March 3, 2003

Subject: Moving Forward Following the 2002 Fire Season

A central theme in the Umpqua National Forest Plan is protecting the environment while providing the goods and services that people need. Last summer's fires affected about 88,000 acres—roughly nine percent of the Umpqua National Forest. Understanding our future management in the context of these events is important. In order to accomplish this task, we have completed two documents: the Wildfire Effects Evaluation Project (WEEP) report and a Watershed Restoration Business Plan Update.

WEEP assesses the 2002 fire effects at a watershed scale. WEEP addresses fire effects to a variety of natural and cultural resource issues within the fire areas. Some objectives of WEEP include:

- Building a public record of the effects of the fire on the various natural and cultural resources found within the fire area
- Establishing a baseline from which to evaluate change over time
- Update existing Watershed Analyses within the fire areas
- Providing needed information for future project proposals like salvage timber sales or restoration projects

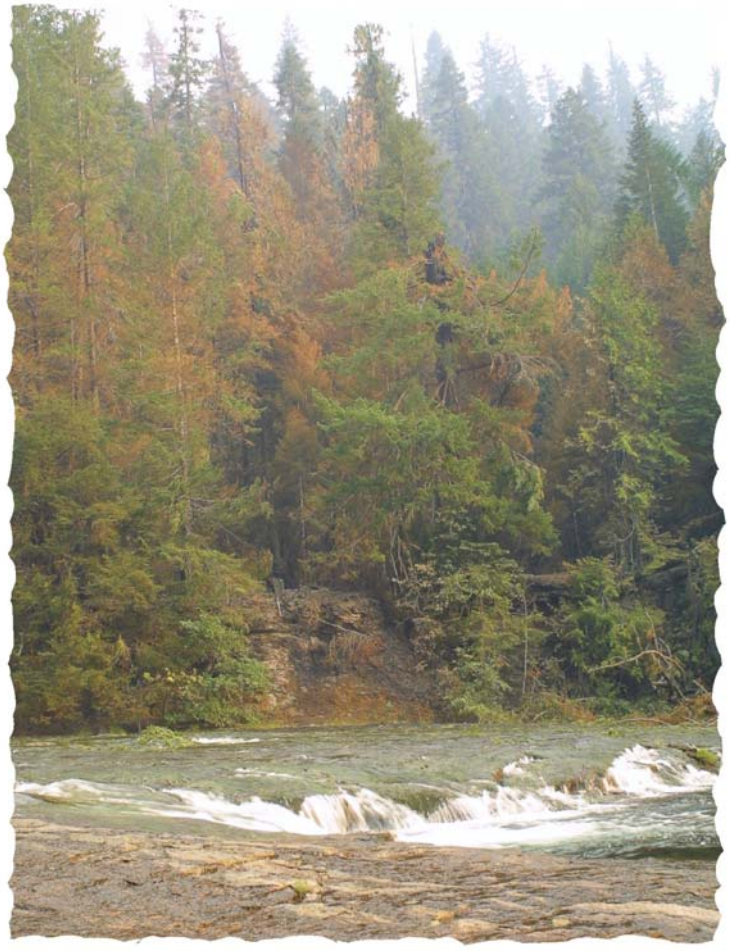
The second document is a Watershed Restoration Business Plan Update to account for the impacts from the 2002 fires. This is a broader look than the 2000 Plan and necessarily encompasses the entire Forest. The focus of this update is to strengthen the terrestrial and fire-related information in the existing Watershed Restoration Business Plan, and to make recommendations as to which parts of the Forest have higher priorities for terrestrial restoration work. This is intended to complement the aquatic restoration strategies already established. Restoration projects may include reforestation, thinning, treatments for fuel reduction, prescribed fire, noxious weeds eradication, timber sales and harvest of other forest products.

Taken together, these documents provide us with a roadmap to continue implementation of our Forest Plan. WEEP gives us a clear picture of resource conditions after the 2002 fires. The Restoration Business Plan Update provides a clear set of investment and work priorities based on the needs of society and potential improvements to land conditions.

WEEP and the Watershed Restoration Business Plan Update are not decision documents. They provide information and priorities for implementation of the Umpqua National Forest Plan, but they do not make any plan or project decisions. I believe by taking the time to look at the bigger picture now, we can work much more efficiently in the future.

JAMES A. CAPLAN
Forest Supervisor

WATERSHED RESTORATION BUSINESS PLAN - 2003 UPDATE



UMPQUA NATIONAL FOREST

March 2003

Watershed Restoration Business Plan – 2003 Update

Umpqua National Forest

Pacific Northwest Region

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Title
Watershed Restoration Business Plan for the Umpqua National Forest – 2003 Update

Abstract
This 2003 Watershed Restoration Business Plan is designed for district restoration coordinators, restoration team members, Executive Team members, and partners of the Umpqua National Forest. It expands the 2000 Watershed Restoration Business Plan to include $18 million of high priority restoration work stemming from 88,000 acres of fires in 2002 and other terrestrial restoration work. This plan presents a strategic approach to the complex task of upland restoration and a 10-year program of work. It complements the aquatic restoration strategies already established. Restoration projects may include reforestation, thinning, treatments for fuel reduction, prescribed fire, noxious weeds eradication, timber sales and harvest of other forest products.

Executive Summary

The Umpqua National Forest is a diverse, million-acre landscape containing headwaters of the Umpqua River, a highly productive fishery for native fish species and an important source of clean water. Half of the Forest is old growth and about a third is designated as Late Successional Reserve. Approximately half the forest is designated as Matrix where commodity timber production is emphasized. Unique habitats supporting rare plants or animals are dispersed across the landscape.

The Present Challenge for Restoration

The Umpqua National Forest landscape has changed significantly over the last 100 years. Decades of intensive forest management practices have altered much of the Forest's aquatic, riparian and terrestrial habitats. Old growth habitat with late-successional forest characteristics is diminished and increasingly fragmented. High road densities provide access to increased public use but affects wildlife in a negative manner by causing stream sedimentation and slope instability. Decades of fire suppression have caused a dangerous increase in fuel buildup and contribute to increased risk of uncharacteristically severe wildfires. Fire risk is exacerbated due to declining health and vigor of pine, increased mortality from pathogens such as white pine blister rust, and increasing pine beetle infestation. Invasive species are present throughout the Forest and are adversely affecting some native plant and wildlife species.

Responding to the Need to Restore the Umpqua National Forest

In August 2000, the Umpqua National Forest produced a Watershed Restoration Business Plan to restore healthy aquatic and terrestrial ecosystems. Primarily focusing on six priority watersheds, it emphasized restoration of aquatic ecosystems with a complement of work in upland areas.

The business plan was updated in 2003 in response to wildland fire that burned over 88,000 acres on the Forest in 2002. The Umpqua National Forest is assessing the effects of these fires, updating our watershed restoration business plan, and taking a broader look at terrestrial restoration across the landscape. This updated version expands the existing Watershed Restoration Business Plan and strengthens the terrestrial aspects and fire-related information to prioritize terrestrial restoration and fire recovery work on the Forest.

The Umpqua National Forest has three restoration goals: quality of life, a resilient forest, and clean water and healthy streams. The updated business plan addresses these goals by identifying seven critical upland restoration priorities in the following order:

- Restore late-successional habitat in Late Successional and Riparian Reserves
- Restore the role of fire in landscapes with historically frequent fire patterns
- Restore productivity and natural functions of Matrix and associated Riparian Reserves
- Restore unique habitats
- Restore big game habitat
- Restore habitat for native species threatened by non-native invasive species
- Restore habitats for non-old growth dependant threatened, endangered, and sensitive species

The Umpqua National Forest will accomplish restoration collaboratively, develop new partnerships, and strengthen existing ones. This is the business of the Umpqua National Forest.

A Reasonable, Sensible and Responsible Approach

The 2003 Watershed Restoration Business Plan Update proposes a 10-year program of work totaling approximately $18 million dollars, in addition to $35 million dollars of remaining work previously identified in the 2000 Watershed Restoration Business Plan. We only expect about $5 million of Forest Service funding. This shortfall in funding underscores the need to coordinate our program of restoration work in a prioritized manner and to seek funding from other sources. The Umpqua National Forest will strive to capitalize on any opportunity to develop partnerships, agreements, cost shares, and acquire grants to accomplish high priority restoration work. The watershed restoration business plan is a critical communication tool to attract outside funding for our restoration program.

In 2000 and 2001, the forest improved 9 miles of road, removed 29 miles of road, restored 1,800 acres of uplands, improved riparian areas, and placed large wood in 13 miles of streams, at an investment of more than $2 million dollars of combined Forest Service and partnership funds. We are moving toward the vision described in the August 2000 Watershed Restoration Business Plan of healthy forests, less forest fragmentation, a smaller, better maintained road network, and reduction of forest fuel in high frequency fire regimes.

What We Hear As We Listen

We used a variety of forums to gather different perspectives about restoration needs of the forest in response to the extraordinary fire year of 2002. We employed open houses, town meetings, public field trips, presentations, discussions with elected officials, and consultations with neighboring forests, other agencies, and research organizations. Opinion about restoration priorities is varied, and frequently one view contradicts another. It is clear there is more to be done than can be easily handled by our limited resources while satisfying the goals of our public.

Key themes we hear repeatedly:

- Some level of active restoration is desirable
- We will be supported when we concentrate efforts in high priority areas
- Support for treatments such as thinning if resulting revenue is used for restoration work
- The public supports in-stream habitat improvements
- Some organizations will provide funding and work in partnership on specific restoration projects such as in-stream improvements and road decommissioning

We recognize many activities such as decommissioning roads, using prescribed fire, and harvesting timber are controversial. Some people view work such as road maintenance, commercial timber sales, and recreation as higher priority than restoration. We will strive to balance restoration among the other competing priorities of the forest. This updated watershed restoration business plan helps us achieve that balance and gives us a blueprint to measure progress along the way.

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Goals

In the words of Gifford Pinchot, first Chief of the Forest Service, "There are only two things on this material earth – people and natural resources." Both people and natural resources are included in the three goals of restoration on the Umpqua National Forest.

Goal 1: Quality of Life

Restoration will sustain the quality of life for present and future generations, including recreational opportunities, economic activities and sustainable uses of our natural resources.

Goal 2: A Resilient Forest

A desired pattern of vegetation structure, both live and dead, is restored over the landscape, making the forest resilient to disturbances such as fire, flood, insects, and diseases.

Goal 3: Clean Water and Healthy Streams

Restoration of stream habitats and natural processes will provide clean water and healthy populations of fish and riparian species.

The Land, the Water, and the Ecosystem

The Umpqua National Forest is a million-acre forest nestled in the western slopes of the Cascade Mountains (Vicinity Map, Figure 2). It includes twenty watersheds. Nineteen of these are in the Umpqua River Basin, and comprise one-third of that watershed (North Umpqua River, Figure 1). The northern end of the Forest is in the Row River watershed, which flows west into the Willamette River. About half of the Forest land is old growth; 67,000 acres are wilderness. The headwaters of the Umpqua River provide refuge habitat for Coho salmon, steelhead trout, Chinook salmon, and cutthroat trout. The basin's fishery has high species variety and productivity compared to similar watersheds in the Pacific Northwest.

Figure 1: North Umpqua Wild and Scenic River

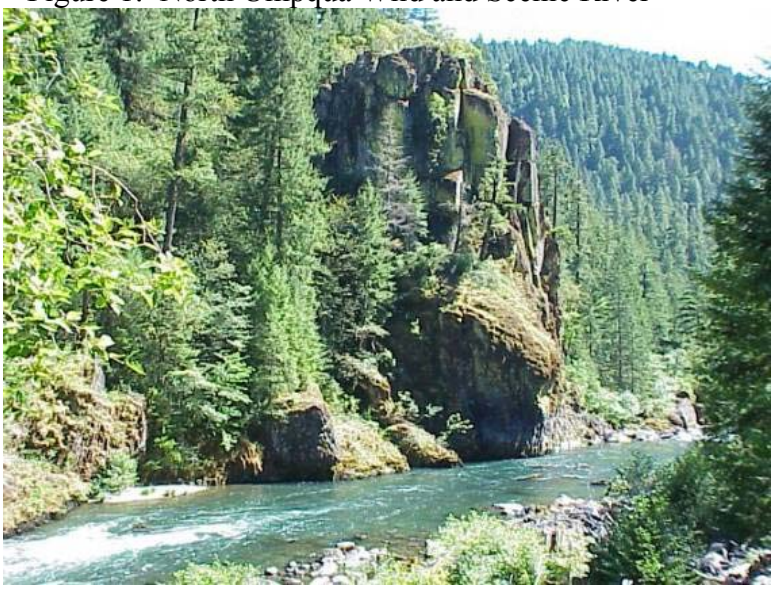
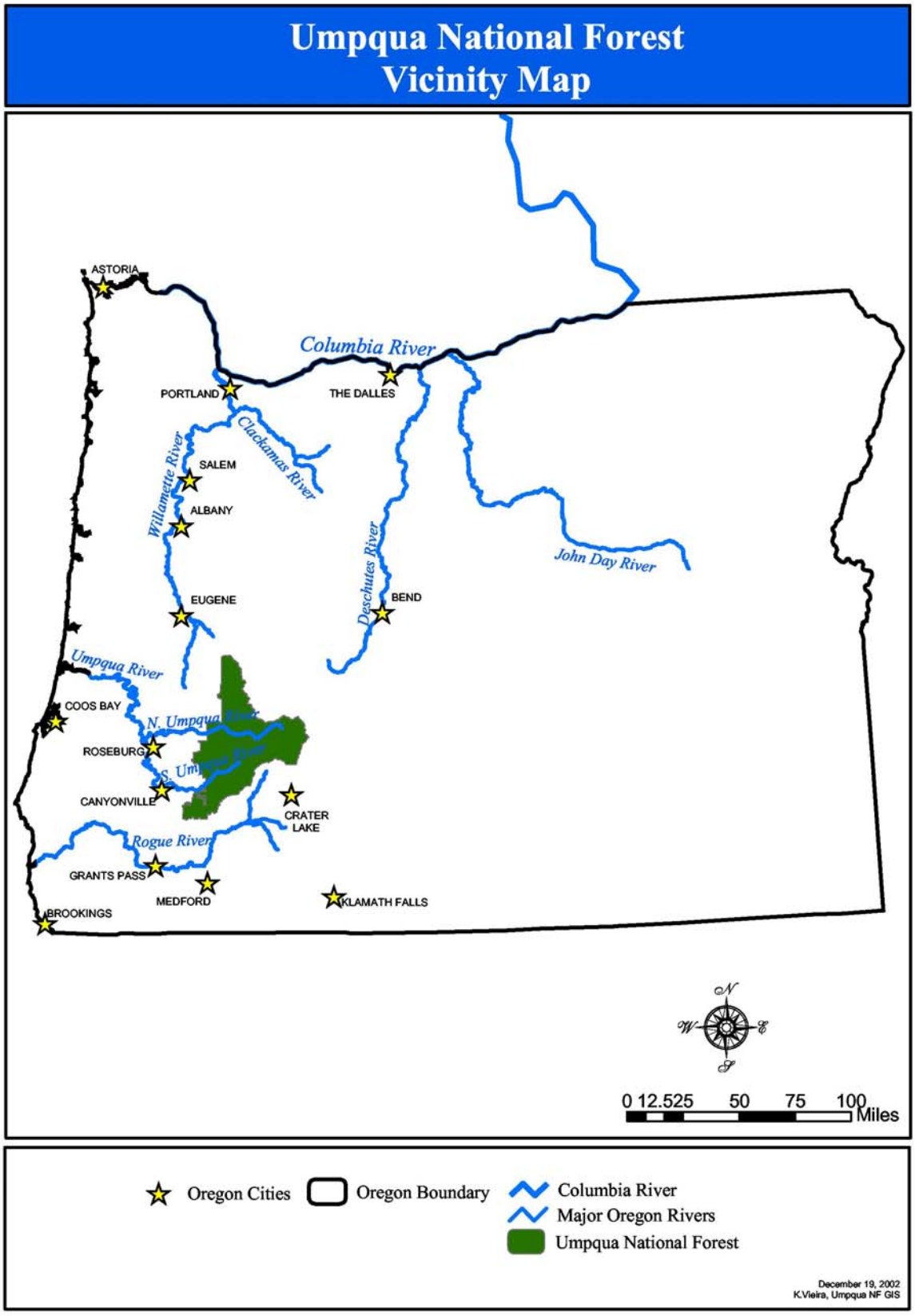


Figure 2. Umpqua National Forest Vicinity



Current Conditions

Land Allocation and Forest Structure

According to the 1994 Northwest Forest Plan, (Northwest Forest Plan Land Allocations, Figure 3) one-third of the Forest is designated Late Successional Reserve (LSR), with the objective to protect and enhance conditions of late-successional and old growth forest ecosystems (USDA and USDI 1994). Approximately 10,000 acres (nearly 5 percent) of old growth habitat within LSR was significantly changed from the wildfires in 2002 that burned across 88,000 acres on the Umpqua National Forest. Much of the remaining late-successional habitat is on dry, south-facing, fire-prone sites. Following the 2002 wildfires, half of the Forest is in a late seral and old growth forest condition with considerable fragmentation from past timber harvest.

One-half of the Umpqua National Forest is designated as Matrix where most timber and other forest commodities are produced. This includes associated Riparian Reserves, which are designated to protect the health of the aquatic system and its dependent species. In much of the Matrix, early-successional habitat is beginning to diminish as trees in young stands die from competition. This is reducing forage for big game while increasing fuel loading in the forest. Managed stands can be thinned to maintain growth and vigor. Mature pine forests are declining in vigor due to competition from more shade-tolerant species, which flourish as fires are suppressed. Sugar pine and western white pine numbers are greatly reduced by white pine blister rust, a non-native disease.

About 24,000 acres of forest, including nearly 11,000 acres of plantations, were severely burned and will become early seral stage areas. On some sites, shortening the time for conifer re-establishment will require planting.

Some managed stands are heavily compacted, with little organic material from past tractor skidding and piling. Unless soil productivity is improved, these sites will continue to have poor tree growth.

Habitat for Non-Old Growth Dependent Wildlife Species

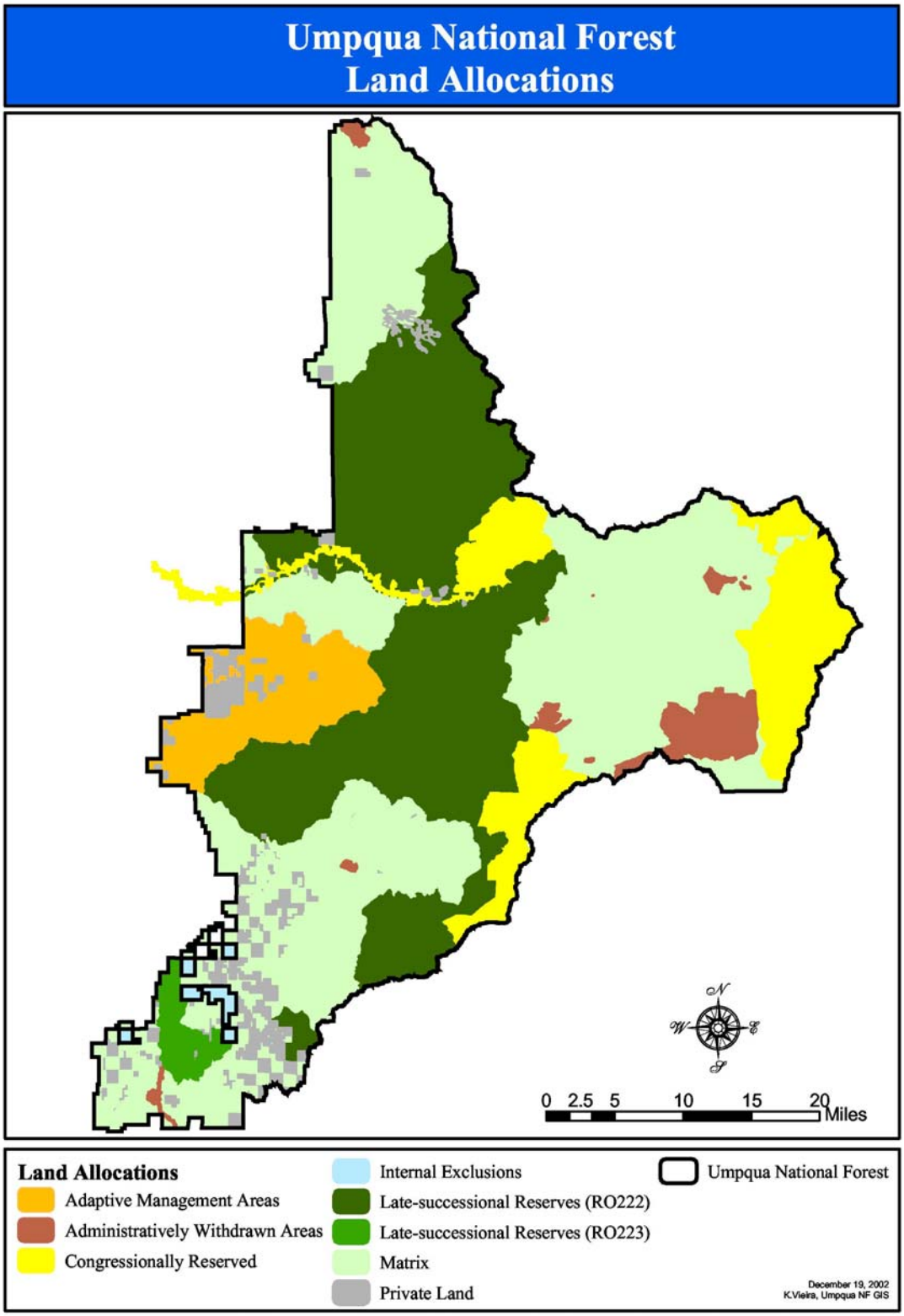
Big game populations are decreasing as forage for deer and elk created by regeneration harvesting declines. Caves supporting colonies of Townsend's big-eared bats are degraded by human disturbance. Many dry meadows, home to Sensitive species like the mariposa-lily and Kincaids sulphur lupine, were affected by roads or reduced in size by encroaching conifers and noxious weeds. Road densities limit wetland habitat for sensitive species.

Non-Native Species

Noxious weeds are present throughout the Forest on managed land. Diffuse knapweed, rush skeletonweed, yellow star-thistle, gorse, Italian thistle, and spotted knapweed can replace native plant species. The majority of noxious weed infestations on the Forest occupy road shoulders. Vehicles appear to be the primary vector for long distance movement of most species. Noxious meadow knapweed is most likely to spread in recently burned areas and disrupt natural vegetation. Yellow star-thistle was growing in one fire camp and may have spread via vehicles and people during fire fighting. We will monitor its possible spread.

Non-native wildlife species adversely impact some native species. Bullfrogs and hatchery-stocked fish are out competing native amphibians in many ponds and wetlands.

Figure 3. Northwest Forest Plan Land Allocations



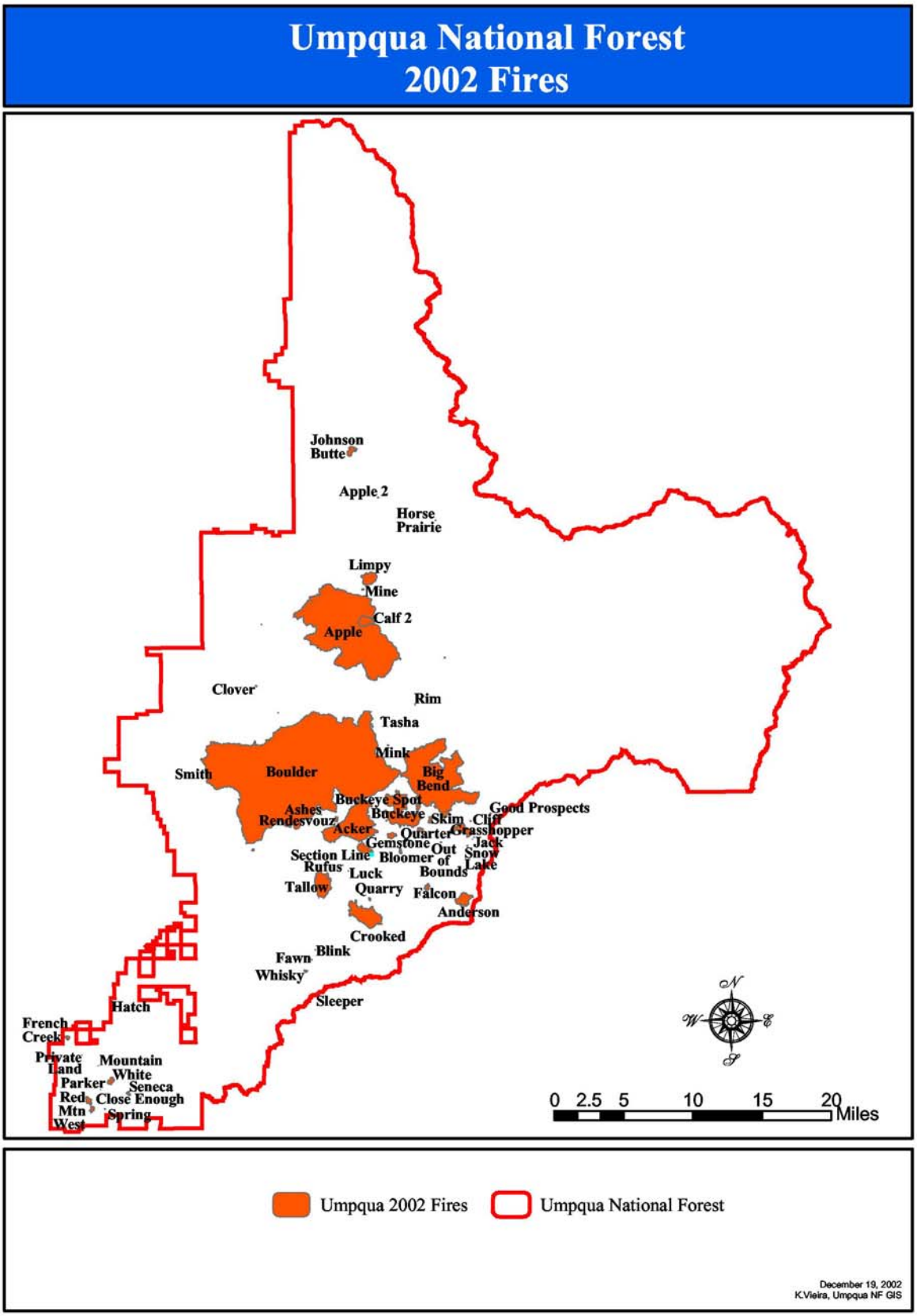
Unique Habitats

Unique habitats on the Forest include meadows, forested wetlands, moist woodlands, oak savannahs, madrone, aspen, and knobcone pine stands. Many sites are negatively impacted by crowding conifers, excluding fires, building roads, and the spreading of noxious weeds.

Fire and Fuels

Wildfires occur frequently during summer and fall. Fuel loads had increased on the Forest since the mid-1900's when suppression of natural fires became effective. Windstorms in 1996 produced windthrown trees scattered throughout more than 100,000 acres. We salvaged trees across several thousand acres; however, downed trees still remain in some areas. Insects and diseases have killed individual trees and small groups of trees on over 40,000 acres of forest in the last 15 years, primarily on the Diamond Lake District. These concentrations of dead trees contribute to increasing fuel loads and associated risk of fire. Nine percent of the Forest burned in 2002, the most active fire season recorded (Figure 4). Fire severity was variable. Areas of high severity burned such that a new forest stand will replace the burned one.

Figure 4. Wildfire Occurrence in 2002



Fire regimes are characterized by frequency, intensity, severity, forest types, and spacing of fire across landscapes patterns over time (Agee, James K., Fire ecology of Pacific Northwest Forests. Island Press. Washington, DC. Pages 19-24.). Fire regimes help describe the role natural fire plays in the ecosystem. There are five fire regimes on the Forest, which are described below and also mapped (Fire Regime Map, Figure 5).

I. Fire occurs frequently and is of low severity. The time between fires is less than 35 years. Examples of this fire regime are oak woodlands, ponderosa pine and eastside Douglas-fir. Approximately 13 percent of the Forest is Regime I.

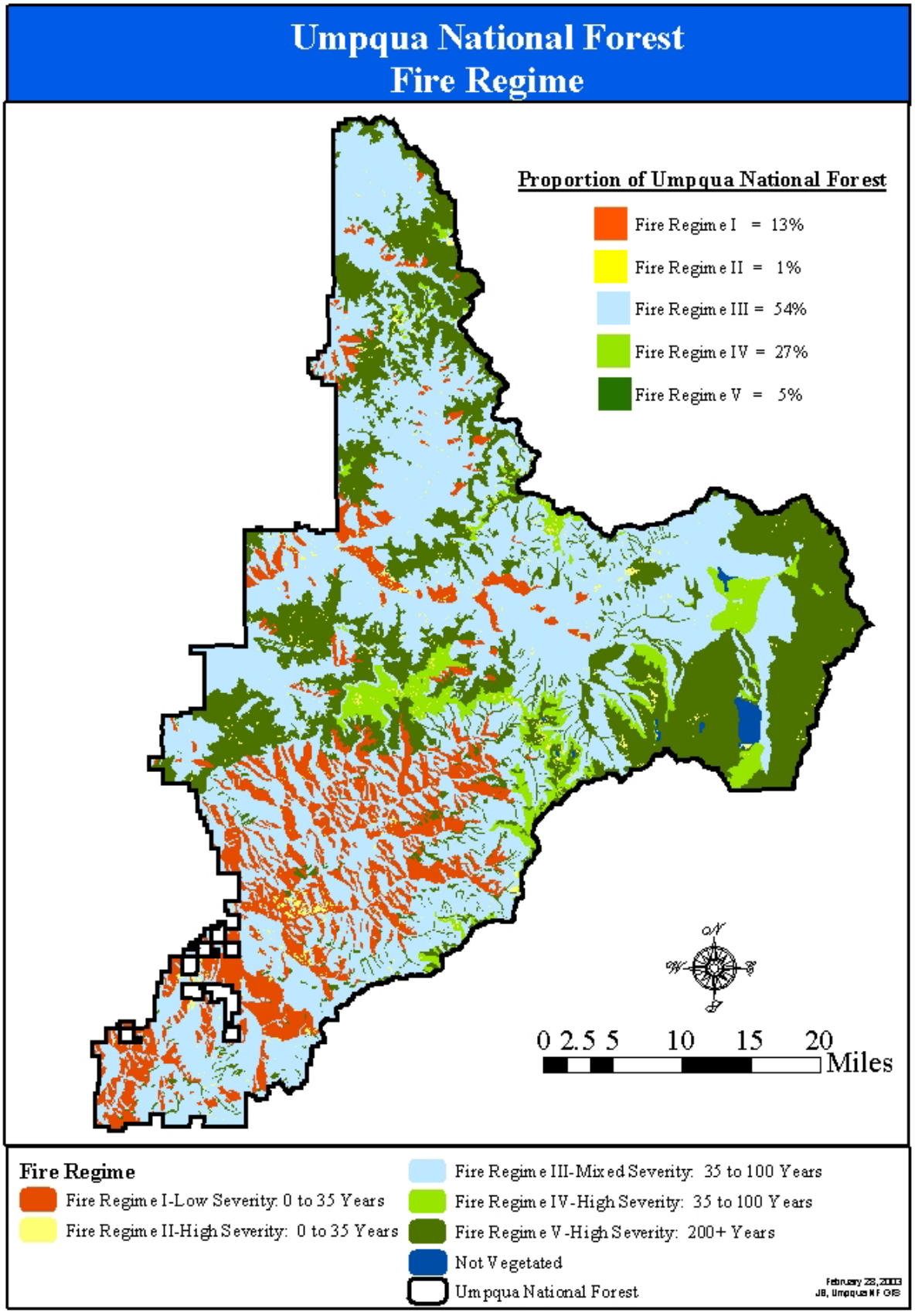
II. Fire occurs frequently, as in Regime I, but is of high severity. Examples of this fire regime are grasslands, 'Oregon' chaparral, and tall sagebrush. About 1 percent of the Forest is Regime II, which includes some unique habitats.

III. Fire frequency is 35-100+ years and is of mixed severity. Examples of this fire regime are westside Douglas-fir, grand/white fir, and Shasta red fir. Approximately 54 percent of the Forest is Regime III.

IV. Fire frequency is 35-100+ years and is of high severity. Examples of this fire regime are lodgepole pine, western hemlock, and low sagebrush. Approximately 27 percent of the Forest is Regime IV.

V. Fire is infrequent and severe. The time between fires is 200 years or more. Examples of this fire regime are Pacific silver fir, western hemlock, mountain hemlock, subalpine, and alpine plant communities. About 5 percent of the Forest is Regime V.

Figure 5. Fire Regime Map



The Vision

Within 10 Years

Visitors to the Forest see a landscape in transition. Young forest stands in key locations are thinned, resulting in a desirable future pattern of young and old forests. Lands severely burned in 2002 are restored with native species. Numbers of sugar pine and western white pine are increasing on the landscape. The Forest's unique habitats are healthy and functioning. Fire is playing a natural role, and fuels are assuming appropriate levels for the landscape and fire regime. Roads are well drained, reducing hazards to stream resources and human safety while providing needed access. Threatened, endangered, and sensitive species are viable. Aquatic habitat is improving as in-stream habitat improvements are completed within priority watersheds across the Forest.

The Centuries Ahead

By 2100, Forest roads are mostly located outside of riparian areas and unique habitats. Late-successional structures dominate the Late Successional Reserves. The distribution of young, mature and old forests meets land management objectives. Riparian Reserves connect Late Successional Reserves, providing travel and dispersal corridors for terrestrial animals and plants. Land management replicates natural disturbance processes while sustaining the economy. Fires, both prescribed and natural, play an important role in maintaining forest structures. Species formerly at risk recover.

The Strategy

Completing Watershed Analysis

Watershed analyses are key to compiling, justifying, and prioritizing the restoration needs of watersheds. Since publication of the 2000 Watershed Restoration Business Plan, the following watershed analyses have been completed or scheduled:

- Middle North Umpqua completed 2001
- Calf/Copeland/Illahee Facial (part of Middle North Umpqua) completed 2001
- Upper South Umpqua scheduled for completion 2003

Restoration Principles

The 2003 Watershed Restoration Business Plan is guided by six key restoration principles, which are based on relationships between forests, streams, wildlife habitats and human interactions in the landscape.

1. Protect, restore, and enlarge refuge areas
2. Focus on effective treatments in priority areas
3. Implement activities restoring ecosystem processes and natural disturbance regimes
4. Learn through monitoring, research and adaptive management
5. Restore a healthy, functioning landscape vegetation pattern that is sustainable over time
6. Emphasize opportunities for partnership

Priorities for 2000 Watershed Restoration Business Plan

The 2000 Watershed Restoration Business Plan identified six priority watersheds. The document emphasized restoration of aquatic ecosystems as directed by the Aquatic Conservation Strategy (ACS). Priority was given to actions taking place within Key Watersheds and Late Successional Reserves identified in the Northwest Forest Plan, or within municipal watersheds, watersheds with opportunities for collaboration, and Ranger Districts with the ability to implement the restoration program. Within some priority watersheds, specific subwatersheds were identified for restoration. These are listed below (Watershed, Subwatershed Focus Areas for Restoration 2001-2011, Table 1).

Table 1: Watershed, Subwatershed Focus Areas for Restoration 2001-2011

WATERSHED	SUBWATERSHEDS
Steamboat	Big Bend, Cedar, Steamboat Headwater, Horse Heaven, Little Rock Creek, Reynolds
Middle South Umpqua	Dumont, Boulder
Jackson Creek	Beaver, Squaw, Falcon
Middle North Umpqua	Copeland, Calf
Little River	Upper Cavitt, includes Cultis, Emile
Upper Row River	Layng

The Plan originally identified Fish Creek as a priority watershed, with the stipulation that Copeland Creek in Middle North Umpqua would be higher priority once watershed analysis was completed in 2001. Refer to 10-Year Goals Table (10-Year Goals for Accomplishing Restoration in Priority Watersheds from 2000 Watershed Restoration Business Plan, Table 2) for the work completed since 2000, and work left to be done through 2010.

Table 2: 10-Year Goals for Accomplishing Restoration in Priority Watersheds from 2000 Watershed Restoration Business Plan -- Highlighted Columns Show Work Remaining

10-Year Outcomes	Steamboat		Mid-South Umpqua		Jackson		Mid-North Umpqua		Little River		Upper Row	
	Done	Left	Done	Left	Done	Left	Done	Left	Done	Left	Done	Left
Road Improvement (miles)	8	91	0	35	0	130	0	14	0	60	1	1
Road Reduction (miles)	26	36	2	36	0	114	0	22	1	54	0	6
Prescribed Fire (acres)	0	8,400	0	1,200	0	2,000	0	2,580	0	4,900	0	400
Precommercial Thin (acres)	1390	0	100	2,200	0	2,960	0	2,000	0	3,560	350	0
In-stream Restoration (miles)	11	6	0	14	0	22	0	8	0	9	0	10
COST ($MM)	$1.8	$8.0	$0.2	$5.0	0	$9.7	0	$4.0	$0.1	$7.2	$0.1	$1.0

In order to meet the 10-year target, the rate of restoration needs to be increased. Wildfires in 2002 accomplished considerable underburning in Middle South Umpqua and Jackson watersheds. We estimate $35 million of remaining restoration work in priority watersheds.

Priorities for 2003 Watershed Restoration Business Plan Update

The 2003 Watershed Restoration Business Plan Update identifies critical terrestrial restoration priorities to meet ecosystem management objectives. Some of these needs are the same as those identified in 2000. The 2003 Update adds to the 2000 Watershed Restoration Business Plan.

In an effort to comprehensively assess the Forest's terrestrial restoration and fire recovery needs, we asked state and federal agencies, local interest groups, private citizens and Umpqua Forest resource specialists to identify Forest restoration needs and opportunities. We categorized the input into seven main restoration priorities, which we ranked according to how they complemented the existing restoration strategy, followed the South Cascades Late Successional Reserve Assessment (April 1998), provided social/economic benefits, provided opportunities for partnerships, and described the urgency to do restoration work.

These seven critical terrestrial restoration priorities, listed in order of rank, are:

1. Restore late-successional habitat in Late Successional Reserves and associated Riparian Reserves

2. Restore the role of fire in landscapes with historically frequent fire patterns

3. Restore productivity and natural functions of Matrix lands and associated Riparian Reserves, including productivity of damaged soil

4. Restore unique habitats, including meadows, oak savannahs, knobcone pine stands and hardwoods

5. Restore big game habitat

6. Restore habitat for native species threatened by non-native invasive species

7. Restore habitats for non-old growth dependant Threatened, Endangered, and Sensitive species

Each restoration priority contributes to the three restoration goals on the Umpqua National Forest (Goals being met as priority terrestrial restoration work is completed, Table 3).

Table 3: Goals being met as priority terrestrial restoration work is completed

Priority Restoration	Quality of Life	A Resilient Forest	Clean Water and Healthy Streams
1. Restore late-successional habitat in Late Successional and Riparian Reserves	• Enhances recreation in old-growth forest • Provides employment through reforestation, thinning and fuel treatment • Plants burned areas	• Restores LSR and RR structure, composition, and functions within normal variability to strengthen resilience to natural disturbance • Reforests burned areas with native species; controls non-natives	• Improves natural processes of aquatic and terrestrial systems as Riparian Reserves connect LSRs • Reduces fragmentation • More cover, less erosion and cleaner water and healthy populations of fish

Priority Restoration	Quality of Life	A Resilient Forest	Clean Water and Healthy Streams
2. Restore role of fire in landscapes with historically frequent fire patterns	• Reduces risk of large, severe fires by restoring natural role and patterns of fire • Protects high-use public areas and private land • Improves hiking, viewing, berry and mushroom picking • Employment through landscape burning projects	• Brings desired structure within a more natural range of variability by restoring natural role and pattern of fire and treating fuels • More resilient ecosystems from less severe natural fires • Endemic levels of insects and diseases	• Less severe impacts of natural or human-caused fire in restored areas • Anticipates less sedimentation, erosion, cleaner water, and faster recovery by native species, especially riparian species
3. Restore productivity and natural functions of Matrix and associated Riparian Reserves, including soil productivity	• Provides commodities from productive timberlands • Boosts local economy timber is harvested, roads improved, reforestation and stand improvement occur • Reforests burned plantations	• Manages dense forests; enhancing growth and vigor through thinning • Increases resilience of pines to insect and disease disturbances • Rehabilitates soils, improving productivity • Moves RR toward desired conditions	• Protects and enhance aquatic system health • Moves RRs toward desired conditions through thinning and soil improvement • Improves soil productivity and stand vigor in uplands
4. Restore unique habitats, including meadows, oak savannahs, knobcone pine and hardwoods	• Enjoys restored habitat and view plants, fish, animals • Ensures species conservation	• Provides structure, composition and functions that sustain unique habitats • Increases resiliency of unique habitat to disturbances	• Improves natural functions of unique habitats as areas are prescribed burned and non-natives are treated • Cleaner water and healthier populations
5. Restore big game habitat	• Increases recreational opportunities	• Restores habitats that are more conducive for big game populations	• Controls noxious weeds improves habitat
6. Restore habitat for native species threatened by non-native invasive species	• Restores and sustain native species • Engages partners in activities to restore natives and reduce invasive species	• Restores structure, composition and functions that favor native species, thus reducing impacts and invasions of non-native • Increases resiliency after disturbance for native species	• Restores functions of native species, especially riparian species, and reducing invasive species • Reduces impacts on native amphibians by treating noxious weeds and waterbodies occupied by bullfrogs
7. Restore habitats for non-old growth dependant threatened, endangered, and sensitive species	• Restores habitat and sustained viable populations • Enjoys viewing and being among unique species	• Restores structure, composition and functions for non-old growth TES species • More resilient habitat and species following natural disturbance	• Increases recovery for western pond turtle and red-legged frogs • Enhances long-term species viability for riparian species

Before each restoration priority is described in detail, the summary of estimated costs for the highest priority terrestrial restoration projects is described below (Summary Table of Cost Estimates for Highest Priority Terrestrial Restoration Projects, Table 4).

Table 4. Summary Table of Cost Estimates for Highest Priority Terrestrial Restoration Projects

Project	Unit	Number of Units	Cost per Unit	Total Cost
Tree Planting (LSR)	acres	5,500	$600	$3,300,000
Fuel Break Construction	miles	40	$40,000	$1,600,000
Thinning (LSR)	acres	3,000	$300	$900,000
Landscape Burning	acres	11,000	$500	$5,500,000
Tree Planting Outside LSR	acres	3,000	$1,000	$3,000,000
Thinning (Matrix)	acres	4,000	$300	$1,200,000
Subsoiling	acres	8,000	$300	$2,400,000
Bat Cave gates	gates	2	$9,000	$18,000
Bat Cave road closures	roads	2	$1,000	$2,000
Aspen burning	acres	10	$500	$5,000
Big game forage mowing	acres	1,200	$200	$240,000
Noxious weed control	sites	43	$100	$4,300
Total				**$18,169,300**

Restore late-successional habitat in Late Successional Reserves and associated Riparian Reserves

The Umpqua National Forest contains part of Late Successional Reserve (LSR) #222 and LSR #223. Recommendations from the *1998 South Cascades Late Successional Reserve Assessment include:* increase the amount of late-successional habitat; increase the amount of interior habitat; improve habitat connectivity; and decrease the threat from catastrophic wildfire.

The 2002 wildfires impacted a significant part of LSR #222 on the Umpqua National Forest, burning approximately 10,000 acres with stand-replacement severity. We'll plant ponderosa pine and disease resistant sugar pine and white pine on pine sites in burned areas. The highest priority for restoring LSR's is to reforest those sites, especially the burned plantations, in the following order:

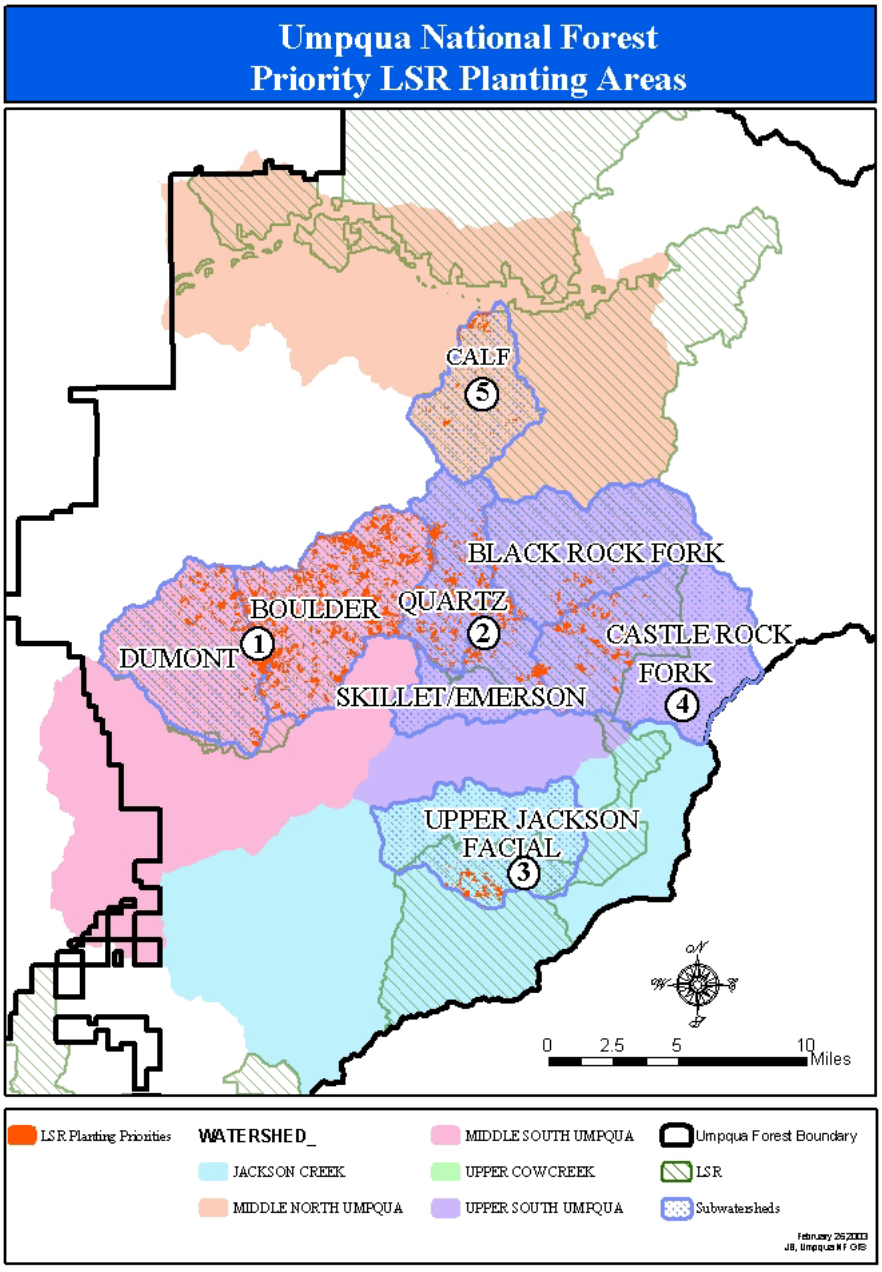
- Plant watersheds with the least amount of remaining late-successional habitat
- Plant Riparian Reserves
- Plant watersheds with the highest potential productivity

The acres in LSR that were stand replacement burned, along with plantation areas to be replanted, are listed in the table below (Priority LSR Reforestation Areas, Table 5). Subwatersheds are listed in order based on percent of late-successional structure. Boulder, Dumont, Quartz, and Black Rock Fork subwatersheds would be highest priority for planting. Subwatersheds with more than 70 percent remaining late-successional structure are not recommended for planting. The locations of the priority planting areas are mapped in Figure 6 (Location of Priority LSR Planting Areas, Figure 6).

Table 5 Priority LSR Reforestation Areas

Priority	Watershed	Subwatershed	Remaining Late Successional Structure (percent)	Plantation Acres for Replanting
1	Middle S Umpqua	Boulder, Dumont	49%	3,300
2	Upper S Umpqua	Quartz, Black Rock Fork, Skillet/Emerson	52%	2,300
3	Jackson	Upper Jackson	56%	100
4	Upper S Umpqua	Castle Rock Fork	58%	500
5	Middle N Umpqua	Calf	69%	550

Figure 6. Location of Priority LSR Planting Areas



The public, by commenting, and Forest resource specialists identified other restoration opportunities, in addition to planting, in designated LSR's. These opportunities include thinning to hasten development of suitable old growth habitat and building fuel breaks and other fuel management activities reduce the threat of catastrophic wildfire.

Priority areas for thinning were selected based upon:

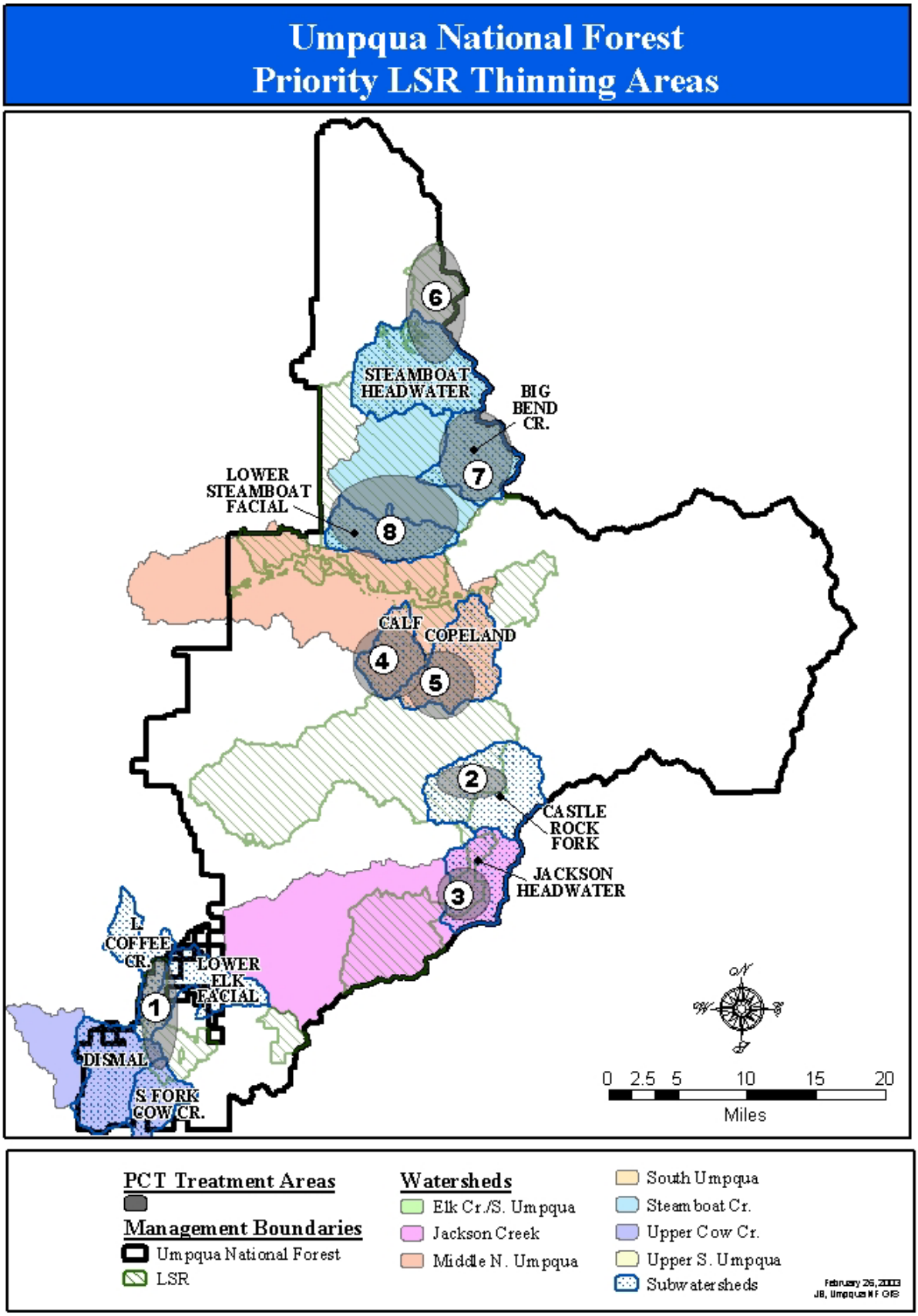
- Potential to enhance long term connectivity while developing interior habitat and enhancing Riparian Reserves
- Potential to enhance pine vigor
- Site productivity

Priority thinning areas are identified in the table below (Priority LSR Thinning Areas, Table 6) and locations are mapped in Figure 6(A) (Priority LSR Thinning Areas, Figure 6(A)).

Table 6. Priority LSR Thinning Areas

Priority	Watershed	Subwatershed(s)	Estimated Acres
1	Elk Cr/S Umpqua R/ S Umpqua /Upper Cow Cr	Lower Elk Facial/Lower Coffee Cr/Dismal/S Fork Cow Cr	800
2	Upper S Umpqua	Castle Rock Fork	1,800
3	Jackson Cr	Jackson Headwater	1,200
4	Middle N Umpqua	Calf Creek	1,200
5	Middle N Umpqua	Copeland Creek	2,800
6	Steamboat Cr	Steamboat Headwater	4,500
7	Steamboat Cr	Big Bend Creek	2,100
8	Steamboat Cr	Lower Steamboat Creek	2,500

Figure 6(A). Priority LSR Thinning Areas



Creating fuel breaks would help protect existing old growth habitat. Fuel breaks will be located where:

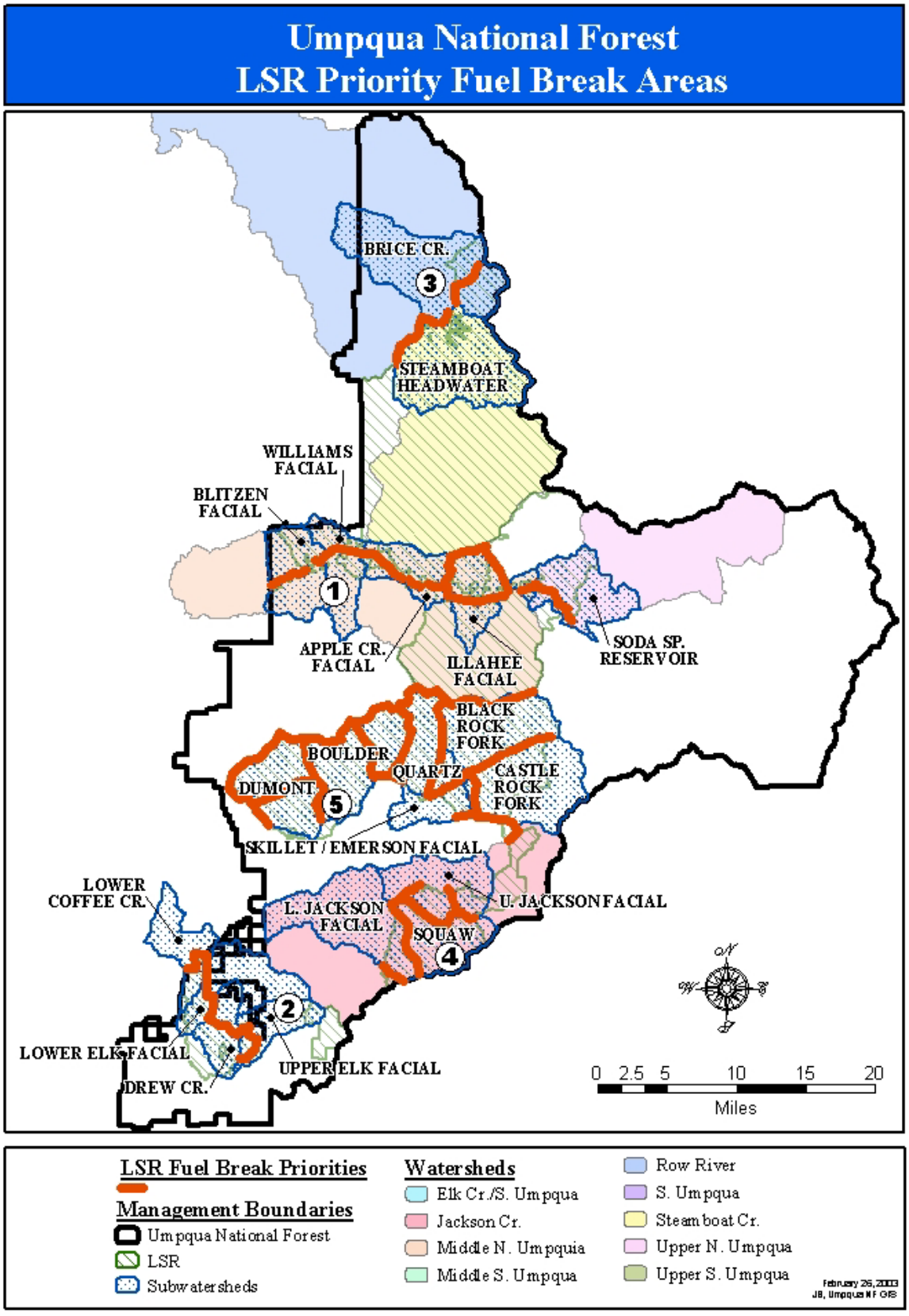
- there is likelihood of wildfire starts (locate fuel breaks across landscapes with large amounts of Fire Regimes I and II where fire is frequent)
- they will protect high use public areas and private lands
- fuel treatments will take place
- they would provide additional protection to areas impacted by fires in 2002
- they will maximize protection of unfragmented late-successional habitat

These priority fuel treatment locations are identified in the table below (Priority Fuel Break Areas in LSR, Table 7) and the locations are shown in Figure 7 (Location of Priority Fuel Break Areas in LSR, Figure 7).

Table 7. Priority Fuel Break Areas in LSR

Priority	Watershed(s)	Subwatershed(s)	Location	Miles
1	Middle N Umpqua/Upper N Umpqua	Blitzen/Williams Facial/Apple Creek Facial Illahee/Soda Springs	Hwy 138/Dry Creek	31
2	S Umpqua/Elk Cr	Lower Coffee/Lower Elk Facial/ Drew Cr/ Upper Elk Facial	LSR #223	15
3	Row River/ Steamboat	Brice Creek/ City Creek	Bohemia Mining District	10
4	Jackson Cr	Upper and Lower Jackson/ Squaw	Squaw/ Jackson	19
5	Upper & Middle S Umpqua	Quartz/Black Rock Fk/ Boulder/ Dumont Castle Rock Fk/ Skillet/ Emmerson Facial	N/S Umpqua Divide	82

Figure 7. Location of Priority Fuel Break Areas in LSR



Restore the role of fire in landscapes with historically frequent fire patterns

Fire suppression in the landscape since the 1950's has interrupted the natural pattern of fire disturbance. The likelihood of higher-intensity fires has risen with increases in fuels, stand densities, and fire-intolerant species. This is most notable in vegetative communities with frequent, low-intensity burn cycles, and frequent, high-intensity burn cycles (Fire Regimes I and II). Priority areas for prescribed burning are:

- landscapes with concentrations of Fire Regimes I and II
- urban or rural interface with the Forest, especially where partnerships can be developed
- landscapes where additional objectives can be met, such as restoring unique habitats or big game forage

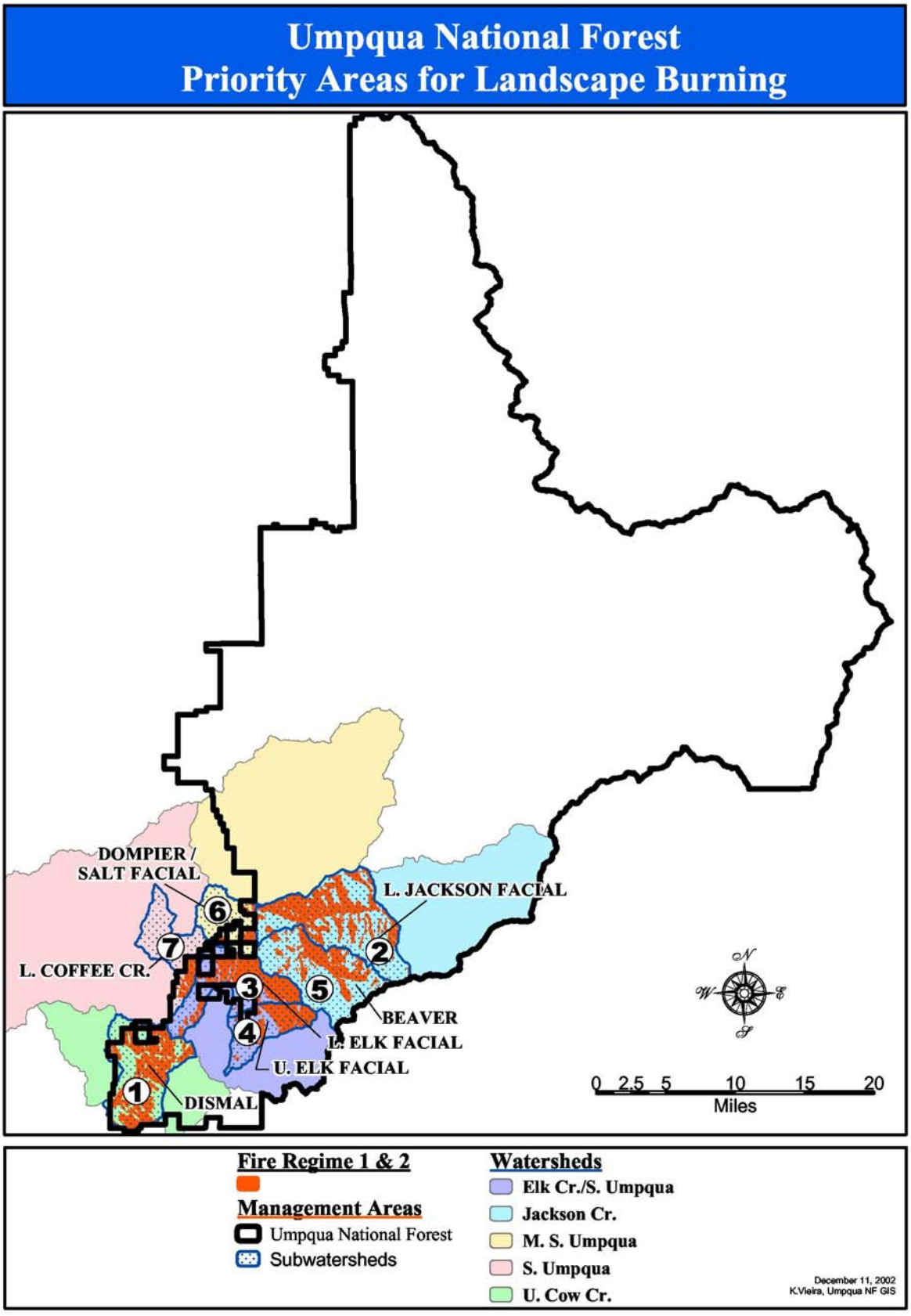
The table below (Priority Areas for the Re-Introduction of Landscape Burning, Table 8) shows the priority list for re-introducing landscape burning. The map in Figure 8 shows locations of areas identified for re-introducing landscape burning (Priority Areas for Re-introducing Landscape Burning, Figure 8). Refer also to the Fire Regime Map on page 13.

Table 8. Priority Areas for the Re-introduction of Landscape Burning

Priority	Watershed	Subwatershed(s)	Fire Regime I & II
1	Upper Cow Cr	Dismal	10,000 acres
2	Jackson Cr	Lower Jackson Facial	11,000 acres
3	Elk Cr	Lower Elk Facial	8,000 acres
4	Elk Cr	Upper Elk Facial	4,000 acres
5	Jackson Cr	Beaver	5,500 acres
6	Middle S Umpqua	Dompier/Salt Cr	1,200 acres
7	S Umpqua R	Lower Coffee Cr	1,500 acres

Resource managers also recognize that managing wildfire on the Forest would help reduce accumulated hazardous fuels and aid in allocating limited fire-fighting resources. To achieve these objectives, Wildland Fire-Use Plans will need to be developed for the Forest. Such a plan is underway for designated Wilderness Areas on the Forest.

Figure 8: Priority Areas for Re-introducing Landscape Burning



Restore productivity and natural functions of Matrix lands, including productivity of damaged soil

Matrix lands have an important role in providing goods and services to national and local communities. In some locations, past management practices or natural events are limiting the land's ability to provide goods and services.

The highest priority restoration activity in Matrix lands is to reforest plantations and sites that were burned with stand-replacement severity during the 2002 fires. The following criteria guide where to plant first:

- plant watersheds that were most severely affected by stand replacement fire
- reforest burned plantations
- plant Riparian Reserves, then uplands
- plant watersheds with the greatest potential productivity
- plant ponderosa pine, disease-resistant sugar pine, and western white pine on pine sites

Matrix planting priorities are identified in Table 9 (Plantation Acres in Matrix in Need of Re-planting, Table 9) and mapped in Figure 9 (Priority Matrix Planting Areas, Figure 9).

Table 9: Plantation Acres in Matrix in Need of Re-planting

Priority	Watershed	Subwatershed	Total Watershed Acres	Plantation Acres in Need of Planting	Percent of Stand Replacment
1	Middle N Umpqua	Panther	12,160	2,550	21%
2	Middle S Umpqua	Ash	4,830	830	17%
3	Middle N Umpqua	Apple Creek	11,830	1,100	9%
4	Upper S Umpqua	Buckeye	15,970	500	3%
5	Upper Cow Creek	South Fork Cow	6,140	30	1%
6	Upper Cow Creek	Dismal	2,980	20	1%
7	Jackson Creek	Jackson Headwater	3,770	40	1%

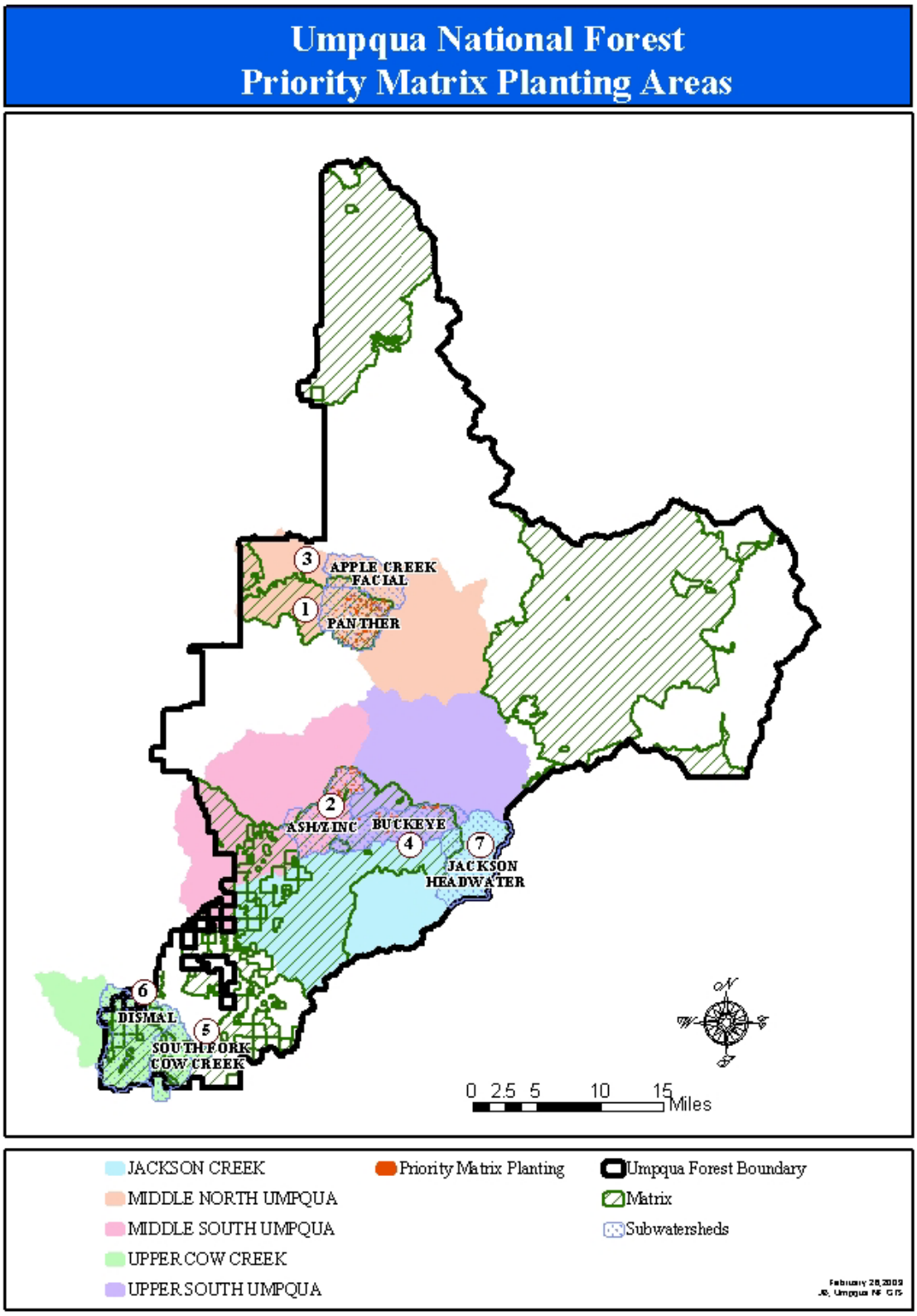
Other ample opportunities to restore productivity and natural functions in Matrix lands across the Forest include thinning dense stands and restoring long-term site productivity by subsoiling to break up compaction. Criteria used to determine priority thinning include:

- enhancing long-term connectivity in Riparian Reserves
- areas with the highest site productivity
- enhancing pine health and growth on pine sites

Criteria used to determine where to restore soil productivity through subsoiling include:

- areas that had repeated planting efforts
- high productivity sites
- subwatersheds with greatest amount of work needed

Figure 9. Priority Matrix Planting Areas

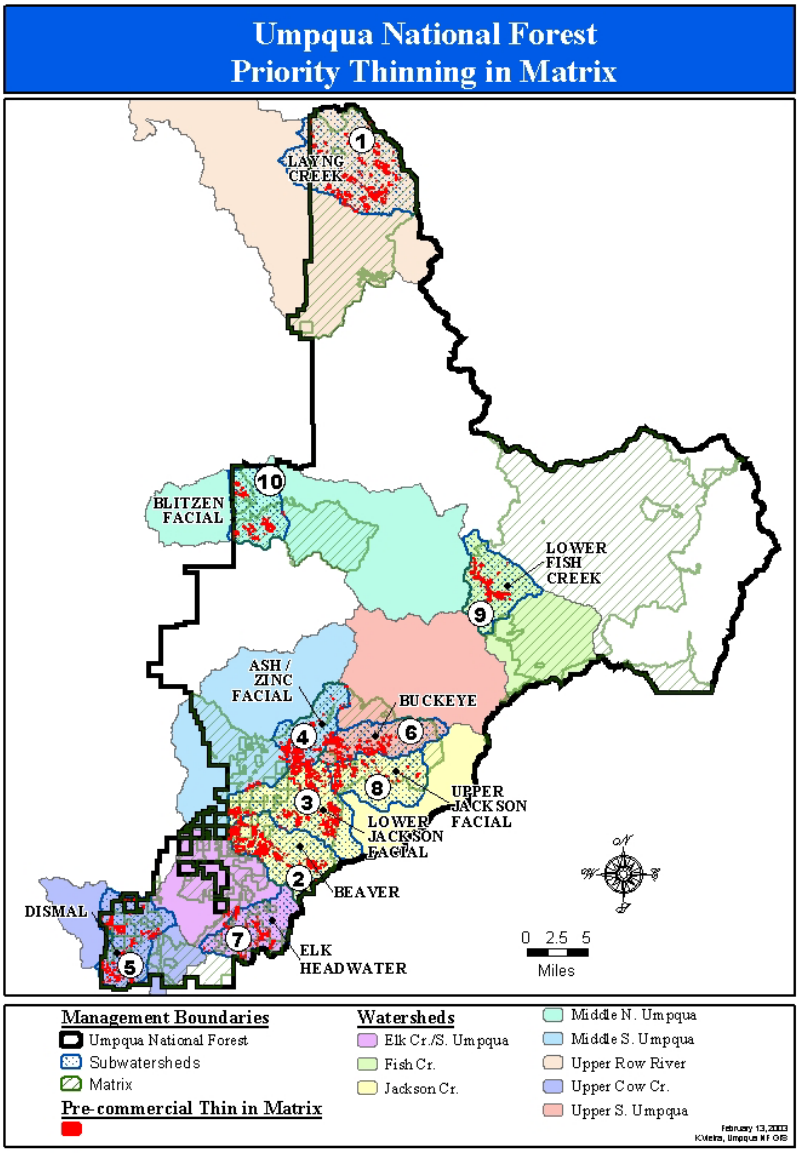


Matrix thinning priorities and acreage are identified in the table below (Priority Thinning in Matrix, Table 10) and displayed in Figure 10 (Priority Matrix Thinning Areas, Figure 10).

Table 10: Priority Thinning in Matrix

Priority	Watershed	Subwatershed	Thinning Acres
1	Upper Row	Layng Cr	2,000
2	Jackson Cr	Beaver	2,000
3	Jackson Cr	Lower Jackson Facial	2,000
4	Middle S Umpqua	Ash / Zinc	1,500
5	Upper Cow Cr	Dismal	1,100
6	Upper S Umpqua	Buckeye	900
7	Elk Cr/S Umpqua	Elk Headwater	700
8	Jackson Cr	Upper Jackson Facial	600
9	Fish Cr	Lower Fish Creek	600

Figure 10. Priority Matrix Thinning Areas

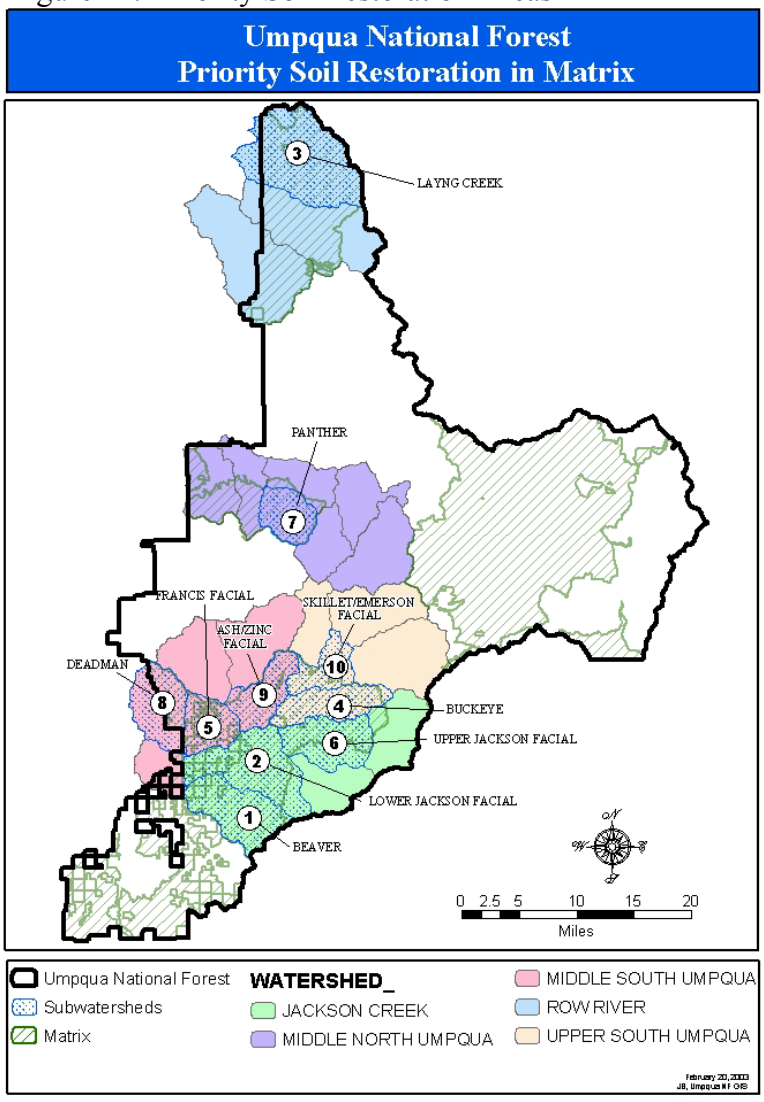


Priority soil restoration areas are identified in the table below (Priority Soil Restoration in Matrix, Table 11) and displayed in Figure 11 (Priority Soil Restoration Areas, Figure 11).

Table 11: Priority Soil Restoration in Matrix

Priority	Watershed	Subwatershed	Subsoiling Acres
1	Jackson Cr	Beaver	14,000
2	Jackson Cr	Lower Jackson Facial	7,900
3	Row River	Layng Cr	7,500
4	Upper S Umpqua	Buckeye	6,800
5	Middle S Umpqua	Francis Facial	6,000
6	Jackson Cr	Upper Jackson Facial	6,000
7	Middle N Umpqua	Panther	4,900
8	Middle S Umpqua	Deadman	4,700
9	Middle S Umpqua	Zinc Facial	4,100
10	Upper S Umpqua	Skillet/Emerson	3,800

Figure 11. Priority Soil Restoration Areas



The remaining four restoration needs are nearly equal in weight when prioritizing restoration.

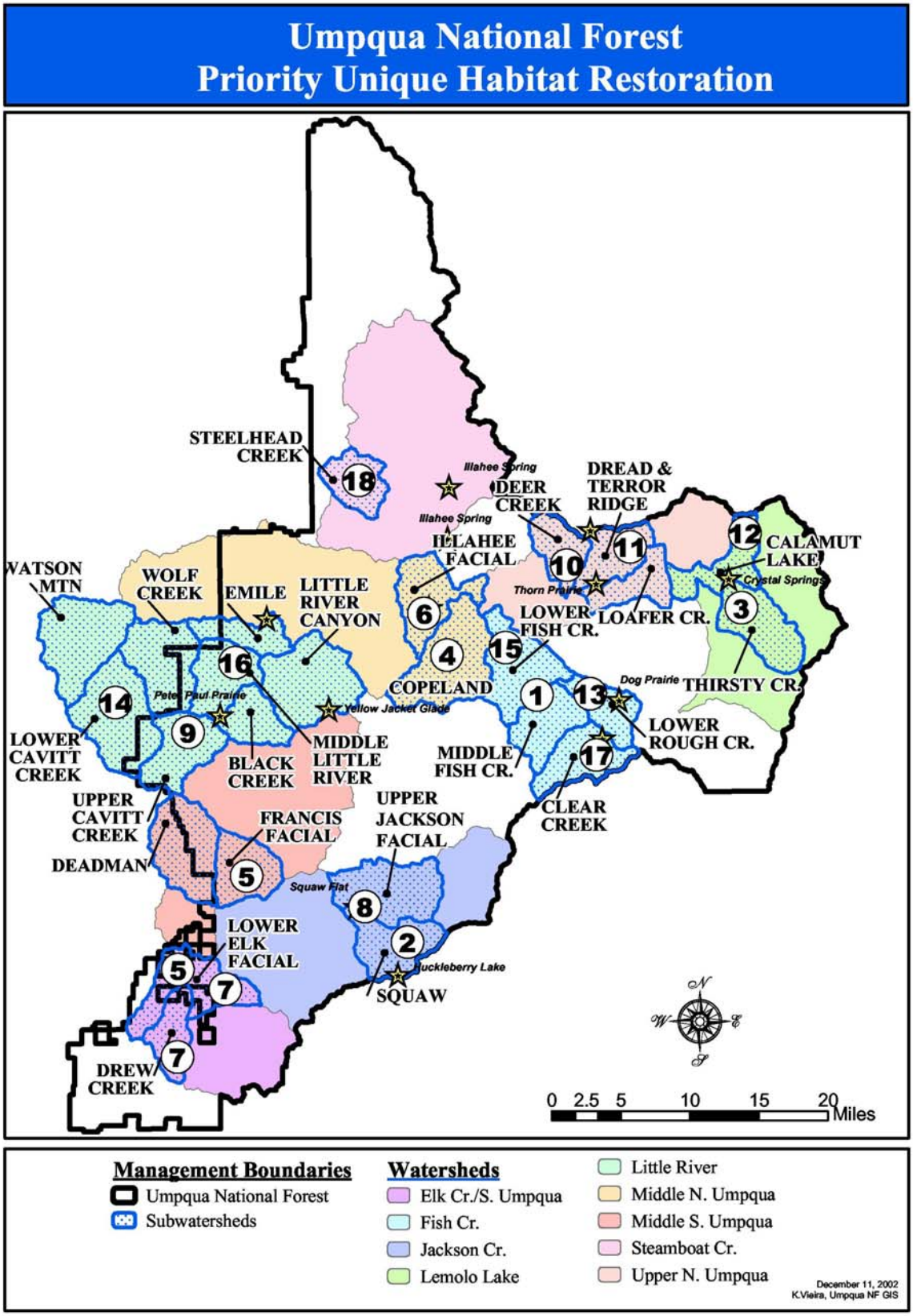
Restore unique habitats, including meadows, oak savannahs, and hardwoods

Throughout the Forest, special topographic features, geological components, and soil or moisture conditions produce unique habitat features that may support rare plant or animals species dependent upon these habitats. These unique habitats can include specific landscape features such as caves, mines, talus and cliffs; or they may be more generalized vegetative features including wet/dry meadows, oak woodlands, shrublands, bogs, or other rare vegetative communities. Many of these sites are small and especially susceptible to damage. Prioritizing restoration activities in unique habitats was based on the rarity of the habitat type, perceived threats to habitat sustainability, and potential to benefit multiple wildlife and plant species. The list of priority restoration projects for unique habits is identified below (Priority Areas for Unique Habitat Restoration, Table 12) and displayed in Figure 12 (Priority Unique Habitat Restoration Areas, Figure 12).

Table 12: Priority Areas for Unique Habitat Restoration

Priority	Watershed	Subwatershed	Location	Habitat Type	Estimated Acres
1	Fish	Clear Cr	Fish Cr Meadow	Aspen	1
2	Jackson	Squaw	Huckleberry Lake	Aspen	10
3	Lemolo Lake	Thirsty Cr	Kelsay Valley	Aspen	5
4	Middle N Umpqua	Copeland Cr	Big Oak Flats	Oak meadow	160
5	Middle S Umpqua Elk Cr/S Umpqua	Deadman/Francis Facial/Lower Elk	Spam/Summit	Oak meadow	110
6	Middle N Umpqua	Illahee Facial	Little Oak Flat/Illahee	Oak meadow	50
7	Elk Cr/S Umpqua	Lower Elk Facial/Drew Cr		Oak meadow	70
8	Jackson Cr	Upper Jackson/Squaw	Squaw Flat RNA	Oak woodland	120
9	Little River			Oak meadow	25
10	Upper n Umpqua	Deer Cr/Dread&Terror Loafer Cr	Thorn Prairie/Mt Meadows	Mountain shrubland	2,000
11	Upper N Umpqua	Dread & Terror	Potter Mt/Dread & Terror	Madrone woodland	600
12	Lemolo Lake	Calamut Lake	Crystal Springs	Wet meadow	3
13	Fish Creek	Lower Rough Cr	Dog Prairie	Meadow complex	400
14	Little River		Willow Flats/Yellow Jacket Glade	Meadow	10
15	Fish	Lower Fish	Big Camas Meadow	Wet meadow	70
16	Little River	Middle Little River	Peter Paul Prairie	Meadow	10
17	Fish	Clear Cr	Skookum Prairie	Meadow	400
18	Steamboat	Steelhead Cr		Meadow	10

Figure 12. Priority Unique Habitat Restoration Areas



Restore big game habitat

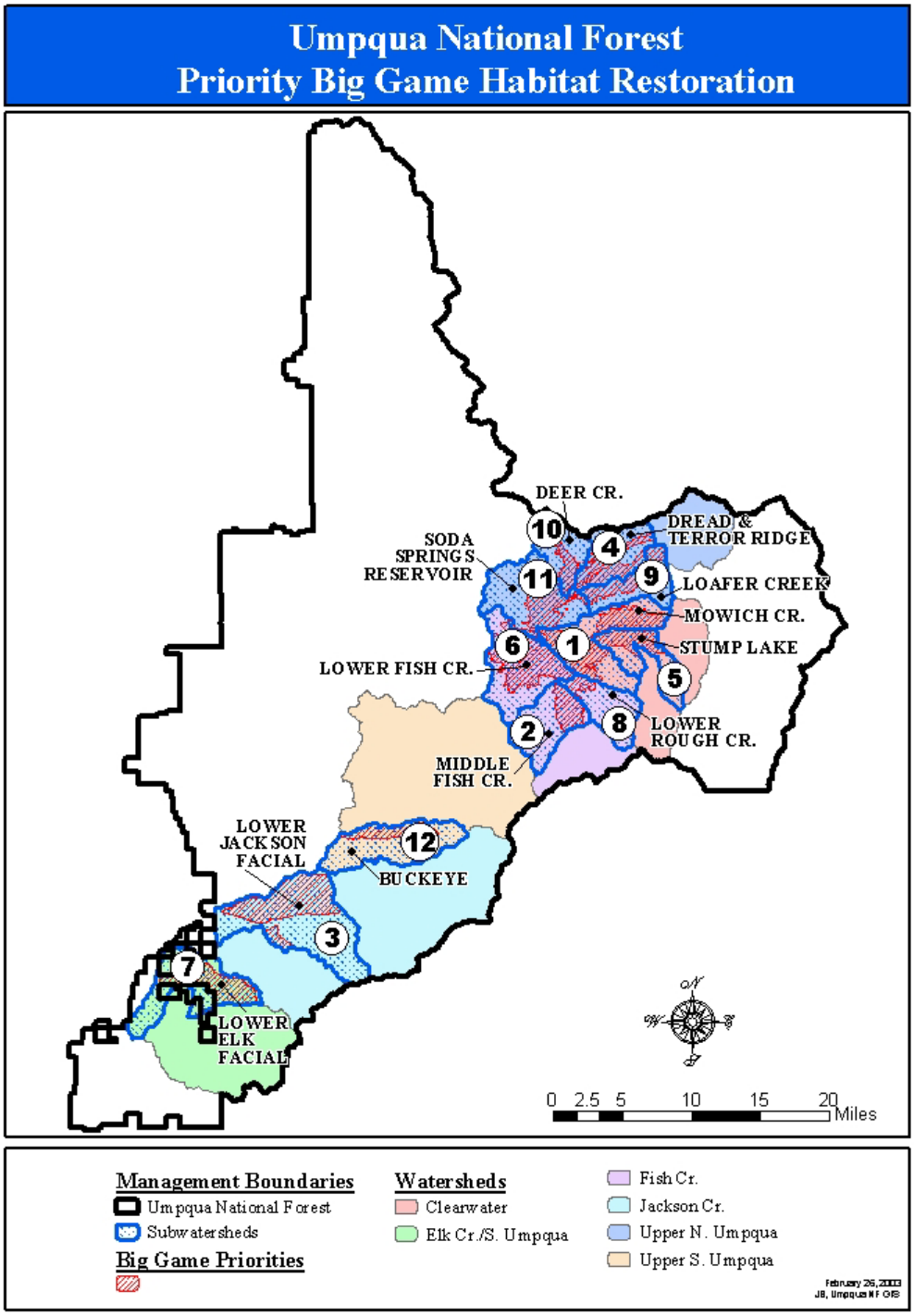
Big game populations, primarily Roosevelt elk and black-tailed deer, are an important recreational and economic resource for local communities. One land management objective of the Forest is to provide habitat capable of meeting Oregon Department of Fish and Wildlife management objectives. Both big-game habitat quality and populations are showing a decline from state management objectives resulting from changes in timber-management activities. To ameliorate these losses, more intensive management of designated winter range areas is recommended.

Potential methods to enhance big-game habitat conditions include seeding or planting of desired forage species, prescribed burning, noxious weed control, road management, conifer control, and mechanical pruning of woody vegetation. Prioritization for this restoration work began with Oregon Department of Fish and Wildlife recommendations, and was further refined using Forest land allocations. The resulting priority treatment areas are identified below (Priority Areas for Big Game Habitat Restoration, Table 13, and Priority Big-Game Habitat Restoration Areas, Figure 13). Treatments in the Lower Jackson Facial, Lower Elk Facial and Soda Springs subwatersheds should focus on restoring black-tailed-deer habitat conditions.

Table 13: Priority Areas for Big Game Habitat Restoration

Priority	Watershed	Subwatershed	Estimated Acres
1	Clearwater	Mowich Cr	1,100
2	Fish Cr	Middle Fish Cr	1,000
3	Jackson Cr	Lower Jackson Facial	1,200
4	Upper N Umpqua	Dread & Terror	560
5	Clearwater	Stump Lake	400
6	Fish Cr	Lower Fish Cr	1,000
7	Elk Cr/ S Umpqua	Lower Elk Facial	740
8	Fish Cr	Lower Rough Cr	150
9	Upper N Umpqua	Loafer Cr	500
10	Upper N Umpqua	Deer Cr	200
11	Upper N Umpqua	Soda Springs	600
12	Upper S Umpqua	Buckeye	350

Figure 13. Priority Big game Habitat Restoration Areas



Restore habitat for native species threatened by non-native invasives

Non-native plant and animal species are often able to outcompete and displace more desirable native species. In some cases, non-natives have contributed to declines in viability for native species. In other cases, non-native species have displaced natural plant communities and caused

significant economic loss. Restoration treatments were prioritized according to the urgent need for early treatment to minimize adverse impacts to existing ecosystems, and reduce future resource damage or loss. Treatment of noxious weeds was identified as the highest priority for this issue area, followed by treating waterbodies occupied by bullfrogs and, finally, restoring waterbodies where stocked fish are impacting native amphibians. Priority treatment areas are indentified below (Priority Noxious Weed Treatment Areas, Table 14(A), Bullfrog and stocked fish waterbodies in need of restoration, Table 14(B), and Priority Non-native Species Treatment Areas, Figure 14).

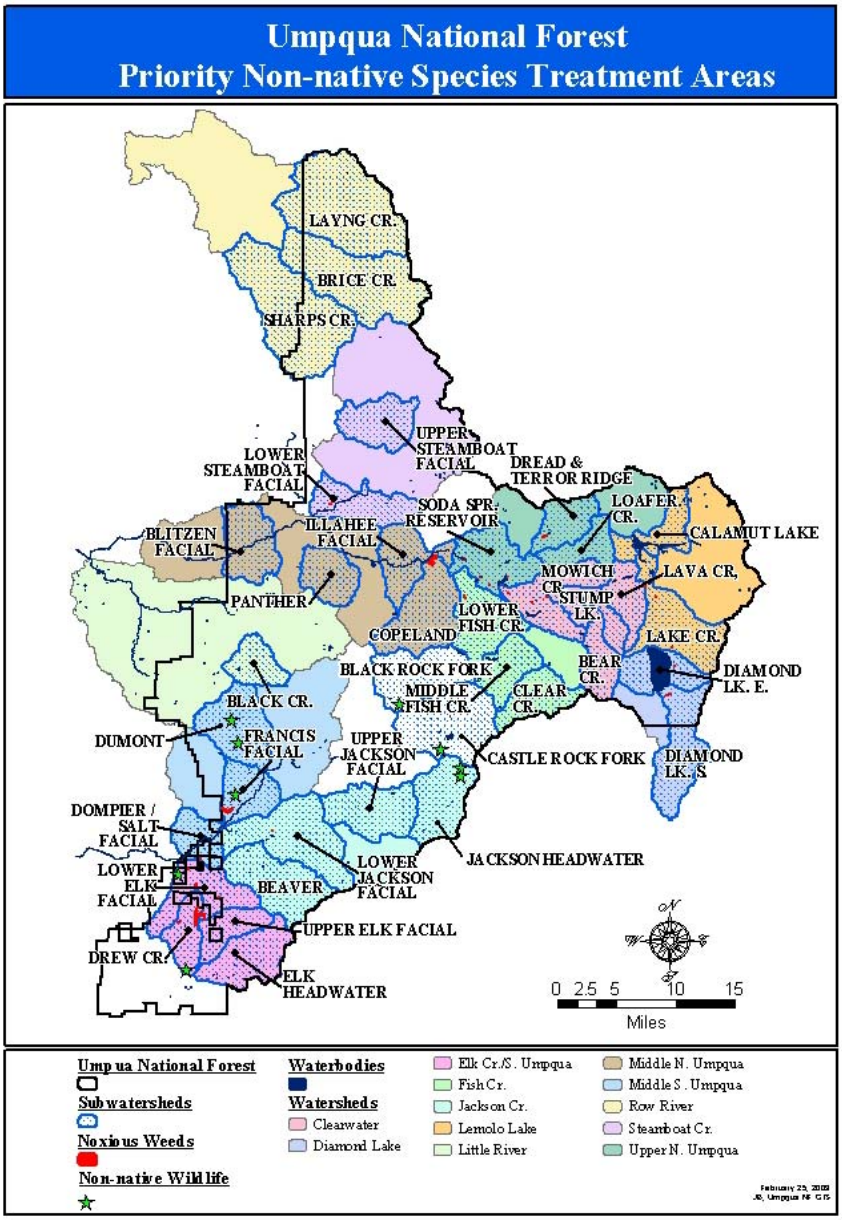
Table 14(A): Priority Noxious Weed Treatment Areas

Watershed	Subwatershed	Weeds
Clearwater	Bear	spotted knapweed
Clearwater	Lava Creek	diffuse knapweed/spotted knapweed
Clearwater	Mowich	spotted knapweed/yellow toadflax
Clearwater	Stump Lake	spotted knapweed
Elk	Drew	yellow starthistle/Italian thistle/diffuse knapweed
Elk	Elk Headwater	rush skeletonweed/yellow starthistle
Elk	Lower Elk Facial	rush skeletonweed/yellow starthistle
Elk	Upper Elk Facial	yellow starthistle
Fish	Clear Creek	spotted knapweed
Fish	Lower Fish	spotted knapweed/yellow toadflax
Fish	Middle Fish	spotted knapweed
Jackson	Beaver	yellow starthistle
Jackson	Lower Jackson Facial	yellow starthistle
Jackson	Upper Jackson Facial	spotted knapweed
Lemolo	Diamond Lake East	spotted knapweed
Lemolo	Diamond Lake South	spotted knapweed/diffuse knapweed
Lemolo	Lake Creek	spotted knapweed
Little River	Black Creek	rush skeletonweed
Mid N Umpqua	Blitzen Facial	French broom
Mid N Umpqua	Illahee Facial	yellow toadflax/diffuse knapweed
Mid N Umpqua	Panther	diffuse knapweed/burned
Middle N Umpqua	Copeland	spotted knapweed/rush skeletonweed
Middle S Umpqua	Dompier/Salt	spotted knapweed/rush skeletonweed/yellow starthistle
Middle S Umpqua	Francis Facial	yellow starthistle
Steamboat	Lower Steamboat Facial	gorse/spotted knapweed
Steamboat	Upper Steamboat Facial	spotted knapweed
Upper N Umpqua	Calamut Lake	diffuse knapweed
Upper N Umpqua	Dread and Terror Ridge	spotted knapweed/yellow starthistle
Upper N Umpqua	Loafer Creek	yellow toadflax
Upper N Umpqua	Soda Springs Reservoir	diffuse knapweed/spotted knapweed/yellow toadflax/giant knotweed
Upper Row	Brice	Japanese knotweed/meadow knapweed/yellow toadflax
Upper Row	Layng Creek	meadow knapweed/false brome
Upper Row	Sharps Creek	meadow knapweed

Table 14(B). Bullfrog and stocked fish waterbodies in need of restoration

Priority	Watershed	Subwatershed	Location	Non-Native Species
1	Elk Cr/S Umpqua	Drew Cr	Drew Lake	Bullfrog/fish
2	Middle S Umpqua	Francis Facial	Shadow Pond	Bullfrog/fish
3	Middle S Umpqua	Dumont	Ash Pond	Bullfrog
4	Middle S Umpqua	Dumont	Podunk Pond	fish
5	Elk Cr/S Umpqua	Lower Elk Facial	Blue Bluff Pond	fish
6	Upper S Umpqua	Black Rock Fk	Carmin Lake	fish
7	Jackson Cr	Jackson Headwater	Toad Pond	fish
8	Jackson Cr	Jackson Headwater	Triangle Pond	fish
9	Upper S Umpqua	Castle Rock Fork	Cliff Lake	fish

Figure 14. Priority Non-native Species Treatment Areas



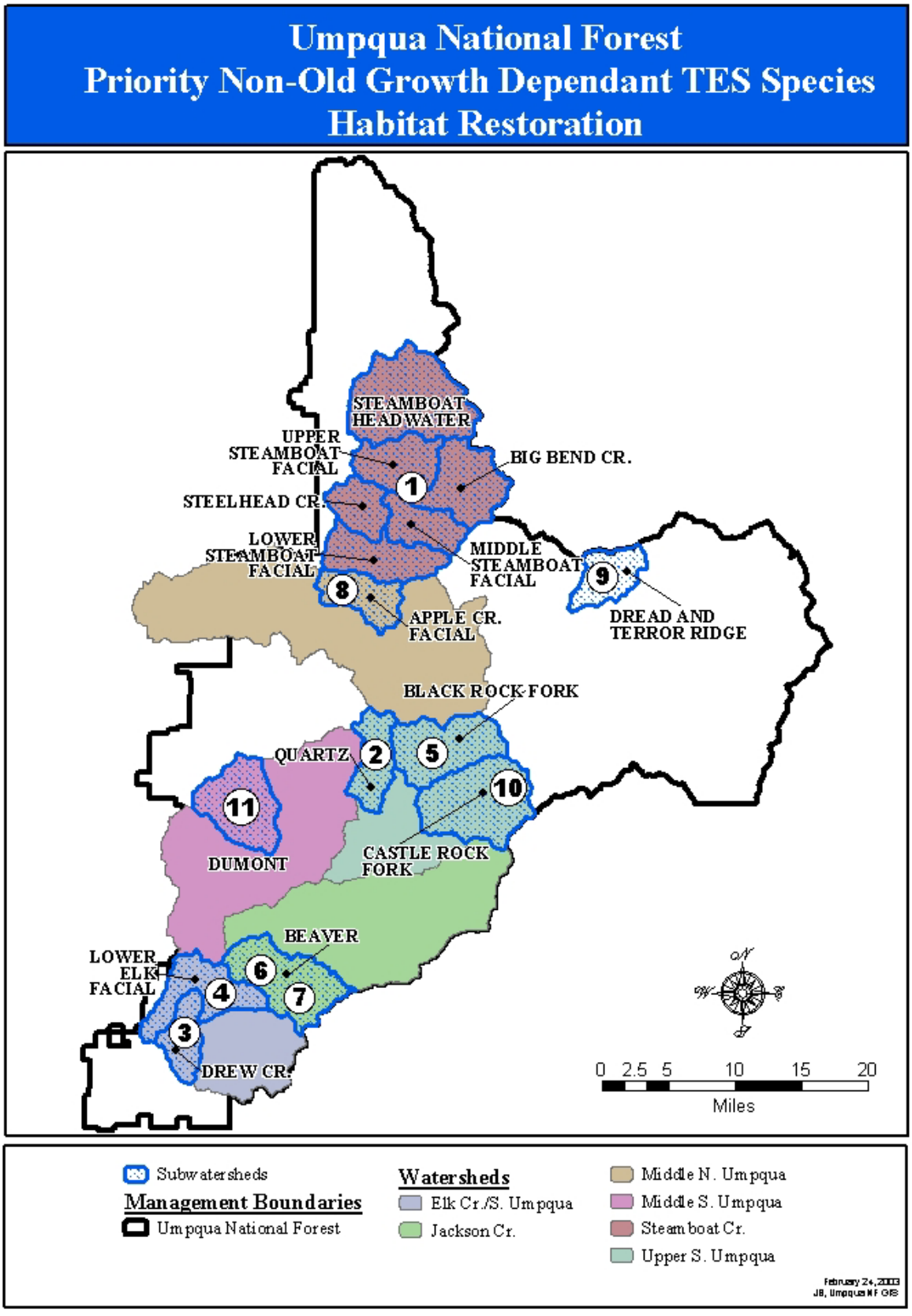
Restore habitats for non-old-growth dependent Threatened, Endangered, and Sensitive Species

Federal law identifies that a Forest land management objective is to maintain species viability for plants and animals. The U.S. Fish and Wildlife Service and Forest Service identify such species as Threatened, Endangered or Sensitive (TES) due to their limited distribution or small population size, significant declines in population numbers or distribution, or perceived threats to continued species viability. The Umpqua National Forest is known to be home for two terrestrial Threatened or Endangered species: the northern spotted owl and bald eagle. The northern spotted owl is dependent on old growth habitat; restoration needs for this species are already covered. Population trends for the bald eagle have stabilized and further restoration activities are not necessary. Restoration activities should focus on Forest Service Sensitive species. The following criteria were used to prioritize restoration: threats to long-term species viability, the ability to affect population recovery or stabilization, and the potential for multiple species benefits. The resulting list of priority restoration activities is contained in the table below (Priority non-old growth dependant TES species, Table 15) and displayed in Figure 15 (Priority Non-Old Growth Dependant TES Species Habitat Restoration Areas, Figure 15).

Table 15: Priority non-old growth dependant TES species

Priority	Watershed	Subwatershed	Location	Species
1	Steamboat	Unable to disclose	Unable to disclose	Townsend's big-eared bat
2	Upper S Umpqua	Quartz	Unable to disclose	Townsend's big-eared bat
3	Elk Cr	Drew		Umpqua mariposa-lily
4	Elk Cr	Lower Elk Facial		Umpqua mariposa-lily
5	Upper S Umpqua	Black Rock Fk	Carmin Lake	Western pond turtle
6	Jackson Cr	Beaver		Western pond turtle & red-legged frog
7	Jackson Cr	Beaver	Blue Bluff Pond	Western pond turtle
8	Middle N Umpqua	Apple Cr Facial		*Kalmiopsis fragrans*
9	Upper N Umpqua	Dread & Terror Ridge	Upper Alvin Pond	Adder's tongue
10	Upper S Umpqua	Castle Rock Fk		Whitney's hazardia
11	Middle S Umpqua	Dumont		Red-legged frog

Figure 15. Priority Non-Old Growth Dependant TES Species Habitat Restoration Areas



Coordination and Administration

Organization

The Forest Restoration Team, working with district restoration coordinators, recommends annual and out-year programs of restoration work to the Executive Team. The Natural Resource Staff Officer is the Program Leader for restoration and is accountable to the Forest Supervisor. The Forest Supervisor and the Executive Team approve the restoration program of work.

Forest Restoration Team

Refer to pages 17 and 27 in the 2000 Watershed Restoration Business Plan for a description of the membership and responsibilities of the Forest Restoration Team. One additional responsibility includes reviewing all restoration proposals for consistency with the 2000 Watershed Restoration Business Plan and the 2003 Watershed Restoration Business Plan Update.

Plans

The Land and Resource Management Plan of the Umpqua National Forest, as amended by the Northwest Forest Plan (Forest Plan Direction), provides overall direction for management and restoration activities on the Umpqua National Forest. A central theme of the Forest Plan is to protect the environment while providing the goods and services people need. Restoration projects may be implemented only if they result in improved resource condition or provide necessary protection of existing good resource conditions.

Additional strategies and programs also provide a roadmap for restoration work on the Forest.

- **Land and Resource Management Plan of the Umpqua National Forest, as Amended by the Northwest Forest Plan**: Sets the overall direction, standards and guidelines for managing various land management allocations across the Forest.
- **Watershed Restoration Business Plan, Umpqua National Forest, 8/21/00:** Establishes goals and restoration projects for restoring the diversity of forest and stream habitats in six watersheds on the Umpqua National Forest. The plan emphasizes restoration of aquatic ecosystems.
- **2003 Watershed Restoration Business Plan Update:** Complements the 2000 Watershed Restoration Business Plan by strengthening terrestrial and fire-related aspects.
- **National Fire Plan:** Directs prevention and suppression of wild fires as well as restoration and reduction of hazardous fuels. Provides assistance to communities within the urban interface and directs use of congressionally appropriated hazardous fuels funds.
- **Umpqua National Forest Hazardous Fuel Strategy:** Provides a strategy for reducing and treating fuels on the Umpqua National Forest and adjacent urban interfaces.
- **2002 Wildfire Effects Evaluation Project (WEEP):** An assessment of the 2002 fire effects at a landscape scale and also addresses fire effects on a variety of natural and cultural resources.
- **Fire-Use Plan:** No plan currently exists for the Umpqua National Forest; one is underway for designated wilderness on the Forest. A fire-use plan would enable the Umpqua National Forest to manage fires according to a set of prescriptions/parameters to meet management objectives.
- **Salvage Timber Sale Program and Other Recovery Activities:** May serve as tools to implement fire restoration objectives.

Funding

Implementing projects requires adequate funding either from Congressionally appropriated sources or authorized external partnerships. Refer to page 43 (Overview of Restoration Project Implementation, Appendix A) for a diagram depicting an overview of restoration project funding and implementation. The restoration program is a multi-faceted effort with projects in several resource areas planned and funded for accomplishment in a given year.

The Forest's annual program of work, including restoration, is planned and implemented using a mix of annual appropriated funding, permanent appropriations, and trust funds, which are receipts collected from revenue generating activities, and funds contributed by partners. Refer to page 44 (Sources of Restoration Funding, Appendix B) for a list of funding sources. Also see page 45 (Potential Sources of Restoration Funding, Appendix C).

Congress annually approves spending levels for Forest Service programs, including funding for the National Forests. Funds are allocated among nine Forest Service regions and then to the Umpqua National Forest from the Pacific Northwest Regional Office in Portland. The Forest annually designates a percent of appropriated funds from specific accounts (Budget Line Items or BLI's) for specific restoration work in order of priority.

The Umpqua National Forest uses a two-year budget planning cycle. For example: the Forest's Executive Team requests funding within established constraints for fiscal year 2005 during fiscal year 2003. In 2003, the team also agrees on the percentage of 2005 appropriated funds to be used for restoration work in 2005. After the restoration funding is calculated, the 2005 restoration plan is developed.

Funds provided for managing fish and wildlife habitat, watershed and vegetation, or constructing and maintaining roads are available for restoration activities. The Umpqua National Forest has set aside 15 to 30 percent of applicable appropriated funds for restoration needs. Percentages may vary by applicable BLI. For example: approximately 15 percent of appropriated road funds are designated for decommissioning of roads and watershed road improvements such as storm proofing and culvert upgrades. About 30 percent of wildlife and fisheries funds are used for improving in-stream habitat and thinning, creating snag habitat, and creating large/down wood in wildlife habitat.

Permanent Appropriations and Trust Funds provide another source of funding for restoration work. The Salvage Sale fund (funded through receipts from timber sales) is a permanent appropriation and is not subject to annual appropriations. Trust funds are deposit accounts wherein a timber purchaser or other business partner deposits funds to pay for restoration or maintenance work needed as a consequence of that individual's use of public land. Funds are deposited and the Forest Service is entrusted to perform the work, hence the name "Trust Fund". These funds are used to dispose of brush and reforest timber sale areas, plant trees and shrubs to treat affected wildlife habitat in timber sale areas, and to prevent the spread of noxious weeds in timber sale areas through preventative seeding of native species.

The Forest Service can also enter into various partnerships with other agencies, private groups, and individuals to further the agency's mission. Agreements may be established between the Forest Service and other entities in order for the Forest Service to accept funding or to share in

costs, labor, or "matches in kind". Funds generated by partnerships may also be used to accomplish restoration work.

Prior to 2003, Umpqua National Forest's annual budget has been $20 to $23 million, including appropriated and trust funds. Funding through the Secure Rural Schools and Community Self-Determination Act (Title II funds) and other partnerships contribute to this amount. Currently, we are investing approximately $450,000 of appropriated funds, $1.2 million of trust funds, and $750,000 of partnership funding and other funds such as Title II funding in restoration work.

Plans Guide Restoration

In order to account for the impacts from the 2002 wildfires and help guide our future management in the context of these events, the Forest is updating its *Watershed Restoration Business Plan, Umpqua National Forest, 8/21/00* (2000 Watershed Restoration Business Plan). A Wildfire Effects Evaluation Project (WEEP) is also being completed to assess the 2002 fire effects at a landscape scale and to address the effects of fire on a variety of natural and cultural resources. Taken together, these documents provide us with a road map to continue implementation of our Forest Plan.

The 2000 Watershed Restoration Business Plan proposed a 10-year, 40 million dollar program of work for restoring the diversity and health of terrestrial and aquatic habitats, focused primarily in six of the Forest's watersheds. The 2003 Watershed Restoration Business Plan Update builds upon and expands the 2000 Watershed Restoration Business Plan. It is intended to complement the aquatic restoration strategies and help prioritize terrestrial restoration and fire recovery work on the Forest.

Restoration Project Selection

The restoration program represents a portion of the overall Forest program. The Forest develops and maintains prioritized lists of planned future investments. Restoration projects are selected through a prioritization process established by the Forest Executive Team. A three-to-five-year rolling project list is developed with priorities for investment in program capacity and product delivery. Restoration projects connected with Title II funding and other partnership funding sources are emphasized.

Projects are selected, funded, and implemented using the following guidelines.

- Implement projects consistent with the restoration strategy that have complete environmental assessments
- Anticipate funding availability and limitations. Initiate environmental planning to have additional projects ready if funding increases or shifts
- Complete restoration work in order of priority
- Include an adequate and appropriate monitoring plan with the project proposal
- Leverage funding from multiple sources based on excellent performance and partnership relationships
- Emphasize opportunities to share personnel and expertise

Restoration projects will need reprioritizing as conditions change and new information becomes available, or during annual budget deliberations. Refer to page 46 (Process for Selecting Restoration Projects, Appendix D) for a complete description and diagram of the process.

Measuring Progress

The Watershed Implementation Tracking (WIT) extension of the National Resource Inventory System (NRIS) has been developed to catalog restoration activities on a national scale. It replaces the Ecosystem Restoration Activities Tracking System (E*RATS) that was previously maintained by the Forest. The Restoration Team defined restoration terminology for input into E*RATS, and has created a crosswalk from E*RATS to NRIS-WIT. These documents are included in the Analysis File located in the Supervisor's Office of the Umpqua National Forest.

The Restoration Team has responsibility for maintaining the WIT database and associated Geographic Information System (GIS) information in order to measure accomplishments, justify financial decisions, and inform partners.

Accomplishments will be tracked in GIS and the WIT database. Appropriate effectiveness monitoring will be included as part of every project implementation proposal. Accomplishment, costs, and effectiveness will be reported annually to the Executive Team and included in the Forest's annual accomplishment report.

Partnerships

Several opportunities for collaboration with the Umpqua Basin Watershed Council were identified in the 2000 Watershed Restoration Business Plan, and are repeated below. These should be reviewed in 2003.

- Work with the Bureau of Land Management to establish two federal land manager seats on the Umpqua Basin Watershed Council (UBWC) Management Team
- Combine the restoration prioritization efforts of the Province Interagency Executive Committee (PIEC) and UBWC into a single basin-wide strategy
- Contribute a base funding level to the UBWC partnership toward accomplishing its goals as outlined by basin-level restoration plan

A number of restoration partnerships are underway. These are listed on page 48 (Partnerships in Restoration Projects, Appendix E). More partnerships will be developed as this plan is implemented.

Restoration Community

The people who use the Umpqua Basin love the outdoors. They earn their livelihoods and enjoy recreational activities in this area. Our restoration community includes county and local governments, tribes, congressional districts, the citizens of adjacent communities (Roseburg, Medford, Eugene, Cottage Grove, Ashland, Grants Pass, the South Umpqua Corridor towns, and the Portland area), and interest groups.

Public Outreach

The goals of public outreach are to broaden participation in restoration and to increase support, including funding.

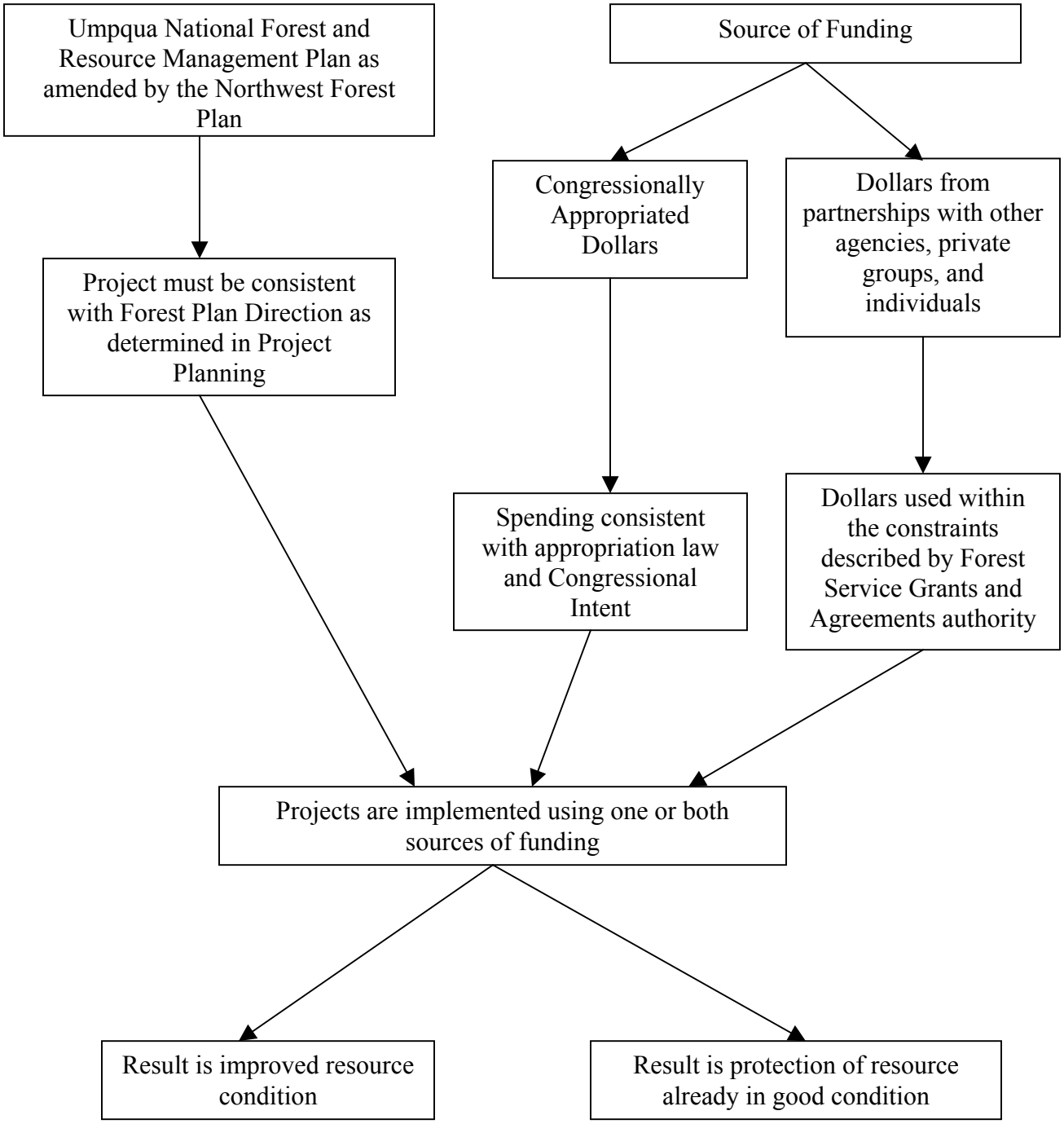
This business plan is our main outreach tool. Forest employees will read the plan. It will be on display and available to the public at all Forest offices. Forest staff will use accompanying materials to present our restoration program to the public. We will conduct outreach to stimulate dialog and solicit ideas about restoration. The Business Plan and accompanying marketing

materials will be updated regularly to include accomplishments, account for changed conditions, and reflect new information. The Plan will be used as the basis of annual restoration reports (Provincial Interagency Executive Council, Provincial Advisory Council, and Umpqua Watershed Council).

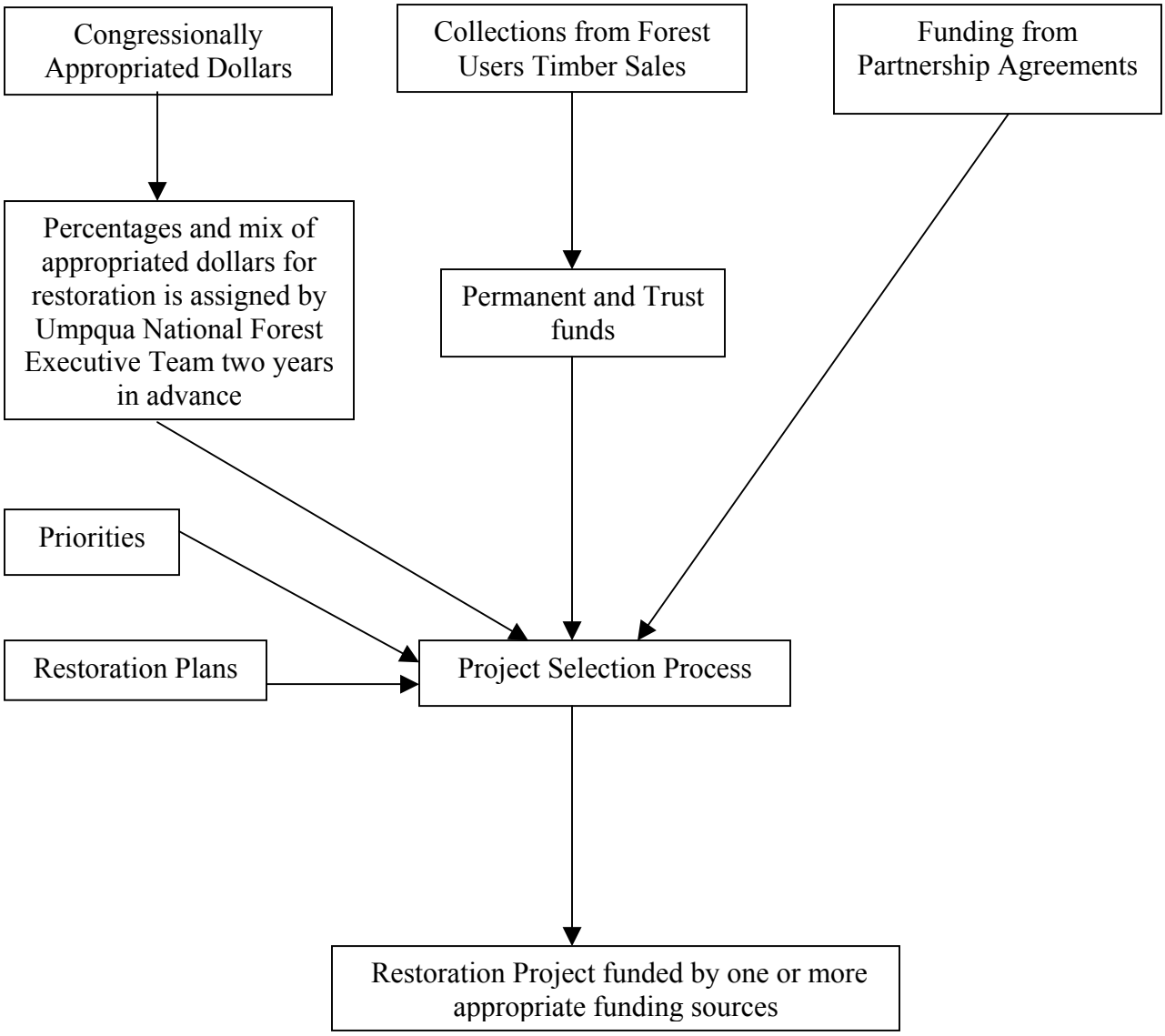
It is critical that the Forest coordinate outreach efforts to partners. The Forest Public Affairs Officer, district rangers and Forest Supervisor will coordinate outreach efforts. The following strategy is established:

- Strive for a consistent message and high levels of credibility when outreaching to partners
- Coordinate all proposals for partnership funding through the Forest Restoration Team
- Encourage districts to secure partners in their respective communities of interest
- Recognize partners in a timely manner, using both personal contact and written reports
- Comply with promises and expectations

Appendix A -- Overview of Restoration Project Implementation



Appendix B – Sources of Restoration Funding



Appendix C -- Potential Sources of Restoration Funding

The following are potential sources of funding for some types of restoration projects. See Forest Service Financial Management direction (FSM 6510) for additional funding determinations.

Funding Budget Line Item/ Activity	Type of Restoration Work								
	Prescribed Fire	Road Decom and Imprv	Wildlife Habitat Imprv	Noxious Weeds	Improve Lake & Stream Habitat	Soil Erosion Treatment	Reveg/ planting	Construct Fuelbreaks	Thinning
Approriated Funds:									
-CMRD		X							
-NFWF:									
>Steams					X				
>Terrest	X		X					X	X
>Lakes					X				
- NFVW									
>Soil & Water						X			
>Veg	X						X		X
>Weeds				X					
-WFHF	X							X	
Trust Funds:									
- CWKV*		X	X	X	X	X	X		
- BDBD*	X								
PAYCO **	X	X	X	X	X	X	X	X	X
Partnership Funds	X	X	X	X	X	X	X	X	X

X This type of restoration work may be accomplished with funding indicated; depending on primary purpose of the project.

* Only applicable in defined timber sale area and as identified in collection plan

** Funds from Secure Rural Schools and Community Self-Determination Act of 2000

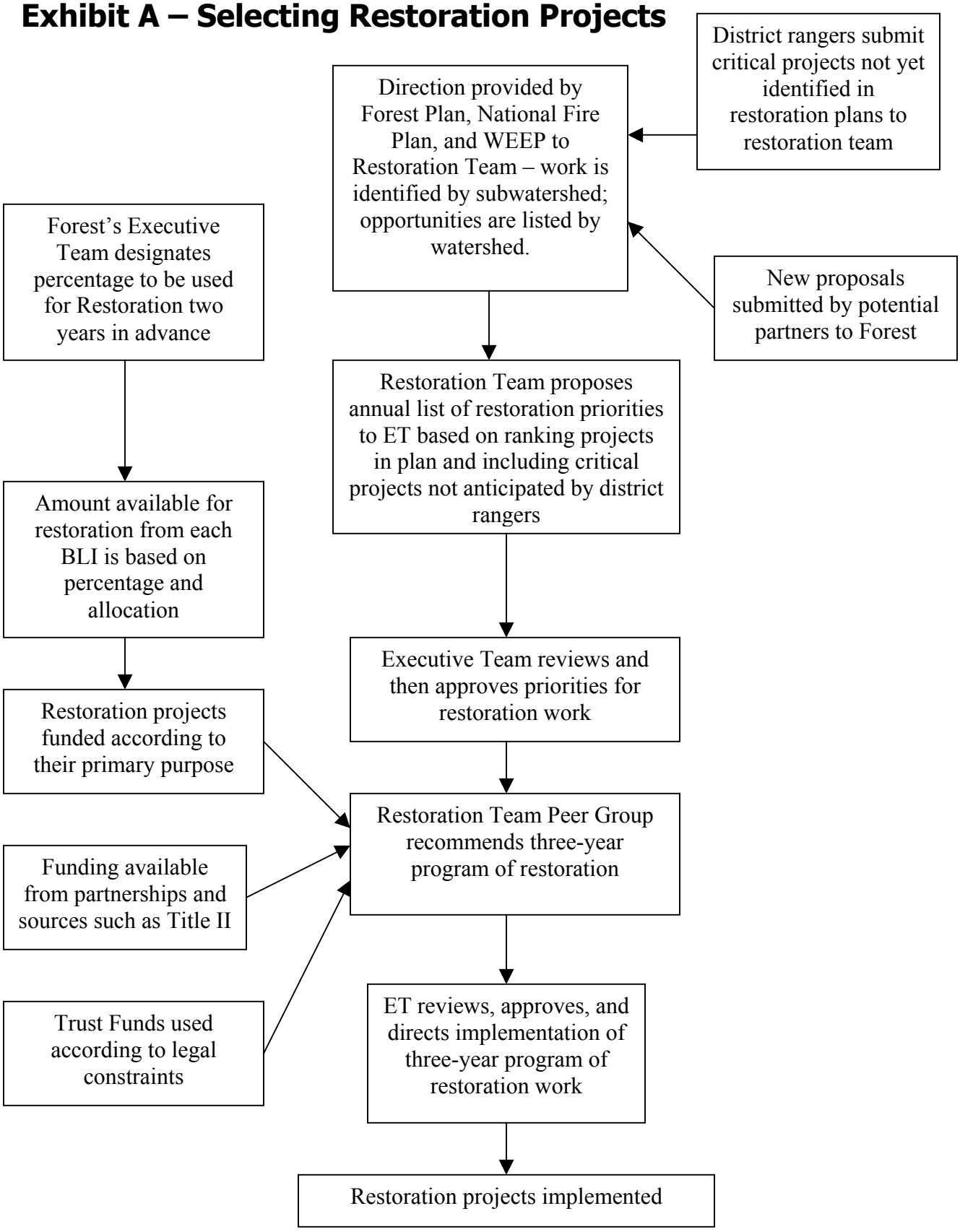
Appendix D -- Process for Selecting Restoration Projects

The 2000 Watershed Restoration Business Plan and the 2003 Watershed Restoration Business Plan Update establish priorities for restoration. Flexibility is built into the process so that unplanned immediate needs are still considered while assigning priority to projects during the selection process. Unexpected needs arise as a result of noxious weeds infestations, unique habitat protection, or management of listed species at risk outside of priority watersheds or outside high priority terrestrial restoration areas.

Criteria for numerical and opportunity ranking are established in the 2000 Watershed Restoration Business Plan. Additional criteria to include priorities for projects listed in the 2003 Watershed Restoration Business Plan Update will be established by the Restoration Team Peer Group. For example, since high priority watersheds are important criteria, a restoration project proposed in a high priority watershed would be assigned the greatest number of points. If a project has partners, more points are assigned. Additional points would be earned by the project proposal if it is "NEPA ready". More points are also assigned to the project if it has high potential for being completed.

The diagram in Exhibit A on the next page illustrates how restoration projects are selected. Project selection in relation to influencing factors such as funding and plans are also depicted.

Exhibit A – Selecting Restoration Projects



Appendix E – Partnerships in Restoration Projects

PARTNER	SHARED INTEREST
Bureau of Land Management	Noxious weed control
Bureau of Land Management	Sugar pine genetic improvement
Bureau of Land Management	Water quality
City of Cottage Grove	Water Quality/Municipal Watershed
Coast Fork Willamette Watershed Council	Watershed Restoration
Cow Creek Band of Umpqua Tribe of Indians	Watershed restoration
Department of Defense Innovative Readiness Training Program	Dam Removal
Dorena Tree Improvement Center	Sugar Pine Genetic Improvement
Douglas County Public Works	Noxious weed control
Douglas County Weed Board	Noxious weed control
Douglas Fire Protective Association	Hazardous fuel reduction
Institute for Applied Biology	Burning research, Upper Row
Lane County	Watershed restoration, Forestry work crew
Native Plant Society	Noxious weed control
North Umpqua Foundation	In-stream restoration
Oregon Department of Agriculture	Noxious weed control
Oregon Department of Environmental Quality	Water quality
Oregon Department of Fish and Wildlife	Big game habitat restoration
Oregon Department of Transportation	
Oregon State University	Dam Removal Monitoring
Oregon State University Extension Service	Noxious weed control
Oregon Watershed Enhancement Board	Watershed restoration
Pacific Northwest Forest Research	Soil Productivity, Fire & Fuel Management, Thinning
Pacific Southwest Forest Research	Soil productivity
Provincial Interagency Executive Council	Watershed restoration
Resource Advisory Councils for Rural Counties	Public use & access to healthy forests, Watershed restoration
Rocky Mountain Elk Foundation	Elk habitat restoration
Steamboaters	In-stream restoration
SW Oregon Insect and Disease Technical Center	Insect & Disease Management, Sugar Pine Genetic Improvement
Umpqua Basin Watershed Council	Watershed restoration
Umpqua Basin Watershed Council	Road assessment and maintenance
Umpqua Valley Audubon Society	Watershed restoration
Umpqua Watersheds	Watershed restoration, Public outreach
Wild Turkey Federation	Early Seral Habitat Enhancement
Wolf Creek Job Corps Forestry Crew	Project Implementation