

Southwest Ecological Restoration Institutes Work Plan

Fiscal Year 2007

Final

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Revised in Response to Final Executive Team Approval 6/29/07

Ecological Restoration Institute/Northern Arizona University
Dr. Wally Covington, Director
Diane Vosick, Associate Director

Colorado Forest Restoration Institute/Colorado State University
Dr. Dan Binkley, Director

New Mexico Forest and Watershed Restoration Institute
New Mexico Highlands University
Dr. Ken Smith, Director

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Executive Summary

This Statement of Work identifies actions and deliverables for the final FY'07 funding committed to the Southwest Ecological Restoration Institutes (SWERI) by the USFS-Region 3 on April 18, 2007 and agreed to by the Executive Team on June 29, 2007.

The work proposed in this memorandum is consistent with the "2007 Work Plan" approved February 22, 2006¹ by the Executive Committee established by Region 3 to implement PL108-317. The changes reflect a funding level of \$2.2 million for the three institutes instead of the total of \$5.5 million approved by the Executive Committee in February 2006.

Thank you for this funding and the continued opportunity for partnership with the U.S. Forest Service.

¹ Final March 9, 2006
Revised April 25, 2007
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Revised June 29, 2007

The Ecological Restoration Institute- Northern Arizona University

Project One: Ponderosa Pine/Mixed Conifer Restoration

The ERI is known for 30 years of continuous, applied scientific investigations that explore all aspects of the restoration of forest health in frequent fire forests. The primary emphasis for our work is the ponderosa pine ecosystem. The work proposed in 2007 will continue to reap the benefits of treatments initiated over the past five to ten years by collecting data that monitor a variety of biophysical and fire behavior responses to treatments. These data are the best-monitored and most reliable long-term restoration sites in the Southwest. Requests for ecosystem responses and fire behavior responses to treatments are one of the most frequent information requests we receive from land managers. In addition, the Arizona Governor's Forest Health Advisory Council has expressed the need for this information. This information is essential to design effective, long-term treatments.

Deliverables:

- 1.1 Summary of treatment actions and ecosystem responses from sites in the Long-term Ecological Assessment Restoration Network (LEARN) for practitioners. Information will be provided through working papers, presentations, field trips and workshops (see projects 5,7,8)
 - Prepare manuscript of working paper on seasonality of fire use (See #5.4).
- 1.2 Article for scientific journal summarizing responses. These are usually peer reviewed publications. Peer review is necessary to establish legitimacy and ensure accuracy, and validate the conclusions that result from monitoring data. Peer review provides strong evidence and enhances the credibility of the recommendations to practitioners, stakeholders, scientists and for inclusion in NEPA documents.
 - Completed analysis of San Juan mixed conifer data and one publication
- 1.3 Invasive exotics are vexing practitioners and restoration projects throughout the Intermountain West. Severe wildfire creates conditions for invasion by exotics, but thinning and prescribed burning can sometimes also lead to the unintended establishment of nonnative plants. In 2007 we will monitor and evaluate existing treatments that are designed to test whether or not cheatgrass invasions can be avoided and/or how restoration treatments should be modified to avoid creating opportunities for invasion.
 - 1.3.a A summary of treatment actions, responses and recommendations for avoiding cheatgrass invasions for practitioners. Information will provided through working papers, presentations, field trips and workshops (see projects 5,7,8)
 - Preparation of cheatgrass information for translation to practitioners.
 - 1.3.b Preparation of cheatgrass results for scientific publication.
 - Cheatgrass manuscript in review.
 - One publication.

- 1.3.c A summary of a rigorous monitoring project of post-fire exotic species establishment and change over time through 2007 for practitioners. Information will be provided through working papers, presentations, field trips and workshops (see projects 5,7,8)
 - Information assembled and one manuscript in review; modify information for practitioners.
 - One publication.
- 1.4 Understanding how different restoration treatments influence extreme crown-fire behavior is essential to properly design restoration treatments focused on reducing hazardous fuels and reducing wildfire intensity. This information will help determine the amount of thinning, burning and frequency of prescribed burning that are necessary to maintain long-term reduction of hazardous fuels. This project will be a retrospective analysis of areas that were treated prior to wildfire to determine how the treatment modified fire intensity.
 - 1.4.a Summary of treatments and influence on fire behavior for land managers, practitioners and decision makers. Information will be provided through working papers, presentations, field trips and workshops (see projects 5,7,8)
 - Assembled project team and charter.
 - Develop plan for knowledge acquisition and synthesis (systematic review).
- 1.5 Re-establishment of native understory plant communities is a critical factor in forest restoration. This project will evaluate different seeding approaches with the goal of encouraging natives while discouraging exotics.
 - 1.5.a Summary of findings related to seeding techniques for practitioners Information will provided through working papers, presentations, field trips and workshops (see projects 5,7,8)
 - Working paper (see 5.4)

Project 2: Pinyon-Juniper Restoration

There is little information on the outcomes of comprehensive restoration treatments in pinyon-juniper ecosystems. Yet the agencies are confronted with millions of acres of degraded pinyon-juniper woodlands. Degradation of these systems leads to wildfires that are considered undesirable by managers, coupled with poor forage and wildlife habitat and increased erosion. This project will continue work already underway at the Grand Canyon Parashant National Monument, on the Tusayan Ranger District in the Kaibab National Forest, on the White Mountain Apache Reservation, and in other locations in the Southwest. It includes an integrated series of actions to examine herbaceous, overstory and understory responses to treatments. Expanding our work to pinyon-juniper ecosystems responds to requests from the Washington DC office of the Bureau of Land Management, and practitioners and stakeholders at the district and local levels.

Deliverables:

- 2.1 Overstory responses to restoration

- 2.1.a Summary of results of treatments that can be used by practitioners. Information will be provided through working papers, presentations, field trips and workshops (see projects 5,7,8)
 - Report results of PJ demonstration projects at Mt. Trumbull.
- 2.1.b Preparation of results for publication in a scientific journal.
 - In progress, will incorporate 2006 monitoring.
- 2.2 Understory responses to restoration
 - 2.2.a Summary of understory responses to treatments that can be used by practitioners. Information will be provided through working papers, presentations, field trips and workshops (see projects 5,7,8)
 - Initiate preparation of PJ understory information for translation to management audiences.
 - 2.2.b Preparation of results for publication in a scientific journal
 - Edit manuscript for submission.
 - One publication.
- 2.3 Understanding the role and frequency of natural fire in pinyon-juniper ecosystems is essential to inform the design of restoration treatments. Currently there is much confusion about this topic in the management and stakeholder communities. Data, such as fire dates, stand ages, and fire evidence will be collected to help answer this important variable.
 - 2.3.a Summary of findings related to natural fire regimes for practitioners. Information will be provided through working papers, presentations, field trips and workshops (see projects 5,7,8)
 - Develop background data and prepare monitoring permit request.
 - Submit monitoring permit application, develop field schedule for future measurements. Measurements minimal in 2007 due to funding.
 - 2.3.b Preparation of results for publication in a scientific journal
 - Submit results from PJ fire study in Tusayan and Canjilon

Project 3: Evaluating Post-Fire Re-burn Potential, Implications for Salvage Logging and Other Post-Fire Treatments

Post-fire salvage of timber is an issue of concern to managers, policy makers, and the public. An ecological reason cited in support for removing trees is the fear of re-burn and the damage it may cause to soils. However, a countervailing concern is that salvage logging itself has negative consequences. Little reliable quantitative scientific information exists in the Southwest to help evaluate the vulnerability of severely burned forests in the semi-arid Southwest to environmentally harmful re-burning. This may be partially due to the very contemporary nature of the problem (it is only in the last 10 years we've seen overstocked forests burn catastrophically at a large scale). This project will proceed in two parts. First we will conduct a synthesis of what is known about the potential for re-burn in the semi-arid Southwest, followed by initiating an

analysis of fuel loads at sites that have burned catastrophically. The Colorado and Arizona Institutes will collaborate in this endeavor. Colorado will take the lead on compiling the status of current knowledge and a synthesis of this information. Arizona will sample burned areas to determine the potential for re-burning.

Requests for information about salvage logging have come from congressional offices.

Deliverables:

- 3.1 Initiate analysis of post-wildfire sites that have not been salvaged to determine potential effects of severe re-burn.
 - Develop background data and prepare monitoring permit request.
 - Prepare & submit special use permit requests, Kaibab NF and Grand Canyon NP.
- 3.2 Summary of potential reburn effects for stakeholder community in the form of a working paper.
 - Data collection will occur in 2007 to support preparation of a working paper in 2008

Project 4: Landscape Assessment

The state of the art for strategic location and monitoring of restoration-based hazardous fuel reduction treatments urges planning at the landscape scale. The ForestERA Project convenes and supports a neutral process for collaboration by practitioners and stakeholders to engage in a constructive dialogue for prioritizing treatments and identifying appropriate management actions at the landscape scale. It also can help build working relations for achieving collaboration objectives during the forest plan revision process.

Evidence for the importance of this tool is the fact that it is referenced in the multi-agency USDA/DOI Wildland Fire Use Guide (http://www.fs.fed.us/fire/fireuse/wildland_fire_use/use_index.html). The Guide includes examples of the Western Mogollon Plateau Adaptive Landscape Assessment data (pp.17-18) and describes the use of landscape-scale analysis in Wildland Fire Use planning. The authors downloaded the images directly from the ForestERA web pages. The introduction states that it "provides **standardized procedures**, specifically associated with the planning and implementation of wildland fire use."

On February 6th, representatives of Arizona Fire Map (State Lands and Cartographers offices) and WALTER (U of A) information management tools met with the staff from ForestERA to determine how best to coordinate and combine efforts. By combining these three tools coverage of all lands in Arizona will be increased, accessibility by all citizens and practitioners will improve and some of the most basic information management questions asked by policy makers can be answered. Finally, this collaboration should result in improved efficiency of both human and financial resources.

Deliverables:

4.1 Complete the Statewide Strategy

- Administrative support to Statewide Strategy sub-committee and editor of Statewide Strategy report.
- Final statewide strategy document to be completed by July 2007.

4.2 Wildlife layers

4.2.a Initiate field work, data integration, and spatial analysis to develop a model for Goshawk occupancy that will allow ForestERA scenario analysis and assessment of northern goshawk responses to proposed forest treatments. This project will span two years with the following deliverables being accomplished in this funding period:

- Progress report
- Foundational data layers
- Models and maps of Goshawk habitat occupancy

4.3 Validation of watershed models - In order to increase confidence in Forest ERA watershed data layers, independent field data is needed to assess model accuracy and enhance technology transfer.

- Collect field data to validate landscape-level models of watershed vulnerability to post-fire erosion and sedimentation. Conduct analyses and report on model accuracy to stakeholders; submit paper for publication.

All the actions proposed under Duty #1, Projects 1 & 2 have an integrated synthesis and translation component designed to serve the needs of practitioners and stakeholders. The ERI has ten years of experience from which to predict the level of information services that will be requested from our customers and the number of requests that can be met with available resources. Flexibility to define specific writing topics is needed so that the ERI can respond to important and emerging needs. As a general rule those topics that serve the most audiences will be the highest priority for completion. The services delivered in project five are requested from collaborative groups, practitioners, and community organizations.

Project 5: Practitioner and Stakeholder Knowledge Services

Deliverables:

5.1 In 2005 the number of requests for information, fact sheets and other rapid response information increased dramatically. This activity ensures that land manager and stakeholder questions are answered in a complete and timely manner.

5.1.a Fulfill information requests

- Provide answers to questions

- 5.1.b. List of information requests
 - Report on requests including information on who requested the information, what was provided and approximate the amount of time spent fulfilling request.
- 5.2 Occasional short summaries that compile best available information as needed by non-technical stakeholders and practitioners.
 - 5.2.a Two white papers based on requests
 - Two white papers
- 5.3 Practitioners and stakeholders need very short, concise descriptions of land management options and the outcomes of those options. The Working papers distill information that already exists in the literature or is generated through monitoring activities conducted in Project 1 and 2.
 - 5.3.a Four Working Papers or Technical Notes
 - Complete four working papers
- 5.4 The ERI maintains an integrated web site that includes publications and information about the biophysical and social science aspects of restoration. Recommendations are peer reviewed and the ERI maintains the highest standards for information posted to the site.
 - 5.4.a Report on major updates to the web
 - Report on updates
- 5.5 Direct communication with individuals is still the knowledge delivery choice preferred by practitioners and stakeholders alike. The ERI will continue to provide in person delivery to convey emerging scientific information on restoration treatments, community collaborations and other relevant topics.
 - 5.5.a Ten presentations
 - Ten presentations.
- 5.6 Seeing is believing. Fortunately, many restoration treatments have been applied throughout the Southwest. The ERI will continue to take diverse audiences to the field to demonstrate and discuss the outcomes of forest restoration on ecological health and wildfire behavior.
 - 5.6.a Ten field trips
 - Ten field trips.

Project 6: Utilization

Following seven years of struggle to attract small wood utilization businesses to the Flagstaff region we are on the brink of a breakthrough. Development is underway to create an integrated wood utilization campus ten miles west of Flagstaff and in Winslow, Arizona. Although still in the preliminary stages of development, the Greater Flagstaff Economic Council believes it is realistic to have businesses operating at the 80 acre site in 2008. To realize the vision of an “integrated

campus” at Camp Navajo the ERI-NAU has been invited to participate and provide the knowledge services required to help both the private and public sector realize the full potential of this endeavor. We will work in partnership with the Forest Products Lab, NAU School of Engineering and Greater Flagstaff Economic Council to help in this new endeavor. Our participation was specifically requested by the Greater Flagstaff Forests Partnership and the Greater Flagstaff Economic Council.

Deliverables:

6.1 Report on contributions

- Report on contributions through March, 2007

Project 7: Assistance to Communities to Design and Monitor Treatments

Community collaborative groups endeavor to assist the land management agencies in the design, implementation and monitoring of restoration treatments. Most stakeholders are neither foresters nor resource professionals. Our work with these groups shows that workshops to assist with collaborative forestry in addition to field consultations are invaluable methods for advancing constructive collaboration and science-based (as opposed to ideologically based) treatments.

Deliverables:

7.1 One workshop for communities and other stakeholders

- One workshop.

7.2 Five field consultations

- Five consultations.

Project 8: Assistance to Practitioners

Our experience reveals that the most effective way to improve the design of restoration treatments is to spend a combination of time with practitioners in the classroom and in the field. In particular, field consultations that include demonstrations of how to design and implement restoration treatments have the highest education impact. Rapid Assessments that reveal historic fire regimes, stand density, spacing and structure for a given project enhance science-based treatment design. The ERI considers these activities some of the most important aspects of our work.

Deliverables:

8.1 Two workshops for practitioners

- Two workshops

8.2 Ten field consultations

- Ten field consultations.

8.3 Three rapid assessments

- Three rapid assessments.

Project 9: Peer-Reviewed Reports

The legislation establishing the Institutes is explicit that there should be annual peer-reviewed reports.

Deliverable:

9.1 Peer-reviewed report

Budget Narrative

The 1.75 million FY'07 budget includes \$1,590,909 in direct expenditures and indirects of \$159,091 or 10% of total direct costs. (The normal University rate is 47.8% of salaries). The majority of the budget is dedicated to supporting the personnel required to carry out this work plan. The remaining budget supports the travel to communities and national forests, supplies and equipment necessary to fulfill the deliverables. This program of work is also supported with state funds to maximize leverage and value to all ERI customers (practitioners, communities and stakeholders).

The agreement period will be determined based on timing of funds.

Budget**

Category	Project 1. Ponderosa Pine/Mixed Conifer Restoration	Project 2: Pinyon-Juniper Restoration	Project 3: Evaluating Post-Fire Re-burn Potential, Implications for Salvage Logging and Other Post-Fire Treatments	Project 4: Landscape Assessment	Project 5: Land Manager & Stakeholder Information Services	Project 6: Utilization	Project 7: Assistance to Communities to Design & Monitor Treatments	Project 8: Assistance to Practitioners	Sub-Total	1st Hit of Funding	Total 07
Personnel	\$124,002	\$128,991	\$ 59,241	\$ 9,521	\$190,035	\$17,878	\$103,320	\$125,808	\$ 758,799	\$205,732	\$ 964,530
Fringe	\$ 33,366	\$ 46,670	\$ 21,880	\$ 4,229	\$ 63,292	\$ 6,165	\$ 30,316	\$ 42,108	\$ 248,026	\$ 61,719	\$ 309,745
Outside Professional	\$ -	\$ -	\$ -	\$100,000	\$ -	\$ -	\$ 20,000	\$ -	\$ 120,000	\$ 5,333	\$ 125,333
Travel	\$ 16,277	\$ 16,277	\$ 4,800	\$ 4,400	\$ 2,700	\$ 1,650	\$ 12,082	\$ 25,000	\$ 83,185	\$ 6,000	\$ 89,185
Operations/Supplies	\$ 7,703	\$ 16,462	\$ 5,568	\$ 8,487	\$ 348	\$ 1,312	\$ 799	\$ 1,539	\$ 42,218	\$ 14,398	\$ 56,616
Publication/Outreach	\$ -	\$ -	\$ -	\$ -	\$ 3,500	\$ -	\$ 2,000	\$ 3,250	\$ 8,750	\$ 10,000	\$ 18,750
Workshops	\$ -	\$ -	\$ -	\$ -	\$ 4,000	\$ -	\$ 3,500	\$ 4,250	\$ 11,750	\$ 15,000	\$ 26,750
Total Direct Costs	\$181,348	\$208,400	\$ 91,489	\$126,638	\$263,875	\$27,005	\$172,018	\$201,955	\$1,272,727	\$318,182	\$1,590,909
Indirect Costs	\$ 18,135	\$ 20,840	\$ 9,149	\$ 12,664	\$ 26,388	\$ 2,701	\$ 17,202	\$ 20,196	\$ 127,273	\$ 31,818	\$ 159,091
Total Project Costs:	\$199,482	\$229,240	\$ 100,638	\$139,302	\$290,263	\$29,706	\$189,219	\$222,151	\$1,400,000	\$350,000	\$1,750,000

* Note: The budget categories of "publication/outreach" and "workshops" are not used by Northern Arizona University. These expenses will be represented in the university accounting system as personnel, travel, and ops/supplies.

** The funds in this budget are federal dollars only. These funds will be leveraged with state funding.

Monitoring and Evaluation

The Ecological Restoration Institute will provide a report articulating progress on the deliverables 13 months after contract has been signed and consistent with the agreement that accompanies this work plan. The institute will also follow billing protocols and requirements established by the Forest Service. The progress reports, along with all materials resulting from work funded under this grant, will be provided to the project representatives for the Forest Service.

Colorado Forest Restoration Institute- Colorado State University

Project 1: Capacity building

This year will continue developing the capacity of CFRI to meet the goals for the Southwest Ecological Restoration Institutes. We will develop facilities at CSU, continue developing and presenting information on our webpage, and provide the foundation for accomplishing the other projects listed in this workplan.

Deliverables:

- 1.1 A peer-reviewed annual report (due in Month 12), with peers defined as the clientele represented in the Colorado Forest Restoration Network.

Project 2: Outreach Products for Colorado

CFRI will provide information in forms that will aid the design, implementation and assessment of forest restoration treatments. The information will be provided on a regularly updated webpage, management-focused publications, a set of short courses, and field visits to provide local consultations.

Deliverables:

- 2.1 A CFRI webpage that provides information for application in restoring Colorado forests, adapting information from ERI and providing links to collaborator sites (due Month 12, followed by continued updating). Goals for this outreach program include presenting information for comparing value, costs, and impacts of alternative approaches to forest restoration. The webpage will be integrated with the collaborative SWERI webpage.
- 2.2 A series of publications, including:
 - Two manager-focused working papers on how to utilize information on the historic range of variation for ponderosa pine forests and pinyon-juniper woodlands (drafted by Month 12, published by Month 14).
- 2.3 A coordinated program of outreach that will include:
 - Short courses (at locations around the state) on forest restoration (2 aimed at forest managers, 1 for the broader public), and a range of face-to-face outreach with clients.

Project 3 (formerly #8): Fire risk and restoration issues in pinyon-juniper woodlands

One of our long-range goals is to implement projects in pinyon-juniper woodlands within the overall area of fire risk reduction, restoration, and management. Our FY2006 work developed better information on the historic conditions of these woodlands. In FY2007, we will continue our

work with 1) dendrochronological studies for reconstructing historic conditions (as identified in the HRV work), and 2) work with collaborators (including ERI, in their Project #2 for FY2007) to examine the ecological effects and legacies of previous stand treatments, such as chaining. We will assess effects on fire risk (including the fuel conditions created by the treatments), and vegetation response (especially establishment of invasive species).

Deliverables:

3.1 An updated assessment of historic conditions based on new information from the dendrochronological studies:

- Submitted to a scientific journal (by month 12)
- Included in working papers (and used in our general outreach efforts).

3.2 Outreach products will include:

- In-the-field collaborations with land managers
- A working paper on impacts of treatments in pinyon-juniper woodlands
- One short course for land managers (by Month 12)

Budget*

	Project 1 Capacity Building	Project 2 Outreach products	Project 3 Pinyon- juniper fire risk management	Sum
Personnel	33,350	49,600	44,500	127,450
Fringe (21%)	7,004	10,416	9,345	26,765
Total Personnel	40,354	60,016	53,845	154,215
Travel	3,000	4,000	3,000	10,000
Supplies	2,000	2,000	20,00	6,000
Publication/outreach	1600	7,500	0	9,100
Workshop expenses	0	2,500	0	2,500
Indirect (10%)	4,695	7,602	5,888	18,185
Total	51,649	83,618	64,733	200,000

** The funds in this budget are federal dollars only. These funds will be leveraged with state funding.

Monitoring and Evaluation

The Colorado Forest Restoration Institute at Colorado State University will provide a report articulating progress on the deliverables thirteen months after the contract is signed and consistent

with the agreement that accompanies this work plan. The institute will also follow billing protocols and requirements established by the Forest Service. The progress reports, along with all materials resulting from work funded under this grant, will be provided to the project representatives for the Forest Service.

New Mexico Forest and Watershed Restoration Institute

The overall goal of this work plan is to ensure that the best available science is used by land managers and stakeholders to develop and implement effective and efficient restoration-based forest treatments in New Mexico. It seeks to fill a critical void that exists between applied and existing scientific findings, and the translation and transfer of that research to inform forest management.

The activities outlined in this work plan respond to needs identified from four sources: 1. the duties and purposes of the Southwest Forest Health and Wildfire Prevention Act; 2. ideas generated from stakeholder meetings held across New Mexico in 2005, 3. the New Mexico Forest and Watershed Health Plan, and 4. conversations with natural resource professionals working in the field.

This revised work plan and budget reflects the work that the NMFWRI can accomplish with a FY 2007 budget of \$250,000. It is important to note that all these NMFWRI activities and others not mentioned here will also be supported by funds provided by the state of New Mexico.

Project 1: Develop a Consensus on Ecological Restoration Monitoring

A collaborative effort to define a uniform set of monitoring protocols for adaptive ecosystem management is recommended in the NM Forest and Watershed Health Plan. Many monitoring protocols already exist in federal and state agencies, and, in use by researchers. Consequently, consensus is needed about which protocols for monitoring to use in specific situations. This was project 5 in the approved 2007 work plan, and was a primary project in the NMFWRI 2006 work plan.

Deliverables

- 1.1 A collection of management/operations and economic monitoring protocols and a guide to their merits and appropriate application. Protocols will be made available on the institute website.
- 1.2 A report summarizing discussions, identified issues, and conclusions from facilitated meetings.
- 1.3 Outreach: Information from the FY06-FY07 monitoring consensus will be transmitted to restoration practitioners in a workshop.

Project 2. Restoration-based hazardous fuels reduction prescriptions for ponderosa pine and lower mixed conifer forests, and, pinyon and juniper woodlands

Project 2 is a determination the types of prescriptions reported in the scientific and technical literature, and, those that are in common use by natural resources managers in New Mexican

ponderosa pine and lower mixed conifer forests, and, pinyon and juniper woodlands. This essentially is an effort to determine what did and did not work, and post-treatment problems that emerged. This was project 7 in the approved 2007 work plan, and is also a continuation of a project started in 2006.

Deliverables:

- 2.1 A document summarizing the state of prescriptions around New Mexico, including a web-based library of case studies of treatments.
- 2.2 The organization of a statewide meeting of practitioners to discuss treatments used in New Mexico and what can be done to improve restoration-based hazardous fuel reductions in the state.

Project 3: Technical Assistance for Communities and Restoration Collaboratives

A set of needs were identified during stakeholder meetings that revolved around tools and information that is useful for communities, agencies, and collaborative restoration groups. One set of needs centered on historical forest trends in project areas and the need for historical photographs to illustrate vegetation trends in areas, as well as map production tailored to group needs. Another aspect highlighted in stakeholder meetings was the use of models and demonstration sites to assist communities and collaboratives to visualize outcomes of treatment alternatives; which includes not treatment. There is also a need to coordinate projects over multi-jurisdictional boundaries to achieve forest and woodland restoration on a landscape scale. This type of mapping will also assist the forest products industry in estimating potential wood supplies over several years. *As previously mentioned, there will be substantial state support of this project.* This project was listed as project 8 in the original work plan.

Deliverables:

- 3.1 The coordination of multi-jurisdictional and watershed-based mapping projects with stakeholders in two regions of the state (likely to be in and around the Gila and Santa Fe National Forests) to identify priority treatment areas, long-term wood supplies, and the potential for stewardship contracting.
- 3.2 The development of a Las Vegas area demonstration area for restoration-based treatments in ponderosa pine. This activity will take place on private lands at the Pritzlaff Ranch, and will involve thinnings, prescribed burning, and post- and pre-treatment monitoring. The goal will be to utilize these sites as demonstration areas for policy makers and other local land owners.

Project 4: Peer-Reviewed Reports

The legislation establishing the Institutes is explicit that there should be annual peer-reviewed reports.

Deliverable:

4.1 Peer-reviewed report

Budget*

	Project 1	Project 2	Project 3	Project 4	Total
Personnel	83,765	57,405	17,360	0	158,530
Fringe (31%)	25,967	17,795	5,381	0	49,143
Total Personnel	109,732	75,200	22,741	0	207,673
Travel	3,000	3,000	2,000	0	8,000
Supplies	1,000	1,000	800	0	2,800
Publication/outreach	2,000	1,000	800	0	3,800
Workshop expenses	2,000	3,000	0	0	5,000
Indirect (10%)	11,773	8,320	2,634	0	22,727
Total	129,505	91,520	28,975	0	250,000

*The funds in this budget are federal dollars only. These funds will be leveraged with state funding.

Monitoring and Evaluation

The New Mexico Forest and Watershed Restoration Institute will provide a report articulating progress on the deliverables thirteen months after the contract is signed and consistent with the agreement that accompanies this work plan. The institute will also follow billing protocols and requirements established by the Forest Service. The progress reports, along with all materials resulting from work funded under this grant, will be provided to the project representatives for the Forest Service.

Acknowledgements

The preparation of this work plan would not have been possible without the dedicated work of the many natural resource practitioners, land managers, stakeholders, community groups, and government officials at the federal, state, tribal, and local level. These individuals, the lay public, and policy makers at all levels are now committed to restoring the ecological and economic integrity of frequent fire forest landscapes and the communities that depend upon them. Among these individuals, we wish to acknowledge in particular the hard work and valuable contributions made by the Southwest Ecological Restoration Institutes Coordinating Committee and that of the Interagency Development and the Executive Teams in reviewing, discussing, and helping to improve the Institutes' work plans. Finally, we wish to acknowledge the long hours and great skill of the professional staff at each of our Institutes and within our universities who helped produce this work plan.