

Strategic Private Lands Conservation in Jackson County



Photo: Bureau Land Management

Natural Resources Conservation Service

2013 - 2018

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USDA NRCS

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TABLE OF CONTENTS

1. Executive summary
2. Natural Resources Conservation Service principles and background
3. Introduction to the plan
4. Overview of the region
5. Natural resource inventory and analysis
 - Human resources *Description; condition; progress; future needs; summary of priorities & accomplishments; NRCS roles and priorities*
 - Soil resources *Inventory and analysis as above*
 - Water resources *Inventory and analysis as above*
 - Air resources *Inventory and analysis as above*
 - Energy resources *Inventory and analysis as above*
 - Plant resources *Inventory and analysis as above*
 - Animal resources *Inventory and analysis as above*
6. Conservation Strategies and Investments
7. Strategic Priorities & Strategies
 - a. Forest Health
 - i. Forest stand health and fuels reduction
 - ii. Oak woodlands restoration
 - b. Water Quality
 - i. Irrigation efficiency
 - ii. Agricultural surface water quality
8. National Initiatives & Conservation Opportunities

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EXECUTIVE SUMMARY

The Natural Resources Conservation Service (NRCS) in Jackson County consulted with conservation partners, and local, state and federal agencies to determine high priority resource concerns and strategies best suited to our agency's resources to address those concerns. The priorities reflect the fact that NRCS works with private land owners in a voluntary capacity.

The highest priority resource concerns identified in Jackson County include:

- ✓ Water quality: temperature, dissolved oxygen, bacteria, sedimentation and pH levels reduce the value of water for wildlife needs as well as not adequately satisfying human needs.
- ✓ Water quantity: seasonal low water levels affect all beneficial uses.
- ✓ Forest stand health and fuels hazard: forests exhibit unnaturally high tree densities, increasing fire risk and hazard, and reducing habitat values and timber productivity.
- ✓ Wildlife habitats: populations are at risk due to inadequate habitat quality and connectivity.
- ✓ Local food systems: local farmers need additional resources to remain profitable and have access to local markets and communities, defraying natural resource impacts on a broader scale.

Annual Local Work Group:

The Local Work Group meeting is an annual forum for NRCS to gather input regarding natural resource opportunities and priorities. The Jackson County Local Work Group was held on January 18th, 2017. With guidance from partners, the NRCS investments are strategically focused in areas where we can coordinate our efforts with those of others and where our impact can be measured.

Strategic Priorities

FOREST HEALTH

1. Forest Stand Health and Fuels Reduction

Work collaboratively with partners to provide land managers with technical and financial assistance to reduce the risk of uncharacteristically severe wildfire in tactical locations that support healthy forest ecosystems.

- Reduce unnaturally high tree densities and the risk of uncharacteristically severe wildfire with the resultant effects on soil, water, air, plant, animal, and human resources, increased risk of insects and disease, reduced wildlife habitat value, and decreased productivity and value of the timber resource

2. Oak Woodland Restoration

Provide land managers with technical and financial assistance to manage oak woodlands to be productive and provide important ecosystem services.

- Reduce existing threats to oak associated plant communities
- Protect and promote habitat and its connectivity for oak associated wildlife

WATER QUALITY

1. Irrigation efficiency

Provide land managers with technical and financial assistance to properly utilize limited water resources and improve water quality by converting flood irrigation to sprinkler.

- Improve water savings through installation of effective irrigation conveyance, equipment and systems.
- Improve effective use of water through irrigation water management.
- Reduce irrigation runoff and improve water quality through efficient systems and management.
- Conserve energy through system design adaptation to local conditions.

2. Surface Water Quality - Agricultural

Provide landowners technical and financial assistance to implement conservation measures to reduce delivery of nutrients, organics and sediment and warmer water to surface waters through the reduction in surface water runoff.

- Improve irrigation system efficiency; reduce runoff and minimize the amount of water withdrawn for irrigation purposes.
- Improve health of riparian areas and buffering capacity of riparian and near stream areas.
- Improve growth and vigor of pasture to promote sustainable permanent cover of desired vegetation.
- Protect stream corridors by installing alternative livestock watering facilities.

LOCAL FOOD SYSTEMS

Provide landowners with technical and financial assistance to help them produce for local markets and feed local communities through transitioning to organic production and high tunnel systems.

- Improve soil health and fertility on small farm and organic operations through best management practices
- Expand production and market seasons by utilization of high tunnel systems
- Increase food availability to local communities through enhanced local marketing and sustainability

Local food systems efforts will be targeted to producers who direct market their produce or market a significant portion of their produce within 50 miles and where there is an opportunity to work with willing landowners, effectively partner with other organizations and create a larger impact and a long-term benefit.

NRCS PRINCIPLES & BACKGROUND

The Natural Resources Conservation Service: Who We Are

With the mission of “Helping People Help the Land,” the Natural Resources Conservation Service (NRCS) provides products and services that enable people to be good stewards of the Nation’s soil, water, and related natural resources on private lands. With our help, people are better able to conserve, maintain, or improve their natural resources. As a result of our technical and financial assistance, land managers and communities take a comprehensive approach to the use and protection of natural resources in rural, suburban, urban, and developing areas.

Our guiding principles are service, partnership, and technical excellence.

Since 1935, the Natural Resources Conservation Service (originally called the Soil Conservation Service and the Erosion Control Service before that) has provided leadership in a partnership effort to help America's private land owners and managers conserve their soil, water, and other natural resources.

NRCS employees provide technical assistance based on science that is suited to a customer's specific needs. We provide financial assistance for many conservation activities. Participation in our programs is voluntary. Our Conservation Technical Assistance (CTA) program provides voluntary conservation technical assistance to land-users, communities, units of state and local government, and other Federal agencies in planning and implementing conservation systems.

We reach out to all segments of the agricultural community, including historically underserved groups (including beginning, limited resource, veteran, and socially disadvantaged farmers/ranchers) to ensure that our programs and services are accessible to everyone. We also provide technical assistance to foreign governments, and participate in international scientific and technical exchanges.

We manage natural resource conservation programs that provide environmental, societal, financial, and technical benefits. We provide technical expertise in such areas as animal husbandry, clean water, ecological sciences, and engineering.

We provide expertise in soil science and leadership for soil surveys and for the National Resources Inventory, which assesses natural resource conditions and trends in the United States.

INTRODUCTION

The purpose of this document is to assist in directing the use of technical and financial resources by strengthening partnerships to more effectively address priority natural resource concerns in Jackson County. The Natural Resources Conservation Service (NRCS) has received support from many agencies, organizations, and individuals in the creation and compilation of this plan. Partners include Jackson Soil and Water Conservation District, United States Department of Fish and Wildlife, Oregon Department of Fish and Wildlife, Oregon Department of Agriculture, Oregon Department of Forestry, Rogue River Siskiyou National Forest, The Bureau of Land Management, Watershed Councils, Irrigation Districts, Oregon State University faculty and Extension Service staff, local NGO's, and residents and landowners of Jackson County.

This plan will be evaluated annually and amended as needed. It is intended to guide conservation activity in Jackson County for 5 years, until March 2018.

This plan will:

- Analyze existing conditions of soil, water, air, energy, plants and animals
- Identify natural resource problems and desired future outcomes
- Prioritize problems & develop a portfolio of potential projects
- Outline actions including technical, financial assistance, and outreach

Vision: *Shared responsibility and commitment to local action achieves effective land stewardship.*

Mission: *To build alliances and strategically invest to effectively solve natural resource problems in Jackson County.*

OVERVIEW OF REGION

Located in Southwestern Oregon, Jackson County borders California to the South and is surrounded by the Cascade and Siskiyou Mountain Ranges. Known for its natural beauty, Jackson County includes 2,801 square miles of dramatic topography, extensive watercourses, unusual and varied geology, and diverse habitats. Jackson County's landscape is as varied as its economy and offers a unique set of resource concerns and opportunities.

Sixty percent of the total area is forest land, with 4% developed and 5% in pasture. Over 50% of the total area is government owned land with Bureau of Land Management and Forest Service managing the majority of those lands.

Jackson County falls in the Klamath Mountain ecoregion. It is renowned for unique geology and a wealth of rare and endemic plants. The terrain is characterized by steep rugged mountains and narrow river valleys, which consist of flood plains, terraces, alluvial fans, and hills. The major river is the Rogue, which is fed by Little Butte Creek, Bear Creek, Evans Creek and the Applegate River. The average annual rainfall ranges from 18 to 70 inches. The climate is cool and moist in winter and warm and dry in summer, with streamflows greatly diminished by late summer.



Natural resources have always played an important role in Jackson County. Logging and the orchard industry were extremely important to the economy for decades. The agriculture industry has diversified to include a wide range of crop and livestock production today. Most of the agriculture in the Rogue Valley is irrigated and water resources are predicted to be inadequate for human needs as early as 2050. Logging has tapered off considerably, and fire suppression coupled with reduced forest management has left forests at high risk for wildfire. Traditional land uses are being increasingly impacted by demand for residential use and a significant population lives in the Wildland Urban Interface. The danger of wildfire and the scope of the ecological, social and economic damage continues to increase with the shift toward mixed forest use.



High priority resource concerns in the region are water quality, water quantity and forest health. Please read further for analysis on each resource.

NATURAL RESOURCE INVENTORY AND ANALYSIS

This section will evaluate the major resources in the area and identify the best opportunities for strategic investment and improvement. The resources are categorized as humans, soil, water, air/energy, plants and animals to facilitate this discussion.

HUMAN RESOURCES

The Takelma Indians were the prominent group of people in Jackson County before European settlement. The Takelma lived on a diet of acorns, camas bulbs, Manzanita berries, pine nuts, deer, fish and elk. The gold rush in the 1850’s launched the European settlement and the region provided an important transportation route through the Siskiyou Mountains from Portland to California.

Demographics. According to the U.S. Census, the 2015 estimated population of Jackson County was 210,287. Approximately 68% of Jackson County residents live in the eleven incorporated cities, which include Ashland, Butte Falls, Central Point, Eagle Point, Gold Hill, Jacksonville, Medford, Phoenix, Rogue River, Shady Cove, and Talent, with the remaining residents living in the unincorporated areas of the county. Jackson County has the 8th fastest growing population of the 36 counties in Oregon, with a 49% increase since 1970. The population of Jackson County has limited ethnic diversity, with the majority reporting white, however over 9% of the population are self-designated Hispanic or Latino. There are no recognized Native American

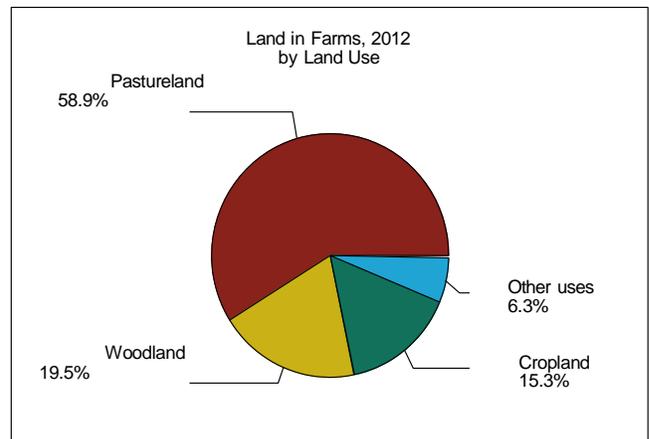
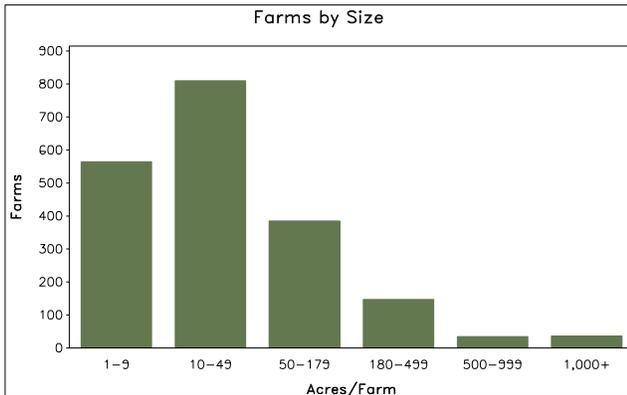
Population distribution	
Cities 10,000-50,000+	Medford Ashland Central Point
Cities 5,000-10,000	Talent Eagle Point
Cities 2,500-5,000	Phoenix Jacksonville Shady cove
Cities less than 2,000	Rogue River Gold Hill Butte Falls
Unincorporated, rural	30%

tribes in the County and no tribally held lands. More than 16% of the population was reported to be living below the poverty level in 2008.

Community outlook. The county is well connected to the regional transportation system with Interstate 5 traversing north to south and serving as the gateway to California for the rest of the state. Community and economic growth are fueled by a highly desirable quality of life which attracts business development as well as relocation. Population growth puts increasing pressure on land use changes and fragmentation of habitat and ecosystems.

Farm characteristics. According to the 2012 Agricultural Census, Jackson County had 1,722 farms working 214,079 acres. The average farm size was 124 acres, however, over 69% of the farms in Jackson County are 50 acres or less. A considerable number of landowners live on small acreages throughout the county and may or may not be utilizing their lands for commercial crop or livestock production. There is a growing trend toward support for local food production and the region is served by several farmers’ markets and other marketing innovations such as Community Supported Agriculture. The average farm net cash income was in the red at -\$1467.00.

Agriculture Quick Facts: 2012 Ag census	
Total no. farms	1953
Avg. farm size	124 ac
Cropland	15.3%
Woodland	19.5%
Pasture	58.9%
Net cash income avg. per farm	-\$1467
Avg. govt. payment per farm receiving	\$3,816
Value of sales in state top one-third	Fruits/nuts/berries, poultry/ eggs, cattle, hogs, horses, aquaculture, other animals
Crops in state top one-third by acreage	Pears, grapes
Livestock inventory in state top one-third	Layers, pullets, rabbits, horses
Century farms	30



Land use. Nearly half of the farmland is in pasture, with the balance approximately evenly divided between forestry and crops. The range of products is diverse and difficult to typify. Crops produced in the county with a value in the top one third of Oregon sales include fruits/nuts/berries, poultry/ eggs, cattle, hogs, horses, aquaculture, and other animals. Pear and grape acreages are in the top one third of Oregon’s production. Less than half the operators make their living primarily from farming and 34% of the principal operators are female. The county is home to 30 listed Century Farms.

Government program participation. The average government payment per farm receiving payments in 2012 was \$3,816, with total payments of \$252,000, representing nearly a 60% reduction from the 2007 census. There is also considerable interest and active participation in other government programs aimed at fuels reduction for the large population considered to be in the Wildland Urban Interface.

Conservation partners. There are a number of organizations which work with private landowners and conduct outreach education and volunteer activities in the region. Jackson Soil and Water Conservation District has a solid future in the county with an established taxing district to provide ongoing support for their work. Watershed councils have also been functioning throughout the region since the 1990’s, with 4 recently combining into a single Rogue River Watershed Council.

Conservation Partners Areas of Involvement & Interest

<u>Conservation Partners</u>	Project partner	Technical assistance	Project funding	Outreach, tech.	Resource priorities
Federal Agencies					
Bureau Land Management	×	×	×		Forest, fuels
Bureau of Reclamation		×			Water quantity
Farm Service Agency	×		×	×	All resources
National Marine Fisheries Service	×	×	×		Wildlife
US Fish & Wildlife Service	×	×	×	×	Wildlife
USDA Forest Service	×	×	×		Forest, fuels
State Agencies & Organizations					
Department of Agriculture	×		×		Water quality
Department of Energy		×	×		Energy
Department of Environmental Quality	×	×	×		Water, Air
Department of Fish & Wildlife	×	×	×	×	Wildlife
Department of Forestry	×	×	×	×	Forest, fuels
Energy Trust of Oregon			×	×	Energy
OSU Extension Service	×	×		×	Human resources
Water Resources Department	×	×			Water quantity
Local Agencies & Organizations					
Irrigation Districts: Eagle Point, Grants Pass, Medford, Rogue River Valley, Talent	×	×	×	×	Water quality, quantity
City of Ashland	×			×	Forest, Fuels

Jackson County Coop. Weed Mgt. Area	×	×		×	Plants; noxious weeds
Jackson Soil & Water Conservation District	×	×		×	All resources
Lomakatsi Restoration Project	×	×		×	Forest, fuels
Rogue Valley Council of Governments	×	×			Water quality
Seven Basins & Applegate Community Wildfire Protection Planning groups	×		×		Forest, fuels
Small Diameter Stewardship Collaborative	×			×	Forest, fuels
The Nature Conservancy	×	×	×	×	Water quality, wildlife
Watershed Councils: Rogue River, Upper Rogue, Seven Basins, Applegate	×	×	×	×	Water quality, quantity, wildlife
Medford Water Commission	×	×	×		Water quality, quantity
Southern Oregon Land Conservancy	×	×	×	×	All resources

Unique local organizations, initiatives. In addition to typical state and federal partner agencies, there are a number of organizations somewhat unique to or particularly active in conservation work in our region:

- Jackson County Integrated Fire Plan
- Applegate & Seven Basins Community Wildfire Protection Planning groups – facilitating fuels reduction and fire preparedness
- Applegate Partnership & Southern Oregon Forest Restoration Collaborative – facilitating landscape-scale collaborative efforts in forest management
- OSU Extension Small Farms Program – special program/staff targeting smaller and specialized producers, such as organic
- Lomakatsi Restoration Project– fuels reduction, oak restoration and forest restoration projects on private and public lands
- WISE project – coordination and improvement of municipal and agricultural water uses
- Natural Resources Advisory Committee – advises county leaders
- Jackson Soil and Water Conservation District – a well-staffed organization with a tax base

Progress to date. Considerable work has been done to educate local residents about natural resources in the area. Watershed councils, OSU Extension, Jackson Soil and Water Conservation District and the Cooperative Weed Management Area members all reach out to the public to provide more awareness and promote better stewardship through many diverse methods.

There has also been extensive citizen involvement in forestry and watershed decision-making, regional coordination and volunteer engagement. The positive aspect of this high level of activity is a high level of local capacity, although the challenges created include higher levels of conflict, high community expectations and scrutiny in environmental issues.

Future needs. Goals for improving the human element in the natural resources equation will involve continuous outreach and education to remind new and old residents of the importance of natural resource management. There is an increasing need to address the small landowners who

represent a larger and larger part of the land use and have a high turnover of ownership. Education efforts need to keep pushing beyond fostering awareness and strive for changing behaviors which support healthy forests, watersheds and ecosystems. Volunteerism and active, informed citizen involvement will also be key to future natural resource successes.

Importance of economics. Another important factor influencing conservation activity and private lands management is economics. In Jackson County, private land managers are limited by economic constraints in their ability to implement conservation. Incentives will continue to be necessary as well as efforts to help make private land management activities more cost effective and economically viable. Efforts are being made to improve marketing options and increase local support for food production through increasing farmers’ markets, encouraging direct sales and local meat processing. Continued support for the development of markets and improving the economic viability of food and fiber production, as well as forest management, will be needed to support active conservation by private landowners.

HUMAN RESOURCES OUTLOOK SUMMARY

What has been accomplished:	What is left to do
<ul style="list-style-type: none"> • Publications and activities targeting small land ownerships, including the Rural and Urban Living Handbooks • Educational workshops for landowners, i.e., Smart Horse, Land Stewards • Educational activities for youth including Day camps, Envirothon, Kids and Bugs • Tours for land managers, policy makers, etc • High levels of citizen involvement in environmental issues; high community capacity • Extensive partnering and regional networking 	<ul style="list-style-type: none"> • <i>Continue to evaluate educational needs and adjust tools, messages and methods to target audiences, including historically underserved, small acreage landowners and specialty crop producers</i> • <i>More education resulting in increased awareness, skills development and application</i> • <i>Workshops, tours, demonstration projects</i> • <i>More youth/education activities</i> • <i>Continued consideration for economic needs and incentives</i> • <i>Continue support for and involvement in community involvement and engagement</i> • <i>Continue effective partnering and regional coordination</i>

Roles and priorities for NRCS. NRCS programs provide an opportunity to work closely with landowners delivering direct technology transfer and financial assistance to implement conservation measures. Staff are also regular participants in trainings, tours, seminars and workshops organized by partners. Working effectively with partners to provide outreach and education will continue to be a priority for NRCS throughout the next 5 years.

SOIL RESOURCES

Unique topography, geology, soils, climate and vegetation distinguish Jackson County and add to its importance as an ecologically distinctive region. From approximately 1000 ft. on the valley floor to 9495 ft. at the peak of Mt. McLoughlin, a diverse and rugged topography characterizes this region. Abrupt elevation changes from valley floors to mountain summits are not uncommon.

The ecology is influenced in large part by the region’s extremely complex geology, and the differences in rock types and ages provide the foundation for a variety of soil types and habitats. The soil survey for Jackson County, which includes the southwestern most part of Klamath County, includes 208 different soil map units, comprising 113 soil series.

Soil concerns that arise are associated with rainfall, runoff, irrigation, livestock grazing and forestry. Those concerns include compaction, sedimentation, nutrient runoff and stream bank erosion. Other sedimentation is most closely associated with forestry practices including timber harvesting and road building.

Progress to date. Accomplishments associated with soil health have been in reducing sedimentation through best management practices in irrigation and forestry. Promoting practices that use plant diversity to increase soil diversity, disturb soils less, keep plants growing throughout the year, and keep the soil covered as much as possible have been used throughout the county.

Future needs. Healthy, productive soils will continue to benefit from management practices that reduce surface erosion, including maintaining cover and minimizing runoff. Minimizing compaction by livestock, improving efficiency of irrigation and apply best management practices in forestry will all contribute to improved soil health and reduce sedimentation.

SOIL RESOURCES OUTLOOK SUMMARY

What has been accomplished	What is left to do
<ul style="list-style-type: none"> • <i>Mitigation of erosion at the project level</i> 	<ul style="list-style-type: none"> • <i>Continue to mitigate erosion at the project level and promote good practices</i> • <i>Encourage and assist reduction of road and ditch failures which contribute sediment</i>

Role and priorities for NRCS. NRCS will continue to actively advocate for soil health through a wide variety of assistance to private landowners. National Soil Health initiative will help drive research and implementation of soil health practices. Efforts to improve soil condition should be focused in areas identified as high priority for water quality improvements.

WATER RESOURCES

Rainfall is variable and locally influenced by topography. Some mountain peaks receive in excess of 120 inches per year, while the Jackson County Airport near Medford only receives about 18.8” annually. Usually 75% of that falls during a five month period in the winter, with only occasional summer thunderstorms.

All drainages within Jackson County flow into the Rogue River Drainage except for a small part of the Umpqua Drainage in the Northwest Part of the county, and the Klamath River Drainage in the southeast.

Water is an extremely important resource in Jackson County. The Rogue River and the associated fishing and recreation benefits are very important to the economy. In addition to its importance to this county, the river also provides habitat for important stages of the salmon lifecycle and the associated fishery here and on the coast. Important dams on the Rogue and Applegate Rivers contribute to flow modification, temperature control, flood control and water storage in the system. Other reservoirs provide water storage and contribute to the complex hydrology of the county.

Major Storage Reservoirs Serving water needs in Jackson County, Oregon

Reservoir/Lake Name	Reservoir Location	Operating Organization(s)	Maximum Storage (acre-ft)
Lost Creek	Rogue Basin	USACE	315,000
Applegate	Rogue Basin	USACE	75,200
Howard Prairie	Klamath Basin	USBR/TID	36,000
Hyatt	Klamath Basin	USBR/TID	16,200
Emigrant	Rogue Basin	USBR/TID	39,000
Fourmile	Klamath Basin	USBR/MID	15,600
Fish	Rogue Basin	USBR/MID	7,900
Willow	Rogue Basin	EPID/MWC	8,000
Agate	Rogue Basin	USBR/RRVID	4,670

Wetlands. Wetlands provide important habitat for migrating and breeding waterfowl, shorebirds, waterbirds, songbirds, mammals, amphibians and reptiles. In addition to being critical for birds and many kinds of wildlife, floodplain wetlands and backwater sloughs and swamps are important rearing habitats for juvenile salmon. Wetlands have direct value for people because they improve water quality by trapping sediments and toxins, recharge aquifers, store water, and reduce the severity of floods. Restoration and careful management of wet meadow systems and other wetlands can increase sustainable production of forage for livestock and increase late-season stream flows.

In general, most wetland habitat loss has occurred at lower elevations and valley bottoms. Many of these wetlands have been drained and converted to agriculture. Wetlands are vulnerable to development as more people move to the region and urban pressures increase. Although wetland drainage is now discouraged, continuing development is a threat to some remaining wetlands. In addition, the ecological processes that create wetlands often are not compatible with current land uses, especially in more developed areas.

Jackson County is also home to vernal pools which are home to endangered plants and will be addressed in the section on plants.

Major Irrigation Districts

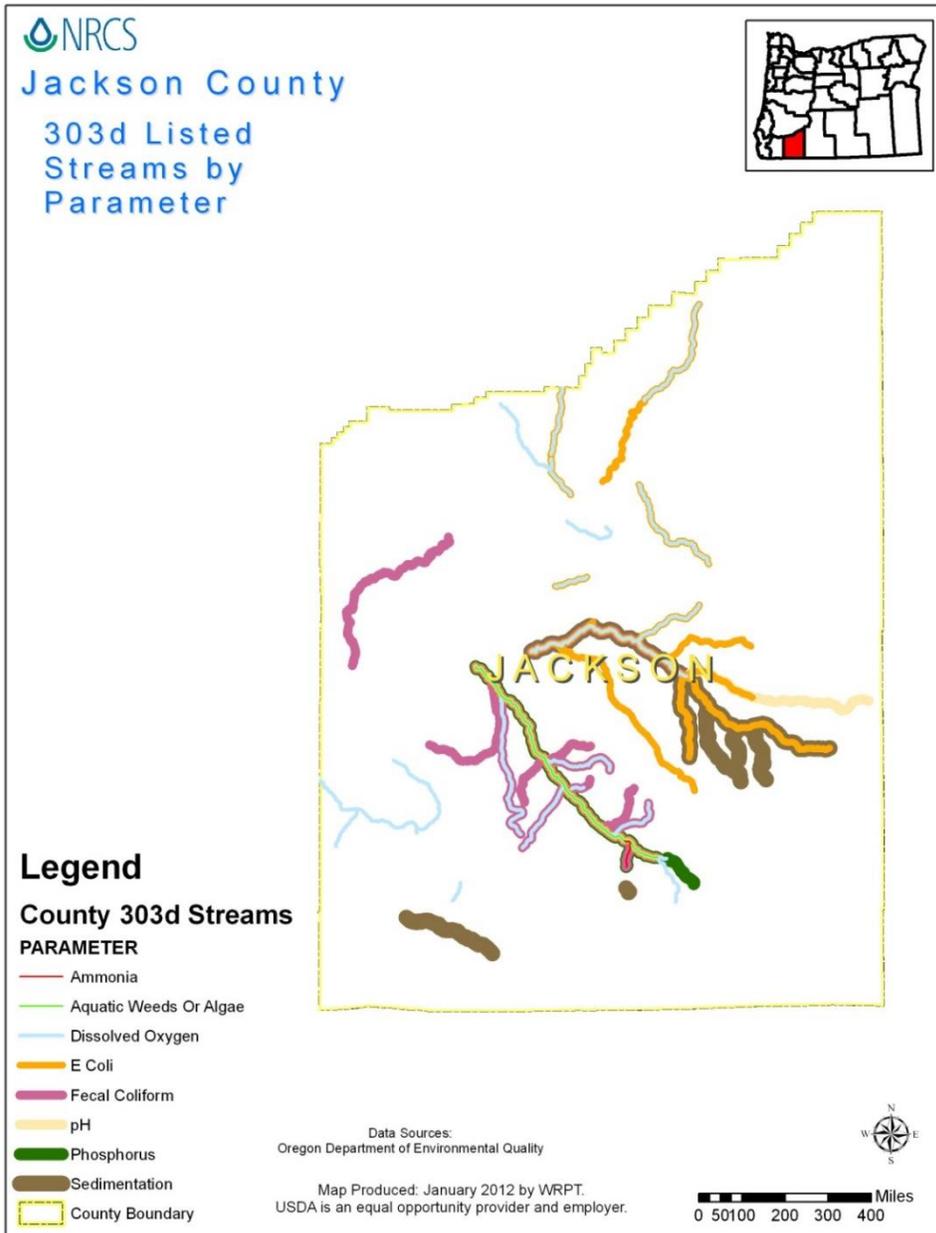
Talent Irrigation District
Medford Irrigation District
Rogue River Valley Irrigation District
Eagle Point Irrigation District
Wood Irrigation District
Grants Pass Irrigation District

Description & Uses. Municipal and public water supplies are mostly based on surface water sources. One exception is Medford Water Commission, which provides a large quantity of water to the urban area from a spring at the foot of Mount McLoughlin. Most individual rural households are served by wells, and Jackson County has more wells than any other county in Oregon.

Surface water is the main source for seasonal irrigation throughout the county. Numerous irrigation districts provide water to agricultural users throughout the county. Some of the water delivered comes from the Klamath basin via canals and storage systems in the mountains. The systems that are supplied by reservoirs in the Cascades were originally engineered for gravity feed, flood irrigation operations. Canal piping and conversions to pressurized irrigation systems are currently occurring as some irrigation districts and farmers improve irrigation efficiencies. However, the old systems and their management/administration make this very complex and difficult. Irrigation methods are varied and there are many opportunities for improvements to reduce runoff and conserve water.

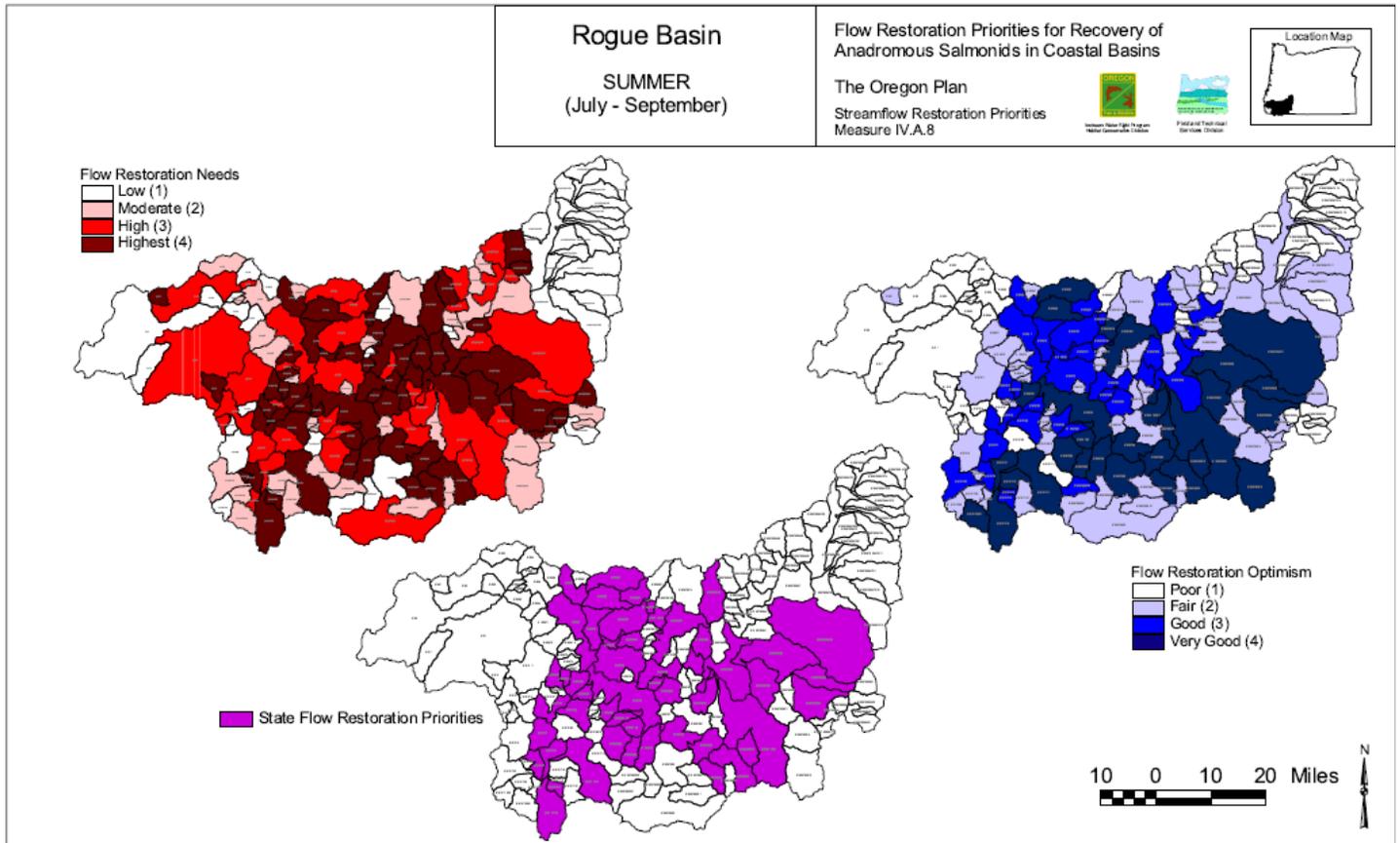
Water quality. Water quality issues are important and impact all beneficial water uses. Agricultural and forestry factors affecting water quality locally include: soil loss and sedimentation from roads and soil disturbance, poor quality riparian vegetation, mismanagement of irrigation water resulting in excessive return flows, poor management of nutrients and animal waste.

According to the Department of Environmental Quality (DEQ), temperature represents the most commonly cited impairment factor in the county. Common listing factors for water quality impairment [DEQ 303(d) list] in Jackson County include temperature, dissolved oxygen, bacteria, sedimentation and pH. High levels of bacteria have been known to close many smaller streams to recreational uses in the summer months when flows are low. Little Butte and Bear Creeks have multiple concerns related to non-point source pollution.



Water Quantity. A significant portion of the Rogue River Basin falling within Jackson County is designated as a Flow Restoration Priority for the benefit of fish populations (developed by Oregon Fish and Wildlife and Water Resources Departments). Virtually all the tributaries of the Rogue River in Jackson County are over-allocated and show deficit conditions during some time of the year. Deficit conditions harm wildlife, which depend on levels of water in the streams for movement and habitat, as well causing difficulty for municipal and irrigation users.

One difficult aspect of improving water quantity availability is that many shared irrigation systems are designed to function with full flows and those old ditch systems do not deliver water when they are run at lower volumes. Additionally, landowners express concern for property values and future needs when they are pressed to consider returning excess water allocations to in-stream rights. Often, irrigation system scheduling is not well suited to meet crop needs, both in terms of quantity delivered or time of use. Irrigation systems that are retrofitted to conserve water are generally beneficial in that crop water needs are better met and the systems produce less run-off, but rarely is less water used.



Bear Creek and Little Butte Creek are both ranked in the highest flow restoration need priority. Studies have shown that water needs for municipal and agricultural uses will not be met in the Rogue Basin by 2050.

Progress to date. There is tremendous capacity and interest in water quality in the Rogue Basin due to the listing of salmon as threatened and endangered species. Watershed Councils are numerous and active in the region, mobilizing many volunteers and providing significant outreach and capacity throughout the basin.

Oregon Department of Agriculture (ODA) has been working to develop and revise plans for Agricultural Water Quality in the Rogue Valley since 1993. These plans identify and outline Best Management Practices (BMPs) to minimize the agricultural contribution to water quality impairment. ODA is planning to evaluate the effectiveness of the BMPs through study of

targeted areas. These areas will be inventoried and monitored to evaluate how well the BMPs deliver benefits to water quality; this will promote timely revision to management recommendations as needed.

The Rogue Valley Council of Governments, the Water Resources Department, watershed councils, and the Medford Water Commission currently undertake a considerable amount of water quality testing and monitoring activity throughout the county.

Several large-scale efforts are in progress:

- A large-scale project encompassing several irrigation districts and municipal water services has been in development and discussion for over 20 years. Called the Water for Irrigation, Streams, and Economy (WISE) project, it proposes major improvements to water delivery systems to reduce loss; find more information at <http://wiseproject.org/index.html>
- A working group targeting water quality in the Little Butte Creek drainage has been initiated by the city of Eagle Point to develop an integrated plan to address non-point source water quality concerns
- An Agricultural Water Quality Enhancement Project (AWEP) was awarded to the Talent Irrigation District in 2010. The project implemented conservation practices to properly utilize surface water and improve on flood irrigation systems by converting to more efficient systems minimizing/eliminating runoff.

Future needs. Collaboration and coordinated efforts will be essential to deal with the complexity and scale of water quality concerns as well as the diversity of landowners in the county. Improving water quality and quantity in the county will require a multifaceted approach. Equipment and facility upgrades are needed at the level of districts and individual landowners. This must be accompanied by continued implementation and adoption of best management practices including irrigation management, nutrient management, and riparian buffers. Upgrades of large delivery systems are necessary and will be expensive and complicated.

The outlook for the adoption of on-farm practices is strong, although implementation of some on-farm system installations is likely to require substantial financial assistance and the implication of increased labor requirements may render some alternatives impractical. There will be an ongoing need to promote improvements that reduce sediment such as rotational grazing of livestock (including cross fencing and water off-site watering systems), irrigation efficiency projects, riparian buffers, heavy use area protection and forest/woodland road management. Practical and economically viable alternatives for animal carcass disposal, such as composting, will also help protect water quality.

WATER RESOURCES OUTLOOK SUMMARY

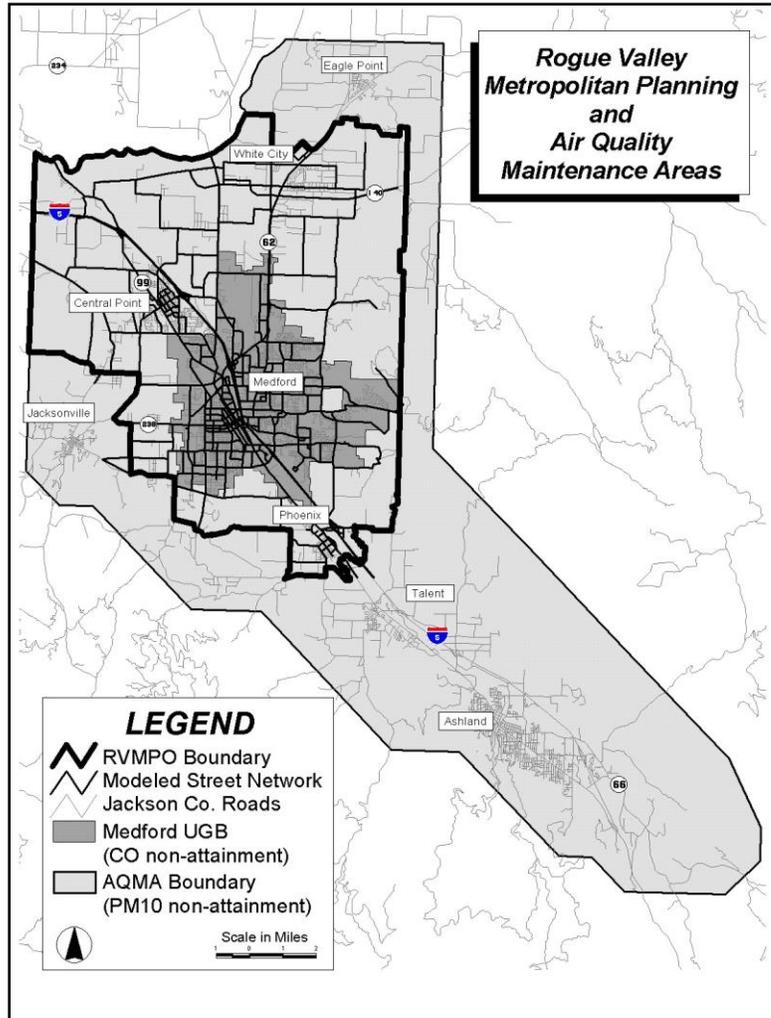
What has been accomplished	What is left to do
<ul style="list-style-type: none"> • <i>Capacity developed in watershed councils</i> • <i>Ag Water Quality plan in place, BMPs identified, outreach being conducted</i> • <i>Large-scale coordination & project development underway</i> • <i>Monitoring, especially Little Butte and Bear Creek</i> 	<ul style="list-style-type: none"> • <i>Continue outreach and technical assistance to small and large acreage landowners</i> • <i>Identify partners and focus areas to:</i> <ul style="list-style-type: none"> ○ <i>Increase installation of improved on-farm equipment, infrastructure.</i> ○ <i>Increase adoption of improved management: nutrient, irrigation, livestock, buffers.</i> ○ <i>Upgrade delivery systems</i> • <i>Continue/improve monitoring</i>

Role and priorities for NRCS. Water quality and quantity is a high priority for NRCS assistance in Jackson County. Strategies targeting water quality and quantity are outlined in the strategic approach section of this plan. Targeting irrigation water management and system improvements will contribute significantly to reducing irrigation return flows and reducing the amount of water drawn for irrigation and helping leave more in-stream. Another focus area will be to provide landowners assistance to improve livestock management and animal waste management practices to minimize the possible contributions of livestock to water quality problems. Increased installation of stream buffers will also improve water filtering capacity significantly. These elements will most effective if implemented in concert with partners and in a focused manner in specific areas. Initial steps will be to develop focus areas and concentrate efforts to maximize the benefit to the resource.

AIR RESOURCES

Air Quality Historically, the air quality in the Rogue Valley has suffered largely because of winter temperature inversions trapping particulate matter and other pollutants including wood smoke, orchard smudge pots, industry, and automobiles. Fog often fills the valley during the winter and early spring, and air stagnation events can persist for several days.

The Environmental Protection Agency (EPA) officially declared the Rogue Valley as “non-attainment” for PM10 in 1990. Communities in the valley shared a common air shed, known as the Medford-Ashland Air Quality Maintenance Area (AQMA). PM10 emissions in the AQMA have been substantially reduced through a suite of emission reduction measures developed and implemented over approximately 25 years. These strategies include emission limits on select industrial processes, the residential woodstove curtailment program, restrictions on residential open burning, street cleaning, replacement of noncertified woodstoves in low income homes, a ban on installation of non-certified woodstoves, and public education. Many of the historical diesel fueled smudge pots used in orchards and vineyards have been replaced with other means of frost protection, such as smudge pots using cleaner burning propane, sprinkler irrigation, and wind machines.



One significant contributor to air quality concerns is seasonal wildfires, which are common due to overstocking and lack of forest management. Regular large-scale wildfire events pose serious impacts to air quality and risks to people with breathing-related illnesses, for whom the only recourse is to stay indoors.

Future needs. Measures to reduce catastrophic wildfire will serve to promote air quality and reduce risks to human health. Promoting alternatives to large-scale burning of forest residues, such as subsidizing biomass utilization, has the potential to improve air quality and contribute to renewable energy development in the area.

AIR RESOURCES OUTLOOK SUMMARY

What has been accomplished	What is left to do
<ul style="list-style-type: none"> • <i>Reduction of emissions; also minimizing agricultural contribution by converting to sprinklers, wind machines for frost protection</i> • <i>Decreased wildfire danger through fuels reduction</i> • <i>Subsidizing removal of biomass from forest</i> 	<ul style="list-style-type: none"> • <i>Continue to minimize agricultural contributions through best management practices</i> • <i>Fuels reduction and forest health improvement to minimize risk and severity of wildfire events</i> • <i>Increase biomass utilization and promote economic incentives for fuels reduction</i>

Role and priorities for NRCS. Forest management improvements and fuels reduction work have the potential to reduce air quality concerns across the region and minimize human health concerns from wildfire. NRCS will continue to address the issue of air quality through assistance to private landowners to integrate air quality concerns into all conservation activities.

ENERGY RESOURCES

Energy resources. The main energy sources in the agricultural and forestry sectors are electric power and gas/diesel fuels. Other sources of energy include natural gas and biomass-generated electricity. Solar energy is not widely utilized in these sectors locally. The region is served by PacifiCorp for electricity, and Avista supplies natural gas in urbanized areas.

Average wind velocity of less than 10 mph make this area ill-suited to development of wind power generation even for smaller scale alternatives.

Forest biomass. Biomass from forest waste represents an important energy resource which is not being fully utilized due to logistics and costs of handling and transporting the material. A 20 MW biomass power plant is located in White City. Extensive community interest has been demonstrated in discussions focused on developing more alternatives for biomass utilization to reduce forest biomass and lower wildfire potential.

Needs and opportunities. Due to high and fluctuating prices, most producers are motivated to limit their overall costs and their energy dependence. In the agricultural sector, the biggest opportunities are through reducing demand through energy conservation. Conservation achieved through improved management and systems installations can also provide economic advantages over time. Irrigation and livestock systems represent the largest opportunity to upgrade energy systems in this region. Another indirect opportunity is to decrease transportation of produce through high tunnel systems, which extend local growing seasons and can increase consumption of locally grown foods.

ENERGY RESOURCES OUTLOOK SUMMARY

What has been accomplished	What is left to do
<ul style="list-style-type: none"> • <i>Studies of biomass availability</i> • <i>Subsidizing removal of biomass from forest</i> • <i>Energy efficient irrigation systems have been installed</i> 	<ul style="list-style-type: none"> • <i>Promote innovation in biomass utilization options</i> • <i>Increased use of management practices which reduce energy consumption:</i> <ul style="list-style-type: none"> ○ <i>Residue management</i> ○ <i>Irrigation management</i> • <i>Facility and equipment upgrades to reduce consumption:</i> <ul style="list-style-type: none"> ○ <i>Irrigation systems</i> ○ <i>Lighting, pumping, heating systems</i> ○ <i>Solar systems for stock water, irrigation</i>

Role and priorities for NRCS. NRCS technical and financial assistance are among some of the few resources available to private land managers to design and install upgraded systems in agricultural operations. NRCS technical specifications are designed to provide the energy benefits while maintaining positive effects on other resource concerns. To that end, NRCS efforts to assist with energy conservation can be combined with efforts designed to address other resource concerns at the same time. NRCS will also continue to support biomass removal from forestland through forest stand improvement and fuels reduction projects.

PLANTS

The Klamath Mountains ecoregion is renowned for unique native plant populations including numerous endemic, rare and endangered species. The region is noted as an Area of Global Botanical Significance, one of only seven in North America. Federal land management agencies, state agencies and private organizations have designated several critical and sensitive habitat areas to protect these unique plant communities. The predominant use of lower elevation agricultural lands is livestock grazing. These managed lands are particularly important because of their potential to help buffer and filter water. The discussion in this section is divided into forests, oak woodlands, pasture lands and native plant communities to facilitate analysis.

Threatened & Endangered Plant Species
Jackson County

- Agate Desert lomatium
- Big-flowered wooly meadowfoam
- Gentner's fritillaria
- Siskiyou mariposa lily (candidate)

Forests. Forests are of such importance in the county that they deserve emphasis in this plan. The Klamath Mountains Ecoregion has more types of cone-bearing trees than anywhere in North America and Jackson County is home to many of those diverse forest species. Forests and woodlands constitute more than 84% of the land cover in the region. Two thirds of the forest land is federal, being managed by the Forest Service and Bureau of Land Management. Private industrial and non-industrial acreage make up a much smaller portion of the remaining forest land ownership. Watershed or landscape level management is complicated by the so-called

‘checkerboard’ ownership pattern where sections are alternately managed by different agencies whose mission and goals are different.

Lumber, plywood, and wood chips are produced for domestic use and for export. Forest products from private and public land historically generated significant employment for many of the residents and forest products have represented a major source of revenue for the region. Harvest levels have fluctuated dramatically on federally managed lands since the 1980s when endangered species listings impacted public lands management.

Much of the forest land suffers from over-stocking which increases fire risk, increases vulnerability to insects and disease and reduces stand productivity. Crowded forests do not provide good habitat for fish and wildlife species and do not serve watershed functions as well as healthy stands. Contributing further to these negative aspects are dense stands of brush and invasive species. The increase in intermingling of residential use and forest land exacerbates both the danger of wildfire and the scope of the ecological, social and economic damage.



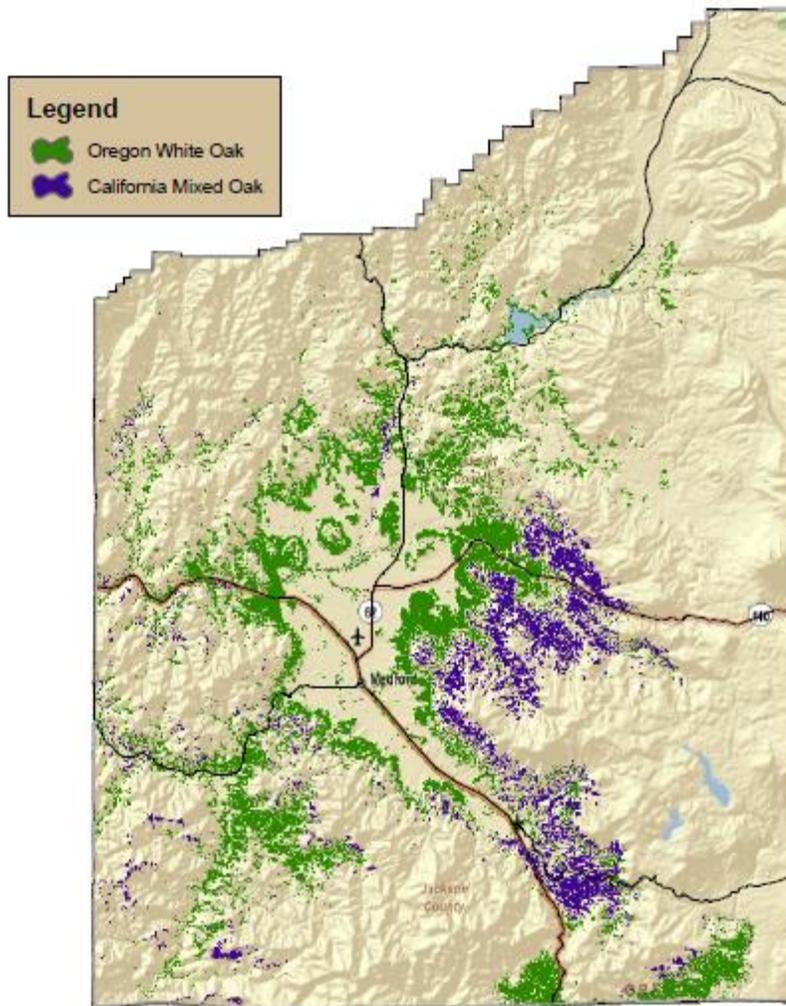
Oak woodlands. Oak woodlands are present throughout lower elevations of the Rogue River Basin. Over the past 100 years, Oregon white oak and California black oak plant associations have significantly declined in abundance and distribution. It is estimated that only 4-7% of historical oak woodlands remain in Oregon. The majority of extant oak stands are at risk from various threats or they lack structural diversity characteristic of healthy, functioning habitats.

In California and Oregon, oak woodlands and savannahs are richer in wildlife, than any other terrestrial system. More than 300 vertebrate species are known to use oaks, including dozens of resident and migratory birds. Oak habitats are important contributors to biodiversity in the Pacific Northwest, supporting communities of plants and animals that are remarkably different than adjacent agricultural fields and conifer forests.

Numerous factors contribute to the loss of oak habitats, including: encroachment of conifers, severe wildfire events/threats, fire suppression and lack of frequent low-intensity fires, and the establishment of dense, young oak stands and invasive plants. Stands typically lack structural



Current Oak Distribution Jackson County, OR



diversity (large cavities, platforms, bunchgrasses, wildflower richness etc.), produce fewer acorns, and are characterized by high fuel loads. As a result, oaks across the landscape are experiencing a decline and wildlife benefits are compromised and at risk of catastrophic loss to fire.

Contribution of forests to ecoregion. Forest management practices can impact a wide range of resource concerns. Improvements to forestry practices can improve soil erosion, fish passage, invasive species, fuel loading, fire danger, wildlife habitat and wildlife corridor establishment. Forest land owners have shown interest in implementing thinning and other management practices which lead to enhanced productivity.

Hay and Pasture lands.

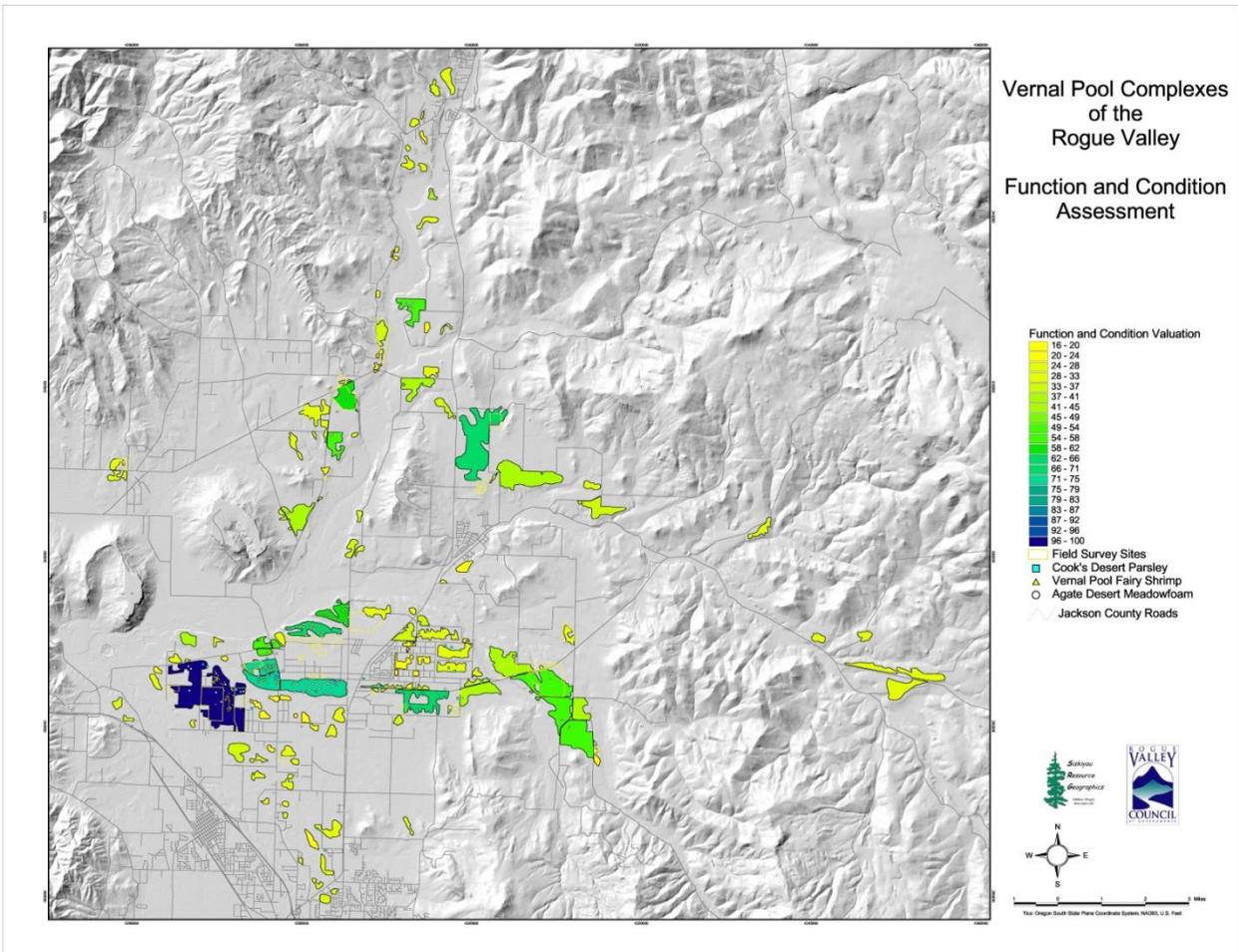
Hay and pasture production represents nearly half of the farm land in Jackson County and livestock is an important source of income and economic support in the region. Pasture lands are largely overgrazed and underutilized due to lack of adequate irrigation and pasture management. The use of prescribed grazing is not widespread and the unmanaged pastures tend to be overrun with weedy species, suffer from compacted soils and be less productive. Most grazing takes place at lower elevations and close to important riparian areas. The application of best management practices has been shown to have a positive effect on improving and maintaining surface water quality and quantity, while also providing economic benefits to livestock producers.

Native plant communities. Native plant communities and pastures are seriously threatened by invasive species and changing land-use practices. The invasive species that are the most detrimental on a landscape scale in this region are: yellow star thistle, Scotch broom and Himalayan blackberry. Invasive species are also noted for aggravating wildfire risk and damage. Blackberries have overrun riparian areas, degrading that important habitat throughout the county. Other important, but localized species of concern are: Japanese knotweed, Alyssum, and garlic mustard.

Rare plants and habitats. Vernal pools are a kind of wetland ecosystem occurring in the Rogue Valley. Over a long geological timeframe, unique suites of plants and animals have evolved that are specially adapted to the unusual conditions of vernal pools. Distinct wildflowers, crustaceans and other insects are dependent on the environment created in vernal pools.

Documented Invasive plants in the Klamath Siskiyou ecoregion	
Armenian blackberry	Mediterranean sage
Canada thistle	Medusahead rye
Dalmation toadflax	Puncture vine
Diffuse knapweed	Quackgrass
Dogtail	Rush skeletonweed
Dyers woad	Scotch broom
False brome	Spanish broom
Fennel	Spotted knapweed
Iberian starthistle	Wooly distaff thistle
Leafy spurge	Yellow toadflax
Meadow knapweed	Yellow star thistle

From ODFW Strategy Habitats



Progress to date. Through Community Wildfire Protection Planning processes rural communities have identified high priority areas and pursued funding to treat fuel loading and reduce fire risk. Cooperative efforts to treat significant acreages have been implemented by partnerships in both Applegate and Seven Basins Community Wildfire Planning areas. In the Seven Basins (Evans Creek) area the investment in fuels reduction over ten years has been over 8 million dollars, including community engagement and state, federal and local partner investment in high priority needs. Federal forest management activities have been coordinated with private lands work to provide the greatest, landscape-scale impact to reduce fire risk and improve forest health. Federal agencies have been making significant efforts to work with the public to develop and implement acceptable strategies to reduce risk of wildfire and biomass accumulations on federal forests.

The Klamath-Siskiyou Oak Network has been formed to address declining oak woodland habitats in southwestern Oregon and northern California. The partnership brings together expertise from a broad range of partners including USFWS, NRCS, BLM, Lomakatsi Restoration Project, and TNC. The partnership has helped to promote habitat restoration and conservation efforts toward long-term sustainability of oak habitats of all types, on both publicly and privately owned lands.

Livestock management practices, such as rotational grazing, cost-shared by NRCS and others, have had a positive benefit on the control of invasive species. Specialized pasture management courses have been offered by the SWCD to educate landowners in advanced management theory and practice. Tree planting projects and invasive weed removal days have been conducted by watershed councils.

The Cooperative Weed Management Area provides a clearinghouse for information and sharing of weed resources. The CWMA was able to respond quickly to an outbreak of garlic mustard on the Rogue River and have demonstrated the strong partnerships and interagency cooperation. Federal land managers dedicate significant resources to weed control on an annual basis. Riparian restoration projects have helped address invasive species in riparian areas on a site-specific scale.

Vernal pools have been mapped and BMPs have been developed to help guide landowners in voluntary conservation practices. Several large preserves are being managed specifically to protect these unique habitats and the species which use them.

Plant needs and opportunities. The unique and special habitats of southern Oregon need continued restoration and protection. Landowners will have continued need for assistance with BMPs for forestry and agriculture suited to local plant communities and their individual land management goals. Attempts to increase connectivity, maintain larger habitat areas and minimize fragmentation will also benefit unique plant and animal communities.

Forest health and fuels are a very high priority in the region, with forest health impacting water quality and quantity, human health and safety, and fish and wildlife habitat. Although expensive and daunting in scope, forest health needs to continue to be addressed. Prioritization of fuels reduction work will be facilitated by maintaining and nurturing partnerships and cooperative

efforts. A skilled and affordable workforce is also a priority to accomplish the volume of work needed. Although Oak woodlands are declining statewide, some habitat remains in Jackson County with a good potential for restoration or maintenance. Landowners have shown good interest in programs addressing oak woodlands to date.

Improved pasture management stands out as a significant opportunity because of its positive impact on water quality and plant health, while also delivering better productivity and economic benefit to livestock producers. Noxious weeds are a constant threat benefitting from coordination, vigilance and early detection; further education and outreach are needed. There is potential to provide better control of invasive species through a variety of improved management practices in forestry and agriculture.

FOREST/PLANT RESOURCES OUTLOOK SUMMARY	
What has been accomplished	What is left to do
<ul style="list-style-type: none"> • <i>Cooperative Weed Management Area formed and functioning</i> • <i>Community Wildfire Plans (CWPPs) developed</i> • <i>Prioritization, coordination of fuels reduction</i> • <i>Development of Klamath Siskiyou Oak Network (KSON)</i> • <i>Fuels reduction work completed</i> • <i>Prioritization by partners, community involvement and outreach done</i> • <i>Mapping of vernal pools & id of restoration priority areas</i> • <i>Development of vernal pool BMPs</i> • <i>Central Umpqua-Mid Klamath Oak Habitat CCPI</i> • <i>Klamath-Rogue Oak Woodland Habitat Restoration RCPP</i> • <i>Ashland Forest All-Land Restoration Joint Chiefs award</i> 	<ul style="list-style-type: none"> • <i>Early detection/Rapid response for new weed species</i> • <i>Weed outreach & education</i> • <i>Reducing intensity of forest fires: through reduction of fuels, outreach, increased resiliency, financial and technical assistance</i> • <i>Web-based tracking of fuels work</i> • <i>Agreement on how to measure progress and what the end result is</i> • <i>Continue to consider habitat needs of T&E species in practice implementation</i>

Role and priorities for NRCS. Plant resources is a high priority for NRCS assistance in Jackson County. Strategies targeting plant resources are outlined in the strategic approach section of this plan. NRCS programs provide financial and technical assistance to private landowners to address plant resource concerns primarily in forest and irrigated pasture lands. Irrigation conversion and water management positively impact water quality in limited streams while increasing forage production. Active forest management reduces fuel loading and overstocking as well as generating a healthier forest condition needed to support clean water, fish and wildlife populations.

ANIMAL RESOURCES

The Klamath Mountains ecoregion boasts a high degree of species diversity, including a rich plant population with many endemic species. The region also provides important habitat for birds and terrestrial wildlife species. ODFW has completed a thorough statewide analysis of critical habitats and the species that they support.

The habitats, limiting factors and suggested approaches to improve the situation concluded by ODFW are summarized here.

Threatened & Endangered Animal Species Jackson County

- Northern spotted owl
- Oregon spotted frog
- Vernal pool fairy shrimp
- Pacific Fisher (candidate)
- Coho salmon
- Mardon skipper (candidate)

Summary of important habitat types

Riparian and freshwater aquatic. *Essentially every stream in Jackson County is potential habitat for salmonid and/or other important fish species. Temperature is the most common water quality factor affecting fish populations throughout the region. In-stream habitat and fish passage are also critical issues here. Stream flow has been cited as another limiting factor on a majority of the streams in the Rogue Basin, but there is optimism that efforts could be successful in a good percentage of those streams.*

Late successional mixed conifer forests, pine, pine-oak and oak woodlands. *Land use conversion from large-scale productive forests to urban and other uses has created concern for connectivity, increased danger of catastrophic fire, and furthered the spread of invasive species.*

Wetlands, vernal pools. *Wetlands are localized and small scale in the county. The geology has created the localized phenomena of vernal pools which are located in a very finite area north of Medford. These pools are habitat for several significant species of animals and plants.*

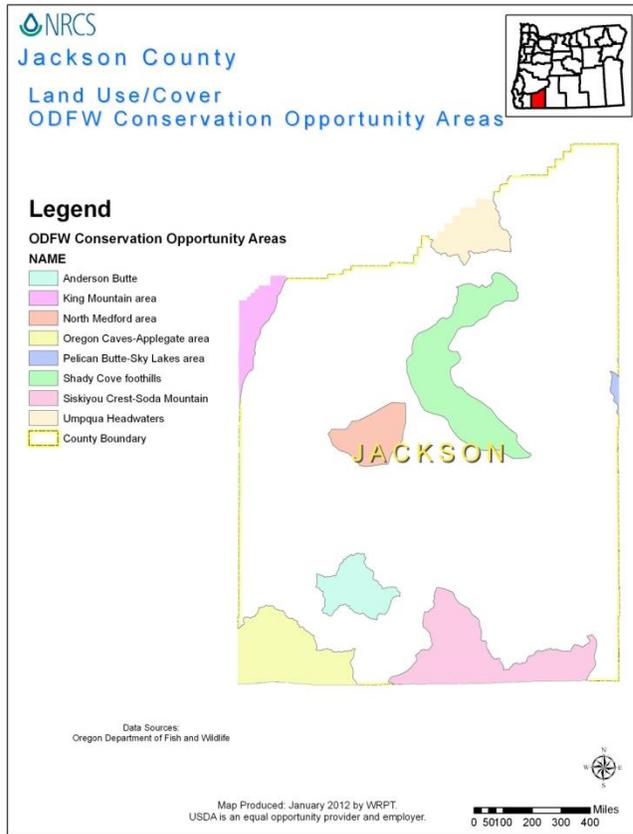
Ecosystem approaches recommended by ODFW

- ✓ voluntary easements and financial incentives to preserve and restore key habitats
- ✓ restore ecological function of riparian areas and wetlands and off channel habitats
- ✓ connect key habitats, prevent fragmentation, provide incentives to private owners
- ✓ integrate fuels and fire management
- ✓ maintain flows and reduce runoff
- ✓ maintain open-structured habitats, i.e., with mowing & controlled grazing
- ✓ restore and maintain ecosystem processes; more eco-friendly management
- ✓ early detection, prevention of invasives

After completing their extensive study, Oregon Department of Fish and Wildlife outlined a number of strategies as well as defining some Conservation Opportunity Areas (COAs) where they felt conservation efforts would be most beneficial.

Critical Habitats identified by ODFW

Conservation opportunity areas & features	Key species
<p>Shady Cove foothills: Pine oak woodland, grasslands and oak savanna</p>	Blue-Gray Gnatcatcher, Lewis Woodpecker, White Headed Woodpecker, Coastal Cutthroat Trout, Summer Steelhead, Common Kingsnake
<p>North Medford area: Many endemic and rare plants, important site for migrating and nesting fowl, aquatic, grasslands oak savanna, riparian, wetlands (vernal pools)</p>	Horned Lark, Purple Martin, Upland Birds, Waterfowl, Coho Salmon, Fall Chinook Salmon, Summer Steelhead, Winter Steelhead, Fairy Shrimp
<p>Antelope creek area: Low elevation site for terrestrial and aquatic species, aquatic, grasslands and oak savanna, riparian, wetlands</p>	Blue-Gray Gnatcatcher, Lewis Woodpecker, White Headed Woodpecker, Coho Salmon, Summer Steelhead
<p>Oregon Caves-Applegate area: Important stopover for migrating songbirds, Aquatic, grasslands and oak savanna, late successional mixed conifer forests, pine oak woodlands, wetlands</p>	Siskiyou Mountains Salamander, Lewis' Woodpecker, Northern Spotted Owl, Coho Salmon, Summer Steelhead, Winter Steelhead, Fisher, Red Tree Vole
<p>Anderson Butte: Important bird area because of brush fields, grasslands and oak savanna, pine oak woodlands</p>	Blue-Gray Gnatcatcher, California Towhee, Oak Titmouse, Wrentit
<p>Sisikivou Crest-Soda Mountain: Edge of three ecoregions, Aquatic, grasslands and oak savanna, late successional mixed conifer forests, pine oak woodlands, wetlands</p>	Siskiyou Mountains Salamander, Blue-Gray Gnatcatcher, Great Gray Owl, Northern Spotted Owl, Willow Flycatcher, Jenny Creek Sucker, Fisher



Progress to date. Oregon Watershed Enhancement Board invested \$6.8 M in restoration and watershed council support projects in Jackson County from 1999 to 2007. Projects have addressed a variety of issues including habitat restoration, riparian tree planting, and fish barrier removal. Fish barriers have been prioritized in the Rogue Basin by the Rogue Basin Fish Access Team. The systematic prioritization resulted in the ability to fund large projects that were very high priority. Savage Rapids Dam and Gold Ray Dam, both major fish barriers on the main stem Rogue, have been removed recently as a result of the landscape-level prioritization. The formation of the five watershed councils and their umbrella organization, the Rogue Basin coordinating council, is a significant accomplishment. These on-the-ground community groups have significant volunteer outreach capability and extensive relationships with private landowners in some areas. The regional

partnerships formed around the Oak Woodland Restoration project are also a significant resource for future conservation work.

Many of the commonly implemented conservation practices include positive benefits for fish and wildlife, including improving water quality, improving habitat and providing forage and food sources. Additionally, practices are planned with particular care to minimize damage or avoid restricting movement and access to existing populations if they are not able to specifically benefit them.

ANIMAL/WILDLIFE RESOURCES OUTLOOK SUMMARY	
What has been accomplished	What is left to do
<ul style="list-style-type: none"> • <i>Grazing management improvements have improved habitat</i> • <i>Vernal pools have been inventoried and BMPs developed</i> • <i>Water quality and fish passage have benefitted as a result of efforts by a wide group of partners</i> • <i>Forest habitat has been improved and the forest made more resilient through forest stand improvement and fuels reduction work</i> • <i>Oak woodlands have been identified as critical habitat for many species and are being given high priority status for restoration</i> 	<ul style="list-style-type: none"> • <i>Promoting water quality through</i> <ul style="list-style-type: none"> ○ <i>Improving grazing management</i> ○ <i>Improving forest management</i> ○ <i>Reducing runoff from irrigation</i> • <i>Improve forest habitat through stand improvement</i> • <i>Protect habitat from catastrophic fire</i> • <i>Restore critical habitat for important species:</i> <ul style="list-style-type: none"> ○ <i>Vernal pools</i> ○ <i>Oak woodlands</i>

Role and priorities for NRCS. Animal resources are a high priority for NRCS assistance in Jackson County. Strategies targeting improving habitat for threatened and endangered species as well as the productivity of domestic livestock are outlined in the strategic approach section of this plan. NRCS can play a critical role in supporting habitat improvements for wildlife on private lands by working with willing landowners. Improvements to water quality through the application of BMPs will benefit all populations especially fish. Forest stand improvement practices on private lands will complement work being done on public lands. Oak woodland habitat on private lands will provide important, high quality habitat at lower elevations. Targeted, high priority investments have the potential to make significant improvements to habitat on private lands in Jackson County.

CONSERVATION STRATEGIES AND INVESTMENTS

This section will explore the best strategies to make measurable progress on resource issues and outline the tools, strategies and investments needed to complete priority conservation work.

The preceding analysis detailed the situation for each resource individually, although it is widely recognized that the condition of the resources is inter-related and that most conservation measures have the potential to have impacts on multiple resource concerns at one time.

In Jackson County, high priority resource concerns to be addressed were determined by convening partners and members of the public to discuss the natural resource concerns and opportunities. Information was also gleaned from extensive interviews and discussions with many individuals working in natural resources and conservation in the county. This strategic planning process has helped to inform and clarify what needs to be done and has helped us to focus the programs and technical assistance available through the Natural Resources Conservation Service to best address natural resources through private lands conservation.

This plan has analyzed the resource needs and the progress of current efforts in order to identify the most strategic opportunities for the involvement of NRCS programs and resources. The following priorities are focused on conservation work most likely to produce results on the specified land uses managed by private landowners in Jackson County.

Strategic Priority: Forest Health

FOREST HEALTH STRATEGY: Forest Stand Health and Fuels Reduction

Work collaboratively with partners to provide land managers with technical and financial assistance to reduce the risk of uncharacteristically severe wildfire in tactical locations that support healthy forest ecosystems.

- Reduce unnaturally high tree densities and the risk of uncharacteristically severe wildfire with the resultant effects on soil, water, air, plant, animal, and human resources, increased risk of insects and disease, reduced wildlife habitat value, and decreased productivity and value of the timber resource.

Resource Benefits	
Humans	✓
Soil	✓
Water	✓
Air	✓
Energy	✓
Plants	✓
Animals	✓

This approach is further defined by several current Conservation Implementation Strategies. This first is focused on 6th field watersheds within the Applegate and Seven Basins Community Wildfire Planning Areas which have been prioritized by considering wildfire occurrence, fuel hazard, wildfire protection capability, high potential for cooperation, and human and natural values threatened by fire. A second focus area has been identified in an area known as the “Greensprings”, which is located at the crossroads of the Cascade, Klamath, and Siskiyou

mountain ranges and includes portions of the Cascade Siskiyou National Monument. Additionally, the Ashland Forest All-Lands Restoration Project (AFAR) was funded from 2015-2017 through the Chiefs' Joint Landscape Restoration Partnership initiative. This strategy is focused on cross-boundary fuels reduction and forest restoration work implemented collaboratively through partnerships on both public and private lands in the Ashland watershed.

Key partners for these strategies include: US Forest Service, City of Ashland, Lomakatsi Restoration Project, The Nature Conservancy, Jackson Soil and Water Conservation District, Oregon Department of Forestry, US Fish and Wildlife Service, OSU Extension, and Jackson County Integrated Fire Plan members.

The Natural Resources Conservation Service will target Environmental Quality Incentive Program (EQIP) funding to support the following conservation practices identified below.

<u>NRCS conservation practices to be applied</u>	
Woody Biomass Removal (384)	Forest Mgt. Activity Plan (106)
Forest Stand Improvement (666)	Tree/Shrub Establishment (612)
Tree/Shrub Site Preparation (490)	Tree/Shrub Pruning (660)
Upland Wildlife Habitat Management (645)	Brush Management (314)
Restoration of Declining Habitats (643)	Fish and Wildlife Structure (734)

FOREST HEALTH STRATEGY: Oak Woodland Restoration

Provide land managers with technical and financial assistance to manage oak woodlands to:

- Reduce existing threats to oak associated plant communities
- Protect and promote habitat and its connectivity for oak associated wildlife

This strategy is focused in areas of declining oak habitat and biological hot spots including Table Rocks and Colestin. This strategy has been implemented through a successful Collaborative Conservation Partnership Initiative (CCPI), and well as a current Regional Conservation Partnership Program (RCPP).

Lomakatsi Restoration Project is the lead sponsor for this project. Other important partners include US Fish and Wildlife Service (Partners in Wildlife Program), Jackson Soil and Water Conservation District, The Nature Conservancy, Klamath Bird Observatory, BLM, and the Klamath-Siskiyou Oak Network.

The Natural Resources Conservation Service will target Environmental Quality Incentive Program (EQIP) funding to support the following conservation practices identified below.

<u>Proposed NRCS conservation practices to be applied</u>	
Forest Stand Improvement (666)	Woody Biomass Removal (384)
Conservation cover (342)	Critical Area Planting
Tree/Shrub Pruning (660)	Fish and Wildlife Structure (749)
Upland Wildlife Habitat Management (645)	Forest Mgt. Activity Plan (106)
Brush Management (314)	Restoration of Declining Habitats (643)

Strategic Priority: WATER QUALITY

WATER QUALITY STRATEGY: Surface Water Quality - Agricultural

Provide landowners technical and financial assistance to implement conservation measures to reduce delivery of nutrients, organics and sediment and warmer water to surface waters through the reduction in surface water runoff.

- Improve irrigation system efficiency; reduce runoff and minimize the amount of water withdrawn for irrigation purposes
- Improve health of riparian areas and buffering capacity of riparian and near stream areas
- Improve growth and vigor of pasture to promote sustainable permanent cover of desired vegetation
- Protect stream corridors by installing alternative livestock watering facilities

Resource Benefits	
<i>Humans</i>	✓
<i>Soil</i>	✓
<i>Water</i>	✓
<i>Air</i>	
<i>Energy</i>	
<i>Plants</i>	✓
<i>Animals</i>	✓

This strategy is focused on livestock operations using flood irrigation with water rights on Little Butte Creek or its tributaries. Little Butte Creek is currently listed on the 303(d) list maintained by Oregon Department of Environmental Quality. Irrigation conversion from flood to sprinkler with increased water management is the primary objective. Partners will play an active role in outreach, technical assistance, and implementation of complementary work.

Key Partners include: Jackson SWCD, DEQ, OSU Extension, Farm Service Agency, Oregon Department of Fish & Wildlife, watershed councils, Cities, Medford Water Commission, Freshwater Trust.

The Natural Resources Conservation Service will target Environmental Quality Incentive Program (EQIP) funding to support the following conservation practices identified below.

Proposed NRCS conservation practices to be applied	
Irrigation Sprinkler (442)	Irrigation Water Management (449)
Irrigation System (441)	Structure for Water Control (587)
Irrigation Pipeline (430)	Pumping Plant (533)

National Initiatives and Conservation Opportunities

In addition to local strategic priorities, we will take advantage of national initiatives to address resource concerns as these programs become available. Currently the following initiatives are available.

National Organic Initiative (OI) - Organic Production

Conservation funding is available to organic producers and those transitioning to organic production. Financial and technical assistance is available through the Organic Initiative under the Environmental Quality Incentives Program (EQIP). The EQIP Organic Initiative signup is a nationwide special initiative to provide financial assistance to National Organic Program (NOP) certified organic producers as well as producers in the process of transitioning to organic production. Organic producers may also apply for assistance under the General EQIP program that is open to both organic and non-organic producers.

Through the EQIP Organic Initiative signup, farmers, ranchers and dairy operators may apply for financial assistance and technical expertise to plan and install conservation measures. Practices to be planned for example may include:

Proposed NRCS conservation practices to be applied

Conservation Cover	Hedgerow planting	Field borders
Buffer strips	Shelter belts	Irrigation systems
Seasonal high tunnels	Conservation crop rotation	Nutrient Management
Cover crop	Mulching	
Heavy use area protection	Critical area planting	
Grassed waterways	Irrigation water management	

Energy Initiative

The intent of the Energy Initiative offered through EQIP is to identify ways to conserve energy on farms by offering financial assistance in developing Agricultural Energy Management Plans, also known as an on-farm energy audit, and to provide assistance to producers who wish to implement various recommended measures identified in the energy audit.

Through the Environmental Quality Incentives Program (EQIP) - Energy Initiative signup, agricultural producers may apply for financial assistance to acquire technical expertise in developing a Landscape or Headquarters Agricultural Energy Management Plan (AgEMP) and/or to implement certain conservation measures that will reduce energy inputs on farm.

Proposed NRCS conservation practices to be applied

Irrigation Water Management (449)	Pumping Plant (533)
Agricultural Energy Management Plan -128	
And more	

Seasonal High Tunnel Initiative

The Seasonal High Tunnel Initiative is a voluntary program that provides financial and technical assistance to agricultural producers. The goal of the initiative is to assist producers with extending

the growing season for high value crops in an environmentally safe manner. The initiative can assist producers with improving plant and soil quality, reducing nutrient and pesticide transportation, improving air quality through reduced transportation inputs, and reducing energy use by providing consumers with a local source of fresh produce.

Proposed NRCS conservation practices to be applied

Seasonal High Tunnel (798)