



Catastrophic Wildfire Reduction Strategy

**Protecting the health and welfare of
Utahns and our lands**



Governor Gary. R. Herbert

My challenge to the steering committee is to develop a comprehensive and systematic strategy to reduce the size, intensity and frequency of catastrophic wildland fires in Utah. In doing so, we can drastically reduce the expenditure of resources by conditioning our forests and rangelands to resist wildfires, rather than spending many times that amount to fight fires and repair the post fire damage to our property, air quality and water systems.

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Supporting information: Appendix A	http://1.usa.gov/17JKkIb

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Utah Department of Agriculture and Food



Introduction

The Mission: Develop a collaborative process to protect the health and welfare of Utahns, and our lands by reducing the size and frequency of catastrophic fires.

Following the severe 2012 fire season, Governor Gary R. Herbert charged Commissioner of Agriculture Leonard Blackham with the task of developing a cooperative strategy to reduce the size, intensity and frequency of catastrophic wildland fires in Utah.

To the casual observer, all wildfires may seem catastrophic; however, it is important to understand that wildfire has always played a critical role in the ecosystem. In many ecological types, through fire, aged and dead timber, young trees and other “ladder fuels,” brush and grasses are thinned or removed making way for a new generation of vegetation. This continuous cycle renews landscape health and provides for the diversity required in a resilient ecosystem. These healthy ecosystems provide numerous beneficial services to humans and wildlife alike. Wildlife benefit from improved habitat while humans profit from clean sources of drinking water and numerous economic and recreational opportunities provided by healthy forests and rangelands.

Recognizing that fire does play an important ecosys-

tem service role, the outcome of this strategy is to identify and implement solutions to abate those fires whose size and intensity prove damaging to landscapes, economies, and human safety. These fires are termed “catastrophic” because they cause unacceptable harm to resources and assets valued by society, including ecosystem and community health and resilience.

In most cases, fires reach catastrophic levels largely as the result of human intervention, or lack thereof, on the land. Invasive species, policies that reduce naturally-occurring and beneficial wildfires, and homes and communities in the wildland urban interface (WUI) have altered landscapes in ways that increases the risk of fires getting out of control or causing harm to human life and property. These are the wildfires for which this process seeks meaningful solutions. Rather than just reducing fires, the ultimate goal is to return landscapes to a condition of health and resilience that allows for wildfires to burn without becoming catastrophic to either human or natural systems.



Executive Summary

Catastrophic fire continues to be a major problem in Utah, inflicting significant damage and financial burdens on the state and citizens. Significant impacts to State and local economies, critical infrastructure, the environment, and private landowners have been increasing in occurrence and severity over the past decade.

Many of our range and forest lands are in poor condition and ecological health. These conditions are largely due to invasive species, lack of setback in plant succession, disease, and climate changes. Large areas with heavy fuels have resulted in “firesheds” that burn in a dangerous and damaging manner when a “start” combines with hot, dry, and windy conditions. Our wildland firefighting professionals do a great job controlling almost all wildland fire starts; as greater than 95% of wildfires are suppressed on initial attack in Utah. But where there is alignment of adverse weather and topography, heavy fuel loads, and human development, the results can be catastrophic.

We can not change the weather or topography; however, we do have the power to impact both the fuel load and the resilience of communities to wildfire. We have knowledgeable and experienced leadership in Utah with partnerships and programs to improve landscape health and thus significantly reduce the threat posed by wildland fire. Likewise, we know how to improve the resilience of communities to wildfire. If we coordinate the efforts of all interested parties, including local partners, we can reduce the impacts and costs of wildland fires. Dollars spent to prevent a catastrophic fire will save many times more dollars than the cost of suppression and rehabilitation. In fact, every dollars spent in prevention saves \$17 in suppression (USFS).

As problem firesheds are identified, we must consider the suite of actions required to mitigate the threat of catastrophic wildfire. The process must be action-oriented with an evaluation method that is both risk-based and cost-effective. Beyond the expected fuels reduction actions, the suite of activities may include changes in policy or procedures at all levels of government, and may also include the re-establishment of forestry and wood products businesses. However we proceed, we must look for solutions that yield financial returns that help off-set costs. Our goal should be to establish fire-resilient landscapes and fire-adapted communities that can withstand wildfire without the damage and danger currently being experienced.

Prescribed and natural fire is a significant component



Leonard M. Blackham
Committee Chair

of the solution. For nearly 100 years we have suppressed natural fires that help maintain plant succession and fuel loads, which in turn helps sustain resilient range and forest conditions. The need to use naturally-occurring and controlled fire on a much greater scale is very important, and is a major education and discussion matter for policymakers, communities, and residents across the west. The careful and controlled reintroduction of fire is an essential tool in the suite of activities needed to reduce catastrophic wildland fires.

The committee identified 14 statewide pilot projects designed to offer the greatest positive impact on community safety, our water supply, utility and transportation infrastructure, and damage to waterways and reservoir storage. The projects totaled more than \$100 million and are viewed as the first step in a decades-long process to reverse the degradation of Utah’s forests and rangelands.

It is recommended that the Catastrophic Wildfire Reduction Steering Committee convened in this process continue to function under the authority of the Utah Conservation Commission and be chaired and staffed by the Division of Forestry, Fire and State Lands. It is also recommend that a significant additional investment needs to be made by the State and affected stakeholders for mitigation and prevention activities to reduce the threat of catastrophic fires.

The continuance of the steering committee will bring coordination of local, state, and federal government and natural resource agencies, along with private sector stakeholders, to a joint and unified effort. This should likewise be duplicated on a regional basis. These regional committees must provide the leadership and outreach to all citizens and interest groups in Utah to increase communities’ ability to adapt to wildfire and improve landscape health so it is resilient to wildfire and provides the many benefits we seek.

Catastrophic Wildfire Reduction Steering Committee

Developing this Catastrophic Wildfire Reduction Strategy involved bringing together a diverse group of experts from across the State of Utah to ensure that a broad base of understanding and resources were available to inform and direct the work. Committee members represented state and federal land management agencies, conservation and sportsmen's groups, the Governor's Office, and county commissioners.

While each individual participant brought unique and valuable expertise and resources to the table, the collective knowledge, experience and skills of the entire committee created an exceptional opportunity for learning and collaboration. Many on the committee have been deeply involved in preventing, suppressing and otherwise managing wildland fires in the state for decades. Their experience and understanding provided much-needed direction to the planning process. Other committee members were relatively new to the wildland fire discussion, yet they brought extensive land management expertise and fresh ideas to the group. All put forth extensive time and effort to make the process a success.

The steering committee plays a vital role in advising the State about:

- Measures of success and an approach for adaptive implementation of the state strategy
- Identifying and overcoming barriers to successful strategy development and implementation
- Promoting awareness of existing efforts (e.g., Watershed Restoration Initiative, Utah's "Forest Action Plan," Secure Rural Schools program, National Cohesive Strategy, etc.) that may be leveraged to contribute to the success of the state's strategy
- Facilitating coordination of agency and stakeholder resources, and integration of management efforts to support implementation of the strategy

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Jerry Steglich, Daggett County Commissioner
Jim Matson, Kane County Commissioner
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- Developing shared messages and being spokespersons for and champions of the strategy to reduce the risk of catastrophic wildfire.

The steering committee will also evaluate information collected from each of the regional working groups (detailed below) to determine statewide issues, strategies, and priority actions.

Regional Working Groups

In addition to the statewide steering committee, the state was divided into six regions to deal with the unique complexities that are inherent to a state as geographically large and diverse as Utah. These working groups used a similar composition as the statewide steering committee and were able to incorporate local expertise and discuss regional issues in greater detail.

The regional working groups were chaired by state or federal agency personnel whose primary purpose was to assemble and facilitate a core team to guide the efforts of the region. In addition to this core group, regional working groups also sought input and feedback throughout the process from other groups or individuals who sought to be involved. (See Appendix A for Regional Working Group chairs and participants.)

The purpose of the regional working groups is three-fold. First, with the assistance of scientists from the U.S. Forest Service’s Rocky Mountain Research Station, they

are using a risk assessment process to identify communities at risk from catastrophic wildfire as well as priority actions to mitigate those risks. For each community, the process categorizes the nature and amount of values at risk; the magnitude of the threat to those values based on burn probability and intensity; a comprehensive proposal to mitigate the risks to those values, along with associated costs; and, the probability the proposed actions will effectively mitigate the catastrophic wildfire threats. This information can then be used to identify relative priorities for further attention and investment.

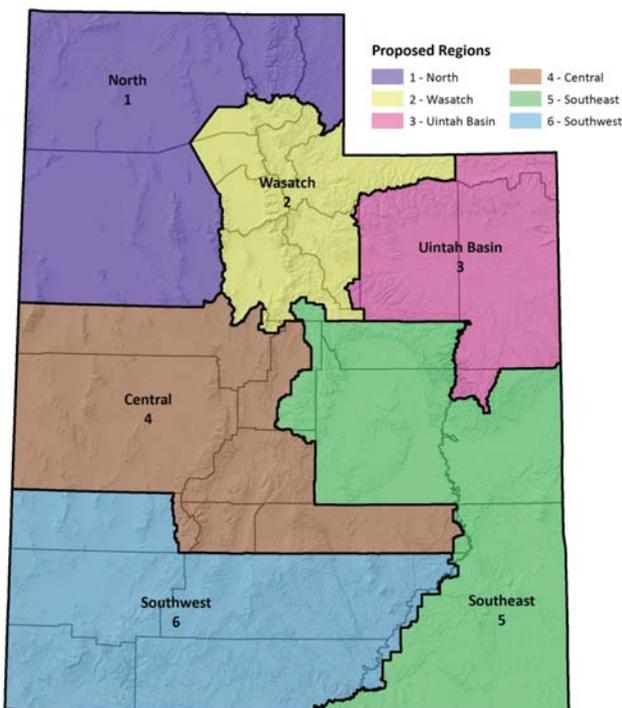
Regional working groups have piloted this assessment process for communities in their respective regions, with the intent of learning how to both use and improve the process before expanding the assessment for all communities at risk.

Second, the regional working groups will also identify significant barriers to reducing catastrophic wildfire. These barriers could include lack of resources or policy impediments that would require action at the state or federal level.

Third, the regional working groups provide geographic context and understanding through mapping. Because wildfire issues are spatial, providing geographic information is a valuable way to understand the issue and to measure the success of mitigation efforts. Therefore, each region was asked to delineate:

- Community boundaries;
- High value resources and assets at risk to catastrophic wildfire;
- Priority wildlands where restoration of resilience to fire is essential to sustaining critical ecosystem services (e.g., watershed health/water quality, wildlife habitat, etc.), or where modification of vegetative conditions is needed to reduce threats to communities;
- Wildland-urban interface areas where modification of vegetative conditions is needed to reduce threats to communities; and,
- Landscapes where 1) the use of prescribed fire may be considered to meet management objectives and 2) wildfire may be considered to meet management objectives.

Six Regional Committees



The Planning Process

Sound results come from sound processes. The participants that developed this Catastrophic Wildfire Reduction Strategy sought to follow a rigorous planning process to understand the issues, formulate a shared vision, and then explore a wide-range of alternatives in order to determine the most effective options going forward. As

with any good planning process, the development and resulting implementation of the Catastrophic Wildfire Reduction Strategy will require an iterative approach that continually monitors the changing conditions and resources as well as works toward constant improvement. As such, the Strategy becomes a living process of improvement and coordination rather than a concrete set of unchangeable edicts.

Understanding the Current Situation

To ensure a holistic, well-informed outcome, the process of creating the Strategy began by seeking to understand the current conditions and major players influencing wildland fire mitigation, suppression and rehabilitation.

(See Appendix A “Fires in Utah, The Current Situation,” and “Fires in Utah, Existing Resources.”)

Shared Vision and Guiding Principles

While the individual participants came from different entities and with different backgrounds, all worked toward a common goal of developing a strategy for reducing catastrophic wildfire in Utah. Through a series of meetings and workshops, the steering committee articulated their shared vision into a list of guiding principles.

Identifying the “Gaps”

Even though there is general consensus regarding the task, vision, and guiding principles, the fact remains that current conditions in the state fall short of the ideal. Many factors impede the realization of the goal of reducing catastrophic wildfire, and a critical step in the process involves identifying the gaps between the cur-

rent and desired condition. These gaps are areas where additional resources or improved policy may help to reduce catastrophic wildfires and improve ecosystem health.

Explore Alternatives

As gaps are identified, solutions can be crafted to address the underlying issues. Programs and resources already exist to address many of the known issues, and much of the work of the steering committee and regional working groups involved identifying and better understanding existing resources and expertise. Additionally, innovative new approaches and alternative solutions must each be explored.

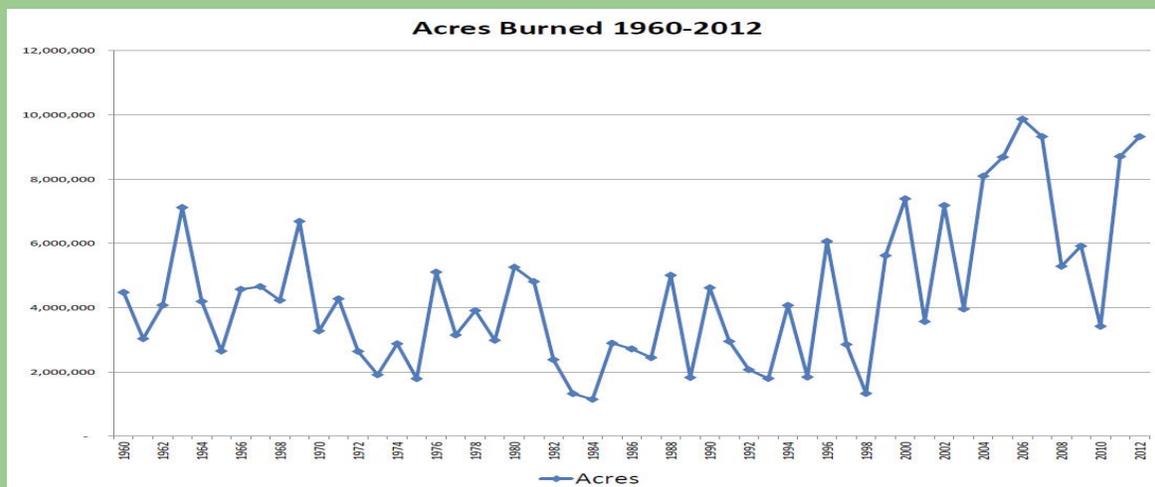
Implement, Review and Adapt the Strategy

After careful consideration of the guiding principles and the identified issues, initial recommendations have been developed. The objective of the steering committee and any ongoing working groups will be to continue to find innovative solutions that reduce or eliminate these gaps and lend to implementation of the Strategy. In this way, the plan becomes an iterative and adaptive process in which the current situation is consistently being reassessed, alternatives are considered, and improved recommendations are made.

Developing a Strategy

To be successful, a strategy must be guided by a foundation of common values or guiding principles, a mutual understanding of the issues and alternatives, and a collective commitment to work toward a shared vision that can be reached through achievable recommendations.

An upward trend in fire size over the past 50 years is evident in this graph.



The challenge issued by Governor Herbert, and the mission of the steering committee, is to develop a plan that is both comprehensive and systematic for reducing the size and frequency of catastrophic wildfires. The steering committee has concluded that the strategy must be developed in a collaborative process and protect the health and welfare of Utahns and our lands. Through the initial stages of the planning process, the steering committee determined this plan should be compatible with the National Cohesive Wildfire Management Strategy and the associated report of the Western Regional Strategy Committee commonly known as the “Western Regional Action Plan.”

The Goals of the National Cohesive Wildfire Management Strategy

Reducing catastrophic wildfire requires attention to three interdependent goals identified in the National Cohesive Wildfire Management Strategy -- Restore and Maintain Landscapes, Fire Adapted Communities, and Wildfire Response. These goals have been embraced throughout the development of this implementation plan for reducing the risk of catastrophic wildfire in Utah. As further described within the Cohesive Strategy, the goals include:

- 1) Landscapes across all jurisdictions are resilient to fire-related disturbances in accordance with management objectives.
- 2) Human populations and infrastructure can withstand

- a wildfire without loss of life and property.
- 3) All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions.

Through discussions by the steering committee and regional working groups, values were identified and distilled into guiding principles, outlined below, which were adopted for the planning process. While the goals above are lofty, they provide direction and focus to the actions proposed and ultimately taken.

Guiding Principles

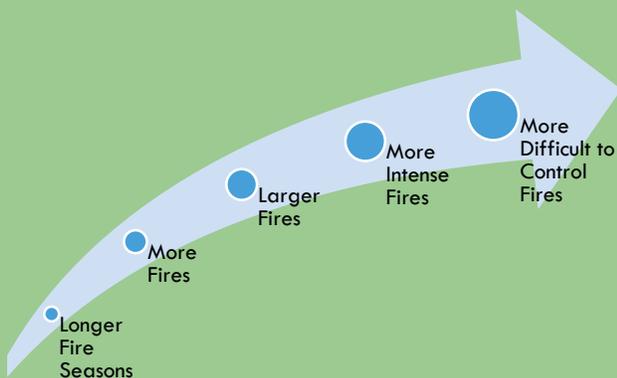
Focus on Action-Oriented Solutions

Strategies to reduce catastrophic wildfires must be action-oriented and focus on real solutions that can be implemented to show actual results that will endure for the long-term. Achieving these solutions will require an integrated, collaborative effort from a broad and diverse group of stakeholders who are willing to look for creative, mutually-beneficial alternatives that are informed by the past, but not afraid of new ideas for the future.

Community Safety

Health, safety and welfare of residents and visitors to Utah are paramount. With this in mind, strategies must consider human life and property, including key infrastructure, as the highest priority.

Length of the fire season across the west has increased by about 6 weeks over the last couple of decades. The number of “mega fires” (those more than 100,000 acres in size) has increased 3-fold in the last decade. The number of fires that exceeded \$10 million in cost (an indication of intensity and control difficulty) has increased every year for the last decade. Where we once had a handful of these fires every year, we are now having as many as 25 or 30 in any given year.



Sustainable Landscapes

Catastrophic fires, in many respects, are symptomatic of the deeper, underlying problem of landscape health. Strategies to curb catastrophic wildfires must also seek to improve the overall health of landscapes and ecosystems. This approach will require maintaining or improving water quality, forest, range and watershed health, and diverse ecosystems for wildlife—particularly threatened and endangered species—at the landscape scale.

Economic Resilience

Economic health is of critical importance and must be a consideration for developing strategies to reduce catastrophic wildfires and minimize the long-term economic impacts after a fire. Solutions that provide a true “win-win” scenario by benefitting the landscape and local economies should be sought after, and any solution should seek to maximize and leverage every public dollar invested to ensure the maximum value to the taxpayer.

Scale and Location Matter

Utah is a large state with a wide variety of landscapes. Different regions will require different solutions. Solutions should be location-, situation-, and scale-specific. Full attention should be given to the appropriate scale at which proposed actions can be practically and effectively implemented.

Public Participation (Social License)

The public must be supportive for solutions to be successfully implemented. Solutions must consider public perceptions through the use of transparent and open processes, and should account for individual responsibility as appropriate.

Issues Identified

Of the hundreds of fires started each year in Utah, only a very small percentage get out of control or reach catastrophic levels. The wildland fire professionals in the State and throughout the west do truly commendable work in containing these blazes. However, in spite of the many laudable and impressive efforts of land managers and emergency service personnel, catastrophic wildfires continue to burn across the State. Many of the fires are the result of weather conditions, rugged terrain, and other factors that are beyond our control. The intent of the Catastrophic Wildfire Reduction Strategy is to identify those aspects that are within our control and find solutions or areas of potential improvement.

While additional issues are likely to emerge, the following were initially identified as issues that could be

improved through additional resources, political support and/or education (listed alphabetically):

Aging Firefighting Aviation Resources

Fire management, and preventing wildfires from becoming catastrophic, requires air support and other specialized tools for fire crews. As aviation resources particularly age, and are even being decommissioned, plans need to be made and funds identified to replace these necessary implements.

Coordination

An impressive and laudable effort is made by those involved in managing range and forests for wildfires. Wildfire suppression, for example, is a model of cooperation and coordination between federal, state and local jurisdictions. Inclusion of and cooperative training with other non-traditional land management entities and stakeholders, such as the agricultural, recreation and environmental communities, could further improve the process, bolster resources, and ensure that mutually beneficial goals can be achieved. Some areas for potential improvement include:

- Ensuring diverse and broad stakeholder participation;
- Ensuring coordination and organization at the appropriate scale;
- Coordinating with federal, state and local policy-makers to ensure high-level support to overcome policy impediments.

Catastrophic fires, in many respects, are symptomatic of the deeper, underlying problem of landscape health.



Economic & Financial Constraints

Securing adequate funding or economic incentives to improve resilient landscapes and community adaptability to wildfire as well as increase firefighting capability and capacity is a significant issue. Solutions to reducing catastrophic wildfire must be economically viable to be truly effective and self-sustaining. While many market-oriented solutions have been attempted across the west, and to a lesser degree in Utah, more focus and effort is needed to align the natural and human resource needs to the intricacies of the markets and existing and projected financial resources.

In the end, the State, its businesses and citizens will inevitably pay the costs of wildfires. It is our choice whether we pay measurably less through prevention, mitigation and market development, or pay a far greater price for suppression and post-fire rehabilitation as well as other ongoing social costs long after a catastrophic fire has been extinguished.

Education, Marketing, and Community Involvement

Catastrophic wildfires are everyone's problem; however, many fail to realize the effect wildfire can have on them or what actions they can take to reduce their exposure. This is especially true within the wildland urban interface where the greatest likelihood for loss of human life and property exists, and fire suppression costs are typically much higher. In spite of the tremendous efforts and increasing success in the area of community education and involvement, more needs to be done to inform and engage the broader public across the state to help build support for addressing wildfire threats and

The use of fire as a management tool and the reintroduction of fire back into ecosystems truly reduces the risk of catastrophic fire.



increase the resources available to reduce those threats.

Fire as a Management Tool

Historically, fire has been used by humans to manage or manipulate vegetation found across landscapes to aid in food production and for purposes of protection. With the advent of modern fire suppression, initially used to “protect” valuable human and natural resources, we have moved away from the use of fire as a means of managing vegetation. In the past 20-30 years natural resource management agencies have once again begun to explore the use of managed fire in specific areas for specific reasons. This task is complicated by the expansion of humans into previously uninhabited areas. Despite this, there is a significant need to re-introduce and utilize fire as a management tool, not only in mitigation and maintenance efforts but suppression as well. There are recognized hurdles that must be overcome for this to occur, including existing laws, rules and policies, agency capacity and capability, and public perception.

Landscape-Level Scale (“Firesheds”)

Catastrophic wildfires often occur because of widespread problems across entire landscapes. The scale of these problems makes them difficult to surmount. Some of these landscape-level issues include:

- Fuel loads
- Invasive species
- Vegetation/forest type
- Cross-jurisdictional nature of wildfire
- Insects and disease deteriorating range and forest conditions

Catastrophic wildfires require three elements:

- 1) Fire start
- 2) Fuel supply
- 3) Suitable (hot, dry, windy) weather conditions

A “fireshed” is the area that is likely to burn and adversely affect a community or other high-value resources and assets if ignition and hot, dry and windy weather conditions exist. Most fire starts are lightning-caused, and in Utah more than 800 strikes are recorded each year. Only a few lightning strikes hit in areas with the right fuel supply and weather conditions, and most are contained in a timely manner by the work of our firefighting professionals. We cannot control natural fire starts or the weather; however, we can influence and should expand our efforts regarding the fuel supply, the resilience of communities threatened by wildfire, and our capacity to suppress undesirable fires.

Fireshed threats must be reduced with improved landscapes that are healthy and can sustain fire without the destruction caused by catastrophic fires.

Livestock Grazing

Grazing by domestic livestock can be a valuable tool to reduce the risk of wildfire. Targeted grazing removes the fine fuels that easily ignite and provide an ignition source for heavier fuels. Domestic livestock grazing can be a strategic resource to reduce fuel in specific areas through the use of fences, water sources, or dietary supplements. While animals are reducing fuel loads they are also creating an ideal seedbed through hoof action and organic fertilization for seeding replacement vegetation that is more fire resistant. Grazing animals are unique in the fact that they can generate revenue from grazing leases while reducing the risk of catastrophic fire. Most other tools for reducing the risk of fire come with a cost to the taxpayers of Utah.

Policy Impediments

Land management and regulatory policy may be one of the greatest impediments to efficiently managing landscapes to reduce the risk of catastrophic wildfires. Because of agency rules, laws, and accompanying legal challenges to land management decisions, agencies and managers lack the flexibility to respond to rapidly changing conditions in such a way that could mitigate or reduce undesirable conditions.

Policy impediments to addressing the threat of wildfire could include, but are certainly not limited to:

- Local government—municipal and county—land use decisions regarding the wildland/urban interface;
- Inadequate State government and private investment in fire prevention and fuels reduction;
- Federal laws and policies, such as the National Environmental Policy Act;

The power of a barbed wire fence

Grazing livestock on the right side reduced the small grasses that grow between the sage brush, preventing the fire from spreading from the ungrazed area.



- State & Federal air quality regulations that limit the use of prescribed fire;
- And even private sector policies, such as those of the insurance industry.

Social License

Reducing the threat of catastrophic wildfire in Utah will require landscape scale modification of vegetation, reintroduction of managed fire, and substantial action by and within communities. Changes of this magnitude necessitate broad social and political awareness, understanding, and support. Shifts in attitudes and behavior around the active use of management tools such as “logging” and fire to modify vegetation, tolerance of smoke, limitations on building materials and the amount of vegetation around at-risk homes, and acceptance of personal responsibility may be particularly challenging. However, cultivating this broad social license to act is essential to reducing the threat of catastrophic wildfire.

Hazard Designation

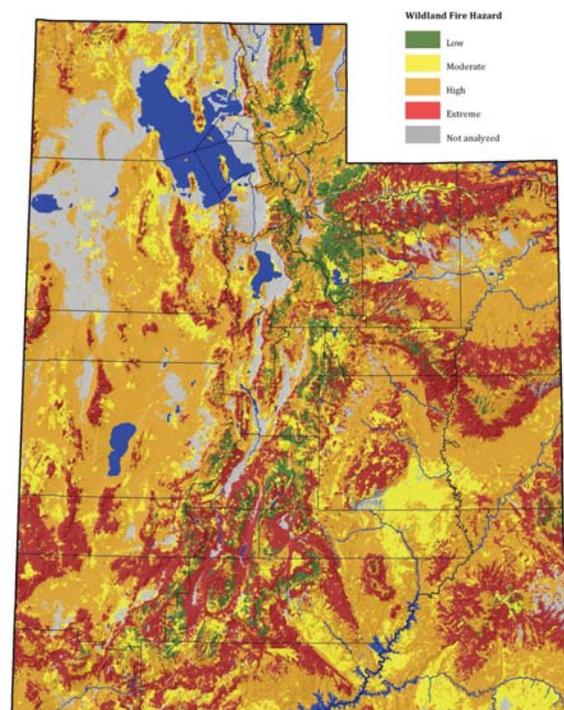
Red = Extreme

Orange = High

Yellow = Moderate

Green = Low

Utah Wildland Fire Hazard



Variability in Suppression and Rehabilitation Costs

The very nature of catastrophic wildfires makes them difficult to predict with any consistency. As such, setting long-term budgets months in advance of, along with maintaining fire resources throughout, the fire season can be problematic. This variability and unpredictability leads to spikes in suppression and rehabilitation costs that strain already limited state and local budgets.

Cost of Catastrophic Fires to Citizens -it is universally understood that fire suppression and post-fire restoration costs are equally catastrophic to local, state and federal budgets. Large fires, such as the 2012 fires in Utah and Colorado as well as the 2013 fires in Colorado, destroyed communities, lives and families, and altered regional economies. The 2012 fire suppression costs in Utah topped \$50 million, while Colorado has suffered hundreds of millions of dollars in losses in just two years.

Research by Jeff Prestemon (USDA Forest Service SE Research Station) shows that every dollar spent in fire prevention returns seventeen dollars of savings in suppression and immediate post fire costs to society. This figure, however, does not include damage to the environment or other social costs that can continue for many years and often far-outpaces the simple cost of suppression. A major on-going source of funding is needed to allow for large-scale initiatives to prevent, not just suppress, catastrophic fire.

Wood Utilization & Markets

Biomass Markets - The by-products of range and forest treatments, woody biomass, can be used for a variety of purposes, including as a renewable energy and heat source. Unfortunately, in most cases, the cost of harvesting and transporting the excess biomass is far greater than the value of the power or other end products. And in Utah, these markets and end users don't even yet exist. As has been found throughout the west, the successful utilization of biomass as a tool for reducing the risk of wildfire—in other words, having the wood “pay its way out of the forest”—is nearly always dependent on government incentives for its removal and/or use. Despite this fact, capturing the value in this raw material is worthy of further examination and may be a cost-effective part of the solution even when considering the cost of government incentives.

Lack of Infrastructure for Forest Products - As the timber industry in Utah has declined, and in many areas completely disappeared, so has the ability of land managers to mechanically treat forested areas through private sector industry. This not only removes a management tool for land managers, it also harms rural economies that partially rely on these businesses.

The use of grazing livestock and mechanically created firebreaks can reduce the spread of fire through forest and rangeland.



Recommendations

Through the process of identifying the gaps and constraints that are impeding progress, several recommendations emerged to help meet the mission of the steering committee.

1. Statewide Coordination of Mitigation Resources
Catastrophic wildfires do not respect jurisdictional boundaries, and cross-jurisdictional coordination will be required to arrive at meaningful solutions. Many of the programs, personnel and expertise to implement this strategy already exist within the State; however, they are distributed throughout state and federal agencies and across a broad geographic area. The statewide steering committee has helped bridge this gap and provides op-



opportunities for collaborative learning and deliberative dialogue. It is important that we come together at a state level to agree on and promote coordination and directed focus in the use of existing state, federal and private funds to maximize our effectiveness and wise use of taxpayer dollars. Continued efforts at this level will be a key element of the strategy to reduce catastrophic wildfires in the state.

The current effort of wildland fire prevention and fuels mitigation activities, along with public education about wildfire, is accomplished through a coordinated effort between agencies and organizations with statutory suppression responsibilities. Specifically, there are two state-wide committees: 1) Inter-Agency Fuels Committee, and 2) Inter-Agency Communications, Education and Prevention Committee. These long-standing and well-developed state-wide committees coordinate the efforts of five local committees that are charged with coordination and implementation of wildfire prevention, fuels mitigation and education endeavors at the local level. These successful committees and initiatives will continue to be supported moving forward.

It is recommended that the centralized committee model continue as a sub-committee of the statewide Utah Conservation Commission (UCC). In addition to commissioners of the UCC, the committee should also include other interested stakeholders as members as well as work collaboratively with the existing fuels and fire prevention committees. The Division of Forestry, Fire and State Lands director or designee should chair the new committee and the division should act as staff for their work.

2. Catastrophic Fire Reduction Fund

The steering committee recommends that a fund be established specifically for the reduction of catastrophic fires. We also recommend to Governor Herbert and the Utah Legislature that a substantial amount of funding be committed to this cause, and on such a scale to create a successful atmosphere to appreciably reduce catastrophic fires in Utah.

Any state funds will be leveraged by existing funding from federal agencies, along with resources that must be developed through markets and the private sector. As

Do we want to react to the catastrophic impacts of wild fire...or proactively invest lesser sums to reduce the risks?

well, policy incentives for landowners, biomass businesses and industry (e.g., insurance and utilities) must also be explored to augment state and federal prevention funds. As this report documents, the dollars and efforts spent to precondition our range and forest lands to resist catastrophic fire will offer benefit ten-fold to Utah's land, water, air, wildlife, and residents.

3. Regional Collaborative Working Groups to Perform Needs Assessment and Prioritization Across the State

To deal with the unique complexities that exist throughout the state, regional working groups were created to ensure that the best local knowledge was integrated into the planning process. To ensure that knowledge of

local conditions and regional priorities continues to be aggregated at the statewide level, it is recommended that regional working groups continue to meet and perform the function of needs assessment and action prioritization.

The regional working groups would be chaired by an employee of a state or federal agency who can maintain continuity, coordinate among the appropriate entities, and ensure that the working group has access to sufficient data and expertise. The regional working groups will serve as a forum for local elected officials,

A series of seven recommendations are made to help meet the mission of the committee.



conservation and sportsmen’s groups, agricultural interests, emergency services personnel, and other interested stakeholders to inform the risk assessment and mitigation prioritization process.

4. Technical Committees to Respond to Specific Concerns of Statewide Importance

Much of the focus to this point has revolved around region-specific communities of interest. While these regionally significant geographic areas are a critical part of the overall mitigation strategy, there remain several topical issues of statewide concern that require further attention. In addition to the regional working groups, it is recommended that the central committee appoint technical working groups as needed for the following issues identified through this planning process:

- Aging Firefighting (aviation) Resources
- Coordination
- Economic and Financial Constraints
- Education, Marketing and Community Involvement
- Fire as a Management Tool
- Landscape-Level Scale
- Livestock Grazing
- Policy Impediments
- Social License
- Variability in Suppression and Rehabilitation Costs
- Wood Utilization & Markets

5. Adopt Key Recommendations from the National Cohesive Wildland Fire Management Strategy

Agencies with wildfire management responsibility in Utah should carefully study the recommendations found in The National Cohesive Wildland Fire Management Strategy: Phase III, Western Regional Science-Based Risk Analysis. This “Western Regional Action Plan,” or WRAP, was developed by representatives of federal,

state, local, and tribal governments, scientists, interested governmental and nongovernmental organizations, businesses and industries as a regional approach to achieving the goals of the National Cohesive Wildland Fire Management Strategy.

The WRAP is a science-based roadmap to guide a truly western approach to wildland fire that holistically addresses the needs of the landscape, the communities, and the brave men and women who respond when fire occurs. While each of the WRAP’s recommendations are worthy of serious consideration, the following—many of which are already positively established and occurring in Utah—speak directly to the relevant issues:

- Encourage federal land management agencies to expedite fuels treatments.
- Prioritize landscapes for treatment (irrespective of jurisdictional boundaries).
- Expedite coordinated identification, prioritization and restoration of damaged landscapes (especially due to invasive species or insect disturbances).
- Work with the Council on Environmental Quality in developing categorical exclusions for landscape restoration.
- Examine legislative related barriers that are impeding landscape health objectives.
- Provide incentives to accelerate fire adaptive communities.
- Enhance educational campaign through statewide and regional coordination.
- Continue to create and update Community wildfire Protection Plans.

6. Increase Public Understanding and Participation

While there is much that can be done in the policy arena to address wildland fires, much will depend on public



involvement and consent. Without this public participation and approval, it will be impossible to create meaningful, lasting changes.

Because much of the general public has a negative perception of wildfires, it has become difficult for land managers to use fire as a tool in restoring landscape health and protecting communities in the wildland urban interface. Especially in heavily populated areas, education will be a critical tool to reduce fire starts and allow land managers to conduct vital treatments. It will become increasingly necessary for the public to understand the choice they face. We must be willing either to change perceptions and behaviors, or live with the consequences.

7. The central steering committee should report annually to the governor and the legislature the actions planned and taken.

For each recommendation above the steering committee should create performance measures to aid in gauging the progress towards and success of these recommendations. These measures should tie back to the goals and guiding principles above to help determine whether the recommendations move the state closer to the desired outcome.

Implementation

The implementation of this proposal will depend on the commitment of the state committee and the organizations they represent, the support of the legislature and governor, and, finally, public participation and social license. Programs to implement the suite of activities to improve the landscapes are in place within Utah:

Department of Agriculture and Food:

- Grazing Improvement Program (GIP) for the use of livestock to reduction of fine fuel loads.
- Invasive Species Mitigation Fund for the control of invasive species and to reduce catastrophic fires.
- Conservation Commission and Conservation Districts for local leadership and knowledge.

Department of Natural Resources:

- Watershed Restoration Initiative for land and habitat restoration projects.
- Forestry, Fire and State Lands programs for coordination, education, prevention, preparedness and suppression activities:
- Cooperative Wildland Fire Protection Program for counties
- County fire wardens, and statewide WUI program coordinators and fuels crews
- Lone Peak Conservation Center and crews
- Federal Excess Property Program
- Wildland fire “Engine Academies” and other Volunteer Fire Department training
- National Fire Plan and WUI & fuels program implementation
- Community Wildfire Protection Plan and FireWise-planning
- Regional Fuels Committee participation & leadership

Our federal partners in the United States Department of Agriculture and Interior Department likewise have several complementary programs to support the needed projects and actions. The necessary partnerships and relationships between state and federal natural resources management agencies are well-established in Utah through the Utah Conservation Commission and the nationally recognized and award-winning Utah Partners for Conservation & Development.

Despite all of this existing coordination, a critically important element that is lacking is sufficient funding to implement at a scale, large enough, to indeed make a substantial and meaningful difference. Beyond these financial resources, other impediments identified by the central committee or determined by regional projects should be addressed with the proper agency or entity through the available means of negotiation, legislation or, when necessary, litigation.

The photos below show the spread of homogenous fuels over time, leading to unhealthy conditions in this forest. The traditional policy of increased fire suppression, and lack of the use of fire as a tool to improve forest health has led to catastrophic fires in the West. Prescribed fires and livestock grazing are two methods to reduce fire.



Prioritization

With finite resources and nearly infinite needs, the prioritization of actions to reduce catastrophic fire in Utah is essential. To be effective, this prioritization process will rely on a transparent process that is applied both to selecting the areas to be treated as well as sequencing the suite of activities within an area.

Prioritization of Areas - Because of the large and diverse geographic extent of the wildfire issue in Utah, areas must be prioritized to ensure the work is focused where it will be of the most benefit. Drawing upon the information developed by the regional working groups, the following factors will inform initial prioritization of Utah communities for mitigation of catastrophic fire risk:

- Type and amount of high value resources and assets at risk;
- Likelihood of wildfire threat (i.e., burn probability and intensity);
- Probability of successfully mitigating the threat;
- Cost of mitigation measures.

Prioritization of Actions within Areas - In addition to determining the geographic priorities, each area will likely require a suite of actions for effective mitigation. An important step in the process may involve prioritizing these mitigation activities as well. The intent of prioritization within the suite of actions recognizes that resources to complete the possible actions aren't likely to be available all at once; some activities make a greater contribution to risk mitigation than others and, in some cases, there is a logical or practical sequencing of actions. This prioritization process will require a collaborative dialogue within communities that increases awareness and understanding of what is required to lower the risk of catastrophic fire to their community.

Regionally Significant Projects

Through the regional working group meetings, each region identified communities to pilot the risk assessment and prioritization process. The initial pilot projects for each region are:

Listed below are summaries of the regional projects submitted by the individual regions.

. The complete project proposals are available at:
(<http://1.usa.gov/17JKkIb>)

Northern Region - 1 Bear Lake Area Project

The first of two areas of focus are the communities around Bear Lake and the Bear Lake watershed. This area was chosen because there are a large number of homes and infrastructure constructed in the wildland urban interface. There are a number of values at risk in the

The committee acknowledges that any meaningful progress will require decades of effort and a dedicated financial investment. It took decades for Utah's forests and rangelands to degrade to their current condition, and it will take decades to rehabilitate them. These projects represent the first steps in this process.

Region	Projects	Protects	Cost
1 - NW	2	forest/homes	\$ 5,600,000
2 - Wasatch	1	homes	\$ 670,000
3 - Uintah	1	homes	\$ 940,000
4 - Central	3	homes	\$ 775,000
5 - SE	2	homes/watershed	\$ 1,194,000
6 - SW	5	homes/watershed	\$120,200,000
Total	14		\$129,379,000

area including property, life, view sheds, and recreation opportunities. Many of the developments only have one egress route to properties which could quickly become problematic in the case of a large fire. Work needs to be completed to provide alternative routes to escape fire. In addition many areas need fuel reduction work completed to lessen the risk of crown fires in neighborhoods. Water availability in these neighborhoods is also an issue that needs to be addressed. In addition, many of the roads and private driveways need to be widened and improved to allow access for fire trucks. An increase in available firefighting equipment is also needed in the area. The group also discussed the idea of creating maps of water sources and private resources that are available to fire fighters. It was also suggested to put this infor-

The Wildfire Paradox: We can't seem to live with it, but certainly can't thrive without it.



mation online so that it can be updated in real time and accessible to firefighters when needed.

Much of the efforts that need to be focused on for this area includes education for property owners. Teaching homeowners what they can do to reduce the risk to their own property is an important tool. \$3.2 Million in costs.

Grouse Creek Project

Concerns that led us to choose this area include risks to Sage Grouse habitat, the potential for extremely large fires (several fires of over 100,000 acres have occurred near here), the risk to the ranching interests in the area and the remoteness of the area.

Mitigation strategies that were discussed include an acceleration of the fuels projects that have been going on in the area, especially removing pinyon-juniper that has encroached on historical sage-brush communities. Additional green strip firebreaks were also identified as a strategy to help limit the size of fires in the area. This concept of keeping fires smaller in size would also help in having the ability to restore burned areas after a fire because the means to do so would be available on a year to year basis. There is a need to have firefighting resources staged closer to the area. Total cost: \$2.4 Million.

Wasatch Region - 2

Midway Fuel Break Project

Develop a fuel break thru 7.5 miles of gamble oak trees above the communities of Swiss Mountain Estates, Oak Haven, and Interlaken developments. This Fuel Break would be 80' foot wide clear zone. The total cost to put in a clear zone of 7.5 miles would be \$195,000. Maintenance would need to be performed yearly in the communities at a total cost of \$20,000. The total cost of maintaining the fuel breaks in these communities for 20

year would be \$200,000. Then they would need inspections, education & compliance at a cost of \$55,000 for the first year. Then follow up for the next 20 years to maintain and teaching new home owners etc. would be \$220,000. Total cost: \$670,000.

Uintah Basin - 3

The project that the Northeast area chose to submit includes the community of Dutch John, Flaming Gorge acres, and Flaming Gorge pines. This project is comprised of 145 homes, 11 businesses, Flaming Gorge Dam, Highway 191, various utility lines, and the Flaming Gorge recreation area. The initial components of the project would include two CWPP's, acquisition of two 5 ton fire trucks, and Fuels reduction work on the National Recreation area adjacent to the communities. Total acres treated on the completion of the project will be more than 650 acres. The total cost of the project, including 20 years of maintenance on fuel treatments is \$940,000.

Central Region - 4

Three pilot projects are proposed along the Sanpete Front with extensive wildland/urban interface challenges. Fire poses risks for approximately 2,133 home owners. There are 11 Community Wildfire Protections Plans written and needing implementation. It was decided upon by our committee that education was the highest priority along with protecting human life and health in this project area. The fuels reduction and fire breaks are mostly up-wind from communities at-risk and were chosen by fire management officers to help them protect these communities from catastrophic fire. They also are located on non-federal land. Total cost: \$775,000.



Southeast Region - 5

Carbon County Pilot Project

Utah has identified two parcels of land in Lower Fish Creek which lie in the northwestern corner of the county to serve as one of two pilot projects. It is feared that should this area burn, significant damage to watershed, transportation corridors, and communication infrastructure could directly result. Further, inexorably linked after-effects of flooding could prove to be even more damaging. Lower Fish Creek is a Blue Ribbon Fishery that connects Scofield Reservoir, which is the sole source of drinking and irrigation water for nearly three-fourths of the county, with the municipalities of Helper, Price, and Wellington and their surrounding unincorporated communities of Spring Glen, Kenilworth, Carbonville, Miller Creek, Coal Creek, etc. Maps of the location of the areas discussed in this document along with links to supporting documentation may be found by directing your browser to: <http://maps.carbon.utah.gov/flexviewer/catastrophicfire/> Project costs: \$841,000.

Grand County Pilot Project

This second project addresses the threat of catastrophic wildfire above the communities of Moab and Castle Valley in the La Sal Mountains. The project includes several components: fuels treatments around existing mountain communities; treatments to protect two vital communications sites; additional clearing along a vital power line; the completion of a CWPP for the west slope of the La Sal Mountains; installation of water tanks in the Willow Basin community; improved address and road signage; public outreach and education. Project costs: \$353,000

Total region 5 project cost: \$1,194,000.

Southwest Region - 6

This region selected one community in each county as an example to show values at risk and actions to mitigate the risks and make the community a “fire adapted community.”

Washington County

The area selected is the Highway 18 corridor including the communities of Diamond Valley, Dammeron Valley, Veyo, Brookside and Central.

Acres to be treated – 34,843

Cost of Actions to mitigate threat - \$54.3 million

Iron County - Community - Brian Head

Acres to be treated – 8,875

Cost of Actions to mitigate threat - \$14.7 million

Beaver County - Community – North Creek

Acres to be treated – 55,000

Cost of Actions to mitigate threat - \$20 million

Garfield County - Community – Mammoth Creek

Acres to be treated – 41,000

Cost of Actions to mitigate threat - \$29.7 million

Kane County - Community – Duck Creek Area

Acres to be treated – 28,673 (Private Lands Only) -

National Forest Lands to be included later.

Cost of Actions to mitigate threat – \$1.5 million (Private Lands Only).

Total region 6 projects cost: \$120,200,000.

Grand total of all projects costs: \$129,379,000

The detailed information about all six regional projects are available at: <http://1.usa.gov/17JKkIb>

Next Steps

Due to the iterative nature of a planning process, and in keeping with the guiding principle to “Focus on Action-Oriented Solutions,” the implementation of this plan will necessarily fall into phases. Even before the Strategy is formally adopted, land managers and stakeholders have begun the process of identifying and implementing those recommendations that can immediately go into effect. Other recommendations will require additional planning, coordination, and preparation prior to implementing. In addition to the recommendations adopted in this document, solutions will need to be found to address the gaps and issues that have not yet been resolved. Finally, as lessons are learned while actions are undertaken, an adaptive approach to implementation will contribute to both the effectiveness and efficiency of meeting the plan’s goals.

The depth of activity of these projects is to be determined according to the available funding appropriated to the newly created Catastrophic Fire Reduction Fund, which can be leveraged with funds from other federal, state and local programs as well as the private sector.

Conclusion

As the statewide steering committee and regional working groups continue to meet, new issues will arise, landscapes will continue to evolve and change, and local changes in public awareness or policies will necessitate continued cooperation and innovation.

Reducing catastrophic wildfires in Utah can clearly protect life, property, communities, economics, and our environment. Watershed protection is essential for ensuring a secure water supply, safeguarding wildlife and agriculture production, and preserving recreational areas and our quality of life. State leadership can make a difference. We have the opportunity to act rather than be acted upon.



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