



STATEWIDE STRATEGY FOR RESTORING ARIZONA'S FORESTS

Executive Summary

Background

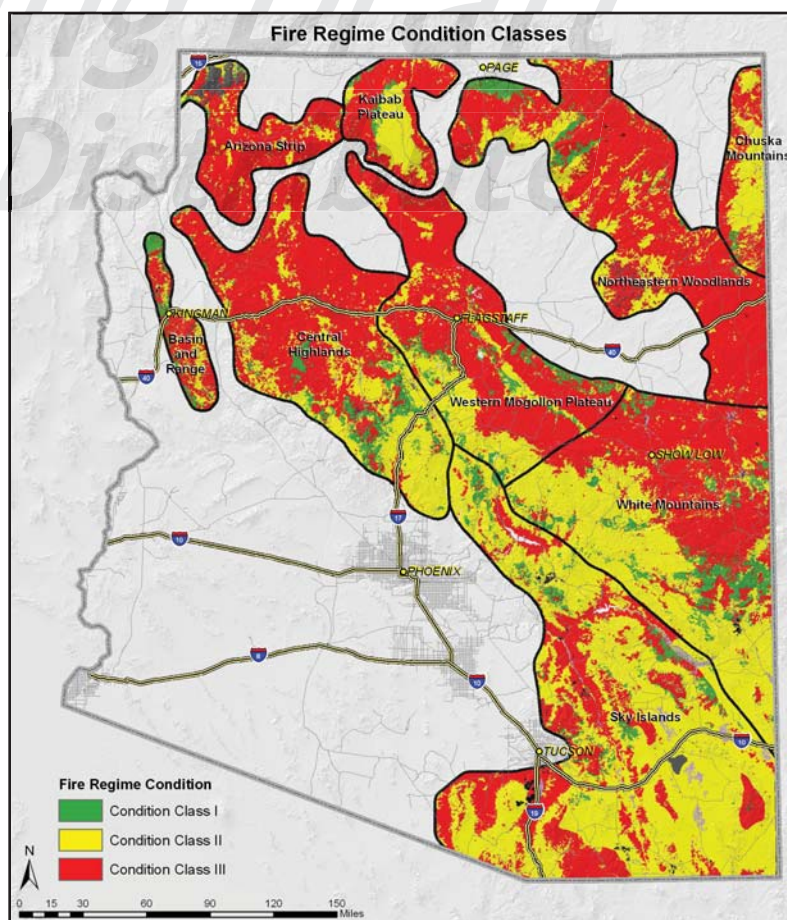
In 2003 Governor Janet Napolitano created the Forest Health Advisory Council and the Forest Health Oversight Council in response to the escalating number, frequency, and intensity of unnatural wildfires threatening Arizona's forests and communities (Executive Order 2003-16). The Councils were directed to develop scientific information and policy recommendations to advise the Governor's administration in matters of forest health, unnaturally severe fire and community protection. In addition, the membership was designed to be inclusive to maximize the opportunity for collaboration and defuse the controversy surrounding forest management.

Initially, the Oversight Council policy recommendations were reactive—responding to year-to-year circumstances. However, members quickly realized that success would demand a proactive multi-year, integrated set of actions designed to maximize efficiency and effectiveness of treatment activities. In 2005, the Councils established a subcommittee to begin work on a 20-year strategy to restore forest health, protect communities from fire, and encourage appropriate, forest-based economic activity. The actions identified in this document are a product of that subcommittee's work, and represent a starting point for on-the-ground implementation of a statewide strategy. Encouraging adoption and implementation of the actions specified here by the entities responsible for their execution is a critical next step. Fortunately, Arizonans have repeatedly demonstrated support for restoring forests. It is our hope that this document provides the road map and motivation to get us there.

Critical findings

Arizona's forests are an invaluable asset in need of increased attention and public investment. The diverse array of native forests and woodlands, from the cottonwood bosques hugging our river courses to the subalpine firs cloaking our tallest peaks, form a stunning panorama across the state, providing recreational and aesthetic resources, surface and ground water, wildlife habitat, and many other benefits to every resident. These forests contribute to our quality of life, enhancing the unique character of our state that attracts a creative workforce and fuels our economic success. But an assessment of forest health reveals that Arizona's forests are in need of attention and improved stewardship. The reality of climate change, drought, and the increasing threat of destructive wildfires and insect outbreaks to our forested watersheds require that we examine our approach to management and take bold action to restore the resilience and health of Arizona's forests, and protect forest values for future generations.

Unhealthy conditions across many of Arizona's forests developed gradually during the past century



Fire Regime Condition characteristics of forests across the state illustrate the unhealthy condition of Arizona forests. Areas in red and yellow want to burn.

due to a combination of factors, including human land uses, fire suppression and climate change. Despite the scale of the forest health problem, solutions exist. Scientists, land managers, and restoration practitioners across the state have demonstrated practical ways of restoring forest integrity, through judicious use of thinning, and the appropriate application of fire as a restoration tool. Local communities have shown a willingness to collaboratively forge strategic solutions to local forest health problems. The fruits of their labor can be seen in the number of community wildfire protection plans crafted in recent years, as well as the ongoing work of collaborative organizations such as the Prescott Area Wildland Urban Interface Commission, the Greater Flagstaff Forests Partnership, the Pinaleno Partnership, and the Natural Resource Working Group of the White Mountains.



Beyond their inherent value, healthy forests are a vital piece of a healthy state economy. Forests are now the backbone for the tourist-based economies of much of rural Arizona—an economic driver that has far eclipsed the value of harvesting saw logs at a statewide level. In 2002, tourism in Arizona was estimated to contribute \$30 billion to the economy in direct, indirect and induced expenditures, representing 20% of the economy and providing \$1 billion in tax revenue. Moreover, the water Arizona's forests supply and purify is more valuable today than ever before for Arizona's burgeoning population. Forests also hold the potential for supporting development of a new generation of manufactured wood products and restoration-based work opportunities that will bring good jobs to rural Arizona. Finally, forests have received increased attention as a source of renewable biomass energy, a less-polluting energy source that can reduce dependence on foreign fossil fuels.

We cannot afford further delays in action. Partial solutions will not suffice. Although some uncertainty will always exist about how to proceed, we now know enough to move forward using the best available science. We must demand the human and financial resources from responsible authorities at a level sufficient to meet long-term restoration, community protection, and fire management goals. Recognizing that fires currently have the potential to burn at uncharacteristically large scales, we must coordinate forest and fire management activities across jurisdictional boundaries. We must allocate our financial and human resources strategically, maximizing the effectiveness of all dollars spent. Realizing the potential for wood and forest-based businesses to support on-the-ground work, we must support the development of appropriately-scaled industry. Finally, we must continue to build public awareness of and support for this ambitious, forward-looking forest management strategy.

We have decades of vitally important work yet to be done across the state. Arizona is well-positioned to lead the nation in meeting what some consider an insurmountable challenge. Today is not too soon to meet that challenge.

Vision

Our vision of Arizona's forests is clear and deceptively simple: healthy, diverse stands, supporting abundant populations of our native plants and animals; thriving communities in attractive forested landscapes that pose little threat of destructive wildfire; and sustainable forest industries that strengthen local economies while conserving natural resources and aesthetic values. These characteristics are the components of a healthy, restored forest and their dependent communities.



This vision unites Arizonans, but there is an emerging consensus that we are on the wrong track, and that many forests across the state are unhealthy, reducing their value and raising the risk of destructive and dangerous wildfire and degraded streams and waterways. State, regional, and national agencies and organizations recognize the urgent need to improve the conditions of Southwestern forests, and are taking some action; but much more needs to be done. The next decade must be one of increased on-the-ground activity, including the thinning of dense stands, increased use of prescribed and natural fire to achieve ecological and public safety objectives, and appropriate utilization of forest products to fuel the sustainable economic activity that will help make forest restoration affordable. Across the state, local groups are developing innovative approaches to forest restoration and fire management.

However, coordination between overarching policy and local, on-the-ground management has been inadequate. Despite broad agreement about the need for forest restoration, a practical strategy has not yet been clearly articulated in a policy-relevant form. Our Vision, therefore, extends beyond the restoration of forest health and includes a commitment to public involvement, coordinated government initiatives, and strategic planning to guide forest management in our rapidly changing state.

Recommendations and actions

The Strategy incorporates statewide stakeholder input that originates from the first Forest Health Summit convened by Governor Napolitano in March, 2003. A subcommittee of the Oversight and Advisory Forest Health Councils and including non-Council members was established to outline and write the strategy. In May, 2006 a workshop was held in Flagstaff to receive input from interested stakeholders. Various iterations of outlines, chapters and drafts were shared with the Councils during 2006. A final working draft of the Strategy was presented and approved for distribution to the public on April 12, 2007. In May, 2007 four public meetings were held in Phoenix, Flagstaff, Tucson and Pinetop, where (fill in) participants took the opportunity to discuss the Strategy, suggest changes and offer endorsements.

The final document was approved by the Council on XXXX and conveyed to the Governor on XXXX and approved by the Governor on XXXXXX.

The Statewide Strategy for Restoring Arizona Forests integrates knowledge and experience from science, community collaboration, and economics to identify the steps needed to increase the rate and effectiveness of forest restoration across the state. Because local ecological, social and economic conditions vary across the state, the Statewide Strategy presents local, landscape-specific recommendations in the Landscapes section of the document (pages x-x). All recommendations are explained and synthesized in the Key Strategies section (p. x-x).

Five Key Strategies: A foundation for action

Five key strategies provide the framework for successfully restoring forests. These strategies evolved from discussions among experts, land managers and stakeholders who are actively working to improve forest health. To accomplish strategic and efficient restoration in 20 years the public and private sector must work together to:

1. *Increase the human and financial resources dedicated to restoring Arizona's forests and protecting communities.*
2. *Coordinate and implement action at the landscape-scale.*
3. *Increase the efficiency of restoration, fire management, and community protection activities.*
4. *Encourage ecologically sustainable, forest-based economic activity.*
5. *Build public support for accomplishing restoration, community protection and fire management across the state.*

Sixteen overall recommendations have been identified as necessary for implementation of the key strategies described above. For the purposes of the Executive Summary, the recommendations and their associated action items are grouped according to the entity responsible for their implementation. Consequently, some of the recommendations that pertain to more than one entity appear several times below. Entities responsible for implementing the Strategy include Congress, federal land management agencies, the Arizona State Legislature, the Governor and her executive agencies, county and local government, citizens, and the Forest Health Advisory and Oversight Councils.

Congress

The federal government and tribes own and manage the majority of forested land in Arizona. This makes participation by the federal land management agencies and tribes critically important to the success of any strategy. At the current level of funding and operation, the tribes and federal land management agencies will not be able to accomplish effective restoration in 20 years. The Congress is largely responsible for appropriating funds that pay for such forest management activities. In addition, Congress develops and executes the policies that motivate or hinder action. Therefore, many of the recommendations in the Strategy are directed at Congress.

Recommendation #1- Congress should increase funding to federal land management agencies and the state to furnish the capacity needed to collaboratively design, implement and monitor restoration treatments. (1.1.)

Actions:

- Vegetation and fuel treatment funding should be increased to a minimum of \$30 million/year for 3 years for the U.S. Forest Service; and \$10 million/year for 3 years for Department of Interior agencies (Bureau of Land Management - BLM, National Park Service - NPS, Bureau of Indian Affairs - BIA, and the U.S. Fish and Wildlife Service - U.S. F&WS) Funding should increase by 15% per year for 20 years. (1.1.1.)
- Funding for CWPP implementation should be increased to \$5 million per year, and the dollars should be allocated to local communities through the State Forester. (1.1.2.)
- Program funding should be provided to federal land management agencies to ensure adequate human resources are available to facilitate treatment action. This includes capacity for all facets of developing and applying treatments including: environmental review, contracting, community collaboration and implementation. (1.1.3.)
- Funding should be provided to U.S. Forest Service research stations in cooperation with universities to convene land managers and stakeholders to identify practical monitoring approaches that require the minimum effort and funding needed to produce appropriate information for informing and adapting management at multiple scales. (1.1.4.)
- Congress should maintain funding to complete the White Mountain Stewardship Contract. (1.1.5.)
- Congress should fund recruitment and training programs for forest and wood-products workers in cooperation with forest and wood-products employers and educational institutions. (4.3.4.)

Recommendation #2- Congress should restore funding to enable communities, stakeholder groups, and the tribes to collaborate and be involved in land management activities including utilization and marketing of small-diameter wood and biomass.

Action:

- Congress should revitalize the Economic Action Program or create a new source of funds dedicated to assisting local communities throughout the West in their efforts to support collaborative approaches to restoration and to develop utilization and marketing opportunities for small-diameter wood and biomass. (1.2.1.)

Recommendation #3- Congress should increase funding for developing and translating best available biophysical, ecological, and social science into forms needed by land managers and stakeholders.

Action:

- Congress should fund universities, colleges, research stations and other organizations with applicable expertise for applied biophysical, social science and economic research that informs and improves forest health and the vitality of rural communities. (1.3.2.)

Federal Land Management Agencies

Land managed by the U.S. Forest Service dominates forested acreage in Arizona. However, other federal land management agencies--BLM, NPS, and BIA--manage or oversee land that has a significant effect on the forests and citizens of Arizona as well. Most of the following recommendations are directed at the U.S. Forest Service. However, all the federal agencies have a role to play.

Recommendation #1- Federal land management agencies should collaboratively develop and implement integrated, landscape-scale restoration, community protection, and fire management for forests across the state. (2.1.)

Actions:

- The U.S. Forest Service should support the collaborative planning and implementation of integrated restoration, community protection, and fire management strategies across the state within the Forest Plan revision process. (2.1.1)
- The U.S. Forest Service should develop, revise, and update annual Fire Management Plans using the best available science and in a transparent, collaborative fashion. (2.1.2)
- National forest plans should provide clear performance measures that allow the agency and public to evaluate progress toward meeting restoration, community protection, and fire management objectives. (2.1.3)

Recommendation #2- All federal, state, tribal, and local governments should increase coordination of forest restoration, fire management, and community protection planning and implementation across jurisdictional boundaries. (2.3)

Action:

- Federal land management agencies should provide treatment data to update the Arizona Fire Map. (2.3.3)

Recommendation #3- The federal land management agencies, counties and local governments should use Community Wildfire Protection Plans to inform and prioritize treatments in their jurisdiction. (2.4)

Action:

- Federal agencies should place priority on implementing projects identified within Community Wildfire Protection Plans (CWPPs). (2.4.2)

Recommendation #4- State and federal land managers should design forest management practices to integrate wildlife habitat and biodiversity conservation protection with restoration, community protection, and fire management. (2.5)

Action:

- The Arizona Game and Fish Department should work with the Arizona Forest Health Council, federal agencies and other stakeholders with applicable expertise to collaboratively develop a set of principles and strategies for integrating wildlife habitat and biodiversity conservation with community protection, restoration and fire management. This should include educating the public about these strategies. (2.5.1)

Recommendation #5- Federal and state land management agencies should collaboratively and strategically place treatments in order to increase efficiency and maximize benefits. (3.1)

Actions:

- Federal land management agencies should develop short-term (2-5 year) and longer-term (10-20 year) treatment plans based on priorities developed at the landscape scale. (3.1.1)
- Federal land management agencies should complete and implement plans for using prescribed fire and Wildland Fire Use where and when appropriate. (3.1.3)
- Federal land management agencies should initiate treatments in places where a collaborative process has preliminarily identified and prioritized landscape attributes at risk. (3.1.4)
- A national forest in Arizona should take a landscape-scale approach that systematically evaluates existing ecological conditions and then identifies, applies and monitors the effectiveness of strategically placed treatments that in theory should modify extreme fire behavior and reduce the probability of large, unnaturally severe catastrophic fire. (3.1.5)
- State and federal authorities should work collaboratively with stakeholders to identify and develop restoration and fire management strategies for watersheds of critical importance across the state. (3.1.6)



Recommendation #6- Land managers should work with stakeholders to clarify the amount, availability, and location of restoration-, community protection-, and fire management-generated wood and biomass across the region. (4.1)

Action:

- The U.S. Forest Service and other federal land management agencies should fund and participate in a collaborative and objective evaluation of the amount and characteristics of wood and biomass available for utilization across Arizona. (4.1.1)

Recommendation #7- Federal, state, and local governments should identify and enhance opportunities for utilizing small-diameter wood and biomass generated from forest treatments. (4.2)

Actions:

- The Forest Products Lab of the Forest Service, the U.S. Department of Energy, and the U.S. Department of Agriculture should conduct a study to identify utilization and marketing opportunities for products created from pinyon-juniper as well as ponderosa pine. (4.2.1)
- The U.S. Forest Service should continue to use, and other federal land management agencies should initiate, best-value contracts and other tools that ensure continuous wood flow, where such contracts support collaborative and science-based forest management, and promote economic and social stability in rural communities. (4.3.1.)

Governor and Executive Branch Agencies

Restoring forest health and reducing the risk of catastrophic fire in Arizona was established as the first environmental priority of Governor Napolitano’s administration in 2003. Under her leadership, state agencies can carry out the strategies and actions identified in this document.

Recommendation #1- Arizona state agencies should develop land use policies and practices that support forest restoration, community protection, and fire management efforts. (2.2)

Actions:

- The State Fire Marshall should adopt and enforce an Urban Wildland Interface Code to protect communities and property from wildfire. (2.2.2)
- The Arizona State Lands Department should develop long-term forest restoration and fire management plans for state lands across the state. (2.2.8)

Recommendation #2- All federal, state, and local levels of government should increase coordination of forest restoration, fire management, and community protection planning and implementation across jurisdictional boundaries. (2.3)

Action:

- The State Forester should work with the Arizona Interagency Wildland Fire Prevention Team or a similar organization to improve coordination between all agencies and tribes on treatment implementation as well as fire preparedness. (2.3.1)

Recommendation #3- State and federal land managers should design forest management practices to integrate wildlife habitat and biodiversity conservation protection with community protection, restoration, and fire management. (2.5)

Action:

- The Arizona Game and Fish Department should work with the Arizona Forest Health Council, federal agencies and other stakeholders with applicable expertise to collaboratively develop a set of principles and strategies for integrating wildlife habitat and biodiversity conservation with community protection, restoration, and fire management. This should include educating the public about these strategies. (2.5.1.)

Recommendation #4- Federal and state land management agencies should collaboratively and strategically place treatments in order to increase efficiency and maximize benefits. (3.1)

Actions:

- State land management agencies should develop restoration, fire management, and community protection performance standards that measure progress toward objectives. Measuring these performance standards can then lead to refinements of strategies, as necessary. (3.1.2)
- State and federal authorities should work collaboratively with stakeholders to identify and develop restoration and fire management strategies for watersheds of critical importance across the state. (3.1.6)
- The state should ensure that all state-identified communities at risk have completed a Community Wildfire Protection Plan or its equivalent. (3.1.7)

Recommendation #5- Federal, state, and local governments should identify and enhance opportunities for utilizing small-diameter wood and biomass generated from forest treatments. (4.2)

Actions:

- Arizona state agencies should use treatment-generated material whenever possible. Specifically, the State of Arizona should actively apply Arizona Executive Order 2005-05, which calls for all new state-funded buildings to derive their energy from renewable sources, such as woody biomass. (4.2.2)
- State agencies should encourage the retrofitting of existing heating systems in public and private buildings to promote greater use of wood biomass. (4.2.3)
- The Arizona Department of Transportation should use restoration treatment by-products generated in Arizona for guard rails and other transportation and highway maintenance applications. (4.2.5)

Recommendation #6- All levels of government should work together to support wood products industries capable of utilizing small-diameter wood and biomass. (4.3)

Action:

- The Arizona Department of Commerce should fund a position designed to assist rural communities to recruit and support forest and wood-products enterprises. (4.3.3)

Arizona State Legislature

The Arizona State Legislature will play a critical role in achieving forest restoration during the next 20 years by providing the financial resources and authorities required to accomplish the actions outlined in this document.

Recommendation #1- The Arizona State Legislature should provide funding for restoration treatments, community protection, and fire management on non-federal lands. (1.4)

Actions:

- The state government should provide financial support to universities and other organizations with applicable expertise such that staff of these entities can provide scientific support to, and serve as neutral conveners within, collaborative processes, as necessary. (1.4.1)
- The Arizona State Legislature should allocate \$5 million per year to community protection activities identified in CWPPs. Activities to be supported would include completion of CWPPs and funding for community collaboration. (1.4.2)
- The State of Arizona should provide adequate financial support to Arizona Fire Map. This tool provides the foundation for sharing treatment information across jurisdictional boundaries. (2.3.2)

Recommendation #2- The Arizona State Legislature should increase funding for developing and translating best available ecological, biophysical, and social science into forms needed by land managers and stakeholders. (1.3)

Action:

- The Arizona State legislature should provide financial support to universities, state agencies, and other organizations with applicable expertise to conduct applied research, translate scientific information, and serve as neutral conveners within collaborative processes. (1.3.1)

Recommendation #3- The Arizona State Legislature should develop land-use policies and practices that support forest restoration, community protection, and fire management efforts. (2.2)

Actions:

- The Arizona State Legislature should delegate authority to counties to manage development in the Wildland Urban Interface, to enhance protection from wildfire, and to protect public safety. (2.2.5)
- The Arizona State Legislature should develop incentives to encourage landowners to maintain defensible space. (2.2.6)
- The Arizona State Legislature should work with local governments to revise planning requirements under Growing Smarter legislation to deal with fire risk at the landscape scale. (2.2.7)

Recommendation #4- Federal, state, and local governments should identify and enhance opportunities for utilizing small-diameter wood and biomass generated from forest treatments. (4.2)

Action:

- The Arizona State Legislature should work with the Arizona Department of Commerce to identify incentive programs that encourage the use of restoration-generated materials by businesses across the state. (4.2.4)

Recommendation #5- All levels of government should work together to support wood products industries capable of utilizing small diameter wood and biomass. (4.3)

Actions:

- The Arizona State Legislature should fund a position that is designed to help rural communities convene, recruit, and support forest and wood-products enterprises. This position will reside in either the State Forester's Office or the Department of Commerce. (4.3.2)
- The Arizona State Legislature should fund recruitment and training programs for forest and wood-products workers in cooperation with forest and wood-products employers and educational institutions. (4.3.4)

Recommendation #6- The Arizona State Legislature, working with the State Forester and local units of government, should educate the public about restoration, sustainable restoration-based businesses, fire management, and community protection needs and responsibilities. (5.1)

Action:

- The Arizona State Legislature should fund the education coordinator position under the State Forester to coordinate and promote public education about forest restoration, sustainable restoration-based businesses, fire management, and community fire protection needs and responsibilities (5.1.2)

Counties and Local Government

Arizona has identified 159 Communities-At-Risk of fire through the Arizona Communities-at-Risk (CAR) process. In response to the Healthy Forest Restoration Act, 13 communities have prepared Community Wildfire Protection Plans (CWPPs) to guide treatment activity and attract federal funding for treatments. In addition to preparing CWPPs, the counties and local units of government have authority to adopt and enforce building codes intended to provide protection from fire. The counties and local units of government have an important and strategic role to play in motivating citizens to take action and guiding development to minimize the risk of wildfire and conflict with restoration-related activities.

Recommendation #1- Counties and local government should develop land use policies and practices that support forest restoration, community protection, and fire management efforts. (2.2)

Actions:

- Counties and local governments should classify undeveloped lands based on relative fire hazard. (2.2.1)
- Counties and local governments should adopt and enforce building and Wildland Urban Interface fire codes to minimize communities' exposure to fire danger. (2.2.3)

- Planners should work with developers to incorporate appropriate buffer zones, based on anticipated fire hazard, into the design of new developments to allow for maintaining conditions in adjacent forests where natural or prescribed fires may continue or be reintroduced. (2.2.4)
- The counties and local governments should develop incentives to encourage landowners to maintain defensible space. (2.2.6)

Recommendation #2- Local governments should increase coordination of forest restoration, fire management, and community protection planning and implementation across jurisdictional boundaries. (2.3)

Action:

- Counties and local units of government should provide treatment data to update the Arizona Fire Map. (2.3.3)

Recommendation #3- Counties and local governments should use Community Wildfire Protection Plans to inform and prioritize treatments in their jurisdictions. (2.4)

Actions:

- Local governments in communities-at-risk should complete CWPPs. (2.4.1)
- Local units of government should ensure that wood utilization opportunities and challenges are clearly identified in CWPPs. (4.1.2)

Recommendation #4- All levels of government should work together to support wood products industries capable of utilizing small-diameter wood and biomass. (4.3)

Action:

- Local governments should develop and use policies, planning, and tax incentives to encourage businesses that will diversify the economy, are appropriately scaled to the amount of material available from the forest, and keep jobs and dollars in rural Arizona. (4.3.3)

Recommendation #5- Local governments should educate the public about restoration, sustainable restoration-based businesses, fire management, and community protection needs and responsibilities. (5.1)

Action:

- County and local governments should create and/or promote education programs to help residents of forest communities understand the risks inherent in living in fire-prone areas, and to educate developers and the community about steps that can be undertaken to reduce exposure to fire hazard and to improve forest health. Much has been done already under the FIREWISE, USA program. (5.1.1)

Citizens

Private landowners provide the first line of defense for protecting their property. Education and treatment cost-share programs exist to assist homeowners to reduce fuels on their property and reduce the risk of their homes burning. Individual action will do much to make Arizona communities safe from fire.

Recommendation #1- Citizens should take action to protect their communities and properties from fire. (5.2)

Action:

- Citizens should seek assistance from their local fire district, fire department, homeowners association or visit <http://www.firewise.org/usa/> to learn what they can do to protect their home and property. (5.2.1)

The Governor's Forest Health Councils

Implementing the Statewide Strategy will require coordinated and concerted effort with annual monitoring to assess progress and adapt strategies to new conditions. The Forest Health Councils, which represent broad stakeholder interests and serve as a forum to collaboratively and constructively address problems, can provide the oversight and motivation required to make effective, timely progress.



Recommendation #1- The Governor’s Forest Health Council, working closely with the State Forester, the U.S. Forest Service and other federal agencies, should develop and administer on a yearly basis a “Forest Health Scorecard” based in part upon the Western Governor’s Association’s 10-Year Strategy Implementation Plan. (5.3)

Action:

- In 2007 the Forest Health Councils should develop a scorecard based on the 20 Year Strategy to measure progress. (5.3.1)

Conclusion

We must act now to strategically and efficiently restore our forests. In a spirit of collaborative engagement, informed analysis, and coordinated practical action, the Statewide Strategy for Restoring Arizona’s Forests provides a vision to guide forest management for the coming decades.

*Working Draft
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