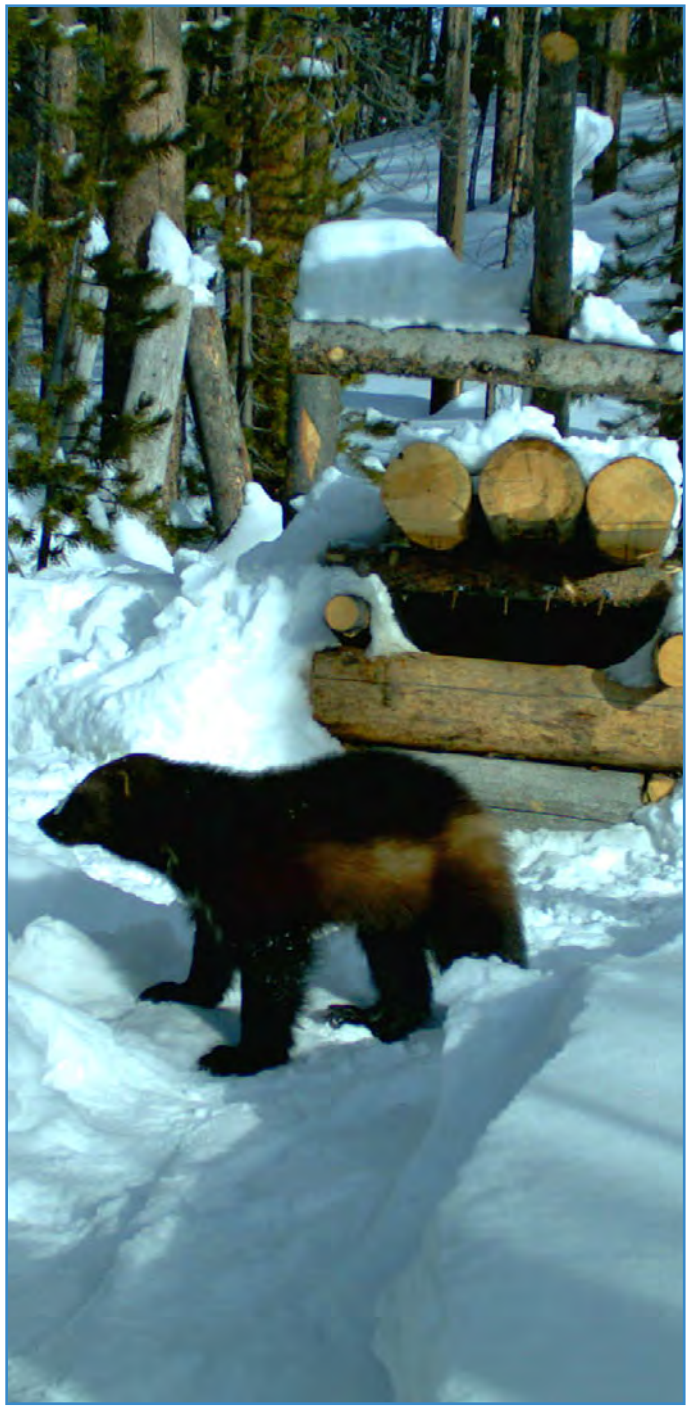
Rocky Mountain Research Station

2014–2017 Strategic Business Plan



Rocky Mountain Research Station

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Remote camera captures a wolverine as it approaches a researcher's trap.

Contents

Cover photo and right: Scientists are studying the movement of plants, such as western larch, in response to changing climates, to provide a central foundation for collaborative studies.

The Executive's Summary: Caring for the Land and Serving People, through Science

One could argue that many of the key challenges inspiring our science today remain largely unchanged since preparation of the Rocky Mountain Research Station's last Strategic Framework Update in 2008. Indeed,

- Fires still burn; larger, longer, hotter, and with more frequency than at any point in recorded history.
- Invasive species still invade while some native plant and animal species struggle to survive.
- Ever-growing numbers of people want to live, work, and recreate in the West; and, they continue to depend on ecosystem services provided by natural landscapes.
- Clean water remains a precious and over-allocated commodity.
- Extreme weather events, symptomatic of changing climates, occur with greater frequency.
- New effects of changing climates continue to emerge, affecting the health, resiliency, and productivity of natural ecosystems and human communities.
- Operational expenses increase while allocated budgets decrease.
- Citizens increasingly find value in the science results and applications we produce.

The challenges facing natural resource-related policy makers, decision makers and community leaders do not just remain; rather, the scope and complexity of challenges continue to grow as the impacts of changing climates, interactions between humans and their ecosystems, and the related ecological thresholds, become more fully understood.

Those we serve - our diverse stakeholders - need our science more than ever.

Oddly enough, the key to achieving our vision for the Rocky Mountain Research Station and thus meeting the needs of our Stakeholders does not depend on enhancing our performance in the research arena but rather, on re-engineering our business model. Given the foreseeable economic trends, we cannot afford to operate as we have in the past. This Strategic Business Plan presents our plans to transition to a financially sustainable business model while continuing to excel in research and delivery of much-needed scientific knowledge.

The diversity of people who join with us to identify research needs, fund and conduct research projects, document and share our work, and apply our findings creates a network in which I place tremendous faith. The research and business management challenges of the future will test our skills and expertise, and I am confident we have the assets – the people, with a wealth of expertise and experiences – to successfully meet those challenges.

Through this Strategic Business Plan and the affiliated Strategic Framework Update, I am pleased to share our operational priorities for the next three years. This is our commitment:

- We will focus on seven strategic research priorities, to best serve those who depend on us for world class, highly relevant natural resource-related science.
- Using the Strategic Research Priorities, we will adopt a new business model that is financially sustainable in the current economic climate, and
- We will accomplish our work safely, with integrity, and with respect for our colleagues and stakeholders.

You can continue to depend on us to develop and deliver highly credible science that enhances the resiliency of landscapes and human communities, and helps sustain our forests and grasslands.

We care for the land and serve people through science. And, we look forward to working with you in this endeavor.

DR. G. SAM FOSTER
Station Director –
Rocky Mountain Research Station

"Those we serve - our diverse stakeholders - need our science more than ever."

Mission of the Forest Service Research & Development

To develop and deliver scientific knowledge and innovative technology to improve the health and use of the Nation's forests and rangelands – both public and private.

Vision of the Rocky Mountain Research Station

Rocky Mountain Research Station science informs and inspires; our research enhances the resiliency of landscapes and human communities. We invite you to join us!

Our Challenge

Our challenge is not to simply achieve this vision, but rather, to maintain and expand our capacity and our accomplishments while operating a financially sustainable research enterprise.

Purpose & Background

Purpose

The Rocky Mountain Research Station's 2014-2017 Strategic Business Plan presents the actions we will take to achieve our Vision and to meaningfully contribute to the needs of land managers, interested partners and the public as we support the mission of the Forest Service Research & Development (FS R&D) organization.

The Business Plan serves as a communication tool between the Station's Leadership Team and our employees, the broader Forest Service community, and Forest Service colleagues.

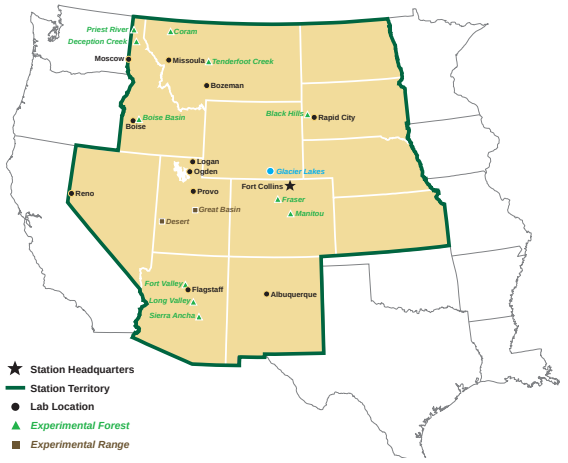
The Plan articulates RMRS'

1. strategic research priorities and associated sub-elements, and
2. strategic business actions targeted for accomplishment within the 2014-2017 timeframe.

Neither the Strategic Business Plan nor the Strategic Framework Update offers excessive details; rather, each provides a general overview and direction for our work. Contact a member of the Station's Leadership Team if you want to learn more details.

Background

As one of seven research stations that comprise the USDA Forest Service (FS) Research and Development (R&D) organization, the Rocky Mountain Research Station (RMRS) is part of the most extensive natural resources research organization in the world. RMRS maintains twelve Laboratory locations throughout a twelve-state territory encompassing the Great Basin, Southwest, Rocky Mountains and parts of the Great Plains. We also manage fourteen Experimental Forests and Rangelands, and several hundred Research Natural Areas. We share this geography with four Regions of the USDA Forest Service: Northern, Rocky Mountain, Intermountain and Southwestern.



While anchored in the geography of the Intermountain West, we conduct our natural resource-related research on a global scale. Just as in other places around the world, the health, resiliency and productivity of ecosystems here in the Intermountain West are affected by:

- climate change, and
- human-ecosystem interactions.

We expect the complexity of natural resource management challenges to increase in coming years. Policy makers, decision makers and interested stakeholders increasingly recognize the value of using the best and most current scientific knowledge in making decisions to address these challenges.

Increasing Demand; Decreasing funds for Supply.

While demand for the types of research we produce remains strong, the federally allocated resources available to fund this work are decreasing, thus potentially affecting supply. Our primary challenge in the next three years is to evolve to a more financially sustainable model of operations; one that supports the development and application of new scientific knowledge with a lessened dependence on federally allocated dollars.

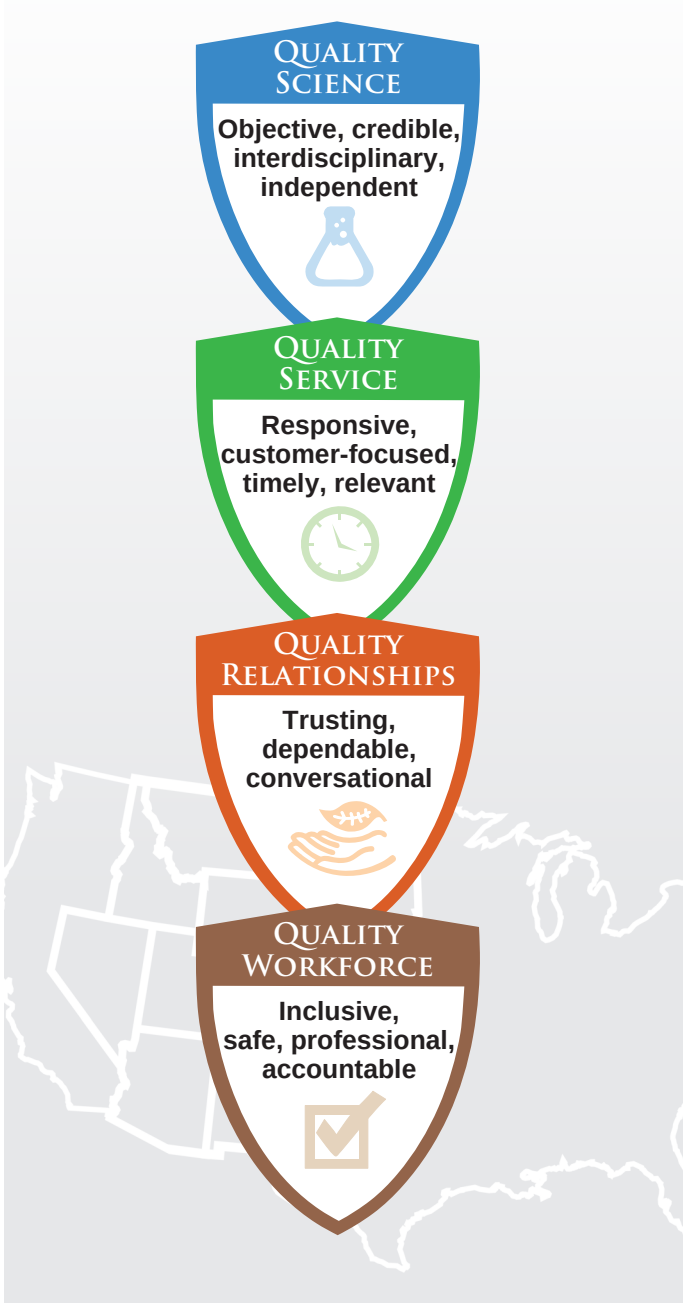
We have a solid foundation from which to achieve greater levels of scientific influence. The challenge of how best to do this within a financially sustainable business model shapes the scope of this Strategic Business Plan and our 2014-2017 Strategic Framework Update.

RMRS cannot address all the questions confronting managers; instead, we will engage our science community based on our strengths as identified in the affiliated Strategic Framework Update. RMRS must also be strategic in its business decisions in order to successfully address the scope, scale and complexity of natural resource management questions, and to operate within anticipated funding levels.

"The strategic business plan is not a paper exercise. RMRS has a noble mission, and it is critical that we set and agree upon our priorities, and that we also identify a small handful of high-impact activities to focus on in the coming years, in order to reach our goals. Without agreement, focus, and accountability, we will be challenged to effectively manage the business and thus, we will miss out on opportunities to grow our science."

MICHAEL WILSON
Program Manager —
Inventory & Monitoring Science

Our Values



Our Strategic Focus

Given the demands for new scientific knowledge and the multitude of considerations necessary to run a financially sustainable research enterprise, we choose to focus on key business values and purpose-driven business strategies.

Two Key Operational Values:

Whereas all of our values shape the core of how we operate, two themes warrant expanded discussions in this business plan:

- Safety.
- Inclusiveness & Civil Rights.

Our employees and stakeholders are the foundation of our work. Our commitment to these two particular values supports our efforts to attract and retain quality employees, and enables our workforce to create, support and sustain our science.






Two Purpose-Driven Components of the Business Plan

As part of our 2013 strategic planning efforts, RMRS established seven Strategic Research Priorities that reflect the science strengths of RMRS. Refer to the affiliated Strategic Framework Update for a more in-depth explanation of these seven priorities:

a. Disturbance Ecology

b. Fire Sciences

c. Human-Landscape Interactions

d. Inventory & Monitoring

e. Resilient Landscapes

f. Species Endangerment

g. Water & Watersheds

We will invest in research we deem the highest priority and divest purposefully from research that falls outside our stated strategic research priorities.

We committed to five strategic business actions crucial to the future viability of RMRS. Our deliverables include:

1. Establish a financially sustainable business model.

2. Link budget to strategic priorities and sub-elements.

3. Optimize locations and uses of RMRS facility assets.

4. Establish a state-of-the-art web platform.

5. Proactively enhance functionality, effectiveness, and cohesion of the RMRS Leadership Team.

Developing new tools to help map and understand fire severity.

Big Creek Lake, Selway-Bitterroot Wilderness, MT – Ponderosa pine forest recently studied and treated by wildfire.

Our Approach to Safety

Employees throughout the Rocky Mountain Research Station (RMRS) demonstrate a commitment to a safe and healthy workplace by applying the science associated with risk management and high reliability organizations to our Station Safety Program.

Managing risk is a fundamental tenet of the Forest Service's safety program. In today's work environment simply mitigating hazards is not acceptable. We focus leadership and employee attention on high risk activities, acknowledge risks, take appropriate actions to mitigate risk, and perform those risk-acceptable activities with skill and judgment. The Station Safety Council (SSC) is chartered to help lead this transition in our program and improve the commitment of all employees to this risk management approach.

We strive to learn and grow as we take new steps through the safety journey. As we do this, we must also continue to be self-aware of the intertwined roles that safety and mission accomplishment play in the daily work that we do. On every job that we accept, we apply the following five practices.

1. When we do our work, we first look at the proposed work and determine if the risk is worth taking on such a job.
2. Once we determine that we will take on this work; we carefully assess the job and associated hazards.
3. When we conduct the work we keep awareness at high levels and are ready to adjust to changes in the environment.
4. When we have an incident or near miss, we capture the stories and lessons learned to instill a culture of continuous improvement.
5. Finally, we agree to keep true to these 5 practices so that we can continue to improve our success in safely achieving our vision.

We truly believe that "the safer we are, the more successful we are."

Our Approach to Inclusivity & Civil Rights

Why is the integration of civil rights programs, purpose and accountability important to the Rocky Mountain Research Station?

As the RMRS tiers off the Forest Service's Mission with its own Vision to provide meaningful, useful and current research, we require not only internal human resource capacity but also the development and sharing of relevant research with our American public for the sake of community stability and personal interests.

RMRS shows by example its commitment to our local communities and strives to outreach beyond these communities in providing and sharing our research knowledge, expertise, services, benefits, and facilities in a manner that demonstrates their applicability in natural resources science and in human dimensions.

RMRS is committed to integrating civil rights programs and purpose in all aspects of its business sense. By pooling expertise, knowledge, data and resources, RMRS is able to more effectively perform as an entity of inclusiveness that values diversity of cultures and race, and also diversity of perspectives, experiences, traditional knowledge and academic expertise.

Employees work in a caring and nurturing environment. Opportunities to develop, advance, and contribute to the organization's mission are seamless within the organization; respect, appreciation, and acceptance of diversity nurture highly innovative, effective, and satisfying efforts.

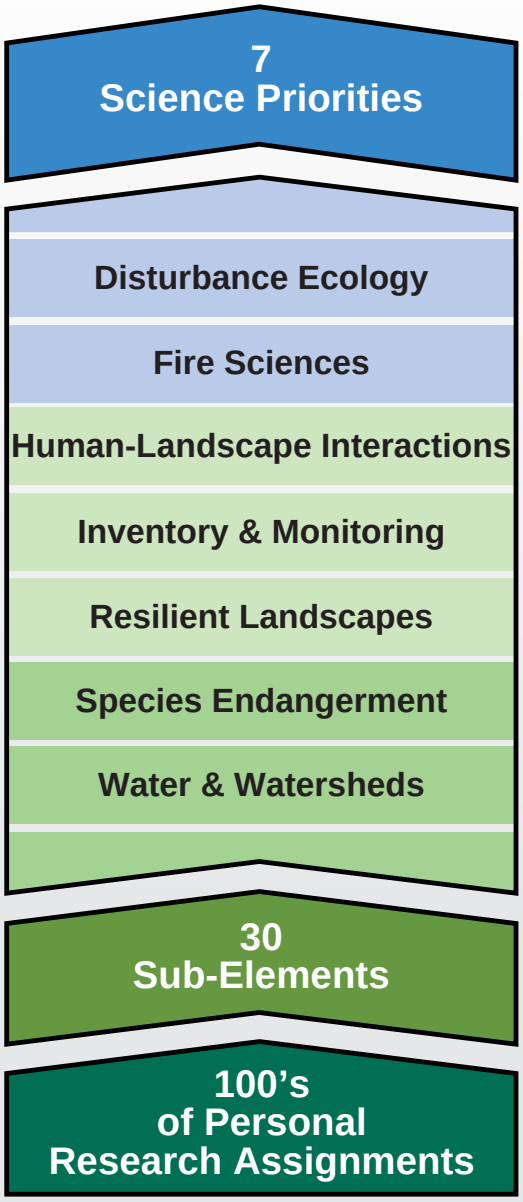
RMRS seeks in good faith to address issues and/or concerns as they occur, timely and satisfactorily within Agency guidelines and policies. RMRS strives to understand, highly value, and effectively embrace and manage diversity and inclusiveness.

To successfully serve a diverse public, we value having diverse cultures and perspectives at all levels. In addition RMRS strives to involve the traditionally underserved communities in the development and delivery of our science and our services in keeping with our agency's Intention Statement, to "create a culture of inclusion that awakens and strengthens all peoples' connection to the land."

"A strategic business plan is our written business sense and purpose, a document which guides, directs and leads us as we conduct our daily business. This daily business affects employees, the Agency's mission and the American public of today and future generations. Civil Rights programs, inclusiveness and diversity play a significant role in accomplishing this mission by supporting the human resources that make our natural resource mission possible."

Angela Baca
Civil Rights Director

Strategic Research Priorities



The Rocky Mountain Research Station's Strategic Research Priorities

Within the backdrop of changing climates and an increasing human footprint, RMRS took a methodical approach to look at our current research portfolio to see where we needed to expand and also where our portfolio should contract. By taking this holistic approach our research continues to provide relevant insights into the health, resiliency and productivity of ecosystems throughout the Intermountain West.

In the process of developing strategic research priorities we compiled, for the first time, a thorough inventory of all lines of then-active (as of 2011) research occurring at the Station. Those several hundred Personal Research Assignments (PRA's) were grouped into 30 Research Sub-Elements, which then fit within 7 Strategic Research Priorities.

Our seven Strategic Research Priorities:

- **Disturbance Ecology**
- **Fire Sciences**
- **Human-Landscape Interactions**
- **Inventory & Monitoring**
- **Managing Resilient Landscapes**
- **Species Endangerment**
- **Water & Watersheds**

These priorities address broad areas of current concerns for, and thus reflect the greatest potential for us to positively influence, the health, resiliency, and productivity of natural landscapes and communities. As such, these priorities drive our future research investments.

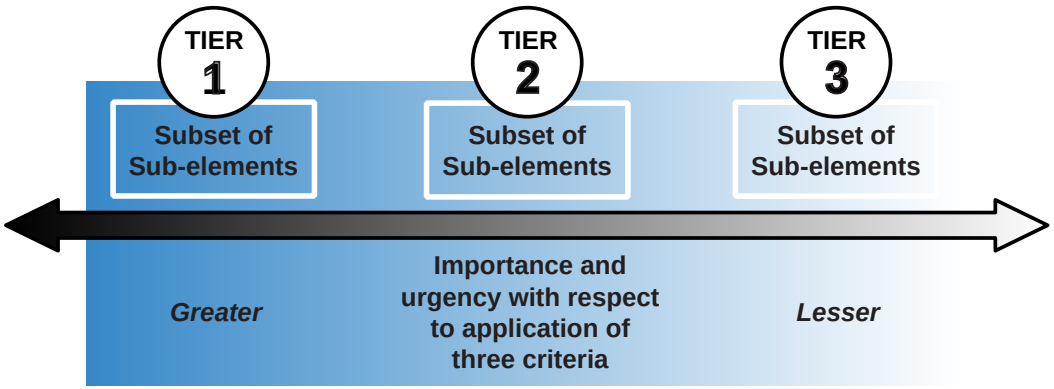
The Strategic Research Priorities and affiliated sub-elements will be used to help guide:

- Investments and Divestments of Financial Resources,
- Hiring and adjustment decisions for our workforce,
- Strategic development of complementary partnerships, and
- Management of our research portfolio.

Since the Strategic Research Priorities and associated Sub-Elements will be used guide areas of research that will be emphasized, and to prioritize our investments in science, a final step was necessary to identify the relative importance of the Sub-Elements and Personal Research Assignments.

The thirty Sub-Elements were evaluated along with their associated Personal Research Assignments (PRAs) to develop a relative ranking of the Sub-Elements which was subsequently parsed into three "tiers." The ranking was based on three criteria:

- **Stakeholder Support:** Stakeholders, investors, partners, other scientists.
- **Future Needs:** Emerging, growth area, innovative science, basic science.
- **Unique Capability:** Personnel, geography, infrastructure.



The descriptions on the following pages provide a brief description of each Strategic Research Priority and the affiliated sub-elements.







RMRS Strategic Priorities and Strategic Elements

Disturbance Ecology (DE) Strategic Priority – Knowledge discovery, knowledge development, modeling and synthesis to understand causes, consequences and interactions of fire, invasive species, insects, pathogens, climate change, and other disturbances and stressors, and ecological responses and outcomes of land uses and management actions. The Disturbance Ecology strategic research priority answers the question of what to expect from natural and anthropogenic disturbances, exploring why disturbances occur, characterizing their spatial and temporal distribution, and elucidating disturbance outcomes and consequences. While some systems and species are dependent on and adapted to natural disturbance regimes, the intensity, frequency and severity of many disturbance events have increased in the US, sometimes out of known historic precedent, leading to ecosystem damage, resource losses and economic setbacks. To adapt to changes and conserve resources for the future, managers need to understand how land uses and management actions, and stressors or disturbances such as invasive species, wildfire, climate change, drought, insects and disease, and their interactions negatively or positively affect species, ecosystems, and landscapes. The public is concerned about, and affected by, social, economic and environmental risks and consequences of environmental changes resulting from ecological and anthropogenic disturbances, and demands informative answers based on sound science to their questions.

Sub Elements:	Tiers		
	1	2	3
(DE 1) **Climate Change and Variability** (Climate Change). – Detect, assess, characterize and model ecological effects of past, present and future climate change on physical environments, plant and animal species, ecosystems and landscapes, carbon flux and stocks, and socio-economic systems to support the assessment of vulnerability and development of adaptation management actions.	X		
(DE 2) **Fire as a Disturbance Agent** (Fire). – Detect, assess, characterize and model causes and impacts of wild fires in relation to fire history, frequency, severity and intensity and with respect to responses at multiple ecological levels (ecosystems, watersheds, communities, and species) and at different spatial and temporal scales.	X		
(DE 4) **Disturbance Interactions** (INTERACTIONS). – Determine, characterize and model how interactions among different types of disturbances influence ecosystem and watershed function and structure, community dynamics and diversity, and species and population vulnerability, demography and responses.	X		
(DE 5) **Non-native Invasive Species** (Invasive Species). – Detect, assess, characterize and model causes and consequences of ***non-native*** invasive species, diseases and pathogens. Consequences involve the detection of responses at multiple ecological levels including ecosystems, watersheds, communities and species' populations, and over different temporal and spatial scales.		X	
(DE 6) **Land Use, Restoration and Management** (Land Use). – Using experimentation, assessments and modeling, improve understanding of beneficial and unfavorable responses to environmental changes resulting from land uses, resource extractions, and management actions. Emerging issues such as energy and urban developments and vegetation treatments for restoration as well as traditional uses such as logging and grazing are addressed. Results are used by managers to reduce unintended effects and improve stewardship approaches (i.e., adaptive management) and maintain long-term sustainability.		X	
(DE 3) **Native Species as Disturbance Agents** (Native Pests). – Improve understanding of the ecology and role of ***native*** species, diseases and pathogens as disturbance agents. Detect, assess, characterize and model causes, impacts and outcomes of environmental changes resulting from insect outbreaks (e.g., bark beetles), diseases and pathogens. Responses are assessed at multiple ecological levels and temporal and spatial scales.			X

Mountain Pine Beetle damage. (Source: Rocky Mountain Region Archive – bugwood.org)

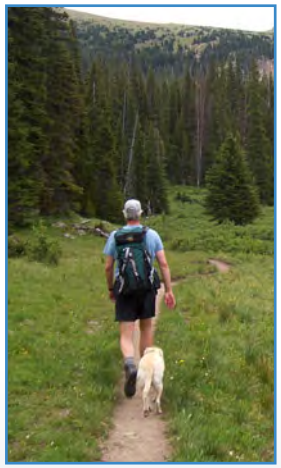
RMRS Strategic Priorities and Strategic Elements (Cont.)

Reviewing a prescribed fire.

Fire Science (FS) Strategic Priority – Knowledge discovery, knowledge development, modeling, and synthesis as they relate to the understanding of physical fire processes, fuel science, and emissions source-strength.

The National Cohesive WIldland Fire Management Strategy provides important context for much of our work in wildland fire.

Sub Elements:	Tiers		
	1	2	3
(FS 1) **Physical fire processes** — the fundamental, multi-scale, physical processes that govern fire behavior, including combustion processes, heat and energy transfer processes, and fuel-fire-atmosphere interactions and dynamics in complex fuel beds and environments.	X		
(FS 2) **Fuel science** — assessment and characterization of the spatial variability and temporal dynamics of both living and dead wildland fuel, including the phenology and chemistry of living vegetation as it relates to ignitability and combustion.	X		
(FS 3) **Emissions source-strength** — characterization of smoke emissions from wildland fire, including chemical speciation, rate(s) of production, and plume dynamics from the surface/source to the point in the atmosphere of neutral buoyancy.			X



Hiking on the Arapaho-Roosevelt National Forest. (Source: Wendy R. Magwire – USDA Forest Service Find-A-Photo)

Human-Landscape Interactions (HLI) Strategic Priority - Natural disturbances and human demands for goods and services have altered the world's forest and rangeland ecosystems. Human – Landscape Interactions is knowledge discovery, knowledge development, modeling, and synthesis as they relate to the understanding of the interface between the health of the natural resources and the wants and demands of a growing human population base.

Sub Elements:	Tiers		
	1	2	3
(HLI 1) **Resource Allocation and Risk Management** – This HLI strategic element involves resource forecasting, tradeoff analysis, optimization across natural and human systems, and risk management.	X		
(HLI 3) **Social Acceptance of Ecosystem Change** – This HLI strategic element explores social and economic drivers behind ecosystem change and services and societal response and acceptance to forest and rangeland management alternatives.	X		
(HLI 2) **Resource Valuation** – This HLI strategic element explores valuation of market and non-market natural resources and their use and valuation of forest and rangeland ecosystem services.		X	
(HLI 4) **Multi-Stakeholder Collaboration** – This HLI strategic element explores collaboration in addressing changing ecosystems and cultural settings.			X
(HLI 5) **Wilderness as Benchmark** – This HLI strategic element explores the role of wilderness as a setting for measuring and conveying ecosystem services and as a benchmark for tracking ecosystem and human change.			X

RMRS Strategic Priorities and Strategic Elements (Cont.)

Inventory & Monitoring (IM) Strategic Priority – The Inventory and Monitoring strategic priority involves the acquisition and analysis of information related to characterizing natural resources at different scales as well as the interaction of those resources with human values and interests. It targets both current resource status as well as trends over time in the context of changing climate, different management strategies, and natural disturbance processes. It includes the development of new inventory and monitoring methods and techniques – such as plot-based, remote sensing, or genetic approaches – as well as the application of various methodologies to local- and broad-scale assessments. A major element of this strategic priority is the Interior West unit of the Forest Inventory and Analysis (FIA) national program. Major elements include components measured, approaches used, time frame, geographic extent, and scope of inventory.

Sub Elements:	Tiers		
	1	2	3
(IM 1) **Terrestrial ecosystems** (flora/habitat). – Includes terrestrial flora and the geographic and geologic setting; and terrestrial fauna habitat conditions; and in addition, species of interest may be categorized as Common, Invasives, or Rare (to include threatened and endangered.		X	
(IM 2) **Fish and Wildlife** (fauna). – Includes specific species of interest or grouping/aggregates of species.		X	
(IM 3) **Water** – Includes both water as a habitat for aquatic species, water as a resource for human or other uses, aquatic habitats, and water quality and quantity.		X	
(IM 4) **Air Quality** – impacts on natural resources (ozone, etc.) and people			X

A forest inventory specialist entering data in a pinyon-juniper woodland.

Aspen Regeneration on the Caribou-Targhee National Forest. (Source: Bud Alford – USDA Forest Service Find-A-Photo)

Managing Resilient Landscapes (MRL) Strategic Priority – This science area helps us understand how ecosystems respond to various pressures and in what situations these pressures result in tipping points or thresholds where the status changes in an undesirable and irreversible way. It will help us understand how to maintain and restore resilient landscapes under a changing climate. It involves integrating knowledge discovery and development, modeling, and syntheses to create adaptive management strategies to help maximize and sustain ecosystem and landscape integrity, function, and resilience into the future. This also means it will integrate information on the effects of multiple interacting stressors on species, populations, landscapes and ecosystems and utilize plant, animal, and vegetation ecology, entomology, pathology, genetics, soils, remote sensing, and monitoring information.

Sub Elements:	Tiers		
	1	2	3
(MRL 2) **Adaptive management strategies supporting restoration** – This sub-element will develop vegetation treatment strategies, techniques, and silvicultural prescriptions, assessments, and management to maximize and sustain landscape and ecosystem resilience and reduce negative restoration impacts (damage to soil/soil crusts, etc). It will focus on developing the basic biological knowledge of select species important for restoration efforts; understanding the successional pathways and thresholds, processes, and trajectories; understanding dynamics and relationships across spatial scales; and understanding long term, interactive, and cumulative effects. This knowledge will then be integrated into decision support tools to provide guidance on prioritizing, designing, and implementing species recovery and restoration treatments and locations, and incorporate risk and adaptive management into restoration efforts.	X		
(MRL 5) **Understanding of the genetic variation and gene flow across the landscape** – Provides science to understand the genetic processes and characterize patterns of variation, gene flow across the landscape, and effective population size; understand and manipulate resistances, tolerances, and plasticity of both beneficial and injurious organisms under current and future environmental conditions of changing climate, exotic species invasions, and land management activities. Understand how landscape properties, like fragmentation, correlate with the genetic variation in plants/animals; explore the genetic relationship between resistance and susceptibility and genetic control of host-pathogen or herbivore relationships; identify adaptive genes in wild populations and understand the genetic-based adaptive capacity of insect and other pest populations; and develop genetics tools to predict/prevent potentially invasive forest pathogens. Initiate assisted migration research to provide guidelines.	X		
(MRL 1) **Landscape modeling** – This sub-element will develop, synthesize, and deliver a framework for incorporating knowledge to help with understanding and quantifying long term, interactive, and cumulative effects to develop adaptive management strategies. This incorporates information on climate change, fire, invasives, insect and disease, sensitive species, human-environment landscape, disturbance/stressors, land use, and management objectives for decision-making.		X	
(MRL 3) **Evaluating and predicting system resilience**. This sub-element will focus on understanding of equilibrium states and pressures, tipping points, and thresholds the forces that control them, and how changes can create alternative states or novel ecosystems.		X	
(MRL 4) **Ensure the availability of quality native plants** – This sub-element will develop and improve methods to ensure that native plant materials are available in sufficient supply on the landscape and the nursery. It will identify, collect, develop, test, and produce genetically appropriate plant materials well-adapted to local conditions; develop nursery procedures and seed production protocols; species selection guidelines, seed transfer zones, screening procedures for insect and disease resistance.			X

RMRS Strategic Priorities and Strategic Elements (Cont.)

Species Endangerment (SE) Strategic Priority – Species Endangerment research is knowledge discovery, knowledge development, modeling, and synthesis as they relate to the understanding of vulnerability, habitat relations, population ecology, and recovery.			
Sub Element:	Tiers		
	1	2	3
(SE 2) **Habitat Relations** — Understanding habitat correlates at multiple spatial and temporal scales is essential for an agency largely responsible for land management. This requires the development and application of new tool, approaches, and methods to correlate species distributions and detections with both habitat and environment. Related to the research of identifying habitat correlates is understanding the habitat requirements for species connectivity among essential habitats, as habitat used for either seasonal or generational movement is often different than daily/yearly use habitat. Habitat relations also include research on the effects of changing human land-use patterns and natural disturbances on habitat and connectivity needs of wildlife at multiple spatial and temporal scales.	X		
(SE 3) **Population Ecology** — Quantify demographic parameters to evaluate which are most vulnerable. Estimates of many population parameters such as age-specific survival and reproduction, population size and density, dispersal, finite population change and others require combinations of field and laboratory methods. Develop and apply new analytical approaches for robust estimates of population parameters. Use conservation genetic and genomic tools where appropriate to evaluate demographic parameters and estimate abundance. Evaluate patterns of connectivity, gene flow, meta-population structure and movement using molecular genetic and genomic tools as well as conventional wildlife techniques. Assess levels and patterns of genetic variation and effective population size to compare with historical conditions. Evaluate the historical patterns of substructure and genetic variation prior to natural and anthropogenic disturbance to evaluate how far current population conditions are from historical conditions. Develop and apply new field methods, analytical approaches and genetic tools to quantify population status and trend in a cost-effective manner at an appropriate spatial and temporal scale(s).	X		
(SE 1) **Vulnerability** — Assess population status and viability of species of management concern. Work with stakeholders and managers to understand the impacts of various habitat alteration alternatives on population viability. Identify factors correlated with species endangerment, and focus on research that understands limiting factors that causes current vulnerability status.		X	
(SE 4) **Recovery** — Identify where and how to facilitate species recovery. This includes identifying correlates of population recovery to provide baseline expectations of population trajectories for species that have gone through population bottlenecks. Collaborate with managers, stakeholders, and collaborators to develop conservation assessments that provide managers with options for implementing appropriate actions leading to recovery. Identify natural and anthropogenic threats that are impeding species recovery and work with stakeholders and mangers to mitigate these threats.			X

A Mexican spotted owl watches a live mouse on the forest floor.

RMRS Strategic Priorities and Strategic Elements (Cont.)

Water and Watersheds (WW) Strategic Priority – Discover and develop knowledge, models and syntheses that predict responses to changing conditions, describe watershed processes, and assess effects of landslides and erosion. The 2011-2016 Strategic Plan for Forest Service Research & Development – Water, Air, and Soil Strategic Program Area establishes relevant context for our work in the Water and Watersheds Strategic Priority area.

Sub Element:	Tiers		
	1	2	3
(WW 1) **Responses to changing conditions** – Predict physical and biological responses of watersheds, water availability and water quality to changing landscape and climate conditions.	X		
(WW 2) **Processes that sustain diversity** – Describes the physical, chemical and biological watershed processes that sustain aquatic biodiversity.	X		
(WW 3) **Landslides and erosion** – Develops methods to assess geomorphic effects of landslides and erosion on aquatic habitats.			X

Cebolla River, CO.

Dr. Frank McCormick, program manager for Air, Water and Aquatic Ecosystems, listening to presentation at GLEES (Glacier Lakes Ecosystem Experiments Site)

RMRS leadership team meeting with National Forest Foundation partners at Manitou Experimental Forest (CO)

Jose Negron explaining bark beetle research at GLEES (Glacier Lakes Ecosystem Experiments Site)

Strategic Business Actions

In order to utilize our research priorities and achieve our vision, we posed the question:

What 3-5 challenges/opportunities/actions should the Station tackle in the next three years, to ensure significant progress towards achieving our vision?

Suggested answers came from employees across the Station, from members of the Station's Strategic Planning Team and from members of the Leadership Team. The raw input was grouped into the common themes, considered, and debated. Five of these themes are reflected in our selected Strategic Actions:

- Budget
- Leadership Team Roles/Development
- Science Priority Uses/Applications
- Explore different business models
- Marketing, Communications, Science Application & Delivery

Five Strategic Actions:
We crafted five strategic actions to address the core themes, and support achievement of our Vision:

1. Establish a financially sustainable business model
2. Link budget to strategic priorities and sub-elements
3. Optimize locations and uses of RMRS facility assets
4. Establish a state-of-the-art web platform
5. Proactively enhance functionality, effectiveness, and cohesion of the RMRS Leadership Team

The initial project management plans, with timelines and milestones to ensure transparency and accountability, are included in the following pages.

"Of all the information contained in our new strategic documents, the SBP's Strategic Actions excite me most. After two years of work we know what we need to do to successfully achieve our vision for the Station, and we carefully planned how we're going to get the work done. I'm eager to proactively engineer our future."

NAN CHRISTIANSON
Assistant Station Director – Communications

Strategic Action #1.

Action/Task: Establish a financially sustainable business model

Determine and agree on what financial sustainability means to the Leadership Team (LT) and seek to achieve it. We will review the previous LT work on this topic (i.e., 2011 budget planning), and examine the various scales (Unit vs Station) to monitor and evaluate.

Describe the Action or Task:

The LT will define financial sustainability, identify criteria for measuring sustainability, and identify one or more approaches to become a financially sustainable organization with two primary goals:

1. Provide a significant (to be defined) amount of non-discretionary funds to our science, and
2. Smartly adjust to substantial changes in funding that comes with operating in the dynamic context of a Federal government research organization, where hard and soft dollars can vary in complex ways.

Explain why this is of critical importance:

In the current fiscal environment of declining budgets, continuing resolutions, increased costs, and recent cuts in staff and science Programs, the LT recognizes that both the current external financial situation and our internal budgeting, accountability, and decision-making processes do not provide for a financially stable research organization; this leads to confusion and disagreement on our Program of Work priorities and leads to budgetary and workforce decisions that seem to be reactionary and based on the situation at the moment. In addition, our situation makes it difficult to describe our steps and progress toward our vision to our employees, our partners and customers, and our agency leadership; this impacts our staff morale and our credibility with external partners and our own agency.

Articulate the end product and what success looks like:

The product of this Action will include a clear definition of financial sustainability, a description of the key elements that create financial sustainability, and a set of criteria that measure financially sustainable within RMRS. This might include elements such as:

- Executive vs. Unit-level authority, discretion, and accountability
- A limited and specified percentage of funding that applies to permanent employee salaries within RMRS;
- Guidelines to employees on soft funding expectations or requirements;
- Percentage goal of hard funds used for operating for science;
- Clear direction within Programs and Assistant Station Director areas, or the Station as a whole, as to criteria used for funding decreases and increases (e.g., how we use science priorities);
- Expectations for partnerships (in terms of meeting science priorities and providing funding).

Success would be a clearly articulated understanding of the RMRS definition of, and goals for, a financially sustainable organization. In the future, RMRS will work towards an organization that provides adequate funding support for our strategic research priority work and our scientists (and others) who successfully compete for substantial soft dollars to enhance work in priority science, with a right-sized and flexible staffing situation to make rapid changes when budgets require. We will use meaningful measures to assess our success.

Point Person: Michael Wilson

Supporting LT members: Alison Hill, Nick Reyna, Sam Foster

Other Team Members needed: The Station Budget Officer;

Other resources needed: Will likely need some assistance from Operations and the Budget shop in determining the cost structure (real and otherwise)

Game Plan:

Timeframes	Milestone accomplishments/tasks/deliverables Consider: if/when to schedule • Employee engagement • Critical coordination needs with others (Stations, WO, External Stakeholders)
FY14 - 2nd Quarter	Meeting with Team to begin pulling together a list of generic definitions of financial sustainability and identify all aspects of previous budget and SBP discussions that address financial sustainability
FY14 - 3rd Quarter	Meeting with Team to solidify definition and to identify and specify draft criteria for achieving the goal. Create concrete steps to move forward in an adaptive management process.
FY14 - 4th Quarter	Present draft definition and criteria to LT and implement any obvious updated processes.
FY15 - 1st Quarter	Formulate draft process and cost structure for getting to the goal (what would it look like each year over the course of several to get to the goal – brutal fast track vs transition)
FY15 - 2nd Quarter	Team will work with Operations/HR to determine available tools and Station will begin experimenting with these tools in an adaptive management process.
FY15 - 3rd Quarter	Present feedback to a cross-section of RMRS employees and key agency leadership/stakeholders
FY15 - 4th Quarter	Team will complete and present final report for employee review

Strategic Action #2.

RMRS Strategic Business Action/Task: Link budget to strategic priorities and sub-elements.

Describe the Action or Task:

Rather than fund the Station in our traditional corporate and program process, a system of funding based on strategic priorities seems needed or at least considered.

Explain why this is of critical importance:

The organization of science programs and corporate staffs are not the measures of importance or success in implementing or meeting strategic priorities. If funding can be first directed to the strategic priorities then the lines of programs can be blurred and the Station becomes truly integrated across and among disciplines. This provides economies and efficiencies in budget allocation, accomplishment reporting, and hopefully, breaks down turf between scientists and science areas. The Leadership Team won't struggle with corporate vs program hats and we'll move together with greater efficiency and effectiveness.

Articulate the end product and what success looks like:

- Transparent implementation and funding of strategic priorities,
- Clarity of hiring decisions, and
- Less tension within the Leadership Team, and greater accountability.

Point Person: Cindy Swanson/Nick Reyna

Supporting LT members: Cloetta Schroeder (consulting role)

Other Team Members needed: Kevin Walker, Karen Iverson

Game Plan:

Timeframes	Milestone accomplishments/tasks/deliverables Consider: if/when to schedule • Employee engagement • Critical coordination needs with others (Stations, WO, External Stakeholders)
FY14 - 1st Quarter	Programs and corporate report FY 2014 funding needs using the strategic priorities and sub-element format developed by Kevin
FY14 - 2nd Quarter	Roll up and display the budget requests using the priorities and sub elements. Ground truth the requested budgets
FY14 - 3rd Quarter	Determine if the current distribution meets our strategic priorities – are more funds needed in some areas and less in others? Do some sub elements fall out and as such we have fewer. How does funding allocation change to programs under this new paradigm? Test work force planning using the new funding allocation.
FY14 - 4th Quarter	Report accomplishments by priorities and sub elements
FY15 - 1st Quarter	Fine tune and use the new distribution to programs. Let programs now manage under the shifted budget.

Strategic Action #3.

RMRS Strategic Business Action/Task Optimize locations and uses of RMRS facility assets.

Describe the Action or Task and Explain why this is of critical importance:

Leadership at RMRS is aware of the need to constantly assess our capital investments, particularly the facilities and infrastructure we maintain. Historically, consideration of this task has generally been deferred because of the extended timeframe over which any substantive changes would occur. For example, building/structure lifespans are often greater than 50 years, and transferring personnel from one location to another requires significant time, funding and mitigation of impacts, while budget cycles are mostly annual.

Articulate the end product and what success looks like:

The team will consider a relatively long time horizon--nominally 5-15 years. Initial stages include: 1. a wall-to-wall inventory of assets and their respective use levels; 2. their expenses—both annual and deferred maintenance; 3. development of criteria and timelines for later stages of the assessment.

Point Person: Colin Hardy

Supporting LT members: Deborah Finch, William Block, and Mike Wilson

Other Team Members needed: Frank McArthur, Station Engineer.

Inventory of RMRS Facility Assets

Rocky Mountain Research Station administers both owned and leased facilities across the 12-state geography of the Station. We maintain a permanent physical presence in all but 3 of the 12 States (exceptions are North Dakota, Nebraska, and Kansas). Locations include 12 cities as well as 7 more remote sites where Experimental Forests and Ranges are located (See figure at right).

Assessment Criteria

The Facilities Task Group has identified a preliminary suite of criteria with which to assess the current "map" of facilities, formulate alternatives, and evaluate the efficacy of alternatives. A preliminary tabulation of these criteria is provided below:

• Condition of structure(s)	• Annualized operational costs
• Planned maintenance and costs (3-5 years)	• Deferred maintenance costs, projected of lifespan of facility
• Redundancies/uniqueness of asset(s); novel or niche.	• Alignment of capacity with Strategic Priorities and sub-elements
• Energy efficiency/"green"	• Potential for generating (external) income
• Partnership dependencies/leveraging capacity	• Location is strategic with respect to "local" bio-geo-physical attributes
• "Critical mass" of occupancy vs. costs	• Political imperative/"capital"

Strategic Action #3. (Cont.)

Timeline:

The Facilities Task Group was chartered in late winter 2013, formulated the assessment criteria in May 2013, and now proposes a suggested timeline as follows:

Timeframes	Milestone accomplishments/tasks/deliverables Consider: if/when to schedule • Employee engagement • Critical coordination needs with others (Stations, WO, External Stakeholders)	
	TASK	**RESPONSIBILITY**
FY13 3rd-4th Qrtr	Generate assessment criteria	Facility Task Group
	Initial inventory of assets	Engineering
FY14 - 1st Quarter November	Task group finalize criteria	Facility Task Group
December	Finalize inventory of assets, including occupancy, income, etc.	Facility Task Group & Engineering
FY14 - 2nd Quarter January	Consolidate annual O&M costs Develop lifecycle costs for each facility/structure	Facility Task Group & Engineering Engineering
February	Quantify or express intangibles (e.g. political capital) Evaluate partner dependencies and/or contributions	Facility Task Group Facility Task Group
March	Create matrix of criteria and data Develop model of alternative locations "map," including consideration of TOS	Facility Task Group Facility Task Group
FY14 - 3rd Quarter April	Evaluate alternatives	Facility Task Group & Engineering
May 2014	Present assessment results to RMRS Leadership	Facility Task Group & Engineering

Strategic Action #4.

RMRS Strategic Business Action or Task: Create state-of-the-art web-based platform.

Utilizing the latest information technology and tools, create state-of-the-art outreach, communication and science delivery strategies through a web-based platform to ensure RMRS is recognized and supported as a regional science leader. The platform will have relevant research findings, products, and tools, and will address critical natural resource issues for land managers, state and local agencies, other scientists, and landowners and citizens.

Importance: Science-based information is the hallmark of the Forest Service decision-making and our research helps "improve the environment and people's lives through discovery and innovation at the highest level". The Rocky Mountain Research station serves over 1/2 of the National Forests and Grasslands in the National Forest System, as well as National Parks, National Wildlife Refuges and other partners in state and local agencies who care about our natural environment. We want to ensure our research is well-supported and our science findings are useable and useful to land managers, are informative and educational to people and communities, and serve to inspire collaboration and discovery with other scientists, universities and research institutions. The internet is now a primary communication, knowledge exchange and research tool for science.

End-product/Success:

- A strong science enterprise supported by a contemporary web platform.
- Communication and Science Delivery strategies that reach and engage land managers, natural resource stakeholders, congressional representatives and other regional and national partners.
- A web platform that is useable and useful to those who make decisions about natural resources.
- Informed congressional representatives, media outlets and other influential partners.
- An informed citizenry that learns, questions and engages.

Point Person: Jan Engert

Supporting LT Members: Frank McCormick, Nan Christianson

Other Team members: Core Team: science delivery specialists, scientist and professional representation from within RMRS, web design expert(s), (both design and operational skills). An Executive Team may include representatives from the WO and/or other western research stations.

Resources needed:

- Passionate and skilled team members from inside and outside the Station
- $50,000/yr. for FY14 & FY15 years for contracting with communication, science delivery and web design experts; $20,000/yr for FY16 ($120,000 total)
- $10,000/yr for travel for team members in FY14 & FY15, $5,000/yr in FY16. ($25,000 total)

"Science-based information is the hallmark of the Forest Service decision-making and our research helps 'improve the environment and people's lives through discovery and innovation at the highest level.'"

Game Plan:
State of the Art Web Platform for Communications, Marketing and Science Application & Integration

Timeframes	Milestone accomplishments/tasks/deliverables Consider: if/when to schedule • Employee engagement • Critical coordination needs with others (Stations, WO, External Stakeholders)
FY14 - 1st Quarter	Form Station Team – (if needed, Executive Team/network)
FY14 - 2nd Quarter	Gather input from employees
FY14 - 3rd Quarter	Define R&D Web requirements/Taxonomy /Audiences
FY14 - 4th Quarter	Initial Design complete - prototype for sharing
FY15 - 1st Quarter	Review and comment –
FY15 - 2nd Quarter	Finalize design and information architecture
FY15 - 3rd Quarter	Web Content Production and Development
FY15 - 4th Quarter	Launch Pilot Site –
FY16 - 1st Quarter	Review and improve design
FY16 - 2nd Quarter	
FY16 - 3rd Quarter	Develop operation/maintenance plan
FY16 - 4th Quarter	Launch 2nd /final version of site…

Strategic Action #5.

Action/Task: Proactively enhance functionality, effectiveness, and cohesion of the RMRS Leadership Team

Describe the Action or Task:

The Forest Service depends on the RMRS to operate effectively and efficiently to meet our mission and objectives which support the Agency. In order to be effective and efficient, the Leadership Team must be a high performance team.

Explain why this is of critical importance

The RMRS Science Program Managers, Assistant Station Directors and Civil Rights Director constitute the Leadership Team. All activities of the Station fall under the auspices of the Leadership Team. If the Leadership Team operates as a high performance team, the Leadership Team will work together in a synergistic manner and Station performance will be at its best.

Articulate the end product and what success looks like

The product is a Leadership Team that is characterized by members who emphasize both corporate and unit thinking. Team members work well together and coordinate their activities, personnel, and plans of work.

Point Person: Sam Foster

Supporting LT members: All Station Leadership Team members will be engaged.

Other Team Members needed

Other resources needed: None

Game Plan:

Timeframes	Milestone accomplishments/tasks/deliverables Consider: if/when to schedule • Employee engagement • Critical coordination needs with others (Stations, WO, External Stakeholders)
FY14 - 1st Quarter	Organize team and develop its purpose, determine and schedule activities.
FY14 - 2nd Quarter	Team building by the Leadership Team to gain better understanding of trust issues and problems and seek to find ways to close the gaps.
FY14 - 3rd Quarter	By the end of the June Leadership Team meeting, the Leadership Team is performing at a much higher level and trust is increasing.
FY14 - 4th Quarter	
FY15 - 1st Quarter	By the October Leadership Team meeting, the Leadership Team is obviously functioning at a significantly higher level; trust is greatly increased.

To learn more about RMRS

Web: www.fs.fed.us/rmrs
Twitter: www.twitter.com/usfs_rmrs

Looking, and Leaning, Forward

The vision and approach outlined in our 2014-2017 Strategic Business Plan require action.

In conversations with employees and stakeholders, it is clear those associated with this Station believe in the Station's future and hold great expectations for our science.

Successful implementation of both the Strategic Framework Update and the Strategic Business Plan requires that we:

1. Establish a financially sustainable business model
2. Link budget to strategic priorities and sub-elements
3. Optimize locations and uses of RMRS facility assets
4. Establish a state-of-the-art web platform
5. Proactively enhance functionality, effectiveness, and cohesion of the RMRS Leadership Team

These five Strategic Actions, already initiated, utilize our updated research priorities, address our primary challenge, and move us towards achievement our vision.

In conclusion, our commitment to our internal and external stakeholders is:

- To focus on seven strategic research priorities, to best serve those who depend on us for world class, highly relevant natural resource-related science.
- To adopt a new business model that is financially sustainable in the current economic climate, and
- To accomplish our work safely, with integrity, and with respect for our colleagues and stakeholders.

We care for the land and serve people through science. And, we look forward to working with you in this endeavor.

For additional information about the Rocky Mountain Research Station, as well as reference materials used in the development of this Strategic Business Plan, visit our website: www.fs.fed.us/rmrs

Landscape shot of Manitou Experimental Forest, CO.

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FOREST
RESEARCH
IS BEING CONDUCTED ON THIS
EXPERIMENTAL PLOT
re-search