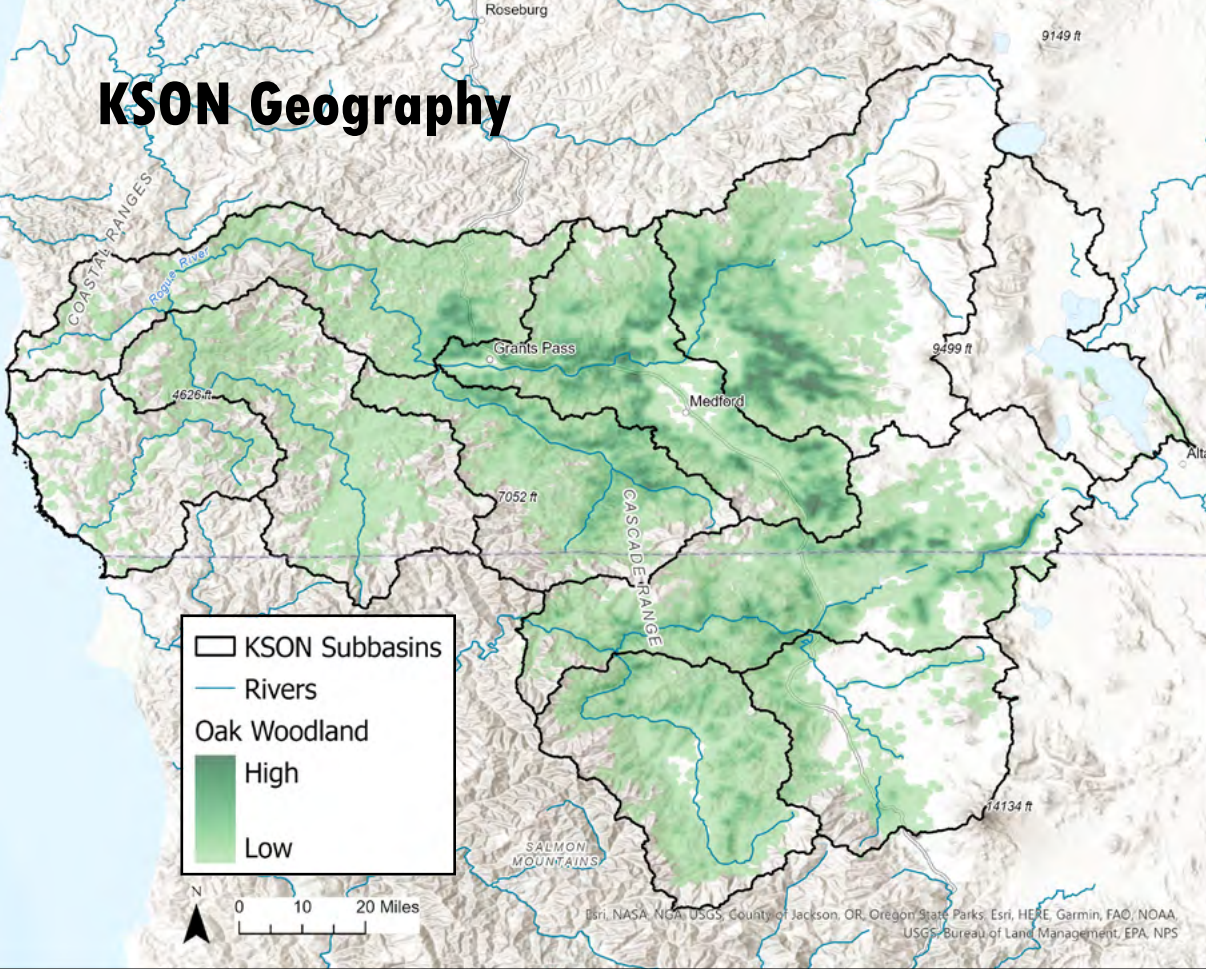




A Decade of Collaborative Oak Restoration Highlights 2011-2023



KSON Geography



We honor the past, present, and future aboriginal inhabitants of these landscapes, including the Shasta, Takelma, and Latgawa peoples, and the Confederated Tribes of Coos, Lower Umpqua and Siuslaw • Confederated Tribes of Grand Ronde • Confederated Tribes of Siletz Indians • Coquille Indian Tribe • Cow Creek Band of Umpqua Tribe of Indians • Confederated Tribes of Warm Springs • Elk Valley Rancheria • Karuk Tribe • The Klamath Tribes • Pit River Tribe • Quartz Valley Indian Community • Tolowa Dee-Ni' Nation • and Winnemem Wintu Tribe.

The Majesty of Oaks

Oak ecosystems are among the most biodiverse in southern Oregon and northern California, supporting many endemic plants and over 300 vertebrate species. The Klamath-Siskiyou bioregion, an area that is characterized as a globally significant biodiversity hotspot and area of conservation concern, contains some of the most extensive remaining oak ecosystems in the western United States. For time immemorial, oak ecosystems have provided and continue to provide culturally important plants and other resources that sustain indigenous communities. Adapted to frequent, low-intensity fire, oaks provide fire resilience to the landscape. A historic regime of frequent low-to mixed-severity fires created a shifting mosaic of habitat type and vegetation structures, and served to maintain the regions oak ecosystems.

Oak ecosystems provide many culturally important resources.

Habitat in Decline

Historically oaks were widespread across the Pacific Northwest in the valleys and foothills of California, Oregon, and Washington. Since the start of European settlement in the mid-1800s, California has lost 33% of its oak woodlands, and estimates of regional oak habitat losses in Oregon and Washington range from 50% to near total loss. Oaks in the Klamath-Siskiyou bioregion are most threatened by conifer encroachment, fire suppression, and agricultural development, but also by incompatible grazing practices, non-native species, and severe fire. Historically, regular burning as a part of indigenous stewardship maintained cultural landscapes of oak conifer forests, woodlands, and savanna in a more open state, enriching natural resources and biodiversity, and enhancing the structure and quality of critical food and fiber resources. Following European settlement, many oak habitats were converted for agriculture or urban development. Decades of fire suppression during the latter half of the 1900s have allowed less fire-resistant yet faster-growing tree species, such as Douglas-fir, to encroach upon and displace oak trees.



The Power of Partnership

The Klamath Siskiyou Oak Network (KSON) is a regional collaboration between local agencies, tribes and non-profit organizations that works to conserve oak ecosystems on private and public lands in southern Oregon and northern California. In the last decade, KSON partners have leveraged over \$7.5 million to restore more than 6,000 acres. Each KSON partner brings significant and unique contributions in the form of financial assistance, technical assistance, workforce capacity, and in-kind contributions to accomplish project objectives in a cost-effective manner, incorporating diverse expertise into all phases of restoration planning, implementation, and monitoring. The KSON Steering Committee directs the goals and activities of the collaboration using an adaptive management framework. In 2012, KSON partners were awarded the Department of Interior Partners in Conservation Award, which recognizes “those who make exceptional contributions in achieving conservation goals through collaboration

and partnering.” KSON’s efforts were also highlighted as a model of best practices for bird conservation in the 2016 State of North America’s Birds report. The partners draw upon best practices, indigenous knowledge, and established science to design prescriptions that protect oaks, enhance habitat, and reduce the risk of unnaturally severe wildfires. Treatments include ecological thinning to reduce conifer encroachment and the density of surface and ladder fuels around large, legacy oak trees. This work sets the stage for the reintroduction of carefully applied, low intensity-fire, which provides a multitude of ecological benefits. Slash from thinning operations is usually removed in controlled pile burns, while prescribed understory burning is used to further enhance and maintain treated sites. Oak restoration also includes the removal of noxious weeds and seeding the understory to establish healthy populations of native forbs and grasses that provide important habitat value.

Setting the Stage for Long-Term Oak Restoration

In 2010, a formal partnership was established to advance regional oak stewardship. On behalf of the partnership, with \$500,000 of partner co-investment, including contributions from US Fish & Wildlife Service, Lomakatsi submitted a successful proposal for \$1.8 million to the NRCS Cooperative Conservation Partnership Initiative (CCPI). The resulting Central-Umpqua, Mid-Klamath Oak Habitat Conservation Project accomplished 2,000 acres of restoration across Douglas, Jackson, and Siskiyou counties between 2011 and 2013. KSON emerged through this partnership, first as an informal working group in 2011 and then with a formal MOU in 2014. In 2015, the partnership brought \$1.3 million of co-investment to a successful NRCS Regional Conservation Partnership Program (RCPP)

proposal sponsored by Lomakatsi that resulted in \$3.2 million to restore approximately 3,200 acres through 2019. This Klamath-Rogue Oak Woodland Health and Habitat Conservation Project spanned private and federal lands from Siskiyou County in California through Klamath and Jackson counties in Oregon. Lomakatsi led prescription development, implementation, and landowner engagement. Klamath Bird Observatory provided expertise in planning and prescription development, using birds as indicators for ecological health, and coordinated implementation and effectiveness monitoring. The Nature Conservancy and Bureau of Land Management provided science expertise, including the Table Rocks Oak Habitat and Vernal Pool Assessment used to guide treatments and monitoring.

PROJECT HIGHLIGHT: Table Rocks

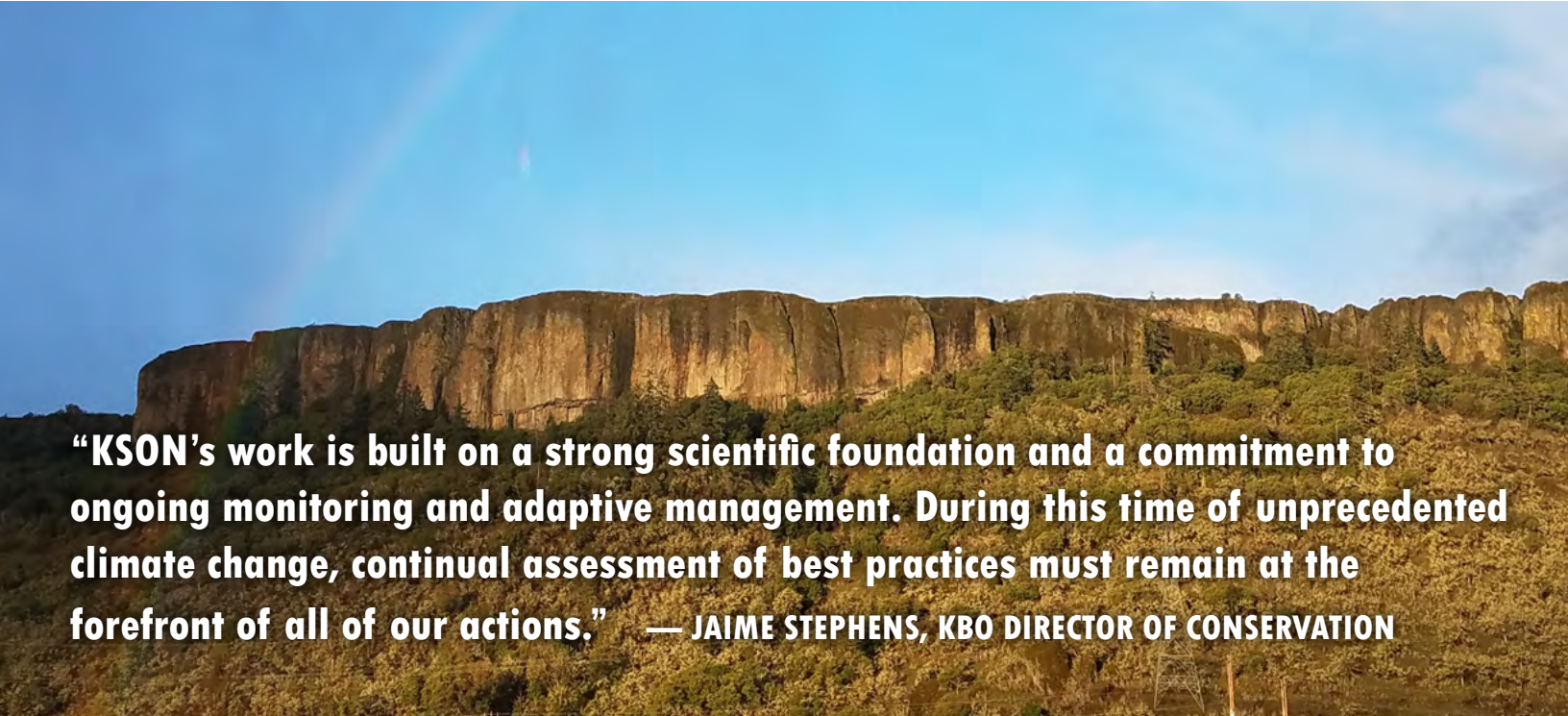
Table Rocks continues to be an important cultural site for Native peoples since time immemorial and has become a treasured community site for recreation, birding, wildflower viewing, and botanical study. Climate science research indicates the site as a priority for treatment based on the quality of the existing oak habitat and the likelihood of Oregon white oak populations being able to withstand the projected effects of climate change. This unique and highly visible site has been a focal point of restoration efforts by KSON, with the goal of protecting existing oak woodlands and restoring threatened areas to reverse the decline of oak-associated wildlife species. The Wildlife Conservation Society Climate Adaptation Fund provided important funding for restoration efforts.

A Decade of Restoring Critical Oak Habitat

Partners have identified approximately 5,000 acres of critical oak habitat in need of restoration and climate adaptation work in and around Table Rocks. To date, restoration treatments have been completed on BLM administered lands through a stewardship agreement between the BLM Medford District and Lomakatsi on approximately 625 acres of BLM land and with a stateside MOU between NRCS and Lomakatsi through a Regional Conservation Partnership Program across 700 acres of adjacent private lands. Prescription writing and implementation were led by Lomakatsi and included selective tree and shrub cutting using

variable density ecological thinning to retain a mosaic patchwork of vegetation and wildlife habitat. This approach prioritized thinning brush and small trees from around large, oak trees to increase their resilience to wildfire. Pile burning was primarily used to remove slash, and controlled understory burning was utilized where feasible to provide ecological benefits. Invasive species removal and seeding of native grasses and forbs were important components of restoration efforts. Snags and large downed wood were selectively maintained for wildlife habitat, while overall fuel loads were reduced to lessen the likelihood of severe wildfire.

From 2014 to 2023, partners have implemented 1,325 acres of oak habitat restoration at Table Rocks



“KSON’s work is built on a strong scientific foundation and a commitment to ongoing monitoring and adaptive management. During this time of unprecedented climate change, continual assessment of best practices must remain at the forefront of all of our actions.” — JAIME STEPHENS, KBO DIRECTOR OF CONSERVATION



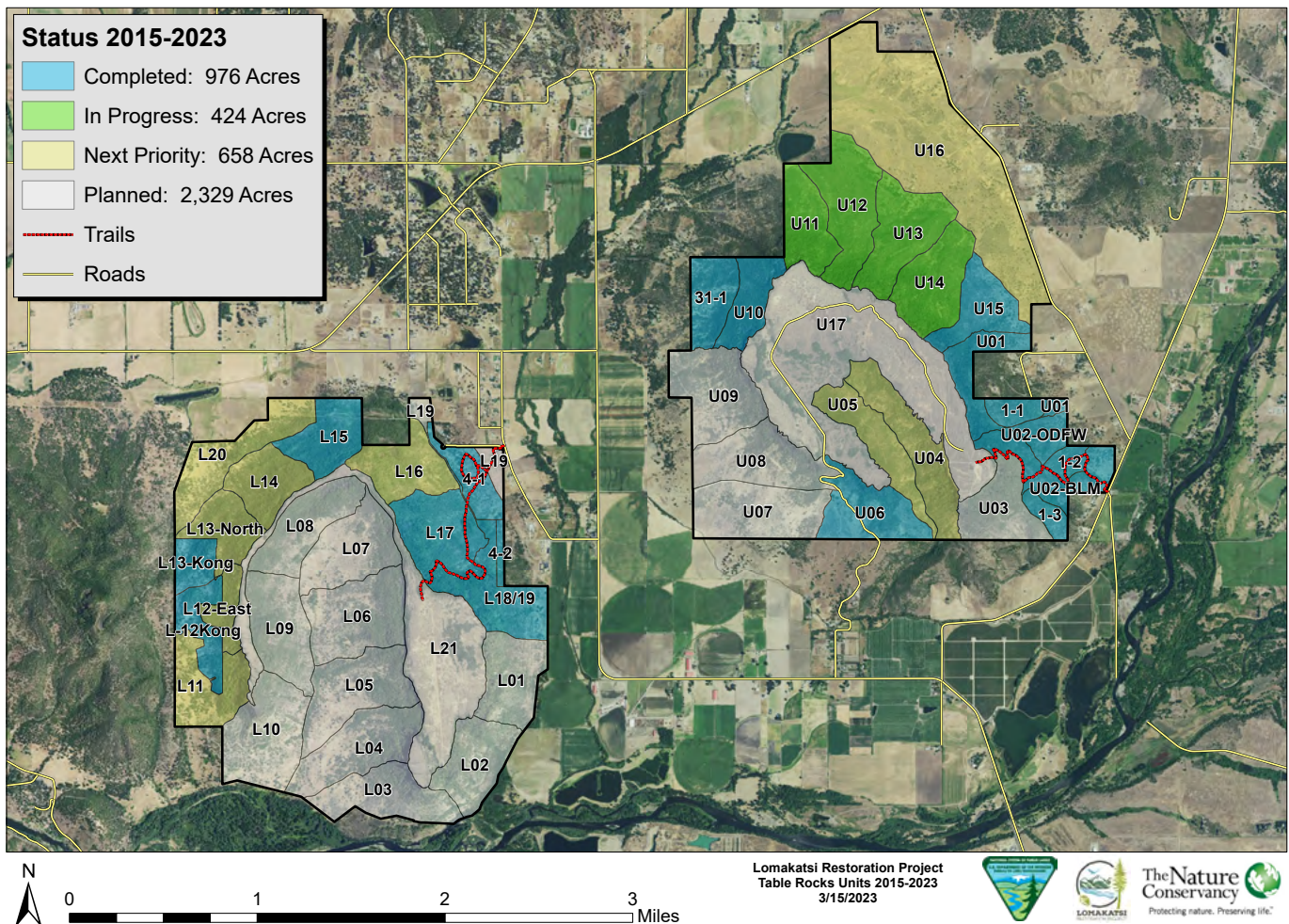
Tribal Engagement

Tribal partners engaged through restoration efforts at Table Rocks include Cow Creek Band of Umpqua Indians, Confederated Tribes of Siletz Indians, and Confederated Tribes of Grand Ronde, who provided valuable expertise in implementation design and the incorporation of Indigenous Traditional Ecological Knowledge into restoration treatments. Through Lomakatsi's Tribal Partnerships Program and in-house multi-cultural workforce, and through the Inter-Tribal Ecosystem Restoration Partnership, an inter-tribal restoration crew representing six regional tribes from Oregon and northern California have taken part in the work at Table Rocks over the years.

TABLE ROCKS PROJECT OBJECTIVES

- Reduce existing threats to oaks and associated plant communities
- Protect and promote oak habitat and its connectivity for oak associated wildlife
- Increase potential for oak ecosystems to withstand a changing climate

Table Rocks Oak Restoration Treatment Status 2015-2023



Adaptive Management

KSON applies an adaptive management approach to oak restoration implementation. For example, oak chaparral habitats, composed of oak woodlands with a chaparral understory, are an important habitat in southern Oregon; yet chaparral is often reduced or removed during restoration to protect large old oak trees from the threat of uncharacteristically severe fire. KSON identified a research need to guide restoration practices to ensure a balance of fuel reduction and wildlife habitat objectives. A series of studies conducted at Upper and Lower Table Rocks, an area of critical environmental concern, found that chaparral associated bird species did not establish territories in very small retained chaparral patches; patches larger than five acres were more likely to be used by birds during the breeding season. Following recommendations from that research, restoration prescriptions retained chaparral patch sizes of five to twelve acres where possible, and placement of smaller patches near larger patches to ensure adequate habitat for chaparral-associated bird species. A follow-up study demonstrated the success of the adaptive management approach: all six chaparral-associated bird species established territories in the larger retained patches.

Birds as Ecological Indicators

A handful of characteristics help explain why oak trees are so important for wildlife. Oak trees produce rich acorn crops that support numerous wildlife species, including birds, such as California Scrub-Jay and California Quail. Mature oak trees often contain a mixture of living and dead tree limbs, and the dead limbs provide cavities for nesting and roosting. Many oak-associated bird species build their nests in cavities, including White-breasted Nuthatch, Western Bluebird, and Oak Titmouse. Dead limbs also provide critical storage sites for acorn-caching Acorn Woodpeckers, as well as habitat for wildlife food items such as grubs and other insects. From 2012-2018 Klamath Bird Observatory implemented a study to examine bird response to the landscape-scale restoration project that reduced factors that stress oak trees while improving the function of oak-associated plant communities on over 1,000 acres of private lands. This restoration resulted in reduced

Ecological Monitoring

Oak habitat restoration treatments were carefully designed based on the latest science. Through this work, Lomakatsi published a white paper on best practices for oak restoration, including the innovative restoration practice of Individuals, Clumps, and Openings used to replicate natural processes. Partners used implementation and effectiveness monitoring to ensure the highest quality outcomes. Implementation monitoring took place through bi-annual field visits with partners to inform restoration treatments in progress and between sites with similar conditions. Effectiveness monitoring involved pre- and post-treatment data collection to document ecological changes in site condition. Klamath Bird Observatory led bird habitat and population surveys across many project sites, including Table Rocks. Lomakatsi led intensive vegetation surveys to document changes in oak habitat structure, including composition in regards to legacy trees, and herbaceous understory. Monitoring results demonstrated a significant increase in habitat value across project sites, including through thinning of conifers from around oaks in danger of being overgrown and shaded out, and in herbaceous understory vigor resulting from ecological thinning and prescribed fire.

Douglas fir and western juniper tree cover and overall shrub cover. Generally, it did not cause notable shifts between vegetation types (e.g. oak-conifer forest did not become oak woodland). Overall, the avian community composition shifted toward an oak-associated community following treatment at the restored sites. Still, KBO observed only negligible change in individual oak- and conifer-associated bird species numbers following restoration. Part of the reason why individual species did not show much response could be because there was much variation in the pre-restoration stand conditions and thus variation in the specific prescriptions designed to improve oak tree vigor and ecosystem health. Additional studies are underway at new restoration sites to measure how individual species respond to oak restoration treatments and more specifically how bird communities respond to overstory and understory restoration actions.

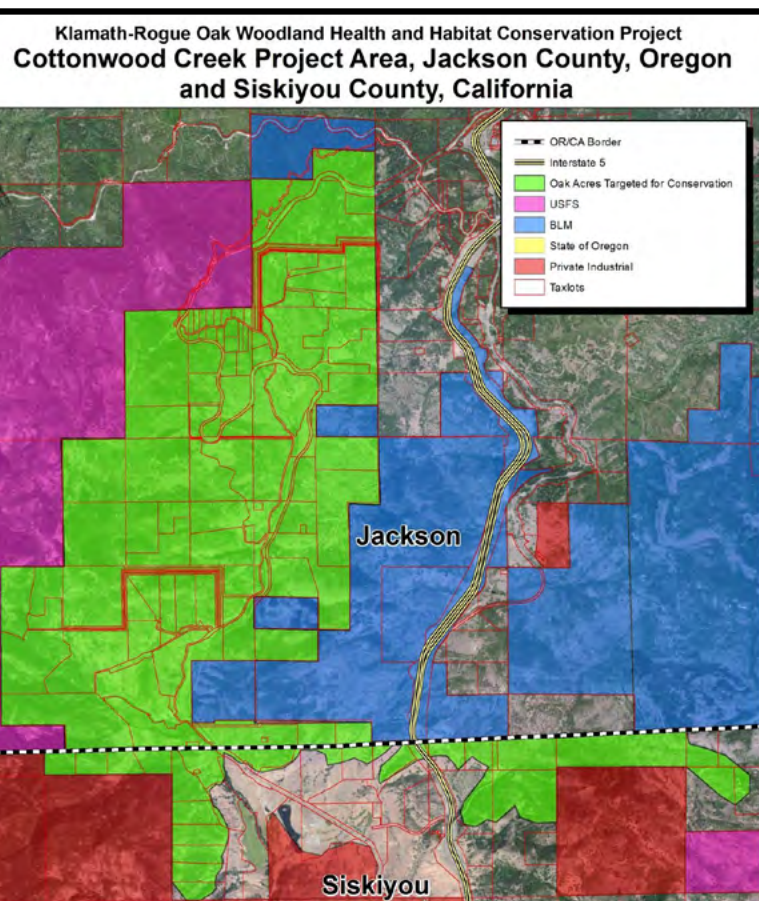
PROJECT HIGHLIGHT: Colestin Valley



A Legacy of Community Collaboration

The Cottonwood Creek Watershed within the Colestin Valley—on the border of Oregon and California along the I-5 corridor, in the mid-Klamath Watershed—harbors incredible biodiversity and high concentrations of critical oak habitat. Many residents in the Colestin Valley have been committed to maintaining its beauty and natural heritage for decades. Lomakatsi has been engaging with landowners to build collaborative restoration projects for over two decades, leveraging partnerships with NRCS and USFWS to treat oak woodlands on private

lands. Through the NRCS CCPI and RCPP awards, and additional investment from the USFWS Partners Program, KSON partners have implemented over 1,200 acres of ecological thinning and prescribed burning to restore oak habitat between 2012 and 2020—almost all on private lands. Treatments were strategically placed to protect large, old legacy trees and increase their resiliency to wildfire. The Colestin community continues to exemplify the important role that landowners can play in restoring and preserving oak habitat in an all-lands context.



“We found it incredibly satisfying to engage in restoration work not only for the good of our own property, but also for the good of the surrounding community. We feel comforted knowing that our woodlands are not only healthier, but safer in terms of fire risk and more beneficial for wildlife”

**- MARK LACOSTE,
COLESTIN LANDOWNER PARTICIPANT**

1,200 acres of oak woodland restoration has been accomplished in the Colestin Valley since 2012.

KLAMATH SISKIYOU OAK NETWORK



The Road Ahead

KSON's Strategic Action Plan (SAP) serves as a road map for achieving continued and accelerated oak woodland conservation across the Klamath-Siskiyou Bioregion for the benefit of all native species associated with deciduous oak ecosystems. The SAP outlines specific conservation foci for KSON over the short (6 year), medium (12 year), and long (30 year) term. The plan identifies and ranks threats to oak ecosystem targets and numerous strategies to address those threats. Working with the SAP, we will continue to assess conditions, threats, and conservation opportunities for oak ecosystems, while increasing our capacities, partnerships, and community support.

Want to Learn More?

KSON partners seek to build a vibrant collaboration that engages public agencies, tribal communities, non-profits, landowners, and other community members in the vital goal to conserve our region's oak resources. Sign up for our email list to hear about our upcoming events and outreach activities. Contact the KSON coordinator for more information or to join our email distribution list.



LEARN MORE

<https://klamathbird.org/partnerships/kson/>

GET IN TOUCH

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