NORTHERN ARIZONA UNIVERSITY | Ecological Restoration Institute

The Ecological Restoration Institute at Northern Arizona University

Accelerating Restoration and Resiliency in the West

Fiscal Year 2026 Work Plan

March 23, 2026

Introduction

In 2004, Congress passed the Southwest Forest Health and Wildfire Prevention Act (Public Law 108 317), establishing university-based Southwest Ecological Restoration Institutes (SWERI) to advance forest health and wildfire prevention across the Intermountain West. Created in response to Congressional recognition that objective, practitioner-oriented science was essential to accelerate forest restoration, SWERI was designed to bridge scientific knowledge with on-the-ground application.

Each SWERI draws on the unique strengths of its university to address emerging management challenges and connects knowledge development to on-the-ground application by stakeholders and land managers. Supported by Congressionally appropriated funds, each SWERI develops an annual work plan that fulfills the Act's duties: 1) developing and monitoring treatments to reduce severe wildfire risk and improve the health of dry forests and woodlands; 2) synthesizing and adapting scientific findings for affected entities[1] to implement treatments on a landscape scale; 3) translating and transferring knowledge to all affected entities; and, 4) assisting all affected entities to implement treatments using best adaptive management practices.

Over the past two decades, the Ecological Restoration Institute (ERI) has become a trusted source of rapid, applied science spanning ecology, forest management, human dynamics, and natural resource policy. ERI combines flexibility and responsiveness to support the full spectrum of forest management needs, which was reflected in our FY25 work. This included the advancement of cutting-edge tools — such as the application of LiDAR to quantify fuel loads, assess treatment effectiveness, and evaluate post-fire recovery — to support adaptive management under increasingly complex conditions. ERI researchers also continued to deepen understanding of ecological responses to managed wildfire, with evaluations in northern Arizona wilderness areas offering new insights into the role of naturally ignited fires in landscape-scale restoration.

In addition to our biophysical work, ERI's social science expertise continues to expand the knowledge needed for communities to navigate wildfire-related risks. Recent surveys of public perceptions and behaviors related to wildfire smoke are informing communication and management strategies, while new analyses of homeowner insurance trends and the economic impacts of post-fire flooding are helping state and federal practitioners better anticipate emerging challenges. ERI also plays a central role in accelerating restoration implementation. Efforts to improve the economics of restoration — including biochar research, workforce training, and exploration of new markets for small-diameter wood — are helping reduce barriers for industry.

Collaborative capacity remains a hallmark of ERI's work. We continue to provide on-the-ground science and leadership assistance and coordination for the Four Forest Restoration Initiative (4FRI). ERI also

contributes to accountability and transparency through collaborative governance monitoring for the national Collaborative Forest Landscape Restoration Program (CFLRP) and by applying risk-based spatial analytics and structured decision making to improve wildfire mitigation and response planning.

Working with Tribal Nations is a cornerstone of ERI's mission. In FY25, ERI and NAU deepened these relationships through support for Wood for Life and a 2025 assessment of fuelwood distribution gaps on the Navajo Nation and Hopi Tribe. New relationships with the San Carlos Apache and Hualapai Nations are further strengthening Tribal–Forest Service connections and helping shape shared science needs grounded in local priorities.

Grounded in the Act and aligned with national and regional policy priorities, ERI's FY26 Work Plan ensures that land managers remain equipped with the latest science, emerging technologies, and applied expertise. Its development reflects a rigorous, collaborative process informed by meaningful engagement with practitioners across federal, state, Tribal, local, and industry sectors. This work included coordination and consultation with the following groups:

- **Regional and forest-level Forest Service practitioners**, including the Coconino and Kaibab National Forests, San Juan National Forest (Pagosa District), Arapaho–Roosevelt National Forest, and the USDA Forest Service Geospatial Office.
- **Forest Service leadership**, **Coconino County**, and the **City of Flagstaff** on cross-boundary planning.
- **National Park Service practitioners**, including Sunset Crater National Monument and Bryce Canyon's Resource Stewardship & Science Division.
- **Department of Defense resource managers** at Camp Navajo and the **Arizona Army National Guard Readiness and Environmental Protection Integration (REPI) Program** to support restoration and resilience planning.
- **Tribal Nations**—including the Navajo, Hopi, White Mountain Apache, San Carlos Apache, Mescalero Apache, and Hualapai Nations—along with BIA, USGS, and the New Mexico Consortium to identify strategic restoration and fuelwood needs.
- **Congress**, the **State of Arizona**, **Coconino County**, the **City of Flagstaff**, local municipalities, and public utilities to align restoration and risk-reduction priorities.
- **Forest industry representatives**, including the 4FRI Stakeholder and Industry Work Groups, forestry contractors, local communities, and forest-products businesses to support restoration implementation and biomass utilization.
- **Forest Service CFLRP coordinators**, the **Risk Management Assistance Team**, **RMRS**, and **ISAP coaches** on the development and use of wildfire risk decision-support tools.
- **Wood For Life participants**, including the Navajo Nation, Hopi Tribe, Forest Service, Ancestral Lands Conservation Corps, and National Forest Foundation to address fuelwood access and capacity needs.
- **Science-delivery organizations** such as the Southwest Fire Science Consortium, federal and state land managers, educational institutions, and nonprofits to strengthen regional knowledge exchange.

Focal Area Summaries

The ERI has six interdisciplinary Focal Areas that crosswalk to specific duties of the Act. These Focal Areas help support current federal direction, Forest Service and Arizona-led initiatives and priorities, including wildfire risk reduction, sustainable forests, and multiple use of our federal landscapes. Lastly, they align with the ERI's mission to address changing climatic conditions, test treatment effects, and support resilient and sustainable forests and woodlands in the West.

Focal Area 1 – Restoration and wildfire resilience knowledge development and transfer *(Fulfills duties under the Act: 1, 2, and 3)*. Focal Area 1 describes ERI's work to address existing and emerging biophysical and social science needs related to issues such as restoration treatment effectiveness, drought and temperature impacts on forests, and understudied forest ecosystems, as well as understanding the social, economic, and policy barriers to forest restoration and wildfire risk mitigation.

Focal Area 2 – Apply ERI expertise to restoration implementation at appropriate scales *(Fulfills duties under the Act: 2, 3, and 4)*. In this Focal Area, the ERI applies interdisciplinary expertise to address barriers and challenges to restoration implementation, at scales appropriate for enhancing resiliency for forested landscapes and human communities. This includes expanding forest operations capacity, testing the best available tools for landscape prioritization, increasing multi-stakeholder support for implementation, and developing innovative efficiencies to implement restoration treatments more quickly.

Focal Area 3 – Foster and support partnerships *(Fulfills duties under the Act: 2 and 3)*. The ERI convenes and coordinates discussions with multiple federal, state, and local entities that advance restoration knowledge development and application across boundaries and at landscape scales.

Focal Area 4 – Integration and engagement with tribal land restoration *(Fulfills duties under the Act: 2, 3, and 4)*. The ERI, with Northern Arizona University, is committed to facilitating the exchange of restoration knowledge and experience between and among tribal and federal partners.

Focal Area 5 – Science and policy application and interpretation *(Fulfills duties under the Act: 3 and 4)*. The ERI translates objective science into practical strategies for a wide range of audiences and develops workshops, field trips, and focus groups to work with all affected entities for shared science delivery and implementation of state and federal agency strategic goals.

Focal Area 6 – Communication and outreach *(Fulfills duties under the Act: 3)*. The ERI is proud to be a known expert in forest restoration science and implementation. To meet the duties of the Act, we promptly respond to media requests, community information needs, policy questions, and practitioner information requests on a weekly basis.

Focal Area Descriptions and Deliverables

Focal Area 1: Restoration and wildfire resilience knowledge development and transfer

Efforts in this project focus on analysis and reporting of long-term monitoring data collected on field plots and implementation of novel studies to investigate key questions aimed at accelerating the pace and scale of restoration, and social and economic research with managers and other affected entities. Specific projects are detailed in the tables below. Areas of work include:

- Precision technologies for ecological monitoring and adaptive management.
- Addressing the insurance crisis.
- Forest management perspectives.
- Wildfire ecosystem effects and post-fire planning.

Focal Area 1: Restoration and wildfire resilience knowledge development and transfer *Fulfills duties under the Act: 1, 2, 3*	
Action	**Requestor/Anticipatory**
1.1) Precision technologies for ecological monitoring and adaptive management *a) Bryce Canyon National Park fuels monitoring* *b) Marshall Lake fuels monitoring* *c) Camp Navajo fuels monitoring*	Requestors: a) NPS, BRCA Resource Stewardship & Science Division (Eric Vasquez and Kayla Ronsani); b) Coconino National Forest, Flagstaff Ranger District, San Juan National Forest, Pagosa Springs District Ranger, Sunset Crater National Monument, City of Flagstaff, Coconino County; c) Department of Defense/ Camp Navajo resource managers (Nick Kainrath) and ARNG REPI Program Coordinator (Brian Webb) Outcomes: Informs existing conditions and localized natural range of variability for the fire-adapted forests on these landscapes; identifies forest structure metrics, departures from desired conditions, monitors treatment effects
1.2) Addressing the insurance crisis and reframing wildfire economics	Requestors: Congress, State of Arizona, Coconino County, local municipalities, public utilities Outcomes: Identify the impacts of the insurance crisis on homeowners and forestry operators
1.3) Forest management perspectives	Requestors: Forest Service, Coconino County, City of Flagstaff, Congress Outcomes: Understand perceptions of recent fuel treatments

1.4) Wildfire ecosystem effects and post-fire planning *a) Plant community responses to fire* *b) Burn severity mapping*	Requestor: Arapaho-Roosevelt National Forest, USDA Forest Service Geospatial Office Outcomes: Understand how prescribed fire, resource objective fire, and wildfire influence key metrics in plant communities related to wildlife habitat and rangeland use. Develop new methods and techniques that help provide timely and accurate burn severity assessments in areas that are obstructed by clouds, smoke, or snow.

1.1) Precision technologies for ecological monitoring and adaptive management.

a) Resource managers at **Bryce Canyon National Park (BRCA)** have been working to understand the localized natural range of variability in the fire-adapted forests of BRCA and to identify forest structure metrics for assessing future fire management effects on the park's desired conditions. Park Service staff first reached out to ERI in 2021, which resulted in a rapid assessment report that highlighted management recommendations and additional science needs. In FY26, ERI will continue to build on this project with BRCA. For this project, ERI will work with the Utah Forest Restoration Institute to use advanced technologies to assess existing fuel loadings and canopy stand structure. This work will provide field- and remotely derived estimates of forest structure, canopy fuels, and stand conditions across priority areas of BRCA to support evaluation of wildfire risk, fuel hazard, and departure from desired conditions.

Requestors: National Park Service, Bryce Canyon National Park Resource Stewardship and Science Division (Eric Vasquez, Vegetation and Fire Management Staff, and Kayla Ronsani, Biological Science Technician at National Park Service).
Outcomes: 1) Results will inform adaptive fire and restoration management and establish monitoring metrics for assessing future treatment effectiveness. 2) Builds on prior ERI rapid assessment work and ongoing collaboration with BRCA to translate advanced monitoring technologies into operational decision support for park managers.

Deliverable:
i. Report on existing conditions

b) The **Marshall fuels and understory monitoring project** evaluates ecological and fuels outcomes associated with restoration treatments implemented using cut-to-length harvesting systems, including PONSSE forwarders equipped with chipping and mastication heads. The project will use field measurements and terrestrial LiDAR to characterize the distribution and variability of chip and mastication surface fuels, associated understory vegetation response, and post-treatment structural conditions. Managers have identified a need to better understand how these treatment approaches influence surface fuel accumulation, fire behavior potential, and ecological recovery through time. Results will support adaptive management by informing treatment effectiveness, maintenance intervals, and integration of prescribed fire following mechanical treatments. For FY26, this project is moving into year two of post-treatment monitoring. Crews will collect field data to evaluate the ecological outcomes and long-term maintenance strategies of forest treatments. This project is linked to a forest operations project

that is monitoring slash management approaches (see Focal Area 2.2a) and will provide monitoring information describing variability in chip/mastication fuel depth, surface fuel conditions, and herbaceous understory response following restoration treatments.

Requestors: Greater Flagstaff Forests Partnership (Anne Mottek) and Coconino National Forest Flagstaff District Ranger (Matt McGrath)
Outcomes: To improve understanding of treatment effectiveness, fuel accumulation timelines, and conditions under which prescribed fire can be reintroduced to maintain low surface and ladder fuels.

Deliverable:
i. Data delivery and monitoring report

c) **The Camp Navajo project** will use airborne LiDAR data to assess forest structure, fuels conditions, and wildfire hazard in the buffer areas surrounding the installation to support risk-informed planning and prioritization of fuel treatments. In parallel, the project explores the use of terrestrial and mobile laser scanning (TLS and MLS) to monitor fine-scale changes in surface and canopy fuels before and after mechanical harvesting and prescribed burning activities. These monitoring approaches help evaluate treatment effectiveness, quantify changes in fuels that influence fire behavior, and improve understanding of how treatments reduce wildfire transmission risk. This information is important to Department of Defense installation managers because it supports defensible decisions about where treatments provide the greatest protection to training resources and surrounding communities and helps guide long-term maintenance and monitoring strategies under limited funding and operational constraints.

Requestors: Department of Defense/ Camp Navajo resource managers (Nick Kainrath) and ARNG REPI Program Coordinator (Brian Webb)
Outcomes: Characterize canopy fuels, surface fuels, and forest structure conditions using field measurements and LiDAR-derived analyses to support evaluation of wildfire risk and effectiveness of planned fuel treatments. This information will help inform treatment placement, monitoring needs, and long-term risk reduction strategies surrounding the installation.

Deliverable:
i. Report on existing conditions

1.2) **Addressing the insurance crisis and reframing wildfire economics.** This project tackles the growing insurance crisis in the western US, driven by the increasing severity, frequency, and size of wildfires. Recent wildfires in Arizona and beyond have contributed to changing dynamics with the insurance industry that impact homeowners, municipalities, counties, and states. Much of the evidence about the impacts of the changing insurance market on community wildfire resilience and forest management is anecdotal. Numerous entities have asked the ERI to assist with better understanding, documenting, and communicating about the scope of these impacts. In FY26, the ERI, working closely with Headwaters Economics, will implement a workshop (September 2026) to bring practitioners and subject matter experts together to identify solutions to the wildfire insurance challenge in northern Arizona. In FY26, the ERI will report on the outcomes of the workshop and scope additional next steps to implement solutions on this topic in collaboration with the NAU School of Forestry Wildfire Insurance and Resilient Economics (WIRE) project. This project builds off recent ERI work to understand homeowner insurance coverage and the economic impacts from post-wildfire flooding events. This work will contribute to educating insurers,

policymakers, and communities about the economic and ecological benefits of proactive forest management and reframing economic decisions related to forest management to emphasize prevention, restoration, and sustainable insurance models.

Requestors: Congress, State of Arizona, Coconino County, local municipalities, public utilities
Outcomes*:* Identify solutions to the wildfire insurance challenge in northern Arizona

Deliverables:
i. Workshop report, or white paper

1.3) Forest management perspectives. Recent ERI social science research includes findings about support for forest management (see: https://eri.nau.edu/social-science-findings). These studies consistently show a high understanding of the need for forest management and support for different strategies and align with other research on perceptions of forest management. However, there is a need to continue understanding perspectives of forest management, how perspectives impact behaviors and responses, and what communication strategies enhance community resilience. This is a continuation of a multi-year effort. In FY23, ERI and NAU School of Forestry social scientists worked with local managers and decision-makers to identify additional information needs, such as how perceptions of forest management strategies have changed over time with residents in Arizona. In FY24, the ERI focused on the topic of smoke related to wildfire and forest management and conducted several assessments to explore residents' perceptions and experiences with smoke in Flagstaff, Camp Verde, and Sedona. In FY25, the ERI compiled and shared these findings with land managers. In FY26, the ERI and researchers at Utah State University will conduct case studies adjacent to recent fuel treatments identified with the Treatment and Wildfire Interagency Geodatabase (TWIG) to understand perceptions of specific fuel treatments, rather than the broad concept of fuel treatments. This project responds to local and regional interests expressed by the City of Flagstaff, Coconino County, Forest Service, and state government. This project will build upon existing research and relationships to develop actionable social science information and identify communication strategies that can effectively enhance community wildfire resilience and adaptation. This work will be conducted through a subaward to Utah State University, with Dr. Cat Edgeley leading study design and implementation.

Requestors: Forest Service, Coconino County, City of Flagstaff, Congress
Outcome: Understand perceptions of recent fuel treatments

Deliverable:
i. White paper on perceptions of recent fuel treatments

1.4) Wildfire ecosystem effects.

a. Plant community responses to prescribed burning and wildfire. We will support a research project, led by Kat Morici at the Colorado Forest Restoration Institute (CFRI), which seeks to understand the effects of prescribed burning, resource objective fire, and wildfire on management-relevant outcomes in plant communities such as herbaceous biomass, forage quality, and non-native species presence. This project includes data collected by staff at CFRI, ERI, the New Mexico Forest and Watershed Restoration Institute, and the USDA Forest Service across the US Interior West. We will curate and provide long-term monitoring data collected by ERI staff in several sites throughout Arizona and Colorado and help support the research effort through limited assistance with analysis and writing of the final manuscript.

Requestors: Fire and Fuels Planners (Chad Buser, Wesley Page), Arapaho-Roosevelt National Forest
Outcomes: Understand how prescribed fire, resource objective fire, and wildfire influence key metrics in plant communities related to wildlife habitat and rangeland use across the US Interior West.

Deliverable:
i. Progress report

b. Initial burn severity mapping. Initial burn severity assessments are the cornerstone of early post-fire recovery efforts, aiding decision-making related to erosion mitigation, community preparedness, and restoration. These assessments are typically completed by agency staff within 45 days of a fire being contained. However, smoke, snow, and clouds can hinder the ability to make these maps quickly and accurately using standard practices (e.g., Landsat-based change detection). We will explore alternative methods of developing these maps in locations with significant obstruction – for example in regions with high cloud cover, or where winter snowfall occurs shortly after fire containment.

Requestors: USDA Forest Service Field Services & Innovation Center, Geospatial Office (Mark Nigrelli)
Outcomes: Field-validated and improved methods of mapping initial burn severity in areas with high obstruction due to smoke, snow, or clouds.

Deliverables:
i. Progress report
ii. Presentation of findings at professional conference

Focal Area 2: Apply ERI expertise to restoration implementation at appropriate scales

In 2026, the ERI continues to create strategies to economically and efficiently utilize small-diameter wood and biomass resulting from restoration treatments. Improving the operational efficiency of ecological restoration treatments is an important goal in this Focal Area. For FY26, the program will:

- Expand the capacity of forest operations and biomass utilization.
- Strengthen restoration outcomes through innovative harvesting systems and improved economic tools.

Focal Area 2: Apply ERI expertise to restoration implementation at appropriate scales *Fulfills duties under the Act: 2, 3, 4*	
Action	**Requestor/Anticipatory**
2.1) Expand the capacity of forest operations and biomass utilization *a) Biochar applications* *b) Forest products or logging industry assessment*	Requestors: Multiple stakeholders, state and local communities, forest product businesses and industry members Outcomes: Expand markets for wood;

	improve forest operations efficiency; identify strategies to improve biomass utilization and strengthen the regional forest products supply chain; assess industry capacity
2.2) Strengthen restoration outcomes through innovative harvesting systems and improved economic tools. *a) Productivity and cost of slash management from a cut-to-length (CTL) harvest system* *b) Transaction Evidence Appraisal (TEA) method cost estimates* *c) CTL tethered-logging harvest systems analysis*	Requestors: USDA Forest Service, Coconino County, 4FRI Stakeholder Group and 4FRI Industry Work Group, forestry contractors, local communities Outcomes: Build industry capacity to support large-scale, sustainable restoration treatments; improve operational and cost-efficiency insights; enhance operational efficiency through innovative harvesting and slash management systems

2.1) Expanding the capacity of forest operations and biomass utilization. This ERI program area focuses on strengthening industrial capacity and markets for small-diameter wood and biomass.

a) **Biochar applications**. The federal work plan will provide administrative assistance, public relations, and outreach for a broad suite of efforts centered on biochar applications in post-fire landscapes. This project aims to advance the integration of biochar into forest restoration and post-fire recovery strategies.

Requestors: USDA Forest Service, forestry contractors, local communities, and the State of Arizona
Outcomes: Expanding biochar use for post-fire soil recovery; developing markets for biochar from small-diameter wood; supporting workforce skills related to biochar production and application; improving operational efficiency by integrating biochar into biomass utilization; providing guidance on effective biochar use.

Deliverable:
i. Report on progress

b) **Forest products or logging industry assessment.** In FY26, the ERI will design, implement, and analyze coordinated surveys targeting the Southwestern forest products industry or regional logging contractors to assess current supply chain conditions, operational capacity, workforce needs, and emerging constraints. The forest products industry survey would evaluate wood supply sources and contracting mechanisms, production capacity, infrastructure limitations, and market challenges, with emphasis on identifying opportunities to alleviate the regional biomass utilization bottleneck and expand outlets for low-value material. A logging contractor survey would update and expand upon ERI's 2021 assessment of logging business demographics, workforce composition, and training needs, documenting post-COVID shifts in operational capacity and business outlook. Survey design and analysis will be informed by

industry input to ensure results address practitioner identified needs and feasible solutions. This effort will establish a more current, consistent, and regionally responsive baseline assessment of industry capacity, information that is lacking in the Southwest.

Requestors: Industry members
Outcomes: Establish a regionally responsive baseline assessment of industry capacity; updated industry metrics; identify strategies to improve biomass utilization and strengthen the regional forest products supply chain

Deliverable:

i. Report on progress

2.2) Strengthen restoration outcomes through innovative harvesting systems and improved economic tools. These projects evaluate innovative harvesting and slash-management systems, cost-estimation tools, and emerging technologies to improve the economic and operational efficiency of large-scale forest restoration. Together, they generate practical, science-based guidance that helps land managers and industry members reduce treatment costs, expand operational capacity, and apply more effective restoration methods across varied terrain.

Requestors: USDA Forest Service, Coconino County, 4FRI Stakeholder Group and 4FRI Industry Work Group, forestry contractors, local communities
Outcomes: Build industry capacity to support large-scale, sustainable restoration treatments; improve operational and cost-efficiency insights; enhance operational efficiency through innovative harvesting and slash-management systems.

a) **Productivity and cost of slash management from a cut-to-length (CTL) harvest system**. This study will analyze an innovative approach to slash management in mechanical thinning treatments using a CTL harvest system that incorporates mastication and chipping of residual materials to reduce reliance on open pile burning (OPB) in Southwest ponderosa pine forests. This work will take place at the ***Marshall fuels and understory monitoring project*** and will provide a comparative assessment of whole-tree (WT) harvest systems traditionally used in mechanical thinning treatments and provide management recommendations for slash management approaches that reduce OPB and overall post-treatment biomass accumulation. This project is tied to work in FA1.1b, where a team is evaluating the ecological outcomes and long-term maintenance strategies of these forest treatments using field data and terrestrial LiDAR.

Deliverables:

i. Peer-reviewed publication and fact sheet

b) **Cost estimation updates for the Transaction Evidence Appraisal (TEA) method**. This follow-up from an FY25 study will analyze and address the need for updated, consistent, and accurate TEA stumpage values or cost center (e.g., haul, stump-to-truck, slash management, and road maintenance) estimates used in USDA Forest Service timber sales, stewardship contracts, and service contracts. This work will provide actionable guidance for stakeholders and forest managers on updated TEA cost estimation methodologies to improve treatment appraisal accuracy and bid outcome success.

***Deliverable*:**

i. Technical report

c) **Analysis of CTL tethered-logging harvest systems for fuel reduction and restoration treatments on steep slopes**. This project evaluates the feasibility, productivity, and cost-effectiveness of tethered cut-to-length (CTL) harvest systems on steep, hard-to-access terrain as a potential alternative to expensive helicopter logging. It may also provide an opportunity to apply remote sensing for pre- and post-treatment monitoring. The 300-acre restoration project—jointly managed by the USDA Forest Service and Coconino County—is currently out to bid. Analysis will proceed only if a contract is awarded, with operations anticipated to begin in June 2026.

Deliverable:
i. Progress report

Focal Area 3: Foster and support partnerships. *Convene and coordinate discussions that advance restoration knowledge development and application across all lands.*

In addition to science translation, the ERI maintains a large commitment to developing, facilitating, and supporting the partnerships and collaborations that advance forest restoration at appropriate scales and across ownership boundaries. In the last year, the ERI supported partnerships locally with place-based Arizona collaboratives, and regionally and nationally with the Forest Service CFLRP and Risk Management Assessment (RMA) programs. FY26 partnership projects include:

- Support and science delivery for the 4FRI collaborative project.
- Implementing a national CFLRP core monitoring indicator.
- Assessing the use and application of risk-based spatial analytics and structured decision-making processes for wildfire mitigation and response.

Focal Area 3: Foster and support partnerships *Fulfills duties under the Act: 2, 3*	
Action	**Requestor/Anticipatory**
3.1) Support and science delivery for the 4FRI collaborative project	Requestors: Forest Service and northern Arizona stakeholders Outcomes: Best available science for landscape restoration, landscape prioritization, monitoring assistance, and effective science collaboration
3.2) Implement national CFLRP core monitoring indicator	Requestors: Forest Service CFLRP Coordinators Lindsay Buchanan and Bryce Esch Outcome: A national core monitoring indicator for the CFLRP
3.3) Assess the use and application of	Requestors: Risk Management Assistance

risk-based spatial analytics and structured decision-making processes for wildfire mitigation and response	Team (Forest Service Fire and Aviation Management), RMRS, ISAP Coaches Outcome: Findings and recommendations to inform decision support tool use

3.1) Support and science delivery for the 4FRI collaborative project. The ERI has provided leadership, administration, and science support to the 4FRI collaborative project since the 2009 request for proposals. The ERI is committed to continued collaboration in the multi-stakeholder group to realize landscape resiliency and restoration.

Requestors: Forest Service and northern Arizona stakeholders

Outcomes: Best available science for landscape restoration, landscape prioritization, monitoring assistance, and effective science collaboration

Deliverables:

i. Report on leadership activities for 4FRI Stakeholder Group, including Stakeholder and Steering Group Leadership
ii. Report on administrative assistance to support effective collaborative operations; and IT support for the 4FRI website and BASECAMP

3.2) Implement national Collaborative Forest Landscape Restoration Program (CFLRP) core monitoring indicator. In FY25, the ERI, in coordination with the other SWERI and the Forest Service CFLRP program managers, continued to collect, analyze, and report on a program-wide core monitoring indicator for collaborative governance of CFLRP projects. In FY26, SWERI will continue this ongoing assessment of existing CFLRP projects. SWERI is working with the Forest Service WO to ensure that the information collected supplements national core CFLRP monitoring requirements. The SWERI will work with CFLRP collaborators to disseminate findings to CFLRP projects, the Forest Service, and Congress.

Requestors: Forest Service CFLRP Coordinators Lindsay Buchanan and Bryce Esch

Outcome: A national monitoring indicator for collaboration

Deliverables:

i. Coordinate and/or participate in one to two (1–2) peer learning activities or conferences
ii. Report on progress

3.3) Assess the use and application of risk-based spatial analytics and structured decision-making processes for wildfire mitigation and response. The use of spatial wildfire analytical and decision support tools (DST) is increasing to support complex decision-making environments on wildfire incidents, as well as pre-fire planning and post-fire response, but there is a limited understanding of how effective these decision support tools are and what conditions support their use. In FY26, the ERI will continue to work with the Colorado Forest Restoration Institute and spatial wildfire DST developers and users to conduct applied social science to assist in evaluating the use and effectiveness of decision support tools, such as Risk Management Assistance (RMA), Potential Operational Delineations (PODs), and Incident Strategic Alignment Process (ISAP), to advance the science and practice of DST use. This will involve a range of approaches, including follow-up assessments on the use of DST processes, case studies of tool use in different contexts,

and evaluating the use of these tools. This is a multi-year, ongoing project in coordination with SWERI and the Forest Service.

Requestors: RMA Team (Forest Service Fire and Aviation Management); RMRS; ISAP Users
Outcomes: Findings and recommendations to inform DST use

Deliverables:
i. Coordinate and/or participate in one to two (1–2) peer learning activities
ii. Report on progress

Focal Area 4: Integration and engagement with tribal land restoration

The ERI Tribal Forest Stewardship and Restoration Program continues to expand opportunities for shared learning and science exchanges with tribal partners across Arizona and New Mexico. For FY26, the program will:

- Support restoration biomass utilization and shared stewardship through the Wood For Life (WFL) partnership.
- Engage with tribal partners to identify and exchange existing ecological questions or gaps.
- Provide direct technical assistance to tribal programs and practitioners.
- Assist tribal and federal practitioners in scoping opportunities for Tribal Forest Protection Act (TFPA)/ 638 authorities and cross-boundary pilot projects.
- Explore the feasibility and utility of establishing an Arizona Tribal Forestry and Fire Working Group.

Focal Area 4: Integration and engagement with tribal land restoration *Fulfills duties under the Act: 2, 3, 4*	
Action	**Requestor/Anticipatory**
4.1) Wood For Life partnership	Requestors: Navajo Nation and Hopi Tribe, Forest Service, Ancestral Lands Conservation Corps, National Forest Foundation, and other Wood For Life members Outcomes: Support restoration biomass utilization and shared stewardship through making firewood available to meet tribal fuelwood needs
4.2) Engage with Tribal partners to develop science support for identified ecological restoration questions or gaps *a) Tribal forest monitoring and adaptive management support*	Requestor: Bureau of Indian Affairs (Lionel Whitehair and Mark Jackson); U.S. Geological Survey (Seth Munson); New Mexico Consortium (Scott Pokswinski); Navajo Department of Forestry (Frankie Thompson and Alex Becenti); White Mountain Apache Tribe

b) White Mountain Apache Tribe fire history partnership and support	Forestry Department Outcomes: Strengthened tribal relationships and development of information to support forest stewardship, restoration planning, and adaptive management
4.3) Direct technical assistance to Tribal programs and practitioners that supports approval and clearance processes and requirements	Requestors: Tribal practitioners, federal and state land managers, educational institutions, non-profit organizations Outcome: Successful completion of clearance requirements and approval requirements
4.4) Tribal Forest Protection Act (TFPA)/ 638 authorities and cross-boundary pilot projects	Requestors: Forest Service, southwestern Tribal nations, Wood For Life Outcome: Identify best practices to utilize new cross-boundary authorities
4.5) Arizona Tribal Forestry and Fire Working Group	Requestors: Southwestern Tribal nations, Southwest Fire Science Consortium Outcome: Understanding the feasibility of an Arizona Tribal Forestry and Fire Working Group to collectively advance tribal restoration priorities and expand restoration capacities across boundaries

4.1) Wood For Life project. The ERI will continue to work with the National Forest Foundation, the Forest Service, Ancestral Lands Conservation Corps, tribal representatives, The Nature Conservancy, and other members to evaluate needs and assess capabilities to formalize, sustain, and grow the Wood For Life Partnership. Wood For Life is a fuelwood partnership that utilizes biomass produced from restoration projects in the 4FRI and Flagstaff Watershed Protection Project footprints on the Coconino and Kaibab national forests, as well as other land ownerships and national forests across the West. In FY22–24, the ERI completed a needs assessment of the WFL partnership in northern Arizona upon request to examine the scale of tribal firewood need and local capacities to receive and utilize more firewood to help achieve forest restoration goals. ERI, working with several WFL partners, hosted workshops in December 2024, August 2025, and April 2026 building upon the results of this assessment. In FY26, the ERI will continue to support Wood For Life capacity needs that emerge from the Partnership (e.g., grant proposals, communication briefs, after action reviews, needs assessment communication, workshop planning, etc.) to increase sustainability of the partnership, as well as help to review and evaluate existing partnership efforts to inform learning and future processes.

Requestors: Navajo Nation and Hopi Tribe, Forest Service, The Nature Conservancy, tribal nonprofit organizations, and the National Forest Foundation
Outcome: Utilization of restoration biomass to support forest restoration efforts and meet tribal fuelwood needs

Deliverables:

i. Report on progress
ii. One to two (1–2) presentations on Wood for Life
iii. Coordination for Wood for Life meetings (rotating chair duties)

4.2) Engage with Tribal partners to develop science support for identified ecological restoration questions or gaps. The ERI has engaged with Tribal nations across the Southwest and will continue expanding those relationships through collaborative efforts that support ecological monitoring, adaptive management, historical ecology, and forest stewardship. For FY26, the ERI Tribal Program will work with Tribal Nations, federal agencies, and research collaborators to strengthen monitoring capacity, develop decision-support information, and advance restoration and forest management priorities identified by Tribal forestry programs.

a) Tribal forest monitoring and adaptive management support. ERI will continue working with Tribal Nations and federal agencies to advance the application of emerging forest monitoring approaches that support fuels management, forest inventory, restoration planning, and adaptive management. Activities include support for **Bureau of Indian Affairs** (BIA) and practitioner-led workshops focused on forest monitoring methods, data collection workflows, analysis, and application of monitoring information to management decisions. ERI will also provide collaborative support to the **Navajo Department of Forestry** to evaluate approaches for integrating advanced forest measurement and monitoring techniques into existing forest inventory and management programs. Together, these efforts will help build workforce capacity, improve consistency in monitoring approaches, and identify opportunities to transition emerging technologies from research applications to sustainable operational use across Tribal lands.

Requestors: Bureau of Indian Affairs (Lionel Whitehair and Mark Jackson); U.S. Geological Survey (Seth Munson); New Mexico Consortium (Scott Pokswinski); Navajo Department of Forestry (Frankie Thompson and Alex Becenti).
Outcomes: Improved alignment among participants; increased monitoring and workforce capacity; identification of operational priorities; development of scalable monitoring workflows; and advancement of decision-support approaches that support forest management, fuels planning, and adaptive restoration.

Deliverables:

i. One to two (1–2) workshops
ii. Progress report
iii. Presentation or briefing

b) White Mountain Apache Tribe fire history partnership and support. In FY26, ERI will work with the **White Mountain Apache Tribe** (WMAT) **Forestry Department** and researchers at the University of Colorado Boulder to support the development of fire-history information relevant to Tribal forest stewardship and fire management. This effort will focus on building collaborative relationships with Tribal forestry personnel, supporting the development of data-sharing and project review processes that respect Tribal data sovereignty, and identifying opportunities to document historical fire occurrence and patterns within forests of the Fort Apache Reservation. The project will support Tribal priorities by placing contemporary forest and fire management activities within a longer-term ecological context while helping establish a foundation for future collaborative research and restoration efforts. Activities may include development of data-sharing agreements, Tribal review and approval processes, field

assessments, collection of fire-history information, and communication of findings directly to Tribal forestry personnel.

Requestors: White Mountain Apache Tribe Forestry Department; Bureau of Indian Affairs; associated federal and Tribal partners.
Outcome: Strengthened Tribal research partnerships; development of processes that support Tribal data sovereignty; improved understanding of historical fire regimes relevant to Tribal forest management; and identification of future collaborative research and restoration opportunities.

Deliverables:
i. Progress report
ii. Presentation or briefing to Tribal partners, as appropriate
iii. Summary of project development and fire-history research activities

4.3) Technical support for clearance and approval requirements. In FY26, ERI will continue to provide direct technical support to Tribal programs and practitioners that helps them navigate often complex approval and clearance processes. ERI supports Tribal practitioners by providing guidance, answering technical questions, and ensuring the documentation and analyses needed for regulatory compliance are accurately prepared and submitted.

Requestors*:* Tribal practitioners, federal and state land managers, educational institutes, non-profits
Outcome: Review and approval of reports, assessments, and specific requests to support planning and project implementation.

Deliverable:
i. Technical support for one (1) project.

4.4) Tribal Forest Protection Act (TFPA)/ 638 authorities and cross-boundary pilot projects. The ERI will assist tribal and federal practitioners in understanding and scoping cross-boundary opportunities for forest, woodland, and fire management with Arizona tribal entities. There are many opportunities for collaboration between Tribes and the Forest Service through shared stewardship approaches (TFPA, 638, Good Neighbor Authority, etc.) that are not yet utilized extensively in Arizona. The ERI will compile accessible information on what opportunities exist and how they are being used and explore how to engage practitioners to pursue these opportunities.

Requestors*:* Forest Service, southwestern Tribal nations
Outcome: Identification of best practices to utilize cross-boundary opportunities with newer authorities

Deliverable:
i. Progress report on forest-level and Tribal program use of agreements to advance cross-boundary collaboration
ii. Publication (fact sheet or white paper) on agreement opportunities and existing experiences with Tribes using these agreements

4.5) Arizona Tribal Forestry and Fire Working Group. The state of Arizona currently has no cohesive organization of Tribes working together on forest and fire stewardship. Building upon the experience of the existing working group in New Mexico, the ERI will explore the feasibility and utility of establishing this group in Arizona.

Requestors: Southwestern Tribal nations, Southwest Fire Science Consortium
Outcome: Understanding of the feasibility of an Arizona Tribal Forestry and Fire Working Group to collectively advance Tribal restoration priorities and expand restoration capacities across boundaries.

Deliverable:
i. Report on progress

Focal Area 5: Science and policy application and interpretation

The ERI mission is to serve a wide range of audiences by translating objective science into practical, actionable strategies. This commitment to effective science delivery is a defining strength of the institute and is woven into every project we undertake. One of the primary ways we address pressing management and policy challenges is through our working papers, white papers, and fact sheets, which distill complex research into clear, accessible formats. Working papers focus on biophysical restoration topics, while white papers address socio-economic and policy-relevant issues; all highlight key management implications to support timely, informed decision-making by practitioners and elected officials. By bridging the gap between research and real-world application, ERI ensures that science reaches those who need it most. This dedication to meaningful knowledge transfer distinguishes ERI from traditional academic institutions and reinforces our role as a trusted resource for stakeholders across the restoration and land-management community. Areas of work for FY26 include:

- Supporting federal land managers with technical assistance, learning workshops, and presentations.
- Implementing an FY25 needs assessment, including a prioritized list of information needs that will shape future ERI research and outreach.
- Strengthening regional understanding of Kaibab Plateau post-fire impacts through biophysical and social science support.
- Translating and summarizing scientific and journal articles for land managers and affected entities.

Focal Area 5: Science and policy application and interpretation *Fulfills duties under the Act: 3, 4*	
Action	**Requestor/Anticipatory**
5.1) Provide support to federal land managers with technical assistance, learning workshops, and presentations	Requestors: Forest Service leadership, specialists, fire professionals, boundary organizations Outcomes: Advance and share landscape restoration best practices; transfer of best available science
5.2) Needs assessment of federal, state, tribal, and local affected entities for biophysical, socio-economic, and tribal research and exchange needs	Requestors: AZ State, Tribal, and Federal Land Management Outcomes: Align information needs with current administrative direction; identify priority transfer of best available science

5.3) Kaibab Plateau fire recovery efforts *a) Ecology support* *b) Social science scoping*	Requestors: Coconino County, Forest Service, Kaibab National Forest, National Park Service Outcomes: Strengthen regional understanding of fire effects, guide restoration and monitoring priorities, and contribute to long term forest resilience planning
5.4) Translate and summarize scientific and journal articles for land managers and affected entities	Requestors: Land managers, stakeholders, Southwest Fire Science Consortium, federal agency ID teams, decision and policy makers Outcomes: Science synthesis briefs; best available science to practitioners and policy writers

5.1) Provide support to federal land managers with technical assistance, learning workshops, and presentations. The ERI works closely with the USDA Forest Service and DOI (BLM, NPS, USFWS) at the local, regional, and national scales to assess science needs and meet science questions with summaries of existing science. To reach broader audiences, we work with our sister institutes at SWERI and other boundary organizations to utilize West-wide webinar and workshop venues for science dissemination. Many of these projects are determined within the Fiscal Year as fast responses to immediate needs and may include presentation of project findings and ERI science-delivery products at relevant professional meetings.

Requestors: Forest Service leadership, land management resources specialists, fire professionals, boundary organizations, and stakeholders
Outcomes: Advance and share landscape restoration best practices; transfer of best available science

Deliverable:

i. One (1) webinar or workshop for the West-wide audience of land managers; this can be in coordination with Forest Service science delivery teams, or boundary organizations, such as the Fire Science Consortia, Drought Learning Network, Pinyon-Juniper Management Network.

5.2) Needs assessment of federal, state, Tribal, and local affected entities for biophysical, socio-economic, and tribal research and exchange needs. The ERI stays on the cutting edge of management and stakeholder needs and information gaps for western forest fire risk reduction, forest resiliency and long-term sustainability. Management priorities are changing rapidly, and a new needs assessment is needed to better understand agency information needs to best follow new direction and guidance from elected officials and land management agencies. In FY25, the ERI will host a two-day workshop titled, “Science to Stewardship: Arizona Cross-Boundary Forest Restoration Workshop.” The first day will focus on improving implementation of existing science, and the second day will explore the management and stewardship questions that need additional research. In FY25, ERI is also conducting a needs assessment in addition to the workshop. In FY26, ERI will implement the findings from the workshop and needs assessment and prioritize a list of information needs and

determine how future ERI research and outreach can fill those gaps.

Requestors: AZ state, Tribal, and federal land management.
Outcomes: Implementation of FY25 needs assessment and prioritized list of information needs. Determination of how the needs assessment findings will guide our FY27 program of work.

Deliverable:
i. Progress report

5.3) Kaibab Plateau fire recovery efforts. In recent years, the Kaibab Plateau in northern Arizona has experienced high-profile, high-impact fire events. There is interest from several land management perspectives on the post-fire impacts of these fires. At the request of Kaibab National Forest, National Park Service, and Coconino County, the ERI will engage with recovery efforts that support post-fire planning. This work will inform pre-fire forest conditions and early post-fire ecological responses by creating a standardized, data-driven reference for these two fires. Information from this project will strengthen regional understanding of fire effects, guide restoration and monitoring priorities, and contribute to long-term forest resilience planning. Additionally, ERI will scope potential post-fire social science needs, including but not limited to assessing economic effects, business owner impacts, or local experiences with the fires.

Requestors: Coconino County, Forest Service, Kaibab National Forest, National Park Service
Outcomes: Strengthen regional understanding of fire effects, guide restoration and monitoring priorities, and contribute to long-term forest resilience planning

Deliverable:
i. Technical report

5.4) Translate and summarize scientific and journal articles for land managers and affected entities. The ERI develops white papers that address socio-economic policy issues and working papers that summarize science applications for land managers. Fact sheets are two-page, brief summaries of peer-reviewed science and Topics in Restoration and Resiliency papers explore a broad restoration topic, like what fire scars tell us about the past and what to expect after restoration, written for a general audience.

Requestors: Land managers, stakeholders, SWFSC, federal agency ID teams, decision and policy makers, and local, county, and state government agencies
Outcomes: Science synthesis briefs for busy practitioners and policy writers

Deliverables:
i. Two to three (2–3) white and/or working papers or a special report that are responsive to managers' needs
ii. Four to six (4–6) fact sheets and/or Topics in Restoration and Resiliency papers

FOCAL AREA 6: Communication and outreach. *Media, community outreach, and information requests.*

For more than 20 years, the ERI has been a trusted, objective resource for our land managers, government agencies, non-government organizations, and our community. As a recognized leader in restoring fire-adapted forests across the western US, ERI staff are regularly sought out for their technical expertise, science support, and resource knowledge. Science communication and outreach are central to

our mission. Focal Area 6 captures this commitment. It demonstrates the unique ways ERI translates science into actionable knowledge for a wide range of stakeholders and is what sets ERI apart from conventional academic models.

In the past decade, we have consistently exceeded our goals for information sharing. ERI staff respond to 20–30 media requests annually, and we maintain an active presence across platforms like Instagram, Threads, Facebook, Bluesky, and LinkedIn. Our experts are frequently featured in print, radio, online, and broadcast media, especially during heightened public discourse around wildfire resiliency, post-fire flooding and restoration, forest health policy, and landscape sustainability. By engaging the public and decision-makers through various media and innovative distribution channels, ERI ensures that science informs the management decisions and policies shaping our landscapes. For FY26, this will include:

- Social media and innovative science delivery.
- Website redesign and continued web support for ERI, SWERI, and 4FRI.
- Media outreach and engagement.
- Science support and knowledge resource services to federal and non-federal entities.
- Final report on FY26 Work Plan.

Focal Area 6: Communication and outreach *Fulfills duties under the Act: 3*	
Action	**Requestor/Anticipatory**
6.1) Social media and innovative science delivery	Requestor: Anticipatory Outcome: Broaden, grow audience reach using innovative, interactive tools
6.2) ERI website redesign and continued website support for ERI, SWERI, and 4FRI to best meet deliverables	Requestors: All affected entities, 4FRI Stakeholder Group, SWERI Outcomes: Science updates and information repository
6.3) Media outreach and engagement	Requestor: All affected entities Outcomes: Science synthesis briefs
6.4) Science support, knowledge resource services to federal and non-federal entities	Requestors: Land managers, state forestry agencies, local government, elected officials, and community organizations Outcomes: Knowledge to inform action; raise awareness, support for restoration
6.5) Report on FY26 Work Plan activities to SWERI Program Manager	Requestor: SWERI Program Manager Outcome: Final Report

6.1) Social media and innovative science delivery. Eight years ago, ERI launched a monthly "Science

Flash" e-newsletter to share the latest ERI science, workshops/ webinars, outreach products, or SWERI news. Additionally, our bi-annual newsletter — distributed to more than 1,200 contacts — highlights news from each program of work and lists recent publications and products. The ERI coordinates across all SWERI to cross-post and amplify intermountain and West-wide actionable science with our shared audiences. In FY26, ERI will continue to engage on social media platforms and develop innovative ways to communicate our research, which includes staff science-communication training to support these communication deliverables.

Requestor: Anticipatory
Outcome: Increase audience reach with innovative and interactive social media tools

Deliverables:

i. Social media campaign and viewer engagement summaries
ii. ERI "Science Flash": eight to ten (8–10)
iii. ERI external e-newsletter: two (2)

6.2) Provide website support for the ERI, SWERI, and 4FRI to best meet deliverables.

Requestors: All affected entities, 4FRI Stakeholder Group, SWERI
Outcome: Access to ERI science products; science updates and information repository for all affected entities

Deliverables:

i. Redesigned ERI website to enhance visitor experience, align with ERI's new reorganization and program areas, and allow visitors better, quicker access to publications and research.
ii. Website analytic reports on each website's user site visits and engagement metrics.

6.3) Media outreach and engagement. Support the education of the public through media outreach.

Requestor: All affected entities
Outcome: Science synthesis briefs for busy practitioners and policymakers

Deliverables:

i. Five (5) media interviews
ii. Five (5) media articles

6.4) Science support, knowledge resource services to federal and non-federal entities. These activities include filling information requests, technical assistance, field trips, and presentations.

Requestors: Land managers, state forestry agencies, local government, elected officials, and community organizations
Outcomes: Knowledge to inform action; raise awareness and support for restoration

Deliverables:

i. A minimum of forty (40) services or activities

6.5) Report on FY26 Work Plan activities to SWERI Program Manager.

Deliverable:

i. Final report to SWERI Program Manager