5, 2014</li> <li>✓ Greco, B., Request for assistance to review USDA Grant Funding Proposals, by Arizona Department of Forestry, May, 6, 2014</li> <li>✓ Greco, B., Responded to an information request from The International Wood Culture Society” regarding “Wood Culture and Uses as Related to the Desert of the Southwest”. June 17, 2014</li> <li>✓ Greco, B., Submitted a letter of reference (per request) to Eastern AZ Resource Advisory Council for Integrated Biological Solutions, LLC for funding of the White Mountain Stewardship 10-Year report. May 22, 2014</li> <li>✓ Crouse, J., Greco, B. Responded to a request from the Apache County, AZ Natural Resources Director to provide Access to a Webinar and provide a summary of Federal Land Acreage for Apache &amp; Navajo Counties (Webinar, Maps, Data summaries). June 26, 2014</li> </ul> </li> </ul>
<b>6.6) Use media to educate the General Public</b>	

## USFS FY14 Plan of Work - Deliverables

a) Deliverable: 2 Newspaper articles	<ul style="list-style-type: none"><li>All deliverables in progress under funding received 5/1/2014</li></ul>
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<b><i>Project 7: Duty 5 under the ACT. Provide annual progress reports</i></b>	
<b>Deliverable</b>	<b>Status</b>
7.1) Complete annual progress report on June 30, 2014	✓ Completed through June 30, 2014