



Part III.
Strategy

Part III Contents

PART III.	STATEWIDE FOREST RESOURCE STRATEGY	
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Statewide Forest Resource Strategy

PURPOSE

The purpose of the Statewide Forest Resource Strategy, as outlined in the 2008 Farm Bill (Title 16 U.S. Code Sec. 2101) and subsequent guidance (USFS 2008), is to provide a plan for using federal, state and leveraged partner resources to address issues, threats, opportunities and priority landscapes identified in the assessment. The term of the strategy is five years, but should include long-term elements to address state and national issues over time. A focus is placed upon where and how federal investment can most effectively stimulate or leverage desired action alongside state, other government, and private contributions. The strategy lays out a set of implementation actions that are aligned with the National Themes and Objectives. In addition, guidance requires the strategy to:

- Describe how the state’s proposed activities will accomplish national State and Private Forestry program objectives and respond to nationally specified performance measures and indicators.
- Incorporate existing statewide plans including Wildlife Action Plans, community wildfire protection plans, and address existing State & Private Forestry program planning requirements.
- Identify strategies for monitoring outcomes within priority forest landscape areas and how action will be revised when needed.
- Identify partner and stakeholder involvement.

The State Assessment has produced a detailed analysis of conditions, trends, threats, opportunities and existing strategies for the leading issues of forest management and conservation in Washington. Opportunities were crafted to include broad categories of measurable actions that can be implemented to address the identified threats, many of which are shared among multiple issues. In other words, “opportunities” in the Assessment serve the purpose of objectives in the Forest Resource Strategy.

Depending on the opportunity, State & Private Forestry programs may either have a lead role, supporting role, or no role relative to other actions and investments. Another purpose of the strategy is therefore to clearly outline these roles – including instances where State & Private Forestry programs currently and will continue to serve a leading role as well as opportunities that are not being significantly addressed by the programs. The purpose of making a distinction among the roles is to identify where existing and potential leveraged partner actions are greatest. A clear depiction of current roles also informs an evaluation of the adequacy or inadequacy of current State & Private Forestry program resources, the potential for significant additional accomplishments with additional increments of resources, or needed statutory or policy enhancements in order to better realize the opportunities.

Although the 2008 Farm Bill enacted the requirement to complete Statewide Assessments and Strategies and established their baseline requirements, none of the underlying federal statutory language that authorizes and guides specific programs was altered. This means the strategy must achieve the foregoing purposes — ostensibly designed to elicit changes in the way programs are deployed — while retaining certain elements of the status quo that are required in programs’ authorizing statutes and policies.

ISSUES, OPPORTUNITIES, OBJECTIVES & PERFORMANCE MEASURES

Threats and opportunities have been identified for each of the six major issues in the Statewide Assessment, captured in sections under these categories:

- A. Working Forestlands & Conversion**
- B. Biodiversity & Habitat Conservation**
- C. Water Quality, Quantity & Puget Sound Restoration**
- D. Wildfire Hazard Reduction**
- E. Forest Health Restoration**
- F. Urban & Community Forests**

The selected issues are correlated with the national Themes and Objectives as identified in the introductory section of the Assessment. National core performance measures have also been assigned to each objective (USFS and NASF 2010):

- 1. Conserve Working Forest Lands:** conserving and managing working forest landscapes for multiple values and uses.
 - 1.1. Identify and conserve high priority forest ecosystems and landscapes**
 - 1.1.1. Performance Measure:* High priority forest ecosystems and landscapes are protected from conversion (acres, annual and cumulative).
 - 1.2. Actively and sustainably manage forests**
 - 1.2.1. Performance Measure:* Number of acres in forest areas being managed sustainably as defined by current Forest Stewardship Management Plan (cumulative) — through a nationally consistent monitoring program.
- 2. Protect Forests from Harm:** protect forests from threats, including catastrophic storms, flooding, insect or disease outbreak, and invasive species.
 - 2.1. Restore fire-adapted lands and reduce risk of wildfire impacts**
 - 2.1.1. Performance Measure:* Number of acres treated to restore fire-adapted ecosystems that are (1) moved toward desired conditions and (2) maintained in desired conditions (annual).

2.1.2. *Performance Measure:* Total number of acres treated to reduce hazardous fuels on state and private lands through State Fire Assistance (annual, direct federal grant only).

2.1.3. *Performance Measure:* Percentage of at risk communities who report increased local suppression capacity as evidenced by: (1) The increasing number of trained and/or certified fire fighters and crews or (2) Upgraded or new fire suppression equipment obtained or (3) Formation of a new fire department or expansion of an existing department involved in wildland fire fighting.

2.2. Identify, manage and reduce threats to forest and ecosystem health

2.2.1. *Performance Measure:* Number and percent of forest acres restored and/or protected from (1) invasive and (2) native insects, diseases and plants (annual).

3. Enhance Public Benefits from Trees and Forests: including air and water quality, soil conservation, biological diversity, carbon storage, and forest products, forestry-related jobs, production of renewable energy, and wildlife.

3.1. Protect and enhance water quality and quantity

3.1.1. *Performance Measure:* Acres and percent of priority watershed areas where S&PF activities are enhancing or protecting water quality and quantity.

3.2. Improve air quality and conserve energy

3.2.1. *Performance Measure:* Population of communities benefiting from S&PF activities designed to contribute to an improvement in air quality.

3.2.2. *Performance Measure:* Population of communities benefiting from S&PF activities that result in energy conservation.

3.3. Assist communities in planning for and reducing wildfire risks

3.3.1. *Performance Measure:* Number and percent of communities-at-risk covered by a CWPP or equivalent that are reducing their risk of wildland fire (annual).

3.3.2. *Performance Measure:* Percent of population living in communities developing or managing programs to plant, protect and maintain their urban and community trees and forests.

3.4. Maintain and enhance the economic benefits and values of trees and forests

3.4.1. *Performance Measure:* Number of communities and percent of population served under an active urban forest management plan.

3.4.2. *Performance Measure:* Number of total jobs (direct, indirect, and induced) sustained or maintained in the economy annually due to S&PF investments.

3.4.3. *Performance Measure:* Total value of resources leveraged through partnerships with states and others partners.

3.5. Protect, conserve, and enhance wildlife and fish habitat

3.5.1. *Performance Measure:* Acres and percent of priority habitat areas where S&PF activities are protecting, conserving, and enhancing wildlife and fish habitat.

3.5.2. *Performance Measure:* Acres of connected forest resulting from S&PF investments.

3.6. Connect people to trees and forests, and engage them in environmental stewardship activities

3.6.1. *Performance Measure:* Number of people who annually participate in FS and state forestry agency environmental literacy programs and activities.

3.6.2. *Performance Measure:* Number of people (measured in person-days) engaged in environmental stewardship activities as part of an S&PF program.

3.7. Manage and restore trees and forests to mitigate and adapt to global climate change

3.7.1. *Performance Measure:* Acres and percent of priority areas vulnerable to climate change where S&PF activities are contributing to resilient forests able to adapt to climate change.

3.7.2. *Performance Measure:* Potential carbon sequestered through implementation of forest management practices that result from S&PF investments on private forest lands.

Opportunities were crafted to include broad, measurable categories of actions that can be implemented to address the identified threats, many of which are common to multiple issues. Through the Assessment, 35 distinct opportunities were identified. In many cases, State & Private Forestry programs may have a shared lead role with other state and federal programs, or private entities to take advantage of these opportunities. These distinctions are not an expression of potential, but rather of current status. Later in this strategy the leadership potential for State & Private Forestry programs, in comparison to current status, is also discussed. Appendix C compiles the opportunities, the threats and issues that are addressed, and their corollary to national themes, objectives and performance measures. Also compiled in Appendix C are the current roles of State & Private Forestry programs regarding actions to achieve the opportunities.

PRIORITIZATION MECHANISMS

A key function of this strategy is to invest State & Private Forestry program funds and leveraged resources in ways that respond to opportunities for specific landscapes identified in the Statewide Assessment. A portion of the funds from these programs is used to take on-the-ground actions. Through this strategy, actions can be targeted to specific geographic landscapes, such as delivering technical assistance (in most cases), and all funding for on-the-ground projects and treatments. Other actions — such as adequately preparing and positioning wildfire suppression resources, and conducting annual aerial surveys for insect and disease damage — are baseline functions or require implementation at a statewide scale. They tie closely to National Themes and Objectives and respond to threats and opportunities identified in the Assessment, but do so in a categorical fashion as opposed to a specific geographic area or landscape. Table S1 describes major program functions and their geographical or categorical prioritization mechanism in this strategy.

Additionally, a subset of otherwise geographically targeted actions must continue to be on-call functions of State & Private Forestry programs that respond to emergency situations and timely opportunities. These functions include responses to the detection and spread of new invasive non-native insect and diseases, emerging outbreaks of native forest pests, the development of new urban forestry policies, champions or partnership opportunities in a municipal area, or the occurrence of large, severe and damaging wildfire incidents.

Finally, this strategy provides supplemental information to, but does not alter, the 2004 Forest Legacy Program Assessment of Need (AON) for Washington State. The program's function is readily prioritized in specific geographic areas with the AON providing the official strategic program guidance.

Table S1. Prioritization mechanisms for functions of State & Private Forestry programs in Washington State

S&PF Program	Function	Prioritization Mechanism		
		Geographic		Categorical/ Statewide
		Priority Landscape	Emergency/ On-Call	
Forest Health ¹	Technical assistance in support of environmental literacy, stewardship activities and planning	✓		✓
	Aerial survey of insect and disease damage and mortality			✓
	Detection, monitoring and response to non-native invasive species		✓	✓
	Detection, monitoring and response to specific native insect and disease populations		✓	✓
	Tree thinning and hazard abatement	✓	✓	
Forest Legacy ²	Conservation easement and fee-simple acquisitions	✓		
Forest Stewardship	Technical assistance in support of environmental literacy, stewardship activities and planning	✓		
	Field visit technical assistance with plan implementation	✓		
	Support for maintaining tree genetic stock and seedling availability			✓
State Fire Assistance ³	Fire preparedness, training and equipment.			✓
	Fuel reduction treatments ⁴	✓	✓	
	Fire prevention and planning ⁴	✓	✓	✓
Urban & Community Forestry	Technical and financial assistance to communities for urban forest planning			✓
	Urban forest improvement projects	✓		
Volunteer Fire Assistance ³	Fire prevention, preparedness, development, organization, training and equipment		✓	✓

¹ Forest health actions, in total, may receive federal funding from S&PF Cooperative Forest Health Program, forest health-specific supplemental allocations such as the Western Bark Beetle Mitigation grant program, or through competitive S&PF funding proposals.

² The Forest Legacy Program is guided by the 2004 Assessment of Need.

³ State Fire Assistance and Volunteer Fire Assistance actions refer to federal funding from the S&PF and National Fire Plan (Fire Operations) portions of the USFS budget and Department of Interior, Bureau of Land Management.

⁴ Fuels treatment and fire prevention and planning actions receive federal funding through State Fire Assistance (S&PF and NFP), as well as through Western State Fire Managers grant program competitive project proposals, and other sources.

Current Mechanisms

Both geographic and categorical prioritization systems are used in the current deployment of State & Private Forestry programs in Washington State. Wildfire fuel treatments, for instance, are prioritized and implemented based on specific areas identified in Community Wildfire Protection Plans. As another example, sub-grants for program development, and education and outreach for urban and community forests, are ranked categorically for selection based on national and state-specific criteria.

However, the delivery of these programs also is dependent on voluntary participation. In the past, prioritization sometimes has been on a first-come, first-served waiting list of

landowners or applicants. This often results in a diffusion of resources across a broad area. Techniques have begun to be implemented that more effectively elicit landowner response in targeted areas, but some landowners remain that do not want to take action for any number of reasons. Another approach applied by programs has been to screen the waiting lists for priority-based criteria to assist in the decision for allocating resources.

Some uses of first-come, first-served prioritization methods remain essential. One example is a landowner who discovers a new or unfamiliar forest insect or disease that is damaging their trees, and requests assistance in identifying it or in developing management recommendations. On-call technical assistance resources are needed to provide this public service, and it affords one of the best available fine-scale estimates of potential problem areas for larger project development and responses to outbreaks.

Finally, there is an inherent tension between focusing actions in specific geographic areas and spreading some amount of lower-intensity focus across a broad area. Programs have done well to develop constituencies and partnerships — whether with communities, other government entities, or non-governmental organizations — in order to leverage better outcomes and achieve increased coordination. Without additional resources, narrowing the geographic focus to a few areas necessarily means removing it from other areas. In turn, the result typically favors one set of partners over another. This is problematical because one measure of “priority” — historically and for the purposes of the Statewide Assessment and Strategy — is the magnitude of the deliverable that can be achieved for a project using leveraged partner efforts and resources. The ability to leverage outside efforts generally is partner-dependent rather than geographically-dependent.

The strategy seeks to strike a balance with this tension, augmenting Assessment-identified priority landscapes with considerations for where the strongest partnerships and greatest need for core program functions exist, as well as opportunities for partnership growth.

Statutory & Policy Requirements

As discussed in the purpose statement for this strategy, there is a need to simultaneously meet the statutory requirements of the Farm Bill and subsequent guidance, while maintaining fidelity to the unaltered authorizing requirements of individual programs.

As an example, a core requirement and priority for some types of funding for wildfire fuel reduction and fire prevention actions is to protect areas with the most significant values at risk — in other words, developed areas with a concentration of people and homes in the wildland-urban interface. The Assessment, based on Congressional direction and subsequent content guidance, includes these considerations but also is required to evaluate all forested lands. Paradoxically, other funding sources for wildfire fuel reduction and fire prevention actions require projects to be adjacent to federal land.

That these two kinds of priority coexist in the same landscape is rare in Washington State, and therefore no single way of evaluating priorities would identify areas that meet the statutory and policy requirements for both the programs and the Assessment. Therefore, the prioritization mechanisms under this strategy are informed by the opportunities and landscapes analyzed in the Assessment, but also involve strategic decisions that are rooted in program-specific federal statute and policy.

CORE & INTEGRATED PROGRAM LANDSCAPES

To achieve the purpose of this strategy, a performance goal is established to direct at least 60 percent of project implementation funding through State & Private Forestry programs to “core landscapes” defined by this strategy, measured for Fiscal Years 2011-2015. The remaining project implementation funds — up to 40 percent — will be directed at “integrated landscapes” as defined by the considerations and selection criteria in this strategy. Core and integrated landscape designations are applicable to program functions that can be geographically focused in priority landscapes, as outlined in Table S1.

Core Landscapes

Core landscape selection begins with the Assessment analysis of high and moderate priority areas and all-lands opportunities. In some cases individual State & Private Forestry programs have defined statutory purposes and policy requirements that must also be met. Core landscapes incorporate these alongside strategic and programmatic considerations, such as existing state strategies (e.g., DNR 2010, DNR 2006, DNR 2004a, 2004b) in addition to the considerations included with the priority landscape analysis.

Core landscapes are divided into three primary program functions: Fuels Reduction & Community Protection Treatments, Forest Health Treatments, and Forest Stewardship Assistance. These correspond to program functions listed in Table S1, for which a focus in priority landscapes was checked. Core landscapes and their associated primary functions are displayed in Figure S1, and key information about each landscape is contained in Tables S2 and S4.

Year to year, federal appropriation levels and the rate of success in competitive grant processes cause the overall level of funding available for project implementation to vary considerably. Based on an average of recent years’ appropriations, and excluding one-time or supplemental funding sources, core landscape functions represent approximately 50 percent of the total State & Private Forestry program allocation to DNR. This equates to about \$2.5 million dollars annually, the bulk of it in wildfire fuels reduction.

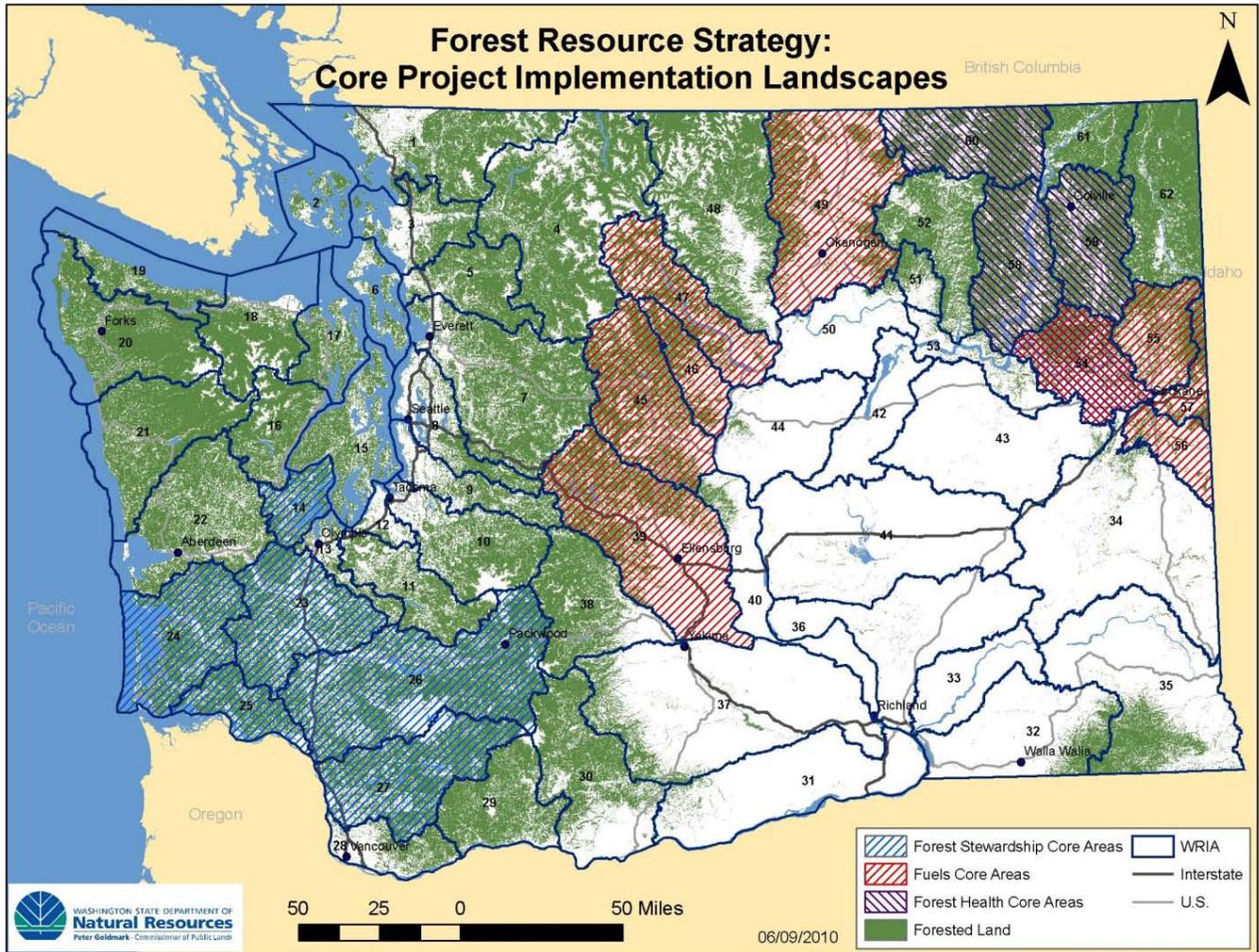


Figure S1. Washington State Forest Resource Strategy core project landscapes for State & Private Forestry Programs

Fuels Reduction & Community Protection Treatments

The core landscape-related function of fuels reduction funds through State & Private Forestry and other federal funding sources is to protect human safety and residences in the wildland urban interface. Owing to the patterns in forestland ownership and management, some of the selected core landscapes (Figure S1) represent significant opportunities to perform or help precipitate integrated treatments in an all-lands fashion, but other landscapes do not. Illustrative statistics for each core fuels landscape are displayed in Table S2. Shown below in Figures S2, S3, and S4 is a detailed view of core fuels landscapes with associated data on Fire Regime Condition Class (FRCC), completed and CWPP-identified priority fuels projects, and planned U.S. Forest Service project areas.

Table S2. Key forestland statistics for core fuels reduction & forest health restoration treatment landscapes

Core Landscape		Core Function	Public Forestland ¹	Small Private Forestland	Forested FRCC 2 & 3	CWPP Priority Treatments ²	Predicted Mortality ³
WRIA#	WRIA Name						
Acres (% of WRIA total forestland)							
39	Upper Yakima	Fuels	387,034 (75%)	42,625 (8%)	450,967 (88%)	36,441 (7%)	176,892 (34%)
45	Wenatchee	Fuels	477,310 (89%)	30,037 (6%)	460,223 (85%)	29,731 (6%)	188,618 (35%)
46	Entiat	Fuels	144,665 (95%)	2,907 (2%)	143,644 (93%)	1,814 (1%)	38,004 (25%)
47	Chelan	Fuels	270,182 (96%)	10,634 (4%)	250,555 (89%)	17,522 (6%)	40,136 (14%)
49	Okanogan	Fuels	303,194 (65%)	80,881 (17%)	396,689 (84%)	52,308 (11%)	132,226 (28%)
54	Lower Spokane	Fuels, Forest Health	33,092 (13%)	95,833 (38%)	111,477 (45%)	33,981 (14%)	99,783 (40%)
55	Little Spokane	Fuels	18,373 (10%)	144,751 (77%)	153,134 (63%)	18,796 (8%)	58,063 (24%)
56	Hangman	Fuels	3,300 (7%)	45,204 (89%)	41,425 (77%)	15,409 (29%)	1,392 (3%)
57	Middle Spokane	Fuels	15,450 (20%)	41,146 (52%)	52,969 (60%)	16,344 (18%)	36,101 (41%)
58	Middle Lake Roosevelt	Forest Health	120,381 (22%)	79,313 (14%)	152,047 (31%)	23,104 (5%)	186,242 (38%)
59	Colville	Forest Health	215,615 (45%)	161,532 (34%)	186,615 (39%)	36,947 (8%)	183,441 (38%)
60	Kettle	Forest Health	362,168 (76%)	89,832 (19%)	290,763 (62%)	55,709 (12%)	200,106 (43%)

¹ Includes federal, state, tribal and county/city managed forestland.

² Includes all land ownerships. For landownership breakdown see Appendix A, Table 7.

³ 2006 National Insect & Disease Risk Map. Mortality projected to exceed 20% of the current stand basal area.

Outlined below are opportunities identified in the Assessment, lead and supporting roles for State & Private Forestry programs, and the associated national core performance measures related to fuels reduction and community protection treatment projects. A full ‘cross-walk’ that includes relationships between Statewide Assessment issues and threats, national themes and objectives, national performance measures, and lead and supporting roles for State & Private Forestry programs is displayed in Appendix C.

Current Leading Roles: The following opportunities were developed to address threats in the Assessment and State & Private Forestry (S&PF) fuels reduction and community protection projects currently serve a lead or co-leading role:

- **Reduce fuel loads in Eastern Washington forests.** *Co-leads:* DNR Fire Protection & Prevention, Conservation Districts, land owners and managers.

-
- **Improve fire prevention and suppression.** *Co-leads:* DNR Fire Protection & Prevention, Fire Protection Districts.
 - **Protect, assist and educate populations in the wildland-urban interface.** *Co-leads:* DNR Fire Protection & Prevention, Conservation Districts, Local Government.
 - **Partner with multiple land owners and managers to achieve landscape-scale forest health restoration objectives.** *Co-leads:* DNR Fire Protection & Prevention, DNR and S&PF Forest Health, land owners and managers, local prescribed fire councils.
 - **Restore ecological integrity, appropriate density, structure and species composition to overstocked Eastern Washington forests.** *Co-leads:* DNR and S&PF Forest Health, land owners and managers
 - **Integrate fuel load reduction activities with forest health improvement actions.** *Co-leads:* DNR Fire Protection & Prevention, DNR and S&PF Forest Health.

Current Supporting Roles: The following opportunities were developed to address threats in the Assessment and State & Private Forestry fuels reduction and community protection projects currently serve a supporting role (Additional current supporting and lead roles defined in Appendix C):

- Restore and maintain forest productivity and carbon sequestration value for climate change mitigation.
- Assist forest ecosystems with adapting to a changed climate.
- Maintain and develop forest markets and infrastructure.
- Use prescribed fire to restore and maintain fire-resistant stand conditions and fire-dependent species.

National core performance measures (see ISSUES, OPPORTUNITIES, OBJECTIVES & PERFORMANCE MEASURES section) applicable to addressing these opportunities include: 1.2.1., 2.1.1., 2.1.2, 2.1.3, 2.2.1, 3.1.1., 3.3.1, 3.4.2, 3.4.3., 3.5.1., 3.6.1., 3.6.2., 3.7.1., and 3.7.2.

Supplemental performance measures applicable to addressing these opportunities in Washington State include:

- Tons of forest biomass material made available through fuels reduction projects (supplemental to 2.1.1., 2.1.2, 3.4.2.).

Spokane-Area Landscapes

Lower Spokane, Hangman, Middle Spokane, Little Spokane

These four landscapes represent the forested environment at risk of wildfire surrounding the largest population center in Eastern Washington: the City of Spokane and its outlying areas. Other landscapes in Eastern Washington have large areas identified for priority treatments under completed Community Wildfire Protection Plans; high hazards from unnaturally severe wildfire due to significant Fire Regime Condition Class departure acreages; and opportunities to partner with federal and other public land managers on integrated treatments. However, none of them have the concentration of

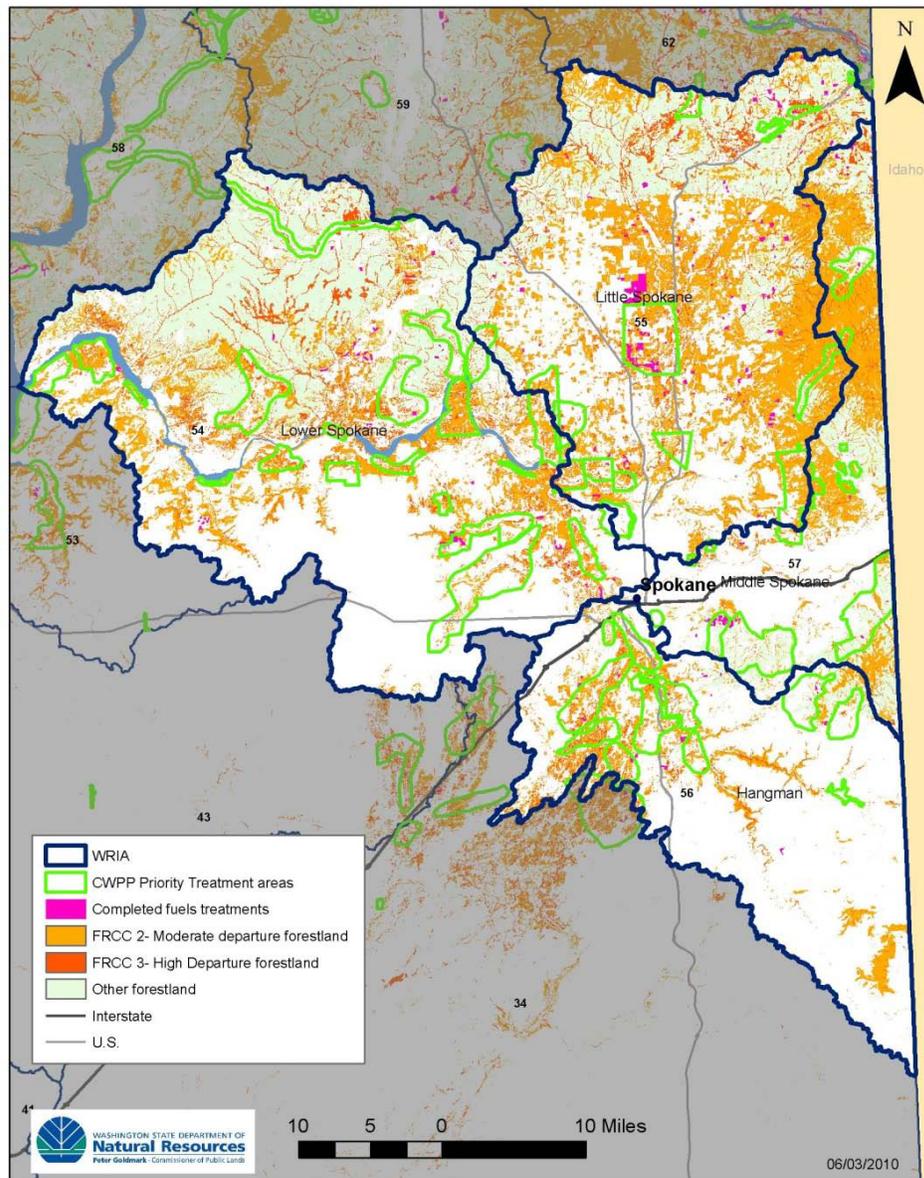


Figure S2. Spokane-area core fuels landscapes

population or values at risk that the Spokane-area contains. Under this strategy, the intersection of high hazards and high values at risk justifies the Spokane-vicinity landscapes as core areas for fuels reduction.

In total, approved CWPPs have identified 84,529 acres of priority fuels treatments within these landscapes (Table S2), of which 62,439 acres are on small private forestland (Appendix A: Table 7). Taken together, 57 percent of the total forestland is in moderate or high FRCC departure (class 2 and 3).

A relatively small proportion of U.S. Forest Service-managed land limits the overall ability to treat across ownership boundaries in these landscapes and resulted in lower ratings in the Assessment analysis of all-lands opportunities. However, there are significant opportunities with the tribal, state and other federal land managers. In the Lower Spokane landscape, the Spokane Tribe of Indians actively and sustainably manages more than 100,000 acres of forestland — 40 percent of the forestland in the WRIA (Appendix B). There also are opportunities in the Lower Spokane and Little Spokane landscapes to partner with Washington State Parks land managers, and with U.S. Fish and Wildlife Service land managers in the Hangman Landscape and in the small forested portion of the Palouse (WRIA 34) Landscape.

Upper Yakima, Wenatchee, Entiat & Chelan Landscapes

The Upper Yakima and Wenatchee landscapes were evaluated as high all-lands priorities for Wildfire Hazard Reduction in the Assessment, and also contain the second-largest population densities in Eastern Washington. The Upper Yakima landscape is bisected by Interstate 90, and the Wenatchee landscape by U.S. Highway 2 (Figure S3). Significant urbanization pressures and recreational use are associated with these two thoroughfares, which provide access to the area for residents of Western Washington population centers, as well as for those living in Wenatchee and Ellensburg. In addition to wildfire hazard reduction, these landscapes also were highly rated for all-lands opportunities to protect and restore biodiversity, forest health, and water quality and aquatic habitat. Each of the additional issues has a strong tie to the risk of large, severe wildfires identified by the Assessment.

All of these landscapes have at least 80 percent of their forestland in moderate or high FRCC departure (Table S2), and the Wenatchee and Upper Yakima landscapes have the second- and third-most acres of departed forestland of any WRIA in the state. The Wenatchee and Upper Yakima landscapes also rank third and fourth among all landscapes for completed private lands fuels projects (Appendix A: Table 6). There are 66,171 acres of CWPP-identified priority treatments in these two landscapes, of which 21,659 acres are on small private forestland (Appendix A: Table 7). This, in concert with a number of planned project areas on U.S. Forest Service land (Figure S3), present good all-lands opportunities and leverage points to build upon past treatments.

The Entiat and Chelan landscapes are dominated by U.S. Forest Service land. In recent years, wildfires have burned a significant amount of these two watersheds and have threatened the small amount of developed and working private land that is present. Significant values are at risk in the wildland-urban interface, especially during fire season, when recreational visitation in the Lake Chelan area is at its peak. The repeated pattern of severe fires and values at risk warrant these as core fuels reduction landscapes.

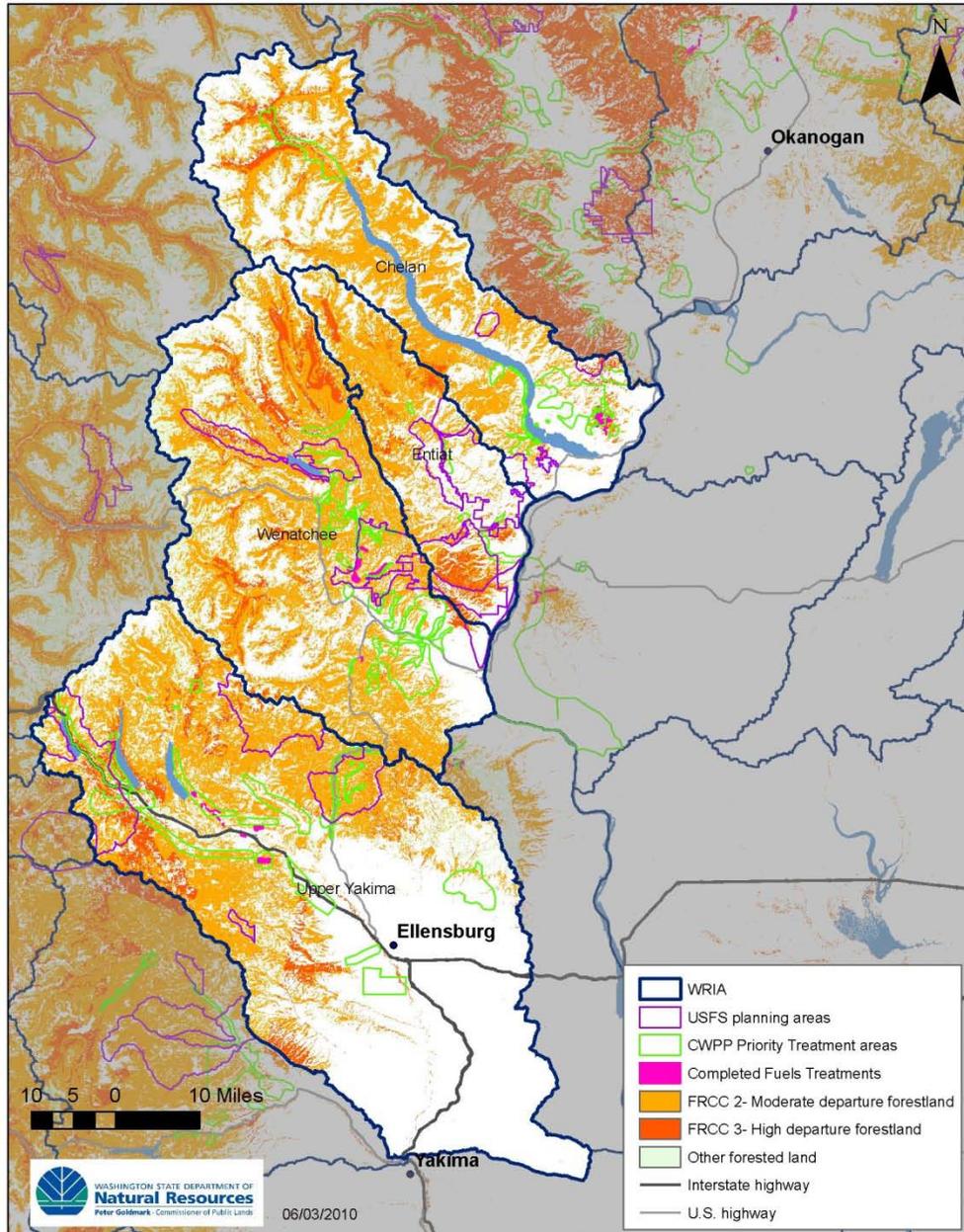


Figure S3. Upper Yakima, Wenatchee, Entiat & Chelan core fuels landscapes

Okanogan Landscape

The Okanogan Landscape was evaluated as a high all-lands priority for Wildfire Hazard Reduction in the Assessment. A significant investment in hazard reduction treatment actions already has been made — 1,754 acres of treatment have been completed, the second-most of any landscape — and CWPPs have identified treatment priorities on a remaining 25,259 acres of private forestland (Appendix A: Table 7). Although the density of development is significantly lower than other core landscapes, Okanogan County has consistently endured large, severe and expensive wildfires in recent years (Table S3). The predominant land use is agriculture, which means low-density improved property such as farms and ranches, many including significant forestlands, are scattered throughout the landscape. Fuel conditions are extreme (Table S2). High interest and receptiveness by landowners for conducting treatments has been due to active local organizations and partners.

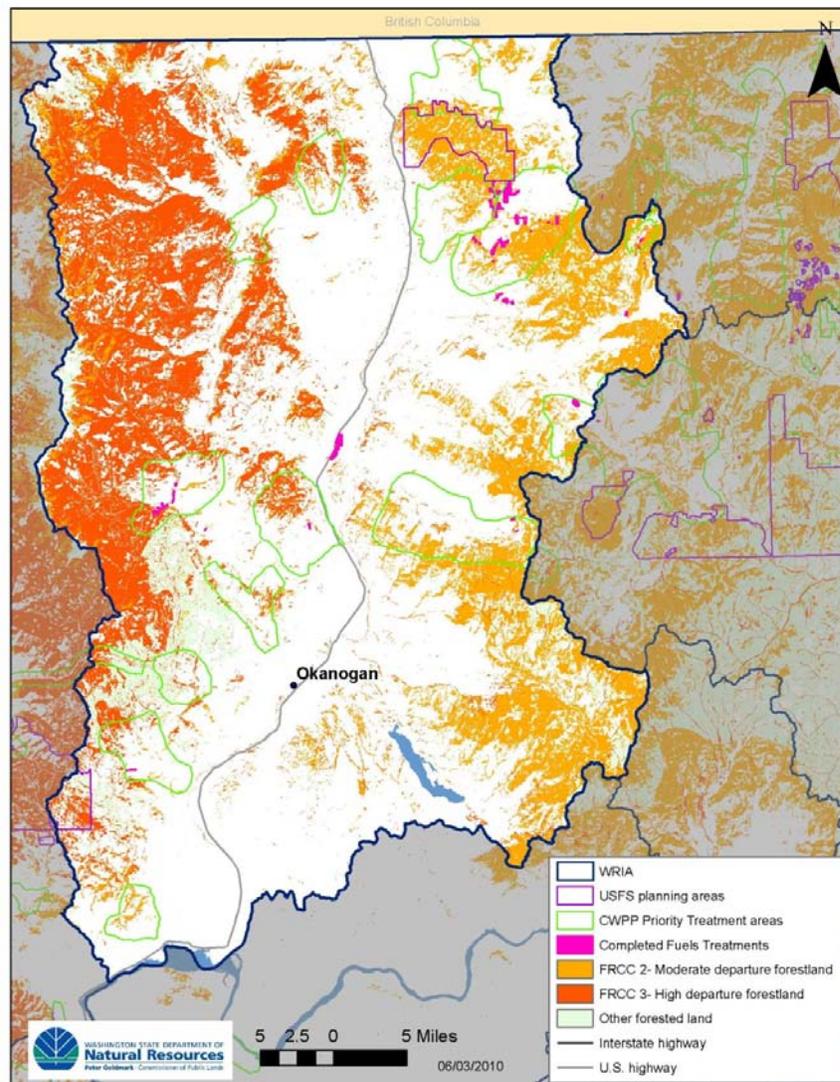


Figure S4. Okanogan core fuels landscape

Table S3. Major wildfires, acres burned, and DNR suppression costs in Okanogan County, 2005-2008

Fire Name	Date	Cause	Acres Burned		DNR Suppression Cost
			DNR Protection	Total	
Pearrygin Lake	7/3/2005	Recreation	310.6	310.5	\$ 725,180
Burnt Bread	8/6/2005	Recreation	1,355.0	1,355.0	\$ 2,064,066
Squaw Creek	9/8/2005	Power Line	384.0	384.0	\$ 160,955
<i>Subtotal 2005 Costs</i>					<i>\$ 2,950,202</i>
The Bear	8/6/2006	Misc	2.0	2.0	\$ 65,245
Spring Coulee	8/20/2006	Unknown	148.0	268.0	\$ 153,151
Cameron Lake	8/22/2006	Misc	1,567.0	1,567.0	\$ 190,370
Tillman Trip	8/22/2006	Lightning	7.0	7.0	\$ 120,852
<i>Subtotal 2006 Costs</i>					<i>\$ 529,618</i>
Glory	6/26/2007	Debris Burning	78.0	118.0	\$ 57,596
Little Chopaka	7/7/2007	Unknown	1,340.0	4,428.0	\$ 464,505
Tunk Grade	7/14/2007	Lightning	14,477.0	16,498.0	\$ 2,073,072
Whiskey	8/18/2007	Lightning	990.0	1,030.0	\$ 997,391
<i>Subtotal 2007 Costs</i>					<i>\$ 3,592,564</i>
Rattlesnake Point	7/1/2008	Lightning	661.0	741.0	\$ 895,617
Cayuse	7/9/2008	Debris Burning	1,195.0	1,778.0	\$ 2,543,900
Dry Gulch	7/10/2008	Power Line	27.0	27.0	\$ 75,233
Green Lake	7/31/2008	Structure	2,013.0	2,614.0	\$ 2,070,260
Malott	8/9/2008	Lightning	140.0	334.0	\$ 705,321
Scotch Creek	8/22/2008	Vehicle	298.0	298.0	\$ 77,151
<i>Subtotal 2008 Costs</i>					<i>\$ 6,367,482</i>
Keystone	5/26/2009	Structure	76.0	81.0	\$ 97,048
Cook Mountain Roast	6/28/2009	Unknown	5.0	5.0	\$ 54,258
Twisp River	6/30/2009	Structure	6.5	6.5	\$ 87,004
Razor/Hi Complex	7/23/2009	Lightning	15.9	24.6	\$ 255,764
French Place	7/25/2009	Lightning	6.5	6.5	\$ 74,185
Mineral Hill	7/26/2009	Lightning	14.0	47.0	\$ 303,686
Oden Road	8/21/2009	Lightning	9,476.0	9,608.0	\$ 2,503,804
Frosty	9/1/2009	Recreation	2.0	2.0	\$ 73,425
<i>Subtotal 2009 Costs</i>					<i>\$ 3,449,174</i>
TOTAL 2005-2009					\$ 16,889,040

There are excellent opportunities to leverage all-lands treatments with DNR actions for state trust lands, the Okanogan Wenatchee National Forest, the Colville Confederated Tribes, and the Washington Department of Fish and Wildlife's Sinlahekin Wildlife Refuge.

This landscape is designated a fuels core area, but also has experienced a significant concentration of insect and disease mortality. Only its westerly neighbor, the Methow landscape, has experienced more acres with elevated mortality since 1989 compared with any other WRIA in the state (Appendix A: Table 5). The Okanogan landscape is projected to experience worse insect and disease damage in the future (Table S2). In

addition, DNR Forest Health Program staff have detected and verified increasing or recurring populations of defoliating caterpillars such as Douglas-fir tussock moth and Western spruce budworm in the landscape, as well as in parts of the Methow Valley. There is a strong opportunity to integrate wildfire fuels and forest health objectives in the Okanogan landscape.

Forest Health Restoration Treatments

The core landscape related function of forest health funds through State & Private Forestry programs is to assist with performing treatments that respond to current, emerging and long-term risks from outbreaks of native forest insects and diseases. This function aligns well with all-lands opportunities identified in the Assessment, the Washington State Strategic Plan for Healthy Forests (DNR 2004a) and the 2007 Washington State Forest Health Law (RCW 76.06). The DNR Forest Health Program has focused its efforts in Stevens County by undertaking a pilot project for the law's implementation. The location of core forest health restoration landscapes is displayed in Figure S1, and illustrative statistics for each core landscape are contained in Table S2. A detailed view of core forest health landscapes with associated data on past mortality, predicted future mortality, and planned U.S. Forest Service project areas is shown below in Figure S5.

Outlined below are the opportunities identified in the Assessment, lead and supporting roles for State & Private Forestry programs, and the associated national core performance measures related to forest health restoration projects. A full 'cross-walk' that includes relationships to Statewide Assessment issues and threats, as well as national themes and objectives is displayed in Appendix C.

Current Leading Roles: The following opportunities were developed to address threats in the Assessment and the State & Private Forestry (S&PF) Forest Health Program currently serves a lead or co-leading role:

- **Restore ecological integrity, appropriate density, structure and species composition to overstocked Eastern Washington forests.** *Co-leads:* DNR Forest Health, S&PF Fuels Reduction, land owners and managers;
- **Partner with multiple land owners and managers to achieve landscape-scale forest health restoration objectives.** *Co-leads:* DNR Fire Protection & Prevention, S&PF Fuels Reduction, DNR Forest Health, land owners and managers, local prescribed fire councils;
- **Early detection and eradication of invasive non-native species.** *Co-leads:* Washington Department of Agriculture, *DNR Forest Health*, Washington Invasive Species Council;
- **Integrate fuel load reduction activities with forest health improvement actions.** *Co-leads:* DNR Forest Health, DNR Fire Protection & Prevention, S&PF Fuels Reduction;

-
- **Protect productivity and function in Western Washington forests.** *Co-leads:* DNR Forest Health, NRCS Conservation Programs.
 - **Reduce root disease impacts.** *Co-leads:* DNR Forest Health

Current Supporting Roles: The following opportunities were developed to address threats in the Assessment, and the State & Private Forestry Forest Health Program currently serves a supporting role (Additional current supporting and lead roles defined in Appendix C):

- Reduce fuel loads in Eastern Washington forests.
- Restore & maintain forest productivity & carbon sequestration value for climate change mitigation.
- Assist forest ecosystems with adapting to a changed climate.
- Maintain and develop forest markets and infrastructure.
- Use prescribed fire to restore & maintain fire-resistant stand conditions & fire-dependent species.

National core performance measures (see ISSUES, OPPORTUNITIES, OBJECTIVES & PERFORMANCE MEASURES section) applicable to addressing these opportunities include: 1.2.1, 2.1.1., 2.2.1, 3.1.1., 3.4.2., 3.4.3., 3.5.1., 3.6.1., 3.6.2., 3.7.1., and 3.7.2.

Supplemental performance measures applicable to addressing these opportunities in Washington State include:

- Number of surveys, survey type, and number of acres surveyed for non-native species (supplemental information to 2.2.1.).
- Number of “Tier 2” Forest Health Hazard Warnings issued and implemented under the Washington State forest health law.
- Number of people by activity or contact type (supplemental information to 3.6.1., 3.6.2.).

Lower Spokane Landscape

The Lower Spokane Landscape was rated a moderate all-lands opportunity in the Assessment analysis of priority landscapes. A lack of U.S. Forest Service-managed land and low levels of past mortality kept this landscape from rating as a high opportunity relative to others (Appendix A: Table 5). However, nearly 40 percent of the forestland in the WRIA is projected to experience heavy mortality over the next 15 years (Table S2).

Although the cumulative amount of mortality since 1989 has been slight in this landscape, a significant share of the forestland is dominated by trees that are nearing or at maturity, including a substantial component of lodgepole pine. From 1910 to 1935, a combination of dry weather, heavy winds, brush and heavy logging slash resulted in

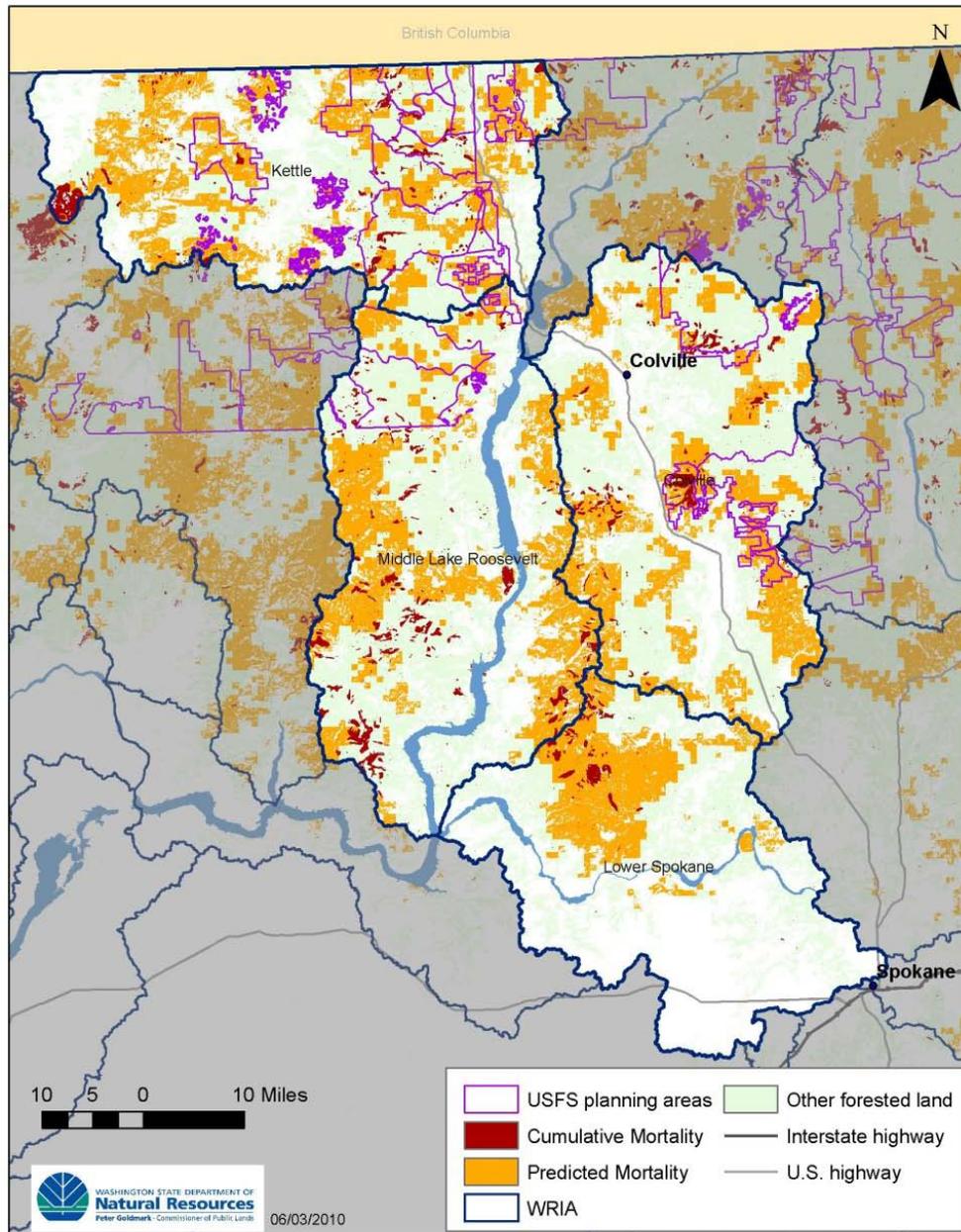


Figure S5. Lower Spokane, Colville, Middle Lake Roosevelt and Kettle core forest health landscapes.

extensive, large and severe wildfires throughout northeast Washington. Consequently, many stands throughout this region of the state are relatively uniform in age. Large areas are reaching a stage of heightened insect and disease susceptibility at the same time.

The Lower Spokane also is a core wildfire fuels reduction landscape, and is within the pilot project area for DNR Forest Health Program’s forest health law. There is a significant opportunity to integrate wildfire hazard reduction and forest health

restoration treatments, and build on all-lands partnerships with multiple land managers. The Spokane Tribe of Indians manages more than 100,000 acres of forestland in the landscape and already is an active partner in the pilot project (40 percent of the forestland in the WRIA). There are also opportunities to leverage treatments among the 22,500 acres of DNR-managed state trust forestland, the 4,500 acres of forested Washington State Park land, and the 3,000 acres of BLM-managed forestland in the landscape. Together, these considerations warrant the Lower Spokane Landscape’s designation as a core area for forest health restoration.

Colville Landscape

The Colville Landscape rated as a high all-lands opportunity in the Assessment analysis of priority landscapes. The area has experienced a moderate amount of insect and disease mortality, but is projected to experience elevated mortality over nearly 40 percent of its forestland (Table S2). Nearly all the U.S. Forest Service land in this landscape contains planned project areas, indicating that a significant amount of management is planned to take place within the next five years (Figure S5). The Colville Landscape also contains the largest concentration of small private forestland owners of any WRIA in Eastern Washington— over 160,000 acres. DNR is actively managing more than 67,000 acres of state trust forestland to improve forest health. Additional all-lands project opportunities exist with the 38,800-acre forested portion of the Little Pend Oreille National Wildlife Refuge, and the 6,300 acres of BLM-managed forests in the landscape. The Colville Landscape also is located in the heart of DNR’s pilot project area for implementing the state forest health law.

Middle Lake Roosevelt & Kettle Landscapes

The Middle Lake Roosevelt and Kettle Landscapes rated as high all-lands opportunities in the Assessment analysis of priority landscapes. There have been higher concentrations of past tree mortality relative to other Eastern Washington landscapes (Appendix A: Table 5), and projected mortality is at or approaching 40 percent of the total forestland. Both have significant areas of planned projects on the Colville National Forest (Figure S5). Of the forestland managed by the Colville National Forest — about 82 percent in the Middle Lake Roosevelt Landscape is within planned project areas, and 68 percent in the Kettle Landscape. This is especially important in the Kettle Landscape because the U.S. Forest Service is the primary forestland manager, accounting for nearly 70 percent of the total forestland. These two landscapes also include a large portion of Colville National Forest and other lands for which a forest restoration strategy and a project proposal have been developed under the Forest Landscape Restoration Program. In the proposal’s development, the Colville National Forest sought participation from DNR, partners such as the Northeast Washington Forestry Coalition, and governments such as the Colville Confederated Tribes.

The Colville Confederated Tribes are active forestland managers across greater than 50 percent of the Middle Lake Roosevelt WRIA. The Kettle Landscape is also of critical interest to the tribe because it contains lands ceded from the Colville reservation that are usual and accustomed areas for cultural, hunting and fishing rights reserved in past treaties with the United States. This area is sometimes called the “North Half” of the Colville reservation. DNR-managed state trust land is not as significant a component of these two landscapes by acreage — about 40,000 acres. But especially in the Kettle WRIA these are very actively managed lands. Both landscapes contain a relatively large base of small private forestland — 90,000 acres in the Kettle and 80,000 acres in the Middle Lake Roosevelt.

Additional all-lands opportunities are afforded by the 4,300 forested acres in the Sherman Creek State Wildlife Recreation Area in the northern part of the Middle Lake Roosevelt Landscape, and nearly 11,000 acres of BLM-managed forestland scattered throughout the two landscapes.

Forest Stewardship Assistance Projects

The core function of Forest Stewardship Program funds through State & Private Forestry is to provide technical assistance to small, non-industrial forest landowners. Assistance includes help with planning and implementing their objectives for sustainable management. This function aligns well with all-lands priorities identified in the Statewide Assessment for Working Forestlands & Conversion, Biodiversity & Habitat Conservation, and Upland Water Quality, Quantity & Puget Sound Restoration.

Outlined below are the opportunities identified in the Assessment, lead and supporting roles for State & Private Forestry programs, and the associated national core performance measures related to forest stewardship projects. A full ‘cross-walk’ that includes relationships to Statewide Assessment issues and threats, as well as national themes and objectives is displayed in Appendix C.

Current Leading Roles: At its present funding levels, the Forest Stewardship Program is not fulfilling a lead role in any of the opportunities that were developed to address threats in the Assessment.

Current Supporting Roles: The following opportunities were developed to address threats identified in the Assessment, and the State & Private Forestry Forest Stewardship Program currently serves a supporting role (Additional current supporting and lead roles defined in Appendix C):

- Reduce the rate of forest conversion.
- Assist forest landowners with meeting environmental protection requirements.
- Maintain a dependable and non-declining flow of timber from unreserved timberlands.

-
- Restore and maintain forest productivity and carbon sequestration value for climate change mitigation.
 - Assist forest ecosystems with adapting to a changed climate.
 - Identify and protect priority species and ecosystems.
 - Conserve Westside legacy features.
 - Restore ecological integrity, appropriate density, structure and species composition to overstocked Eastern Washington forests.
 - Maintain stocks of genetically appropriate tree species.
 - Reduce fuel loads in Eastern Washington forests.
 - Partner with multiple land owners and managers to achieve landscape-scale forest health restoration objectives.
 - Integrate fuel load reduction activities with forest health improvement actions.
 - Protect productivity and function in Western Washington forests.
 - Reduce root disease impacts.
 - Conserve riparian forest vegetation and reestablish appropriate tree species composition.
 - Conserve forested wetlands.
 - Reduce negative effects of forest roads on the hydrology of watersheds.
 - Remove barriers to fish passage and increase aquatic habitat availability.

National core performance measures (see ISSUES, OPPORTUNITIES, OBJECTIVES & PERFORMANCE MEASURES section) applicable to addressing these opportunities include: 1.1.1., 1.2.1, 2.1.1., 3.1.1., 3.4.2., 3.4.3., 3.5.1., 3.5.2., 3.6.1., 3.6.2., 3.7.1., and 3.7.2.

Southwest Washington Landscapes

The Upper Chehalis, Willapa, Grays-Elochman, Cowlitz, Lewis and Kennedy-Goldsborough Landscapes were selected as core areas for Forest Stewardship projects (Figure S1). In part, their selection owes to rating highly for all-lands opportunities in the Assessment analysis of priority landscapes for the issues of Working Forestlands & Conversion, Biodiversity & Habitat Conservation, and Water Quality, Quantity & Puget Sound Restoration (Table S4). A detailed view of core Forest Stewardship Program landscapes with associated data on salmonid stocks, forest-adjacent impaired waters, forest biodiversity conservation opportunity, and focal U.S. Forest Service watersheds is shown below in Figure S6. Each of the core Forest Stewardship Program landscapes are priorities for inventoried listed and candidate salmonid stocks that are depressed, critical, or status unknown. Of any WRIA in the state, the Willapa, Cowlitz, Upper Chehalis and Lewis Landscapes have the second- through fifth-highest stream mileages with these stocks, respectively.

Kennedy-Goldsborough is designated a core landscape because of its unique considerations beyond those analyzed in the Assessment priority analysis. Kennedy

Creek is an iconic salmon fishery, so much so that the South Puget Sound Salmon Enhancement Group developed a signed, accessible, low-impact trail along the creek to provide salmon viewing opportunities. The trail offers salmon viewing and interpretive habitat information in a natural setting that educates students, teachers, and the general public about Washington's at-risk salmon runs. Downstream, DNR manages the adjacent Kennedy Creek Natural Area Preserve, including salt marsh and estuarine tide flat habitats. This is a short stretch — only 2.3 river miles from the saltwater upstream to an impassible waterfall; and this, coupled with the watershed's relatively small overall size, is why the magnitude of water quality and salmon issues did not rise higher in the Assessment analysis. However, by percentage, small private forestland owners manage more of this landscape than most others in Western Washington, and in addition to iconic salmon populations, terrestrial biodiversity conservation opportunities are abundant (Table S4).

Table S4. Key statistics for core Forest Stewardship Assistance landscapes

Core Landscape		Public Forestland ¹	Small Private Forestland	High COF Forested ²	Unhealthy Salmonid Stocks ³	Assessment Priority Landscape Rank
WRIA#	WRIA Name	Acres (% of total WRIA forestland)			Stream Miles	
14	Kennedy-Goldsborough	13,608 (11%)	49,509 (38%)	77,365 (60%)	12	Mod. Working Forest Mod. Biodiversity Mod. Water Quality
23	Upper Chehalis	137,013 (28%)	105,856 (21%)	248,330 (41%)	814	High Working Forest High Biodiversity Mod. Water Quality
24	Willapa	76,801 (18%)	34,538 (8%)	287,972 (62%)	1,028	High Working Forest High Biodiversity High Water Quality
25	Grays-Elochman	51,426 (24%)	32,265 (15%)	119,223 (54%)	362	High Working Forest Mod. Biodiversity Mod. Water Quality
26	Cowlitz	564,972 (55%)	101,687 (10%)	446,816 (43%)	958	High Working Forest High Biodiversity High Water Quality
27	Lewis	356,573 (65%)	64,876 (12%)	154,887 (28%)	602	Mod. Working Forest High Biodiversity High Water Quality

¹ Includes federal, state, and county/city managed forestland.

² Biodiversity Conservation Opportunity values: high significance and high risk, or high in one and moderate in the other.

³ Inventoried candidate or listed stocks with a depressed, critical or unknown status. Mileage is additive among multiple species, where present.

Much of the small private forestland in each of these WRIAs is situated in direct proximity to rivers and streams (Figure S7) and therefore provides a high quality opportunity to assist these landowners with good stewardship options that will help salmonids and other riparian-dependent species. In addition, each of these WRIAs

contains significant lengths of listed impaired water segments that are directly adjacent to forestland (Appendix A: Table 4).

All core Stewardship landscapes contain a mixture of forestland ownership types that will present good all-lands opportunities, especially for work on watershed restoration issues. The Lewis WRIA, for instance, contains more than 220,000 acres of focal watershed areas for the Gifford Pinchot National Forest (Appendix A: Table 4). Although U.S. Forest Service project planning area data were not used in the analysis of opportunities for issues in Western Washington, Gifford Pinchot National Forest managers plan to conduct significant projects within the Lewis and Cowlitz Landscapes over the next five years (Appendix A: Map 8).

All-lands forest biodiversity and habitat conservation opportunities are also considerable in these landscapes (Table S4). The Willapa Landscape, for example, contains some of the highest-quality habitat in the state for threatened marbled murrelets. With the exception of the Lewis Landscape, no less than 40 percent of the forestland habitat in selected

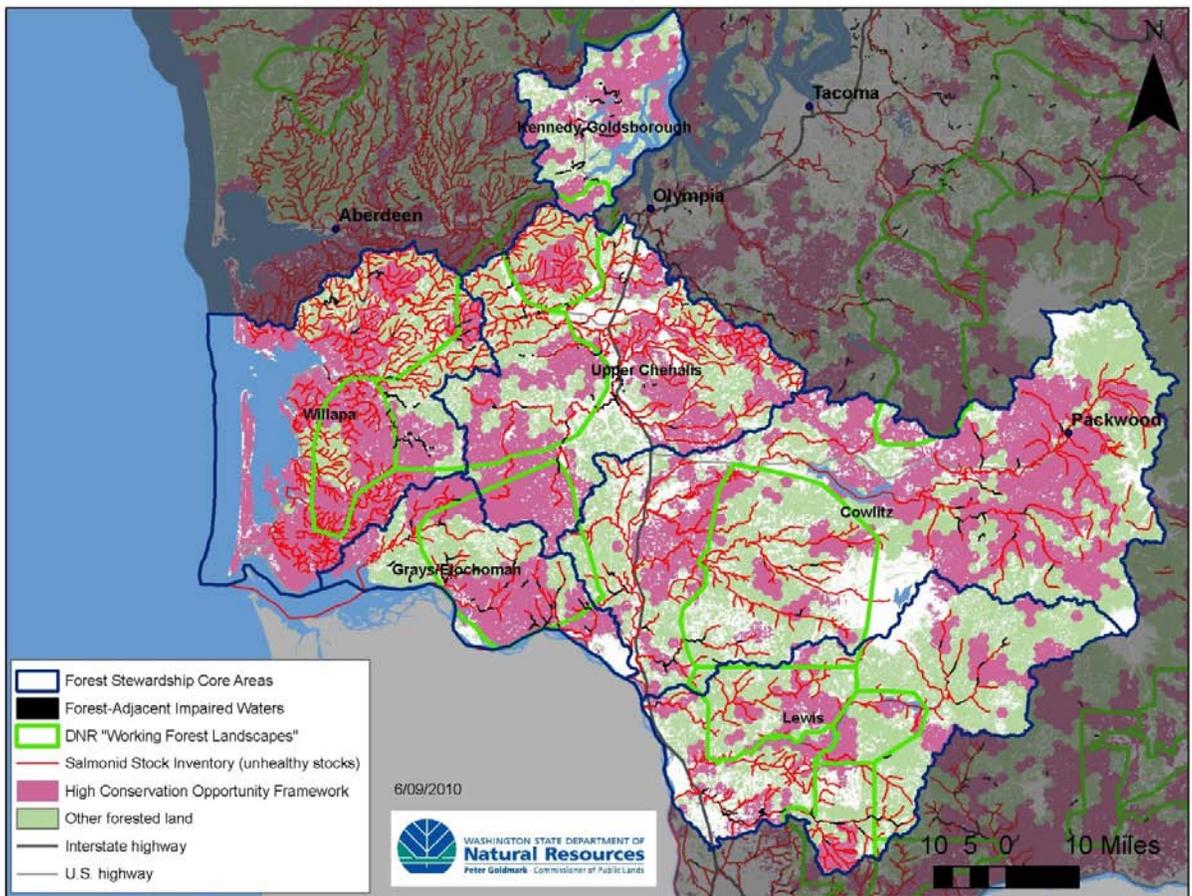


Figure S6. Kennedy-Goldsborough, Willapa, Upper Chehalis, Cowlitz and Lewis core Forest Stewardship landscapes

Forest Stewardship core areas is rated as having high biodiversity significance and high risk, high significance and moderate risk, or moderate significance and high risk (Table S4).

The Forest Stewardship Program, in cooperation with the U.S. Forest Service Pacific Northwest Region, conducted a Spatial Analysis Project (SAP) to assess the stewardship potential for small private forestland owners throughout Washington State (DNR and USFS, 2009). Through the analysis the Program considered a number of weighted data layers that were selected by the State Forest Stewardship Coordinating Committee. The Kennedy-Goldsborough, Upper Chehalis, Willapa, Grays-Elochman, Cowlitz and Lewis

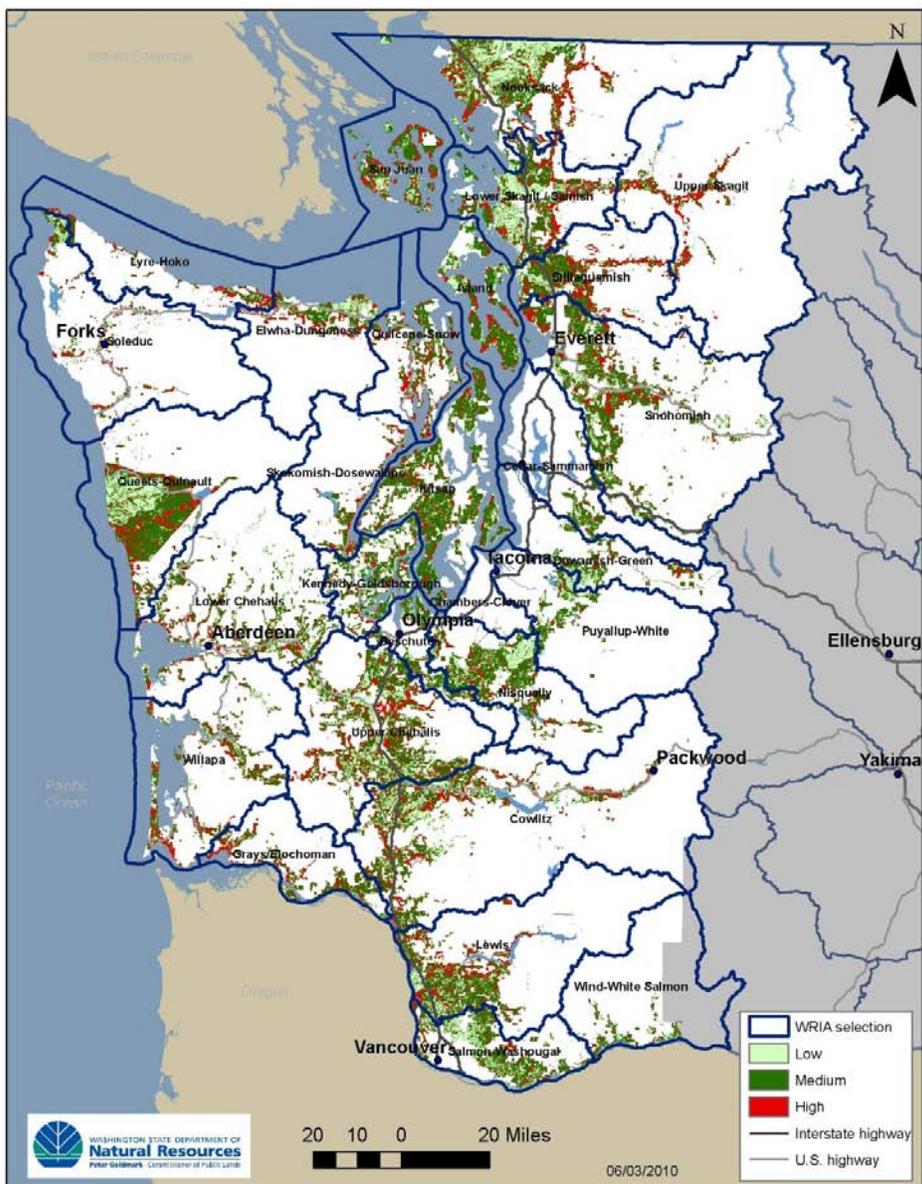


Figure S7. Western Washington results of Spatial Analysis Project for forest stewardship potential

Landscapes contain a high density of good stewardship potential (Figure S7). The Program continues to consider and report assistance delivered to landowners according to their potential as assessed in the SAP.

A focal issue in the DNR agency-wide Strategic Plan (DNR 2010) is protecting the public natural resources of the state against landslides. During several recent winters, severe wind, rain and snow storms have battered the forestlands of Western Washington. In some places, almost 20 inches of rain fell on already melting snow within a period of two days. Flooding was widespread — including the evacuation of several populated areas and forced the closure of Interstate 5. Although forest practices rules contain provisions to guard against landslides, an estimated 1,500 slides occurred in the December, 2008 / January, 2009 storm alone. For this reason, DNR and its partners in the Forest Practices Adaptive Management Program are improving the evaluation of landslide hazards and unstable slopes, improving the delivery of information to landowners and managers, and determining what policy changes may be necessary. Many of the slides and flooding impacts were concentrated in southwest Washington. The Forest Stewardship Program's work in these core areas will provide small forestland owners with information about unstable slopes and landslide risks as they develop management plans, and will coordinate with DNR Forest Practices foresters on delivering more in-depth assistance.

Finally, these landscapes were selected on the basis of their opportunities and priorities, in addition to the ability to partner with the Washington State University Extension, and Lewis and Cowlitz County governments on the funding for stewardship forestry assistance. The Washington State University Extension has actively conducted coached planning courses for small forest landowners throughout the state. Coached planning sessions are funded by participant registration fees, and allow small forest landowners to learn about forest management while they assess and plan the management objectives that are appropriate for their property. DNR is responsible for reviewing and approving these plans, and teaching course subjects. However, in many cases there is no resource available to follow-up with the landowners to perform site visits and provide specific recommendations, or assist with applying management practices. In the core landscapes, Forest Stewardship Program funds under State & Private Forestry will be applied to these purposes.

Urban & Community Forestry Projects

National guidance has focused State & Private Forestry expenditures on creating self-sustaining urban and community forestry programs, rather than on project implementation. There currently is no substantial, consistent amount of State & Private Forestry funding available to conduct tree planting, re-greening or habitat restoration projects in the urban forest environment. The role of State & Private Forestry therefore is primarily to assist communities with planning their programs, inventorying their tree canopies, and performing education and outreach activities. Individual communities have

the lead role in implementing their own programs. This core program function is outlined and described in greater detail in the STATEWIDE & CATEGORICALLY PRIORITIZED ACTIONS section later in this strategy.

However, the Assessment identified a substantial need and widespread opportunities for communities that have already completed, or will complete their program development within the duration of this strategy. Completing program development under the Community Accomplishment Reporting System (CARS) provides the necessary assurance that project implementation funds will be in strategic alignment with national and state program priorities. Were project funding to become available, such as through the America’s Great Outdoors Initiative or legislative proposals to reestablish federal funding for tree planting, DNR has identified landscapes in which projects in the urban environment have strong ties to forest uplands priorities (Figure S8).

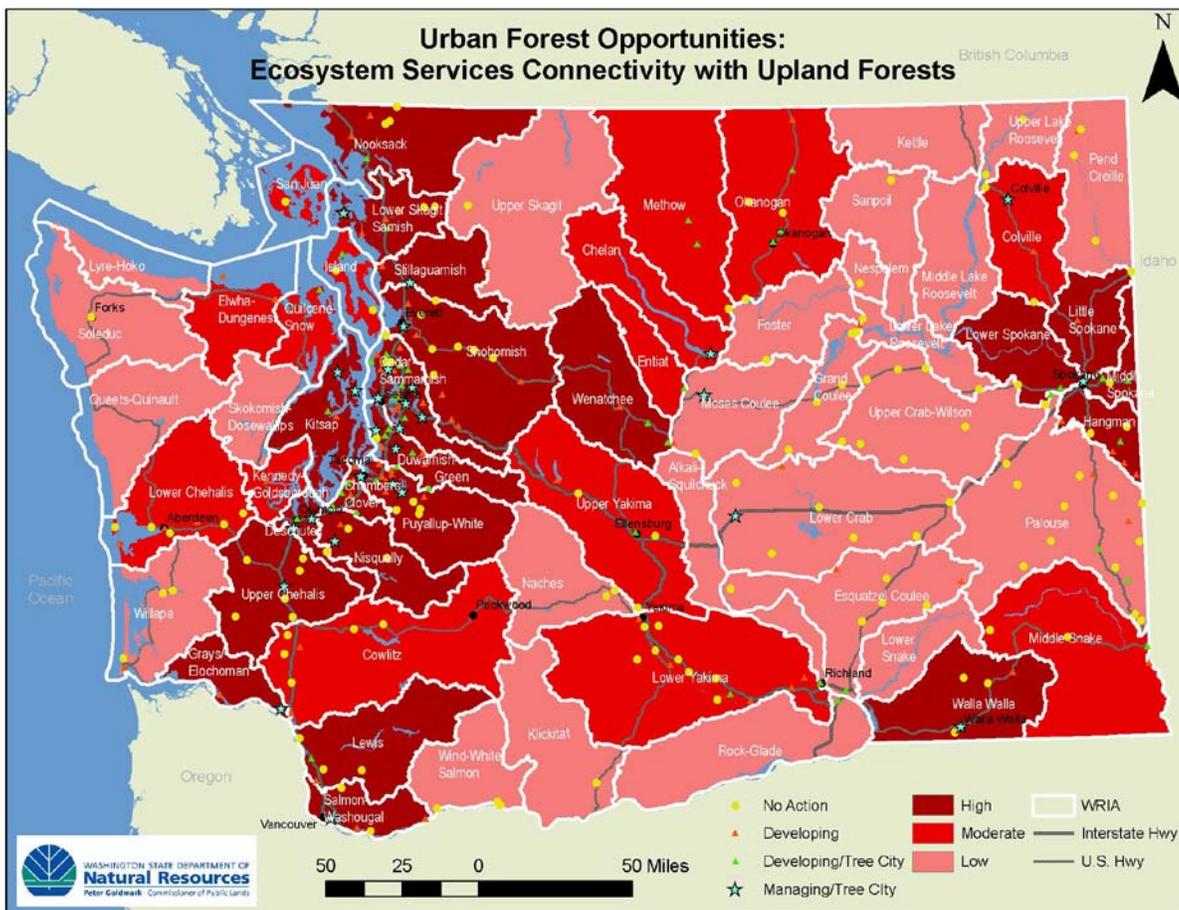


Figure S8. Urban forest opportunities for ecosystem services connectivity with upland forests

Projects could respond to many of the specific opportunities identified in the Assessment, as outlined below. Displayed in Appendix C is a full ‘cross-walk’ that includes relationships to Statewide Assessment issues and threats, as well as national themes and objectives and national performance measures.

-
- Maintain and restore connectivity of ecosystem services between the developed and forested upland environments.
 - Reconnect urban people, especially youth, with the forested and outdoors environments.
 - Conserve, restore and expand the urban tree canopy.
 - Early detection and eradication of invasive non-native species.
 - Assist communities with developing and implementing urban forest conservation programs.
 - Identify and protect or restore critical landscape linkages for species movement.
 - Maintain and improve air quality and energy conservation.
 - Restore and maintain forest and tree productivity and carbon sequestration value for climate change mitigation.

Program actions to respond to these opportunities would address the following national performance measures (see ISSUES, OPPORTUNITIES, OBJECTIVES & PERFORMANCE MEASURES section): 2.2.1., 3.1.1., 3.2.1., 3.2.2., 3.3.2., 3.4.2., 3.4.3., 3.5.1., 3.5.2., 3.6.1., 3.6.2., and 3.7.2.

Forest Legacy Projects

Forest Legacy Program projects, which include the acquisition of fee or conservation easement interest in high-value working forestlands, will continue to be 100 percent within priority areas identified in the program's Assessment of Need (DNR 2004b). The unaltered AON Forest Legacy area map (Figure S9) represents the "core landscape" for projects under this strategy. The Statewide Assessment analyses may assist the Program with information that refines geographic areas of potential focus within the Legacy area, relating to established AON objectives and parcel evaluation criteria, such as:

- Link protected forest landscapes (Example: Private with Conservation Easement, State, Local Government, and Federal Lands).
- Buffer currently unthreatened forest land base by protecting transitioning forest lands.
- Support the goals of the Washington State Strategic Plan for Wildland Fire Protection.
- Link working forest landscapes.
- Protect habitat and water quality through appropriate forest management regimes.
- Contribute to large forest landscapes — 1,000 acres or greater — that are actively managed for forest use and are not overly fragmented with developed parcels, promoting sustainable multiple use forest management practices.
- Protect critical habitat for Threatened or Endangered Species.
- Promote protection of wildlife corridors.

In addition to supplemental information regarding AON objectives, the Assessment may provide additional means of quantifying some of the Forest Legacy AON evaluation criteria for individual parcels. The criteria for consideration include:

- The threat of conversion;
- The parcel's status as working forestland;
- Water quality concerns;
- Fish and wildlife habitat;
- Leveraging against existing protected landscapes;
- Readiness of the transaction and cost-share willingness of the landowner; and
- Public recreation, scenic and cultural significance.

Current Leading Roles: The following opportunities were developed to address threats in the Assessment and State & Private Forestry currently serves a lead or co-leading role:

- **Reduce the rate of forest conversion.** *Co-leads:* Transfer of Development Rights Programs, State Property Tax Incentives, State and Federal agency land transactions, DNR Natural Areas Program, Non-Governmental Organization Investments, Washington Wildlife & Recreation Program.

Current Supporting Roles: The following opportunities were developed to address threats identified in the Assessment, and the Forest Legacy Program currently serves a supporting role (additional current supporting and lead roles defined in Appendix C):

- Compensate landowners for ecosystem services.
- Maintain a dependable and non-declining flow of timber from unreserved timberlands.
- Identify and protect priority species and ecosystems.
- Identify and protect or restore critical landscape linkages for species movement.
- Conserve Westside legacy features.
- Conserve riparian forest vegetation and reestablish appropriate species composition.
- Conserve forested wetlands.

National core performance measures (see ISSUES, OPPORTUNITIES, OBJECTIVES & PERFORMANCE MEASURES section) applicable to addressing these opportunities include: 1.1.1., 3.1.1., 3.4.3., 3.5.1., and 3.5.2.

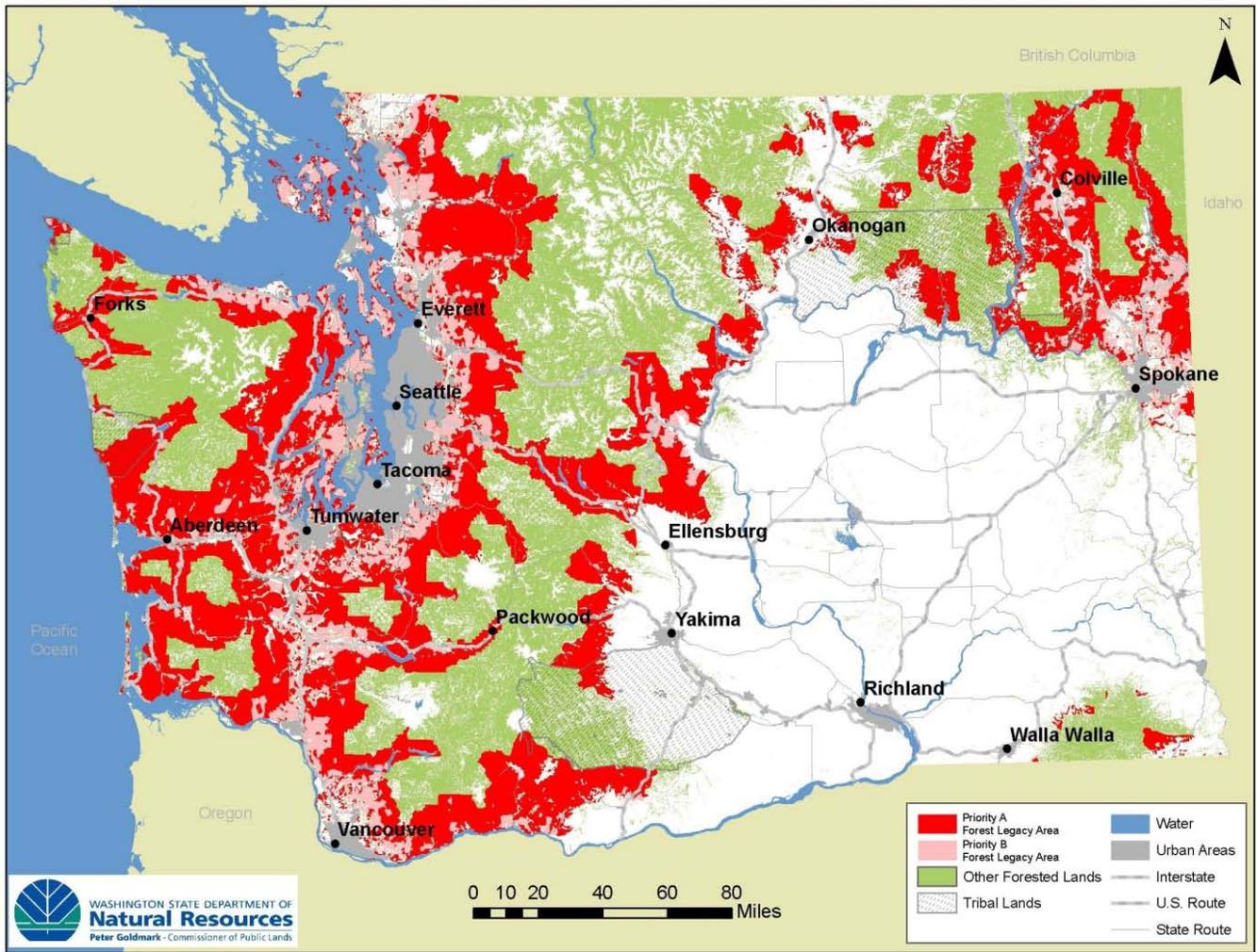


Figure S9. Forest Legacy areas for Washington State

Integrated Landscapes

The preceding core landscapes for Fuels Reduction & Community Protection Treatments, Forest Health Restoration Projects, and Forest Stewardship Assistance Projects are fixed during the five-year term of this strategy, and will comprise at least 60 percent of the geographically prioritized program funds. Integrated landscapes, in contrast, will vary from year-to-year and will comprise up to 40 percent of the remaining funds. Selection of integrated landscapes will begin with high and moderate priority landscapes identified for the Assessment issues. Actions for integrated landscapes correspond to program functions listed in Table S1, which were checked for a geographic focus in priority landscapes, and a focus for emergency or on-call actions. The strategic objectives of integrated landscapes are to:

- Respond to Assessment-identified opportunities outside core landscapes, but within high and moderate all-lands priorities, as identified in the Assessment, including but not limited to:

-
- Achieve integrated program outcomes among multiple opportunities;
 - Contribute to all-lands accomplishments with other land managers and partners;
 - Respond to heightened landowner interest in wildfire hazard reduction that may arise following a significant incident;
 - Implement CWPP-recommended fuels treatments; or
 - Identify and address emerging outbreaks of native or non-native insects and diseases.
- Provide supplemental emphasis or enhanced program integration in core landscapes.

Potential Multi-State Priority Areas

Potential multi-state priority areas with the Oregon Department of Forestry and Idaho Department of Lands are somewhat constrained by the relatively small amount of shared boundary that is actually forested. The Selkirk Mountains in northeast Washington, the Blue Mountains in southeast Washington, and from the Cascade Mountains west to the Pacific Ocean are the primary prospective areas.

Northeast Washington Landscapes

A western states' competitive State & Private Forestry grant project was funded in 2009 for the area of the Spokane-Rathdrum Prairie aquifer. The project focuses on improving forest health and stewardship in a watershed that supplies drinking water to 100,000 people in Kootenai County, Idaho, and another 400,000 people in Spokane County, Washington. With a continued focus on watershed, wildfire and forest health issues, prospective multi-state priority areas with the State of Idaho include the Pend Oreille, Little Spokane, Middle Spokane and Hangman Landscapes (WRIAs 62, 55, 57, 56).

Blue Mountains & Snake River Landscapes

There also are good opportunities for a tri-state priority area that would include the Middle Snake and Walla Walla Landscapes (WRIAs 35 and 32) in Washington, as well as their Oregon and Idaho counterparts. These include the forested areas of the Blue Mountains, which extend south into Oregon and come in close proximity to the Idaho border. The Snake River and its major Washington, Idaho and Oregon tributary rivers — the Clearwater, Wenaha and Grand Ronde — represents a fisheries and water quality priority that is potentially shared by all three states. Streams fed by those in Blue Mountains forests are important to restoring and protecting the health of the broader watersheds.

Columbia River Gorge Landscapes

A potential multi-state priority area with Oregon Department of Forestry also could include private and public forestlands in the Columbia River Gorge area. Specifically, the

Wind River (Wind-White Salmon WRIA) and Hood River drainages on the eastern end of the Gorge, and the private forestlands east of the cities of Portland, Oregon and Vancouver, Washington (Salmon-Washougal WRIA) on the western end of the Gorge are prospective areas of shared priority.

The Columbia River as a whole is a massive watershed that has earned tremendous conservation focus, especially its federally-listed salmon runs. The Columbia River Gorge is a nationally recognized Scenic Area and was so designated in 1986 due to concerns over expanding urban growth. The National Scenic Area Act designated for special protection 292,500 acres on both sides of the Columbia, from the outskirts of the cities of Portland and Vancouver in the west to the semi-arid regions of Wasco and Klickitat counties in the east. The lands within the Scenic Area are split equally among public and private ownership. The Columbia River Gorge Commission has the responsibility to set policy for protecting the non-federal lands in the Gorge. They would be a key partner, along with the U.S. Forest Service, sovereign tribal governments, and local government in developing and coordinating a multi-state priority forest management project through State & Private Forestry. The Commission develops and adopts land use and resource protection policy through the Columbia River Gorge Scenic Area Management Plan.

The combination of the characteristics of its terrain and weather patterns, have given the Gorge a long history of wind-driven wildfires. The second-largest wildfire in the history of Washington State occurred in what is now the Yacolt Burn State Forest, northeast of Vancouver. Community Wildfire Protection Plans are in place for the Washington side of the Gorge, but few wildfire hazard reduction actions have been funded by State & Private Forestry.

STATEWIDE & CATEGORICALLY PRIORITIZED ACTIONS

Categorical prioritization applies to core program functions at a statewide level that are not directed to a specific geographic area (Table S1) in the same advanced-planning context that is applicable to project funds to be allocated among core and integrated landscapes. The following section describes the categories of core program functions that service essential strategic priorities of these programs.

State & Volunteer Fire Assistance

This category of State & Private Forestry funds is used to support the infrastructure and personnel necessary for timely, professional and coordinated wildland fire suppression actions throughout Washington State. The DNR fire protection and prevention program is funded with a combination of two primary state sources: 44 percent of the funding is allocated to the department by the state of Washington from the general fund; another

44 percent is derived from the Forest Fire Protection Assessment (FFPA) which is an annual fee paid by land owners of private and state forest land. The State Fire Assistance grant funds provided by the U.S. Forest Service, State & Private Forestry accounts for 12 percent of the funding the department utilizes to prepare for, respond to and prevent wildland fires across the state-protected lands. It also helps fund the cooperative partnerships with local, state and federal agencies. In addition, the funding supports statewide fire prevention planning and fuel management by assisting partners in developing Community Wildfire Protection Plans, promoting Firewise communities, and implementing priority action items identified through this planning.

Categories of actions under State Fire Assistance and Volunteer Fire Assistance will continue to include developing and maintaining jurisdictional agreements, providing equipment, training and qualifications maintenance, responding to wildland fire incidents, dispatching resources, and interagency partnerships on coordination and suppression assets. Volunteer Fire Assistance funds are made available via a grant request for proposals, for which all Fire Protection Districts in the state are eligible.

Current Leading Roles: These categories of actions, funded in part by State & Private Forestry, play a leading role to address the following opportunities identified in the Assessment:

- Improve fire prevention and suppression. *Co-leads:* DNR Fire Protection & Prevention, Fire Protection Districts, Federal Agencies.
- Protect, assist and educate populations in the wildland-urban interface. *Co-leads:* DNR Fire Protection & Prevention, Conservation Districts, Fire Protection Districts, Local Government.
- Reduce fuel loads in Eastern Washington forests. *Co-leads:* DNR Fire Protection & Prevention, Conservation Districts, Land Owners & Managers.

National core performance measures (see ISSUES, OPPORTUNITIES, OBJECTIVES & PERFORMANCE MEASURES section) applicable to addressing these opportunities include: 2.2.1., 2.1.2, 2.1.3., 3.3.1., 3.4.2., 3.4.3., 3.6.1., and 3.6.2.

Jurisdictional Agreements

DNR uses State & Private Forestry funding to help coordinate among federal, state and local jurisdictions to define wildland fire suppression responsibilities so that when an incident occurs, emergency response is executed quickly and efficiently through clearly defined command structures. DNR develops and maintains formal agreements with fire protection districts and municipal fire departments to assure that these responsibilities are clear to all agencies of jurisdiction. These are reciprocal agreements that allow for general availability of local agency resources on incidents for which DNR is the responsible agency, and assistance from DNR to local agencies on incidents for which they have jurisdiction. DNR and federal agencies collaborate with local jurisdictions

develop local operating plans created under the Pacific Northwest Coordinating Group (PNWCG) Master Cooperative Fire Protection Plan.

Equipment, Training & Qualifications

State & Private Forestry funds are used to assist DNR in acquiring and maintaining fire suppression vehicles and equipment. This includes 110 staffed Type 5 and Type 6 fire engines, 6 staffed FEPP Type 2 helicopters and associated support vehicles, 4 mobile kitchens, a mobile shower unit, hundreds of handheld and portable radios and other communication equipment, and other large incident support equipment. DNR also provides and maintains 20 remote automated weather stations used by the department and the interagency fire community. DNR assists local fire districts providing fire response to private, state, or federal ownerships in acquiring personal protective equipment, general fire equipment, and federal excess fire engines and tenders.

DNR participates in Sub-Geographic Area Training Groups, offering training and educational opportunities open to all federal and state wildfire agencies as well as local fire districts and municipal departments. DNR provides instructor cadre and course coordination on interagency wildland fire training offered to federal and state wildfire agencies as well as local fire districts and municipal departments. DNR issues training “red cards” for 1,500 department personnel as well as 9,500 fire service personnel who meet PMS 310-1 requirements for specific Incident Command System (ICS) positions, maintaining the associated training and experience records in the Incident Qualifications System (IQS). DNR also participates on and supports Sub-geographic IQS Qualification Review Boards with local fire service and Federal partners.

Incident Response & Business Functions

Washington Interagency Incident Management Teams (WIIMTs) are essential for the effective response to complex wildland fires. There are five of these Type 2 teams in Washington. DNR provides WIIMT team members proportional to expected team use, and ongoing training for five WIIMTs including hosting an annual team review and workshop. DNR also participates on the Geographic Board that oversees the five Type 2 Washington Interagency Incident Management Teams. In addition, the PNWCG Operations Working Team provides oversight and guidance to the two national Type 1 Incident Management Teams based in the Pacific Northwest.

State & Private Forestry funds assist DNR in making local agency resources available to respond to federal incidents by assuming responsibility for resource ordering, dispatch and payment reimbursement administration for:

- Washington fire service resources dispatched to federal incidents;
- Washington fire service resources on WIIMTs dispatched to federal incidents including out of state wildfire assignments.

Interagency Dispatch

State & Private Forestry funds assist DNR's coordinated operations with the National Interagency Dispatch System. Participation includes Interagency Coordination Centers throughout the state providing initial attack response and dispatching other agency resources to off-unit wildfire assignments:

- Wenatchee (CWICC) with the U.S. Forest Service;
- Colville (NEWICC) with the U.S. Forest Service and Bureau of Land Management;
- Sedro Woolley with the U.S. Forest Service;
- Enumclaw with the U.S. Forest Service;
- Forks for the Bureau of Indian Affairs and the U.S. Forest Service; and
- La Grande, OR (BMICC) with the U.S. Forest Service and Oregon Department of Forestry.

Interagency Partnerships & Suppression Assets

The Pacific Northwest Wildfire Coordinating Group (PNWCG) was established to provide a coordinated interagency approach to wildfire management in Washington and Oregon. PNWCG members include DNR, Washington Association of Fire Chiefs, Oregon Department of Forestry, Oregon Fire Chiefs Association, the U.S. Forest Service, Bureau of Land Management, Bureau of Indian Affairs, National Park Service and U.S. Fish and Wildlife Service. Using State & Private Forestry funds, DNR participates in the PNWCG steering committee, its associated working teams (8), and advisory councils (3).

With the support of State & Private Forestry funding, DNR maintains firefighting resources that are available to Federal, State and local fire districts under cooperative agreement. This includes over 800 permanent employees and 375 seasonal employees with one or more ICS position qualification, two agency Type 2 20-person hand crews, 34 inmate 10-person hand crews and kitchen crews, and three helitack firefighter crews of either three or four people. This is in addition to the assets listed under the Equipment section of this strategy.

DNR maintains an extensive inventory of fire supplies and equipment in its cache system. Total value of the inventory is \$2.6 million, with \$1.25 million or 48 percent stored at the Tumwater cache; the balance of the inventory is in the Region caches. This cache system supports initial and extended attack operations primarily from the Region cache's and responds from the Tumwater cache to support large incidents managed by a Type 2 Incident Management Team.

Finally, DNR contracts for an interagency Type 1 Air Attack Platform in cooperation with the Colville National Forest and for a Single Engine Air Tanker in cooperation with the Bureau of Indian Affairs. Both aircraft are operationally located at Deer Park, Washington, near Spokane.

Fire Prevention

DNR provides coordination and technical assistance to counties and communities developing Community Wildlife Protection Plans (CWPP) to prepare for and mitigate the impacts of wildfire threat in the wildland-urban interface. Plans identify and prioritize hazardous fuels treatments, address wildfire response, infrastructure needs, community preparedness, fire training, fire prevention, and other hazard mitigation. DNR also provides training and technical assistance to communities through the Firewise Program established under the National Wildfire Coordination Group in recognition of the need for communities in the wildland-urban interface to plan for and mitigate wildfire threat. Currently there are 47 completed CWPPs and 62 Firewise Communities statewide. CWPP coverage is nearly complete for the most at-risk areas of Eastern Washington, with only Douglas County's plan remaining in the development stage. Firewise, while useful for Eastern Washington communities, has also proven to be among the most effective strategic resources to deploy in Western Washington areas that have a pattern of wind-driven fire.

Fuel Reduction Treatments

DNR's assists landowners, local coordinating groups and communities planning and implementing fuel management projects. This includes providing technical assistance, conducting assessments of fire hazards and fuel management needs, and administering fuel reduction contracts. Most of these actions are focused in core and integrated landscapes as outlined earlier in this strategy. The type of work conducted under categorized priorities is essential to informing where landscape-based work is most needed, such as the development of Community Wildfire Protection Plans.

Cooperative Forest Health

This category of State & Private Forestry funds supports statewide and on-call functions to monitor, identify and assist landowners of all types with native, established, and invasive non-native forest insects, diseases and pathogens. The four principal strategic actions supported at the statewide level are:

- Trained personnel and resources to conduct the statewide annual aerial survey of insect and disease damage;
- Statewide entomology and pathology expertise on insect and disease prevention, identification and management control recommendations;
- Invasive species detection, monitoring and response; and
- Western Washington assistance with threats to forest productivity such as from root or foliar diseases.

These actions contribute to the strategy's previously identified leading- and supporting-role opportunities and performance measures (see CORE LANDSCAPES). Specifically, these categories fulfill the essential function of tracking trends in forest health conditions

on all forestland ownership types in the state. This work, in turn, helps guide landowner and agency program responses where they are most needed.

Urban & Community Forestry

This category of State & Private Forestry funds is used fulfill the core function of assisting communities with urban forest management program development (Table S1).

Current Leading Roles: The following opportunities were developed to address threats identified in the Assessment and the State & Private Forestry Urban and Community Forestry Program currently serves a leading role:

- **Conserve, restore and expand the urban tree canopy.** *Co-lead:* Community Urban Forestry Programs, Puget Sound Partnership, Washington Wildlife & Recreation Program.
- **Assist communities with developing and implementing urban forest conservation programs.** *Co-lead:* Community Urban Forestry Programs.
- **Maintain and improve air quality and energy conservation.** *Co-lead:* Community Urban Forestry Programs.
- **Improve public awareness of the benefits of urban forests.** *Co-lead:* Community Urban Forestry Programs.
- **Reconnect urban people, especially youth, with the forested and outdoors environments.** *Co-lead:* Environmental Education Programs & Curricula, DNR Recreation & Camps Programs.

Current Supporting Roles: The following opportunities were developed to address threats in the Assessment, and the State & Private Forestry Urban and Community Forestry Program currently serves a supporting role (Additional current supporting and lead roles defined in Appendix C):

- Maintain and restore connectivity of environmental services between the developed and forested upland environments.
- Identify and protect or restore critical landscape linkages for species movement.
- Early detection and eradication of invasive non-native species.
- Restore and maintain forest and tree productivity and carbon sequestration value for climate change mitigation.
- Protect, assist and educate populations in the wildland-urban interface.

Program actions to respond to these opportunities address the following national performance measures (see ISSUES, OPPORTUNITIES, OBJECTIVES & PERFORMANCE MEASURES section): 2.2.1., 3.1.1., 3.2.1., 3.2.2., 3.3.2., 3.4.2., 3.4.3., 3.5.1., 3.5.2., 3.6.1., 3.6.2., and 3.7.2.

Program actions are categorized among five major strategic goals: providing leadership, promoting education and outreach, financial and technical assistance, building program capacity, and planting trees (DNR 2009).

Four major strategic actions are accomplished with State & Private Forestry funding in the service of these goals:

- On-call technical assistance to communities with program development actions, such as tree inventories, ordinance development and long-term planning;
- Sub-grants to communities for executing program development;
- Sub-grants to communities for education and outreach; and
- Sub-grants to communities for implementation actions, such as tree planting and invasive non-native species control.

Sub-grants to communities, as appropriated program funding levels dictate, are evaluated on the basis of scoring criteria. Municipal and local governments and non-governmental organizations are eligible to apply for an award limit of \$10,000 per grant, except that communities of 50,000 or more residents may apply for up to \$30,000. Basic criteria include project readiness, timeliness, appropriate costing, cost-sharing and alignment with program goals.

Eligible program development actions will include:

- Urban forestry ordinance development or revisions;
- Urban forestry board or commission development and training;
- Urban forest resource or tree canopy assessments, tree inventories, and mapping;
- Efforts toward attaining Tree City, U.S.A. status;
- Urban forest management plan development.

Eligible education and outreach actions will include:

- Urban forestry education curriculum and materials development;
- Urban forestry reference library establishment or enhancement;
- Research projects that include adequate results communication and outreach;
- Public events, volunteerism, communications materials development, signage, and other outreach products.

Forest Stewardship

There is a need for continued statewide implementation actions under the Forest Stewardship Program in order to be able to review and approve forest stewardship plans. In addition to targeted work in core Forest Stewardship landscapes identified by this strategy, plans are generated from the actions of DNR programs, other State & Private Forestry programs, and the education and outreach with small forestland owners

by Washington State University Extension and individual Conservation Districts. Specific review and approval expertise, such as wildlife biology, has been centralized to achieve statewide coverage as a cost savings and efficiency measure. Program expenditures to achieve these objectives will respond to national performance measures 1.2.1., 3.1.1., 3.5.1., 3.6.1., and 3.6.2. (see ISSUES, OPPORTUNITIES, OBJECTIVES & PERFORMANCE MEASURES section).

The Statewide Assessment identifies an opportunity to “Maintain stocks of genetically appropriate tree species,” which is linked to working forestlands, forest health, wildfire, and biodiversity issues and related opportunities (Appendix C). The threats of severe disturbances and climate change make this an especially important function, now and in the future. A small amount of Forest Stewardship Program funding will continue to be allocated to the DNR tree genetics program, network of seed orchards, and Webster Forest Nursery, which in turn makes seed stock and seedlings available to private forest landowners. DNR’s Webster Tree Nursery makes between 3 million and 5 million seedlings available annually for purchase by small private land owners to help them meet the replanting requirements of the State Forest Practices Act. State & Private Forestry funding makes an essential supporting contribution to this objective, especially in enabling appropriate tree species composition reestablishment following forest treatments or disturbances. Significant tree species range shifts are also projected to occur as a result of climate change, and these changes are likely to outpace trees’ ability to regenerate naturally. An essential climate mitigation and adaptation strategy can be anticipated to include the facilitated dispersal of genetically adapted trees so that forest cover is maintained. Program expenditure to achieve these objectives respond to national performance measures 2.1.1., 2.2.1., 3.4.3., 3.7.1., and 3.7.2.

UNMET OPPORTUNITIES & NON-LEAD RESPONSIBILITIES

The Statewide Assessment identified 35 specific opportunities in response to the issues and threats to forest management and conservation in Washington State. Of these, State & Private Forestry Programs are serving a lead or co-lead role in 16 opportunities. Without infinite resources it is impossible for State & Private Forestry programs to have a leading role in all, or even most, of the opportunities. However, several broad conclusions may be drawn from comparing the division of roles — described in the preceding sections of this Strategy and in Appendix C — with the magnitude of the issues, threats and opportunities identified in the Assessment. Below are the opportunities identified in the Assessment for which State & Private Forestry is not currently serving a leading role:

- Assist forest landowners with meeting environmental protection requirements;
- Compensate forest landowners for ecosystem services;
- Maintain and develop forest markets and infrastructure;
- Maintain a dependable and non-declining flow of timber from unreserved timberlands;
- Restore and rebuild timber-dependent rural economies;
- Restore and maintain forest productivity and carbon sequestration value for climate change mitigation;
- Assist forest ecosystems with adapting to a changed climate;
- Identify and protect priority species and ecosystems;
- Identify and protect and/or restore critical landscape linkages for species movement;
- Conserve Westside legacy features;
- Use prescribed fire to restore and maintain fire-resistant stand conditions and fire-dependent species;
- Maintain stocks of genetically appropriate tree species;
- Maintain and restore connectivity of environmental services between the developed and forested upland environments;
- Conserve riparian forest vegetation and reestablish appropriate species composition;
- Conserve forested wetlands;
- Reduce negative effects of forest roads on the hydrology of watersheds.
- Enhance coordination among forest landowners and managers toward integrated watershed restoration outcomes;
- Remove barriers to fish passage and increase aquatic habitat availability.

In many cases, State & Private Forestry appropriately serves a significant, but supporting role in these opportunities. Other state and federal programs, private actions or

initiatives are currently — and can be anticipated to continue — serving a lead role. But several opportunities stand out in which the State & Private Forestry supporting role seems inordinately small compared to the importance of the opportunity, especially where opportunities are in close alignment with national Themes and Objectives. Broad leveraging values are apparent with the investments that other state, federal, tribal and private entities are making in these same opportunities.

With the exception of the Forest Legacy Program, State & Private Forestry is contributing little to upland forest management and conservation issues of significance in western Washington. For example, shared opportunities among biodiversity, water quality, and working forestlands like riparian conservation and forest roads are without any consistent, material tie to State & Private Forestry assistance. One important working forestlands and water quality protection opportunity — to “Enhance coordination among forest landowners & managers toward integrated watershed restoration outcomes” — has no current State & Private Forestry role at all. The DNR Forest Practices Program and Small Forest Landowner Office, their tribal, state and private partners, and landowners and managers currently, and are likely always, to serve the leading roles on these opportunities. A long-term goal of this strategy is for State & Private Forestry to make contributions that are commensurate with the national interests being served.

State & Private Forestry program investments in Eastern Washington are not making consistent contributions to maintaining and developing forest markets and infrastructure. Biodiversity objectives may be secondarily achieved through State & Private Forestry investments establish forest conditions that are more resilient to wildfires, insects and diseases. However, these projects generally employ a limited range of forest management tools and prescriptions. Broader accomplishments toward shared biodiversity, wildfire hazard reduction and forest health restoration opportunities are consequently not as common as is desired. Use of prescribed fire use is infrequent. Projects focus on costly non-commercial activities and prescriptions. Biomass utilization from forest material generated as a byproduct of treatments is rare. State & Private Forestry currently has no leading role in these opportunities, yet the footprint of Eastern Washington management actions is significant. A long-term goal of this strategy is to improve the use of State & Private Forestry funds in such a way that accelerates accomplishments and serves multiple objectives.

The following subsections offer some of these unmet opportunities in greater specificity. Other opportunities, such as forest markets, infrastructure and biomass, are addressed in the performance improvement goals outlined later in this strategy. The remaining opportunities, which will require policy or statutory changes, or both, are also discussed later in this strategy.

Watershed Restoration & Salmon Recovery

A more specific unmet opportunity is the disparity of restoration contributions to Pacific salmon, an icon of the Northwest and the subject of massive private and public recovery efforts. State & Private Forestry is making supporting investments in this opportunity (among others) through Forest Legacy Program acquisitions that prevent forestland conversion. Since 1993, the program has invested nearly \$25 million in conservation acquisitions permanently protecting 32,000 acres as forestland. Many of these projects have been oriented, in part, toward the service of watershed protection objectives. Otherwise, including riparian forest and fish considerations in the guidance for Forest Stewardship Plan development comprises the rather minimal remaining extent of State & Private Forestry program's contributing work.

Ensuring that basic actions are taken by forest landowners to support salmon recovery is primarily the responsibility of DNR Forest Practices and related state programs. However, if State & Private Forestry is to have a meaningful role in watershed protection under an "all-lands" concept — an articulated goal of Secretary of Agriculture, Tom Vilsack (2008) — contributing more to Pacific salmon recovery and related watershed actions will be essential.

Other state and federal program investments appropriately dwarf State & Private Forestry program actions related to forests' role in salmon recovery and watershed health. Figure S10, for example, displays the 614 projects completed or initiated by the Puget Sound Partnership (PSP) to improve habitat connectivity and achieve other specific Puget Sound Action Agenda items since 2008. These total over \$460 million in state and federal funds (PSP 2010).

Pacific Coastal Salmon Recovery Funding program (PACSRF), created by Congress in 2000. According to National Marine Fisheries Service's 2009 program review, total PACSRF funding to Washington State and state tribes was \$232 million for the period 2000 to 2008, for an annual average of almost \$26 million per year. This funding is primarily for specific recovery projects.

Since its initial funding in 2008, the U.S. Forest Service Legacy Roads and Trails program has received \$180 million in annual appropriations and investments under the American Recovery and Reinvestment Act of 2009. This has enabled the restoration of 63 miles of fish habitat and preventive actions against the delivery of sediment from nearly 1,000 miles of forest roads. The DNR Family Forest Fish Passage Program has, since 2003, opened 441 miles of stream habitat previously inaccessible to fish through state funding in excess of \$17 million.

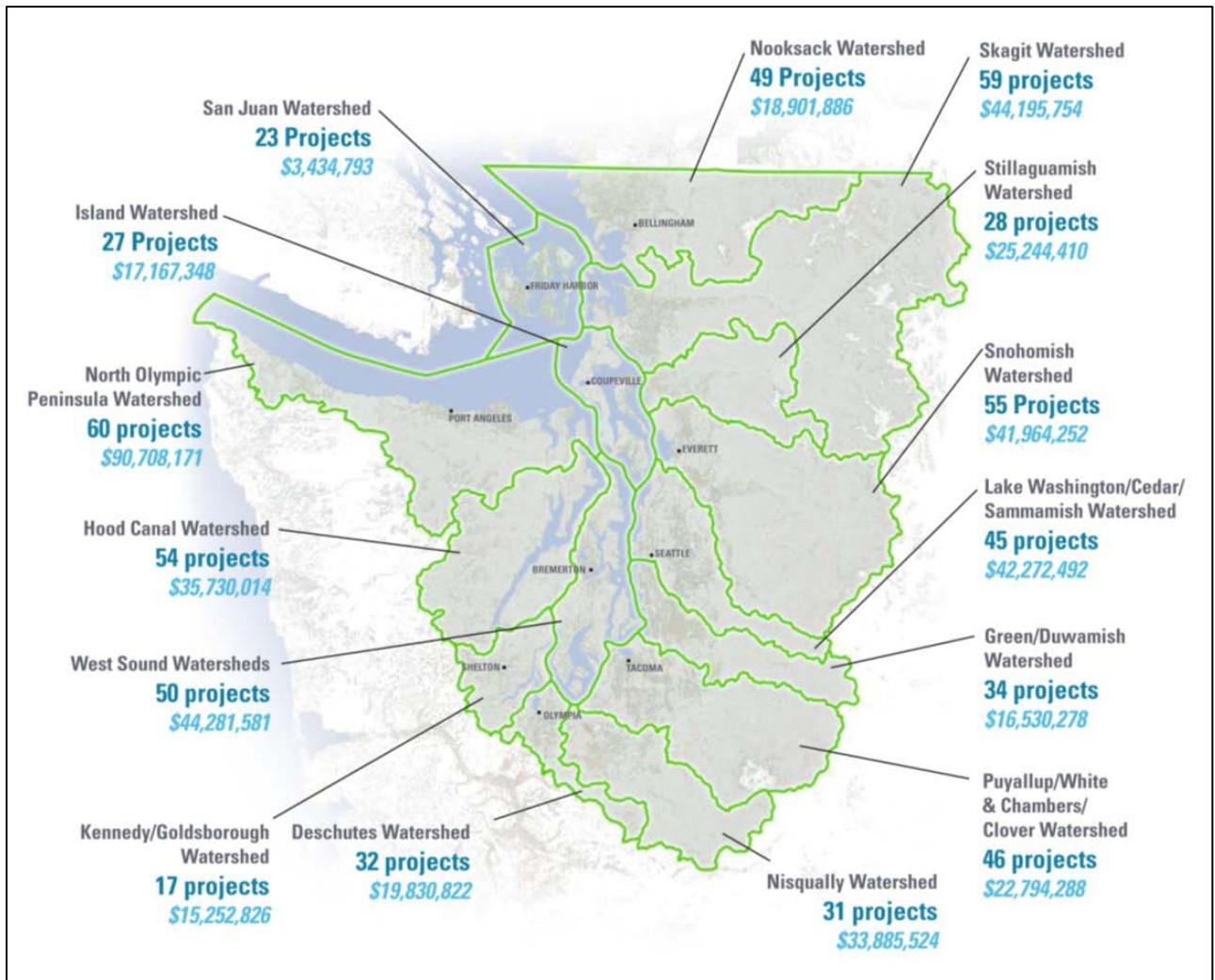


Figure S10. Puget Sound Partnership recovery projects implemented or initiated since 2008

One of the most needed, straightforward, measurable, and readily prioritized forestland watershed restoration and salmon recovery actions is repairing barriers to fish passage at forest road stream crossings. In watersheds with depressed or declining salmonid populations, especially important opportunities are ensuring access to upstream spawning habitat and enabling smolt to successfully traverse downstream once they have matured. There is an overwhelming need to accelerate these projects in Washington State. Based on data from the Washington State Department of Fish and Wildlife (WDFW), over 7,800 confirmed fish passage barriers have been inventoried in that are proximate to forestland. The total number of barriers, once inventories are completed and combined, is likely to be much higher. In the core landscapes for Forest Stewardship designated by this strategy alone, there are over 2,100 inventoried barriers.

State & Private Forestry contributions to these projects should focus on small forestland owners, who have a more difficult time absorbing the expense of fish passage projects. WDFW, the Governor's Recreation and Conservation Office, and DNR maintain an MOU

on implementing fish passage restoration projects under the Family Forest Fish Passage Program that ensures the worst fish barriers will be the first repaired. This means a preexisting state program, accountability structure and prioritization methods are in place to serve as a conduit for State & Private Forestry contributions to basic watershed restoration projects for fish passage. DNR and its partners are pursuing multiple actions to accelerate these actions for small forestland owners, and State & Private Forestry could help serve this broad state objective.

Climate Change

Mitigating and adapting to anticipated climate change impacts on the forests of Washington State is the subject of considerable scientific and management emphasis. The sheer scope of the scientific questions, possible future scenarios, layers of ecosystem responses and management implications makes any kind of cohesion among these efforts difficult to attain. Every major governmental entity and land management agency in the nation is in the process of developing a climate strategy, and every major scientific organization is regularly producing new climate impacts research. Two basic climate change opportunities were identified in the Statewide Assessment and are applicable to all six issues that the Assessment evaluated:

- Restore and maintain forest productivity and carbon sequestration value for climate change mitigation; and
- Assist forest ecosystems with adapting to a changed climate.

State & Private Forestry programs currently fulfill a supporting role in both opportunities, but this is primarily by virtue of ancillary benefits to climate mitigation and adaptation from ongoing practices rather than by deliberate intent. For example, conserving the urban tree canopy is a longstanding objective of the Urban and Community Forestry program that also has climate mitigation and adaptation benefits. It is probably infeasible for State & Private Forestry to serve a leading role simply based on the opportunities' huge scope. However, if for no other reason than maintaining and improving the efficacy of current actions, there is a need to build climate change considerations into all project design elements. Fuels reduction prescriptions may need to be modified in order to continue attaining desired wildfire behavior modification objectives; forest health prescriptions may need to recommend different tree spacing or species selection; Forest Legacy acquisitions may need to consider the anticipated changes in forest cover over time to determine whether a parcel will continue to be forested; watershed restoration actions will need to consider changes in the periodicity and intensity of runoff, and so on.

One critical data gap identified in the Assessment is the lack of a broad-scale analysis that can identify the most vulnerable areas to climate change impacts. The scale of current research varies widely, and much has focused on specific changes to ecosystem interactions such as those among forest insects and their host trees or wildlife species

and their habitats. The best available surrogate for broad-scale forest vulnerability was projections of change in basic vegetation cover types.

The lack of broad-scale vulnerability analyses is not without cause. Different land management and conservation entities have correspondingly different objectives, and scientists' work simply reflects the needs and demands of their clientele. However, beyond the "trees" of specific climate impact concerns lies a "forest" of potentially shared objectives and strategies that is at risk of being overlooked. An effective way to explore this potential may be to convene major land management entities and evaluate opportunities within a specific watershed or landscape. This approach would break an almost infinitely complex set of impacts and objectives into more manageable components. The U.S. Fish and Wildlife Service has begun forming Landscape Conservation Cooperatives as part of its climate strategy based on a similar conceptual underpinning. Many other federal and state agencies are receptive to or are already implementing similar efforts. One example of major U.S. Forest Service work on climate change adaptation is the National Forests chapter of the Synthesis Analysis Project completed by the U.S. Climate Change Sciences Program in 2008. Subsequent region-specific strategies have been developed based on this and other information.

A long-term goal of this strategy is for State & Private Forestry program actions to contribute toward collaborative landscape-scale climate strategy development efforts in Washington State. This will also include participation and alignment with ongoing state climate strategies, such as the DNR climate adaptation strategy called-for in the agency-wide Strategic Plan (DNR 2010) and the Washington State integrated climate change response strategy initiated by recent state legislation.

PROGRAM RESOURCES

Guidance for Statewide Forest Resource Strategies requires a description of the resources needed by the State Forester in order to address strategic components (U.S. Forest Service 2008). This section provides a quantitative gauge of baseline program viability-level resources, current program funding levels, and the potential for meeting additional strategic priorities with increased resources. Figure S11 shows the current funding levels for State & Private Forestry programs to Washington State, averaged from Fiscal Years 2006 to 2009. Most one-time funds, such as supplemental congressional appropriations and American Recovery and Reinvestment Act projects, have been removed from the averages to reflect more normalized program levels. For each program, the current funding levels are qualified below with a discussion of observed program funding trends.

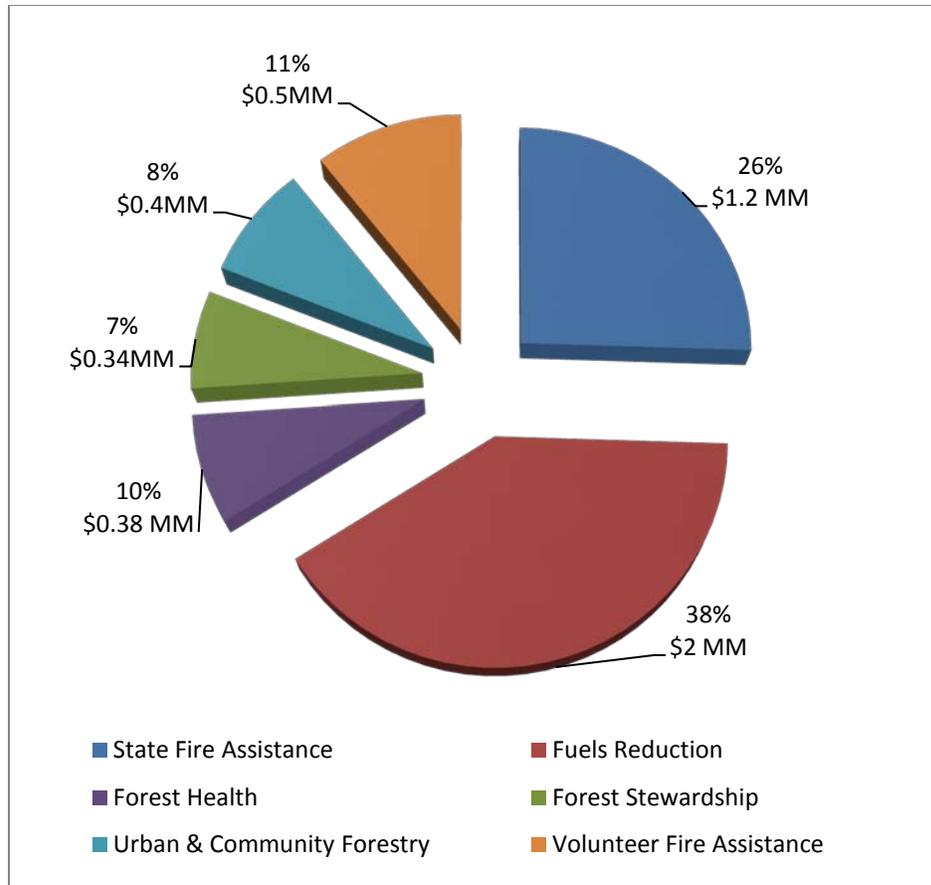


Figure S11. Average annual State & Private Forestry program allotments to Washington State, Fiscal Years 2006-2009

State & Volunteer Fire Assistance

The current State and Volunteer Fire Assistance programs' respective funding levels of approximately \$1.2 million and \$500 thousand annually are sufficient to meet baseline viability requirements. The trend in recent years' allocations has been steady, but the Fiscal Year 2011 President's Budget requests a 23 percent reduction in State Fire Assistance funded through combined State & Private Forestry and National Fire Plan accounts.

Federal funding comprises 12 percent of Washington State expenditures on wildland fire preparedness and suppression. Reductions from current levels would significantly diminish federal, state and local coordination and resource sharing. In turn, this would result in lost efficiencies, likely increasing overall fire suppression costs for all jurisdictions as well as risking additional human safety, property and forest resource damage. Local fire districts play an increasingly critical role in the coordinated emergency response system in Washington State. State & Private Forestry funding is important to assuring their continued ability to meet these demands. DNR performs a crucial role as a

bridge between the federal wildland fire system and local fire districts. Communities would be less prepared, and at the same time, more wildfires would be likely to escape containment goals due to lack of timely mobilization, clear communication, and advanced planning.

The wildland fire environment continues to become more and more complex as forest fuel and climatic conditions change, human interactions in the wildland fire environment increase, national firefighting policy evolves, and demands upon the emergency response community grow. While the current program level is viable, there is an increasing need in several programmatic areas where additional federal funds could provide significant improvements at the state and local level. These include:

- Increased training and technology transfer;
- Increased access to equipment for the fire districts;
- Increased access to technology; and
- Increased access to decision support models, techniques and expertise.

For example, the U.S. Forest Service Pacific Northwest Region has begun holding complex fire simulation exercises with state and local jurisdictions in eastern Washington. These employ real-life wildfire incident scenarios where multiple jurisdictions must work together on severe fires that threaten human safety. Initial simulation exercises have proven to be an invaluable learning and performance improvement tool. Expanding the use of this tool and its technological support components would greatly enhance program performance.

Based on these opportunities and the need for program growth that accommodates increasing wildland fire complexity, an additional annual program allocation of \$500 thousand (total \$1.7 million) in State Fire Assistance and \$500 thousand in Volunteer Fire Assistance (total \$1 million) would attain the next increment of meaningfully enhanced accomplishments.

Wildfire Fuels Reduction

Fuels reduction funding is a subset of several ongoing and competitive program funding sources and not a State & Private Forestry program unto itself per se. These sources have been aggregated for the purposes of this strategy. The current average annual fuels reduction funding level of \$2 million is sufficient to meet baseline viability requirements. The trend in recent years' allocation has been declining, although significant one-time funding has allowed the rate of implementation for Community Wildfire Protection Plan treatments to increase.

Even so, there are 341,452 forested acres of CWPP-identified priority treatments on non-federal forestland in Washington (Appendix A; Table 7). To-date, State & Private Forestry-funded fuels projects have treated 16,970 acres, or roughly five percent. Because early fuels reduction treatments predated CWPP development, not all of the

accomplished acreage is within CWPP priority areas (five percent is an over-estimate). Areas may have been excluded from CWPP identification because they had already been treated. Even assuming that all the accomplished treatments were within CWPP priority areas, which means 324,482 priority acres remain — at present program funding levels, and depending on treatment cost assumptions and cost-share rates, it would take well over 100 years to fully implement CWPP treatments using State & Private Forestry funding alone. Most wildfire hazard conditions that were remedied with these treatments could have long grown back to their former state by the time any maintenance activities on previously treated acres could be initiated.

Based on the rate at which needs outpace current resources, doubling the average annual program allocation to a \$4 million level would achieve the next meaningful increment in meeting the identified opportunities. The trajectory of fuel reduction accomplishments can be expected to increase as forest biomass industry infrastructure grows, provided that existing traditional infrastructure does not suffer significant additional losses. Increased material utilization will reduce per-acre treatment costs and effectively stretch limited funding further.

Forest Health

The current annual average Forest Health program funding level of \$380 thousand is sufficient to meet baseline viability requirements. These include the annual aerial survey of insect and disease damage, field surveys and monitoring of native and non-native invasive insects and diseases, basic entomology and pathology expertise for technical assistance, and a modest amount of treatment. A forest health project in northeast Washington was recently funded under the Recovery Act, and the program has secured additional funds through competitive grant opportunities in recent years. However, the overall trend in average annual allocation is declining as Western Bark Beetle Mitigation funds diminish or are reallocated to other Regions. The FY11 President's Budget would reduce combined Cooperative Forest Health funding among State & Private Forestry and National Fire Plan line items by 12 percent.

Should it continue, the downward trend bodes ill for the health of Washington's forests. The National Insect and Disease Risk Map projects elevated mortality levels will occur on 33 percent of the forestland in eastern Washington within the next 15 years (Appendix A; Table 5), which seems likely to be a substantial underestimation when compounded by projected climate change impacts. While much of northeast Washington's lodgepole pine has escaped the stand-replacing mortality levels that have been experienced only miles north in British Columbia, large areas are reaching a stage of heightened susceptibility at the same time. Recent years insect and disease damage and wildfire trends also bear witness to worsening, compounding interactions between these two elements of forest disturbance regimes that have vastly departed from historical norms.

The DNR Forest Health Program is arguably the most advanced and best equipped for effective action compared with any other western state. There is a strong statutory

underpinning for responses to forest health emergencies and for taking systematic preventive measures. An “all-lands” approach has already been adopted by DNR, its constituents and partners, and endorsed by the State Legislature. State investment in the program are equal to that of State & Private Forestry’s, even after severe Washington State General Fund budget reductions were enacted for the current fiscal biennium. In the previous state fiscal biennium, state investment was more than twice as great.

As is the case with fuels reduction, the need for additional action vastly outpaces current resources. Implementation of the Recovery Act project will test several new methods of fine-scale risk evaluation and targeted landowner response with the aim of further increasing program efficacy. Using these improvements, a potential increased State & Private Forestry funding level that would realize the next increment of accomplishment toward identified opportunities is \$1 million annually. Principally this would be used to implement additional forest health restoration treatments. A current lack of capacity to deliver targeted outreach that will elicit timely landowner action would also be remedied, extending the efficacy of treatment efforts.

Forest Stewardship

The current average Forest Stewardship program funding level of approximately \$342 thousand annually is not sufficient to meet baseline viability requirements. The Fiscal Year 2009 State & Private Forestry allocation to Forest Stewardship in Washington State was the lowest in 20 years, and the FY10 estimated level is the second-lowest. As a result, Forest Stewardship does not serve a leading role in any of the Assessment-identified opportunities. Other state-funded and State & Private Forestry-funded program resources are currently required to meet the basic demand for forest stewardship planning. There is also a complete lack of Stewardship funds for project implementation. The national trend for congressionally appropriated funds has stabilized after a number of years in decline, but remains at low levels.

A minimum program viability level is estimated to be \$550 thousand annually. This funding level would sustain the following assets:

- Three Western Washington field foresters to assist landowners with projects to address “all-lands” priority landscapes for Water Quality, Quantity and Puget Sound Restoration, Working Forestlands and Conversion, and Biodiversity and Habitat Conservation issues and their opportunities identified in the Assessment;
- A forest roads engineering specialist to assist with projects to reduce watershed impacts and attain “all-lands” watershed restoration objectives; and
- One outreach specialist who would:
 - Contribute to current broad-reach education strategies, like field days and coached planning courses currently led by Washington State University Extension;
 - Organize and leverage Forest Stewardship actions with the lead-role entities and project funding sources for identified opportunities.

An enhanced program level that would achieve the next meaningful increment toward realizing identified opportunities would require \$1 million annually. Personnel expenditures would remain the same as minimum viability levels, but \$150 thousand annually would be sub-granted for project implementation within each of the three NRCS Local Working Groups in Western Washington (\$450 thousand in total). These project funds could then be leveraged against investments by the NRCS Environmental Quality Incentives Program and other NRCS conservation programs, along with Puget Sound Partnership, Salmon Recovery Funding Board, Washington Wildlife and Recreation Program, and DNR Small Forest Landowner Office projects. A relatively small State & Private Forestry investment in Forest Stewardship project implementation funding would tremendously increase working forest, watershed restoration and biodiversity outcomes by bringing some resources to coordination efforts among ongoing investments. Although a truly collaborative spirit prevails among the entities central to forestland management and conservation efforts in Washington State, collaboration is difficult to sustain when the partnership is essentially one-way. The enhanced program level would have the added benefit of greatly increasing reportable program contributions toward the applicable national performance measures by virtue of the huge leveraged fund contribution opportunities.

Urban & Community Forestry

The current Urban and Community Forestry program funding level of approximately \$400 thousand annually is above baseline viability requirements. Pursuant to a longstanding MOU among the U.S. Forest Service and State Foresters, \$200 thousand annually is the established baseline viability level. Costs have increased substantially since this agreement was signed, and the actual inflation-adjusted amount for Washington's baseline program should be approximately \$248 thousand. This provides the essential program staff to deploy the program development, education and outreach strategies outlined earlier in this strategy (see STATEWIDE & CATEGORICALLY PRIORITIZED ACTIONS section). Funding that is supplemental to the baseline program amount is sub-granted to communities and applicants for purposes also outlined earlier, which notably lack categories for urban tree planting, re-greening and ecosystem services connectivity projects. After recent unsettled trends, congressionally appropriated program funding has stabilized and a modest seven percent increase is proposed in the President's FY11 Budget.

Based on the Assessment-identified opportunities for connectivity between priorities in the urban and uplands forested environments (Figure S8), an enhanced program level that would begin realizing these opportunities requires an additional \$600 thousand annually (\$1 million total). These investments would be tied to the following specific assessment opportunities and corresponding performance measures (Appendix C):

- Conserve, restore and expand the urban tree canopy;

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- Maintain and restore connectivity of environmental services between the developed and forested upland environments;
 - Identify and protect and/or restore critical landscape linkages for species movement;
 - Reconnect urban people, especially youths, with the forested and outdoors environments;
 - Maintain & improve air quality and energy conservation; and
 - Early detection and eradication of invasive non-native species.

The preceding opportunities have broad benefits and respond to issues beyond the urban forest environment (Appendix C). Expenditures on urban and community forest projects would be leveraged against the considerable conservation actions by other entities, including direct community expenditures, Puget Sound Partnership restoration projects, Washington Wildlife and Recreation Program projects and others. Continuity in ecosystem services is especially important in a watershed restoration context. Water quality exiting the managed upland forest environment can attain the highest possible standards, only to become compromised as it accumulates pollutants traversing the exurban and urban zones. Similarly, upland work to restore watershed function and fish passage is largely wasted if salmonids are unable to successfully migrate past the downstream urban environments. In other words, it is folly to make investments in the upper watershed reaches without also addressing limiting factors in the lower reaches that are heavily influenced by the urban environment.

Forest Legacy

Forest Legacy program projects compete for funding in a national selection process, and therefore “average” levels do not appear in Figure S11. Annual funding requests depend on the ripeness of projects with willing landowners and partners, so year-to-year figures vary widely. Washington State’s program has focused on conservation easement acquisitions as opposed to more expensive fee simple interest transactions (DNR 2004b). This, coupled with excellent leveraged partner resources, has earned the program a leading role in the opportunity to reduce the rate of forestland conversion identified in the Assessment. Significant acreage of permanent working forest conservation has been achieved while minimizing per-acre costs. The recent trend in congressionally appropriated funding for the program is upward after a long flat period, and the FY11 President’s Budget requests a 32 percent increase over FY10 enacted levels. At current funding levels, the program meets baseline viability requirements for Washington State.

One recent study estimates that nearly one million private forestland acres are at risk of conversion in western Washington alone (Bradley et al. 2009). Threats of this magnitude are simply too great for a single program to wholly guard against, making it of the utmost importance to employ leveraged partnerships and close coordination with other conservation investments. Strategic considerations in the Legacy Assessment of Need (DNR 2004b) like focusing on working forestlands that are well outside urban growth

areas and positioning acquisitions adjacent to forestland in a stable ownership status are the most effective means of reducing conversion trends. Effectively this strategy uses conservation investments to establish a buffer between developed and working lands uses before extreme development pressures are brought to bear that would drive property prices too high. The DNR Strategic Plan (2010) contemplates balancing a buffer-based approach with a Community Forest Trust concept for acquisitions that are at more immediate risk. Together, these two strategies could provide a well-rounded approach.

National program rules cap the value of any given Forest Legacy project at \$7 million. No state may submit more than three projects annually, and the combined project values may not exceed \$10 million. By a wide margin, Washington State has the capability and wealth of opportunities to perform \$10 million in Forest Legacy projects annually on a sustained basis. Per-acre costs for the Forest Legacy program's share of completed acquisitions has ranged from around \$300 to over \$2000. Several recent large projects have been in the low end of this range but per-acre costs will always depend on site-specific values and considerations. At an average Legacy share of acquisition costs in the \$500 per acre range, \$10 million annually over the five-year life of this strategy could permanently conserve 100,000 acres and make a significant impact on the predicted conversion rates.

PERFORMANCE IMPROVEMENT GOALS

Regardless of funding levels, a goal of this strategy is to continually improve the performance of State & Private Forestry program delivery and project actions. The first category of improvement includes better informed decision-making with the closure of identified data gaps in the Statewide Assessment. Secondly, important advances in forest biomass utilization are being implemented at DNR's initiative and in partnership with the U.S. Forest Service will potentially improve project efficacy and better realize opportunities. Third, there has long been a need for improved coordination and information sharing among the many entities, programs and existing strategies identified in the Assessment issues. Finally, this strategy is intended to inform, guide and improve funding proposals in future competitive grant applications.

Data Gaps

The Statewide Assessment identified data gaps for each of the six analyzed issues. As these gaps are filled and decision information tools are improved State & Private Forestry program actions can be more effectively deployed. Periodically, programs will review the status of identified data gaps and adjust their decision making according to any new information that may have become available.

The Working Forestlands & Conversion assessment section identified two major data gaps, including better information on the factors that constitute economic viability for

forest landowners and drive their decisions to stay in forest production. This is an essential piece of information because it can further inform conversion rate projections and the location of at-risk areas. Conversion may be inevitable in some cases and conservation focus should be avoided. In other cases, landowner conversion decisions may be imminent but readily influenced, and conservation focus should be intensified. Additional data may also become available that identifies lower-cost alternatives to the current strategies that would more directly and effectively diminish current conversion trends without large funding increases.

The Biodiversity & Habitat Conservation issue analysis identified three data gaps, including the need for better quantitative data on how the distribution of forest structure has changed over time. Also, the Washington Department of Fish and Wildlife will soon complete its Wildlife Action Plan, which supplements and complements the Comprehensive Wildlife Conservation Strategy information used in the Assessment. State & Private Forestry projects that address biodiversity related performance measures will adjust to additional data as they become available over time.

The Upland Water Quality, Quantity and Puget Sound Restoration issue analysis identified seven data gaps. Quantitative data on the average water yield from the forested portion of the state's watersheds is not readily aggregated from available sources. Neither has a comprehensive hydrologic atlas been developed for Washington State so that groundwater and surface water interactions with forest practices can be easily identified. No comprehensive inventory of the roads system on small private forestland exists. The fish passage barrier inventory on forest roads in the state is not complete, but is rapidly improving with the consolidation of several previously segregated data sources. Finally, data from the Salmonid Stock Inventory will continually be updated and better inform areas where focus on depressed stocks may be appropriate.

The Forest Health assessment section enumerated four data gaps. Foremost among these is the lack of consistent, fine-scale resolution forest structure and tree species composition data. Data are abundant to assist with determining landscape-scale conditions, but means to identify geographic areas smaller than 1000-meter pixels for the deployment of outreach and treatment strategies on the ground are lacking. This difficulty is compounded when working across multiple land owners and managers, all of whom have data quality and coverage ranging from relatively complete to almost nothing. Several methods of data collection are being tested with an ongoing Recovery Act forest health project in northeast Washington. Methods for effectively prioritizing landowner risks, followed by targeted outreach to generate interest and action (another identified gap) are also being tested. A goal of this strategy is to apply enhanced risk assessment, prioritization and outreach methods to all future forest health restoration treatment actions.

The Wildfire issue analysis identified five data gaps. Foremost among these is the lack of state-level data on actual and projected growth of the wildland-urban interface. Individual Community Wildfire Protection Plans identified and defined the interface differently. A west-wide wildfire risk assessment project is underway as a collaborative effort among federal and state agency members of the Western Forestry Leadership Coalition. The output data produced will describe wildfire threat, fire effects, wildfire risk and communities' risk ratings. Closing these data gaps will enable additional prioritization to maximize the efficacy of fuels and community protection treatments.

The Urban and Community Forests assessment section identified six data gaps. Assessing condition and trend information was difficult for this issue because one critical data gap is the lack of a statewide urban forest canopy assessment. Individual communities have performed many tree inventories to assess their specific areas. Statewide data to better assess trends and needs is still in development. An objective assessment of urban forest canopy information, and changes over time, will further inform decisions about effective project implementation.

Perhaps no data gap is more significant than the need for unifying climate change mitigation and adaptation strategies (see UNMET OPPORTUNITIES). Climate change is recognized as a threat for every issue analyzed in the Assessment. Program actions will need to continually be evaluated based on evolving science.

Forest Biomass Utilization

Increasing the sustainable use of forest biomass is a strategic priority of DNR and many other land owners and managers. Enhanced biomass infrastructure would reduce treatment costs for currently non-commercial prescriptions. Reduced costs would, in turn, enable more acres to be completed. Utilizing current waste material would have added benefits for maintaining and expanding forest industry infrastructure, reducing air pollution from open burning, and meeting state and national renewable energy goals.

Through its Biomass Initiative, DNR has selected four pilot projects throughout the state. The projects span a range of technologies across a diversity of locations. The goal of the Initiative is to fill a void in assembling people to forge public-private partnerships among forest biomass suppliers, biomass purchasers, energy producers, communities, and agencies.

DNR-managed state trust lands are viewed as a potentially significant and reliable source of sustainably produced material. DNR requested and received new authorities from the State Legislature to enter into biomass supply agreements and other contractual mechanisms for transacting biomass. A supply and sustainability analysis is one prerequisite to long-term agreements, and a recent State & Private Forestry grant will help fund a statewide-level effort to meet this need. Where DNR is able to provide a core volume of biomass supply that stimulates the growth of new infrastructure, other land

owners and managers will benefit from having an additional market to help defray treatment costs.

Because biomass markets are not yet well developed, State & Private Forestry projects have not met with consistent success in utilizing byproduct material from forest treatments. As the Biomass Initiative progresses DNR is developing a biomass offering protocol that will be applied to all State & Private Forestry projects. This involves compliance with all applicable state laws, and will initially require some additional administrative expense. A goal of this strategy is to develop, pilot and implement a procedure for consistently offering 100 percent of the biomass material produced from State & Private Forestry-funded treatments by Fiscal Year 2012.

Improved Coordination

As the Statewide Assessment and preceding discussion in this strategy have made clear, there are many public and private entities contributing to the identified issues, threats and opportunities. The use of spatial data sources from multiple agencies and entities in the evaluation of all-lands priorities was an intentional step toward better coordination and identifying landscapes with mutually shared objectives. Selecting WRIs as the scale for priority landscape analysis was another effort to achieve coordination because it is used by many agencies for related purposes. The Statewide Assessment and Strategy is perhaps the first attempt to align – or at least inform – State & Private Forestry actions with other management and conservation actions in a broad-scale systematic fashion. Much work remains toward this objective.

Coordinated Data Sharing

During the development of the Assessment and Strategy, an effort to create a web-based geographic information system clearinghouse of basic project types and locations was briefly explored. In concept, such a resource would enable interested entities to post their recent and ongoing actions with a brief description. This information is useful for better understanding how new project proposals can leverage against others' investments toward broader landscape-scale shared outcomes. A number of agencies and entities already have GIS data of this type, and much of it is publicly available albeit in disparate sources. More forethought and planning are necessary to determine the appropriate construct and administration of a resource that could consolidate existing information and provided a forum for adding new data. A goal of this strategy is to catalyze such an effort and see its execution within one calendar year. At minimum, the underlying data that were used in the Assessment analysis will be made available in a clickable web-based map format.

Coordinated Technical Assistance

An integral part of better coordination among forest management and conservation investments is avoiding unintentionally duplicative efforts. For example, technical assistance resources for forest management are maintained to varying degrees by DNR,

the USDA Natural Resources Conservation Service (NRCS), Washington State University Extension, County Governments, and Washington State Conservation Districts. Good levels of coordination and leveraged actions have been maintained among these resources at the field and statewide levels. The NRCS State Technical Advisory Committee and the DNR Forest Stewardship Coordinating Committee have proven to be good venues for statewide level coordination. This is in the spirit of a September, 2008 Memorandum of Understanding signed among the National Association of State Foresters, National Association of Conservation Districts, NRCS and the U.S. Forest Service with the goal of coordinating interagency delivery of technical assistance to private forest landowners. The MOU cites five barriers which are hereby incorporated to guide the coordination objectives of this strategy:

1. The availability of technical expertise and assistance to private non-industrial forest landowners is insufficient to meet the need;
2. The lack of integration of planning and other administrative issues between the Parties (to the agreement) make it difficult for private landowners to participate in forestry and conservation programs;
3. Funding devoted to forestry and agroforestry is inadequate and inconsistent;
4. The Parties speak different technical/organizational languages, which suggest a need for improved communication; and
5. Forestry is not a priority for many State Technical Committees.

Coordination up to this point has mostly been on project and outreach activities. A goal of this strategy is to initiate and sustain a more rigorous, statewide collaborative effort among these organizations. This would account for and, where mutually beneficial, align areas of focus for available personnel resources that will deliver better overall service. One potential outcome is to establish specific technical service provider agreements with NRCS for forestry expertise where it meets mutual objectives.

Coordination within State & Private Forestry Programs

Enhanced coordination among State & Private Forestry programs has the potential to achieve more integrated landscape outcomes. Actions within core and integrated landscapes under this strategy -- especially fuels and forest health projects -- should be closely aligned. Often, the same field personnel who plan and implement fuels projects are also responsible for planning and implementing forest health projects. Program objectives and priorities differ in some cases (thus, different core landscapes); making integration more challenging than it might at first appear. One scenario involving fuels treatment planning highlights this point: program direction generally requires that homes or other structures are present for a landowner to qualify for participation in a project. Spread over a given project area of perhaps 1,000 acres, this may cause some forested parcels that do not contain structures, but still contain at-risk conditions, to remain as untreated "holes." An integration approach that has met with some success is

to allocate forest health treatment priority to filling these “holes” in order that a more complete hazard reduction objective is accomplished.

Coordinated Watershed Restoration

A currently unmet opportunity identified in the Assessment is to, “Enhance coordination among forest landowners and managers toward integrated watershed restoration outcomes.” The DNR Forest Practices Program is convening workgroups among land managers and governments for each WRIA that will help fulfill this opportunity. A goal of this strategy is to use these discussions to identify prospective State & Private Forestry investments that can contribute toward all-lands watershed restoration objectives.

Government-to-Government Tribal Coordination

Coordination with tribal governments and forest management programs is essential to achieving many of the opportunities identified in the Assessment. Government-to-government interactions with tribes occur on many levels and are related almost all DNR programs and responsibilities. Specific to State & Private Forestry programs, land held in fee title within reservation boundaries has regularly received technical assistance and cost-share project funding. In addition, several past National Fire Plan projects have helped to reduce wildfire hazards in areas of intermingled private and tribal land. Eastern Washington tribes have also actively prioritized reducing wildfire and forest health hazards on reservation forestlands, and several specific opportunities are cited for additional cooperative work under the descriptions of core landscapes earlier in this strategy. Tribal involvement and collaboration with the Forest Stewardship program was strong during the Spatial Analysis Project. Culturally significant resources and plants are also common components of Forest Stewardship Plans. Tribes have taken active part in Forest Health program actions related to piloting the state’s forest health law in Stevens County, and are leaders in the Tapash Sustainable Forests Collaborative in Kittitas and Yakima Counties.

Other, more systematic areas of coordination occur in relation to the DNR Forest Practices Program and through local Timber/Fish/Wildlife committees. Tribal coordination will be particularly essential to realizing future opportunities for better State & Private Forestry contributions to all-lands watershed restoration actions. A performance improvement goal of this strategy is to actively and regularly interact with tribal governments, and use available and relevant tribal natural resource data and personnel to inform decision-making and project development.

Competitive Grant Proposals

Each year, DNR programs develop project proposals that compete with other states for a subset of the overall State & Private Forestry funding. In recent years, 15 percent of the national State & Private Forestry program allocations have been dedicated to funding competitively selected projects. The information in the Statewide Assessment and Strategy will enhance the quality of all future competitive proposals by quantifying

priorities and identifying opportunities that address state and national issues and threats. Western Competitive Grants are a specific subset of competitive funds that will be the subject of performance improvement over the duration of this strategy.

Many landscapes rated highly in the Assessment analysis of all-lands opportunities, but were not selected as core areas because of funding constraints or individual program considerations. In Eastern Washington, these include the Pend Oreille, Methow, Sanpoil, Naches, Lower Yakima, Klickitat, and Wind-White Salmon Landscapes (WRIAs 62, 52, 48, 30, and 29). These areas will be closely evaluated for future competitive grant proposals. Excellent partnership opportunities exist with tribal forestry programs in the Pend Oreille, Sanpoil, and Klickitat Landscapes on forest health, wildfire hazard reduction, watershed restoration and biodiversity.

In Western Washington, most of the WRIAs that drain Puget Sound were highly rated for all-lands opportunities but not selected as core areas purely for lack of resources. Watershed and working forestland issues will be the focus of future competitive project funding proposals in these landscapes. The outcomes of DNR Forest Practices Program WRIA coordination workgroups efforts discussed above will be used to inform specific project identification.

Potential multi-state priority areas identified earlier in this strategy are also high-quality competitive projects. DNR will work with the Oregon Department of Forestry and Idaho Department of Lands on future project proposal development.

Competitive grant proposals may also focus on adding accomplishments to core and integrated landscape functions. For instance, the Upper Yakima is a core fuels landscape but was also rated highly for all-lands working forestlands, biodiversity, and forest health opportunities as well as a moderate water quality rating. Competitive proposals could be developed that supplement wildfire hazard reduction actions in specific areas to address other issues and opportunities that were identified.

Finally, this strategy sets a goal to perform an external call for Western Competitive Grant project proposals and evaluate its utility as an ongoing tool for project development. Strong partnerships, aligned priorities, and leveraged funds are all essential to ensuring State & Private Forestry funds serve the most effective role possible in addressing themes, objectives, threats and opportunities. Perhaps the best means to consistently meet these essential requirements is to formally solicit outside partners who are already working in priority landscapes. More innovative and integrated project ideas could also result from this approach. DNR would screen the proposals for alignment with the Statewide Assessment and Strategy, along with standard Western Competitive Grant selection criteria, and advance the best among them with DNR as the lead applicant.

wildfire hazard reduction. Since Fiscal Year 2008, EQIP has funded forest improvement where State & Private Forestry investments are substantially absent, such as Skagit, Clallam, Thurston, Gray’s Harbor and Pacific Counties. In Eastern Washington, the bulk of EQIP practices are applied to improve forest health and vigor. EQIP expenditures are guided by Local Work Group (LWG) priorities and annually established ranking criteria. Figure S12 displays the distribution of this acreage by county and LWG.

Additional EQIP funding could be directed toward shared forest conservation and management objectives in core Forest Stewardship landscapes identified under this strategy (Figure S1). These landscapes include the Southwest LWG and southeastern portions of the Puget Sound LWG. Core Forest Stewardship work will help private forest landowners connect with available NRCS cost-share resources, and assist with the necessary management planning.

Okanogan and Ferry Counties are areas of mutual emphasis for reducing forest health risks by EQIP and State & Private Forestry. Continued and increased levels of emphasis, as well as additional on-the-ground coordination to improve performance will leverage opportunities in these areas. EQIP and State & Private Forestry programs each have slightly different roles and capabilities that can be aligned to serve shared objectives, including those identified in the Statewide Assessment and Strategy.

Cooperative Conservation Partnership Initiative

The CCPI is a program whereby partners with approved projects enter into multi-year agreements with NRCS to help enhance conservation outcomes on agricultural and nonindustrial private forest lands. One purpose of CCPI is to leverage resources of certain Federal government programs along with services and resources of non-Federal partners to implement natural resource conservation practices. Proposals submitted by eligible partners are evaluated and competitively ranked for selection. In contrast to broadly applied EQIP funding, CCPI allows project-specific focus in defined areas. CCPI projects must meet the individual program objectives for EQIP, CSP, and the Wildlife Habitat Incentives Program.

The potential is very rich for CCPI to leverage DNR, State & Private Forestry, and other local, state, federal, tribal and private investments toward achieving opportunities identified in the Assessment. NRCS and DNR have, for instance, worked together on a CCPI proposal to leverage DNR Family Forest Fish Passage Program funding in the Chehalis River basin and accomplish watershed restoration objectives. If the application is approved, this effort will be used as a model for future projects under CCPI.

CCPI also gives priority to proposals that further the Nation’s efforts with:

- Renewable energy production and energy conservation;
- Mitigating the effects of climate change;
- Facilitating climate change adaptation;

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- Fostering carbon sequestration.

Close intersections are apparent between this CCPI priority and the biomass and climate change objectives of this strategy. Finally, a CCPI project area “overlay” of State & Private Forestry work in core and integrated landscapes could be ideal for achieving additional forest conservation objectives that are mutual to NRCS, DNR, and the U.S. Forest Service.

Conservation Stewardship and Healthy Forest Reserve Programs

The CSP and HFRP programs are two potentially significant resources for protecting working forestlands in cooperation with State & Private Forestry and DNR program actions. The purpose of HFRP is to assist private landowners in restoring, enhancing and protecting forestland resources through easements, 30-year contracts and 10-year cost-share agreements. CSP encourages private forest landowners and other land stewards to improve their conservation performance by installing and adopting additional practices, and improving, maintaining, and managing existing activities. Landowners enter into five-year contracts with NRCS for payments to accomplish practice installation and maintenance. Both programs secure a termed conservation commitment from forest landowners and offer compensation for the earned conservation benefit. This can have the effect of helping landowners maintain economic viability and avoid conversion to non-forest uses, as well as its direct conservation benefits.

HFRP in particular presents a unique partnership opportunity with the DNR Riparian Open Space Program (ROSP) and Forest Riparian Easement Program (FREP). DNR solicits and prioritizes landowner applications for these conservation designations, but has insufficient funding to meet the demand. HFRP may be a direct contributor to unfunded FREP projects, since the easement terms are similar at 30 and 50 years, respectively. DNR has maintained a waiting list for FREP applications since the program began in 2003, and currently has 84 applications in backlog. HFRP could additionally serve as an interim bridge where landowners are interested in permanently protecting their qualifying Channel Migration Zone lands, but current ROSP funding is not sufficient to enroll them.

Conservation Innovation Grants

Projects under the CIG program are expected to lead to the transfer of conservation technologies, management systems, and innovative approaches (such as market-based systems) into NRCS policy, technical manuals, guides, and references or to the private sector. This funding source could be used to make advancements toward a broad array of Statewide Assessment and Strategy opportunities. One example is developing and testing new management techniques and prescriptions for climate change adaptation. Testing biomass technologies and management practices for collection, harvest and converting material to energy products – as well as evaluating associated life-cycle carbon emissions – is another potential use of CIGs. Implementing new and innovative technologies to restore at-risk forest ecosystems would also be a potentially high-quality

CIG application. Finally, CIGs could help develop regional partnerships, market infrastructure (such as ecosystem market registries), and integrated tools that facilitate the development of ecosystem services markets. Each of these examples could serve NRCS objectives for the program as well as the opportunities in the Assessment and Strategy.

STATUTORY, PROGRAM & POLICY RECOMMENDATIONS

Several recommendations have been identified through developing the Statewide Assessment and Strategy that cannot be addressed with internal decisions about program focus, performance improvement, or external partnerships. Specifically, these include: overall statutory program authorities; changes to the State & Private Forestry competitive grant process and potential future budgeting structures; and methods for increasing treatment efficacy and reducing costs.

Overall Program Authorities

As explained early in the Strategy, truly focusing State & Private Forestry actions in landscapes that are identified on the basis of “all-lands” priorities is not always feasible. Some essential functions fit well in this context while others are more constrained by program-specific priorities. Previous authorizations for more generically-purposed landowner assistance funding through the Forest Land Enhancement Program (FLEP) quickly passed into congressional disfavor and appropriations were ceased. Yet, the very flexibility that FLEP provided would have precisely fit the Statewide Assessment process.

Competing and conflicting policy objectives for State & Private Forestry have not helped programs demonstrate measurable, consistent successes. On one hand, broadly applicable programs are discouraged under suspicion that they lack tangible outcomes and fidelity to national priorities. On the other, specifically targeted programs with clear accountability are asked to show increasing degrees of integration among sometimes disparate purposes. This dynamic in part accounts for DNR’s selection of a “core” and “integrated” landscape concept for this strategy – both approaches are needed to assure that key objectives are met, without being so rigid as to overlook new opportunities, integration, and key leverage points. DNR will closely evaluate the effectiveness of this approach over the Strategy’s duration. The results will inform DNR’s FY 2016 Assessment and Strategy update. This strategy also recommends that Congress carefully consider the outcomes of Washington and other states’ strategic approaches for the purpose of informing legislative actions on State & Private Forestry programs as part of the next Farm Bill revision.

A specific program concern that may need legislative attention, but could also be addressed in agency policy, is a reaffirmation that the primary purpose of the Forest Legacy Program is to conserve working forestlands. Project selection in recent years has seemed to begin trending toward forestland that is unquestionably of high conservation value, but whose “working” values are dubious.

Competitive Grant Processes & Potential Future Budget Structures

The Western Competitive Grant process was instituted as part of State & Private Forestry Redesign in Fiscal Year 2008. The competitive share of funds is currently 15 percent but could grow to as much as 60 percent. This strategy concludes that the competitive process must be made less onerous and time consuming in order for it to better contribute toward priority landscapes and opportunities.

A national off-the-top allocation is used to fund the competitive share, which correspondingly reduces the remaining program amounts. This, in turn, effectively makes it compulsory to annually prepare competitive proposals. Annual project development therefore represents an additional fixed administrative cost because projects take a long time and a lot of work to develop with no assurance of being funded. This consumes the time of personnel who are partially funded through State & Private Forestry, meaning that they are not spending time on program work. Requirements that non-federal matching funds be derived on a project-specific basis as opposed to a functional basis have also made competitive projects less effective. Finally, grant accountability reporting is more difficult and time consuming for competitive projects, which incurs more fixed administrative costs. In these important respects, the competitive process is not contributing as much as it could toward the intended outcome of increased measurable accomplishments toward national themes and objectives.

As is discussed earlier in this strategy, there will always be a need for balance between geographically targeted project actions and functions that are inherently statewide in scope. Increased project funding has been a continued policy focus in order to assure that expenditures are creating tangible benefits. However, personnel are still needed to organize and conduct projects. Many programs also have prerequisite planning requirements before project activity becomes eligible.

Future U.S. Forest Service budget proposals and congressional appropriations should therefore contemplate reallocating the 15 percent competitive share on a formula basis for specific project uses in state-identified priority landscapes. With the completion and U.S. Forest Service approval of Statewide Assessments and Strategies

Increasing Treatment Effectiveness & Cost Reduction

One of the most significant barriers to realizing the opportunities cited in this strategy for Forest Health Restoration and Wildfire Hazard Reduction is the high cost of typical treatments on a per-acre basis. Reduce these costs, and accomplishments increase correspondingly using the same overall funding amount. Traditionally, however, State & Private Forestry actions have been focused on non-commercial treatments; those that could produce revenue were expressly avoided. The logic is that landowners should take actions on their own that benefit their forests and can be paid for with revenue from timber harvest. In many cases this means contacting landowners repeatedly with technical assistance – first to establish management objectives and complete a Forest Stewardship Plan, then again to advise on considerations for potential treatment options, and once more post-harvest to apply a cost-share treatment on non-commercial tree thinning or brush disposal. Sometimes this is necessary, but in other cases more flexibility would be greatly beneficial. Working strictly in noncommercial stands can also be less effective for meeting forest health objectives because the at-risk trees are primarily of mature age.

A recommendation of this strategy for reducing treatment costs would be to write a set of approved integrated restoration prescriptions that landowners could implement, and cap the State & Private Forestry contribution at some standard per-acre amount. Essentially State & Private Forestry would be establishing an ecosystem service price that the landowner was paid to implement a treatment whose outcome achieves the desired public benefit. State & Private Forestry would simply be making a standard contribution to the outcome in an amount commensurate with that benefit. Whether implementing the treatment involved commercial material or not would be irrelevant. Landowners with specific stand conditions on their lands that enabled them to implement the treatment for the established price, or less, would select that option. Those with purely non-commercial work could continue to have the option of applying for cost-share under standard program channels.

National performance measures for objectives under the theme of Protecting Forests from Harm include descriptions like “restore fire-adapted systems.” Restoration of fire-adapted systems could generate better quality results toward forest protection as well as related opportunities for biodiversity enhancement, but current prescriptions are hard-pressed to truly achieve this measure. The overriding objective for wildfire hazard reduction treatments, for instance, is to moderate fire behavior while remaining within the tolerances of the landowner for things like visual impacts. This objective is not always synonymous with restoration. Restoration is also a more difficult to achieve in a forest scattered with five acre home sites as opposed to less densely developed areas of the wildland urban interface. Therefore, in adopting the integrated restoration prescription concept some differentiation would be needed among the treatment objectives – an array of prescriptions would be necessary.

Administering the prescription, including confirmation that it had been implemented to specifications, would present some new but not insurmountable challenges. The concept is analogous to “end result” federal contracting or the “designation by prescription” option currently available under U.S. Forest Service stewardship contracts.

DNR will work to advance these recommendations in the service the Statewide Assessment and Strategy. State & Private Forestry programs are important and relevant to many priorities and opportunities in Washington State, but the recommendations outlined in this section can make needed improvements to program efficacy.

COLLABORATION WITH PARTNERS & THE PUBLIC

This section outlines the public input and intergovernmental coordination process used in the development of the Statewide Assessment and Strategy. Guidance requires, at minimum, coordination with the state Forest Stewardship Coordinating Committee, NRCS State Technical Committee, state wildlife agency, and applicable federal land management agencies.

General public input on the draft Statewide Assessment was solicited by posting documents to the DNR website over a two-week review period. Notification of the opportunity was made via post on the DNR “Ear to the Ground” blog on May 4, 2010. The Washington State Forest Stewardship Coordinating Committee (FSCC) typically meets once each spring. The Statewide Assessment and Strategy project lead provided an overview of its development status and collected committee input at the annual FSCC meeting on April 27, 2010. Additional comments, suggestions and discussion were requested from committee members, including the review of draft Assessment documents that were made available on the DNR website shortly thereafter.

The NRCS Washington State Technical Advisory Committee (STAC) meets regularly throughout the year. The State Forester and the project lead met with the STAC to introduce Statewide Assessment and Strategy concepts and solicit member ideas on November 24, 2009. DNR provided a conference call opportunity for interested STAC members to discuss priority landscapes and the draft Assessment on April 20, 2010 (the regularly scheduled March STAC meeting was cancelled). Core and integrated landscapes were discussed at the May STAC meeting. Ongoing discussions among DNR and NRCS staff also informed the content of the Assessment and Strategy.

In addition to the FSCC and STAC outreach efforts, an ad hoc stakeholder task group was selected and convened among state agency staff and private members of standing DNR advisory committees. DNR program managers, staff from the Washington Department of Fish and Wildlife, Department of Ecology, State Parks, Governor’s Recreation and Conservation Office, Washington State Conservation Commission, and Washington State

University Extension were invited to attend. Private representatives from the Washington Forest Protection Association, the small forest landowner community, the Washington State Urban and Community Forestry Council, and the Washington State Association of Counties were invited. An initial meeting was held on November 20, 2009 to scope issues and methodologies for the Assessment. A follow-up meeting was held on May 10 to review priority landscape analyses and discuss strategic approaches. Communications with individual participants took place throughout the Assessment and Strategy's development.

The Washington Department of Fish and Wildlife is represented by members on the FSCC, STAC, and ad hoc stakeholder task group. Supplemental coordination with staff took place throughout the Assessment and Strategy process on issue scoping, opportunity identification and the acquisition of wildlife-related data.

The Commissioner of Public Lands sent a letter to all Washington Tribal Council Chairs, natural resource directors, and affiliated organizations requesting government-to-government consultation regarding the Statewide Assessment and Strategy on March 16, 2010. The Makah Tribe, Snoqualmie Tribe, Puyallup Tribe, Yakama Nation, Colville Confederated Tribes, Kalispel Tribe, Spokane Tribe, and the Upper Columbia United Tribes organization responded. Additional coordination discussions took place according to the respective levels of interest in the project.

Interagency discussions among DNR and U.S. Forest Service State & Private Forestry program managers in the Pacific Northwest Region took place throughout the Assessment and Strategy process. U.S. Forest Service agency land managers were consulted in a series of discussions lead by Dale Hom, Olympic National Forest Supervisor. Forest Supervisors, their planning staff, and district staff participated in video teleconferences held on January 5, March 29, April 20, and May 18. This coordination effort included aggregating National Forest System-related data, reviews of priority landscape analyses, and strategic approaches.