



The Klamath Siskiyou Oak Network (KSON) is a regional collaboration that works to conserve oak ecosystems on private and public lands in southern Oregon and northern California.

SON envisions healthy and resilient oak ecosystems with intact ecological processes across much of their historic range in the Klamath Siskiyou Bioregion of southern Oregon and northern California. This Bioregion includes diverse landscapes with historic, intrinsic, aesthetic, environmental, wildlife, and economic values that are shared by a wide cross-section of the public. Its oak ecosystems are threatened with loss and degradation due to fire exclusion, certain agricultural practices, and rural and urban development. To address these threats KSON works to protect and restore oak ecosystems on both private and public lands through an effective partnership among non-governmental organizations, local state and federal agencies, as well as private community members, and other conservation and natural resource user groups. KSON's Strategic Action Plan (SAP) serves as a road map for achieving continued and accelerated oak woodland conservation across the Bioregion for the benefit of all native species associated with deciduous oak (e.g., Oregon White Oak and California Black Oak) ecosystems within the KSON Geography.

This plan recognizes the importance of indigenous cultures and their land stewardship. The oak ecosystems of southern Oregon and northern California were shaped by traditional, time-tested, ecologically appropriate and sustainable indigenous cultural practices. As such, the conservation of these systems must be guided by ecocultural approaches and traditional ecological knowledge. This guidance will ensure the survival of both indigenous ecosystems and cultures.



Lazuli Bunting

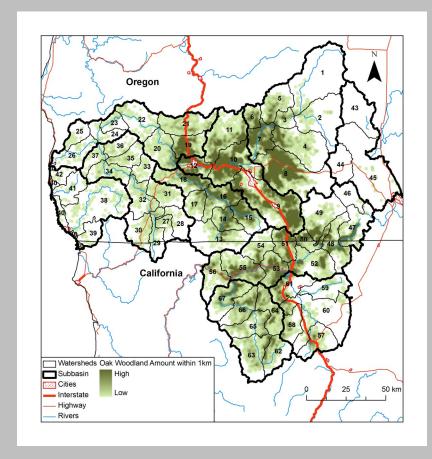


White-breasted Nuthatch



Ash-throated Flycatcher

# What makes KSON's geography and partnership unique?



The extent of southern
Oregon and northern
California's oak ecosystems
and the cultural, regional,
and continental significance
of this region as an area of
conservation need make the
protection and restoration of
oak ecosystems within the
KSON geography a priority.

The map above displays the distribution of oak woodland in the KSON geography, one of four oak targets of the SAP.

The plan includes a series of maps that can be used to identify priority geographies for conservation implementation strategies.

## The KSON geography:

- Contains some of the most extensive remaining oak ecosystems in the western United States
- Has high biodiversity and endemism as part of the Klamath Siskiyou Bioregion, an area that is characterized as a globally significant biodiversity hotspot and area of conservation concern
- Serves as an important climate refugium and area of connectivity between Oregon and California
- Contains oak ecosystems that are among the most biodiverse in the Pacific Northwest, hosting many endemic plants and more than 300 vertebrate species, including high diversity of oak associated birds, many of which are of continental conservation concern
- For time immemorial and in the present day, oak ecosystems have provided and continue to provide culturally important plants and other resources that sustain indigenous communities



# KSON has a history of using multi-million dollar conservation investments for effective oak woodland restoration efforts in southern Oregon and northern California

## Building collaboration for oak restoration since 2011

First established as an informal working group, KSON is a partnership of local agencies and non-profit organizations, formalized with an MOU in 2014. The KSON Steering Committee directs the goals and activities of the collaboration using an adaptive management framework.

## Leveraging over \$7.5 million in public and private funding for oak restoration

Each KSON partner brings significant and unique contributions in the form of financial assistance, technical assistance, and in-kind contributions. Together, we accomplish project objectives in a cost-effective manner, incorporating diverse expertise into all phases of restoration planning, implementation, and monitoring. The partnership has received funding support from Oregon Watershed Enhancement Board, the Natural Resource Conservation Service, the US Fish and Wildlife Service, the Bureau of Land Management, and many other sources.

## Over 6,500 acres have been restored

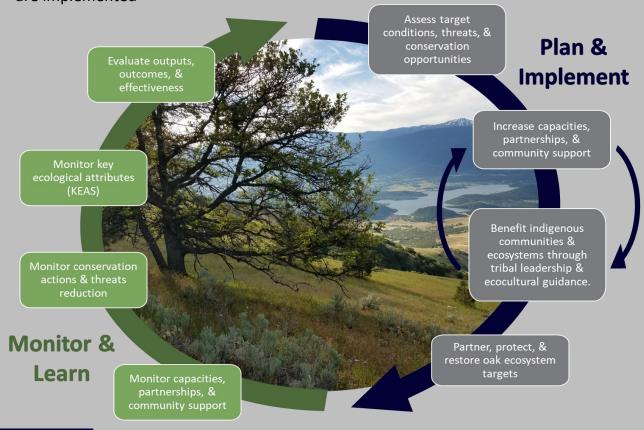
In 2012, KSON partners were awarded the Department of Interior Partners in Conservation Award, which recognizes "those who make exceptional contributions in achieving conservation goals through collaboration and partnering." KSON's efforts were also highlighted as a model of best practices for bird conservation in the 2016 *State of North America's Birds* report.

KSON's SAP outlines specific conservation foci to guide conservation action over the short (6 year), medium (12 year), and long (30 year) term.

The plan focuses on four oak targets –
Oak Savanna, Oak Chaparral, Oak Woodland, and Oak Conifer.

## In summary, the SAP:

- **Describes and maps** four oak ecosystem targets
- Identifies and ranks threats that stress and degrade aspects of the four oak targets
- Chooses key ecological attributes (KEAs) and indicators that further describe and measure the condition of our targets at both local and landscape scales
- Assesses the current and desired future status of each target
- **Develops and prioritizes a combination of strategies** that will be implemented to reduce the threats and improve the status of the targets
- Visualizes how these strategies will reduce threats and change the status of the targets with theory of change conceptual models (i.e., results chains)
- **Prioritizes conservation focus areas** based on occurrence, condition, and configuration of the targets; occurrence of threats; and land ownership
- Specifies short-term outputs and longer-term outcomes that will be used to measure the effectiveness of conservation actions and adapt KSON's approach as the SAP strategies are implemented



# **Top Strategies and Threat Reduction**



Bewick's Wren



Purple Finch



Black-Throated Gray Warbler



Oak Titmouse

The SAP identifies and ranks threats to oak ecosystem targets and numerous strategies to address those threats. Results chains in the plan provide a visualization for how those strategies work to reduce threats and change the status of the targets to achieve both near and long term goals.

### **Top-ranked Threats**

Across all four targets, the highest rated threats include **agricultural conversion**, **fire exclusion**, and **conifer encroachment**. Medium ranked threats include urban development, commercial and industrial development, incompatible cattle grazing, solar farms, and non-native grasses and forbs.

#### **Top-ranked Strategies**

We present a parallel set of enabling and conservation implementation strategies that represent broad courses of action to adaptively increase KSON's ability to realize conservation outputs and outcomes throughout the KSON geography.

**Enabling strategies** are designed to increase KSON's capacities, partnerships, and community support. The goal of enabling strategies is to increase our regional capacity for oak conservation, resulting in increased guidance, technical assistance, tools, and increased support and funding for oak conservation.

- Build capacity for technical assistance with increased human resources and equipment for planning, implementing, and monitoring
- Conduct research and monitoring on threat impacts and conservation management effectiveness
- Develop decision support tools
- Partner with tribes to ensure conservation planning is guided by traditional ecological models and that tribes benefit from strategic plan implementation
- Partner with public land managers to protect, retain, and restore target habitats

**Conservation implementation strategies** are designed to address contributing factors, reduce threats, and decrease biophysical stressors to achieve desired target habitat conditions.

- Protect target habitats from conversion
- Increase restoration of target habitats
- Offer technical assistance for training, planning, and implementation
- Partner with public land managers to protect, retain, and restore target habitats

# **Example Application: Using the SAP to identify priority areas**



Using the top-ranked strategies and threats identified in the plan, as well as the maps provided in the SAP, KSON partners applied the following process to identify a priority geography for a **Conservation Implementation Strategy: Increase restoration of target habitats.** 

- 1) Top threats that are best addressed by restoration: Fire Exclusion and Conifer Encroachment are two of three highest threats
- 2) Top targets that are most threatened by Fire Exclusion and Conifer Encroachment: Oak Woodland and Oak Conifer
- 3) *Identify geographies with high amounts of Oak Woodland and Oak Conifer.* Geographies should also be informed by climate resilience and departure data.
- 4) Within those geographies, look for the best opportunities for restoration. Narrow down specific areas by examining land ownership and zoning within high-priority geographies.
- 5) KSON partners work together to identify other opportunities and planned projects within these regions. Following our successful model for oak restoration implementation, KSON partners contribute diverse expertise into all phases of restoration planning, implementation, and monitoring.

## **Adaptive Management**

Key ecological attributes (KEAs) are used to describe the current and desired conditions of each of the four targets. Each KEA has indicators used to measure target conditions. Using the KEAs and the indicators, we assessed the current conditions and described the desired future condition for each target. Restoration efforts implemented over the next 6 to 30 years will result in landscape level outcomes for our oak targets. The desired outcomes are quantified for each KEA (*indicators in italics*):

**Amount on Landscape**: Increase the *area* of the Oak Conifer target; maintain the current *area* of the other targets

**Plant Community**: Increase the amount of Oak Savanna with >25% cover of high diversity native understory; maintain the amount of Oak Woodland acres with >25% native understory cover

**Oak Trees:** Increase the amount of Oak Woodland and Oak Conifer acres *characterized by an abundance of younger age class oaks, 90% of legacy oaks retained, and abundant, accessible, & high quality acorn crops* 

**Fuel Load:** Increase the amount of Oak Woodland and Oak Conifer that are *characterized by a low load surface behavior model* 

**Fire Regime:** Increase the amount of Oak Savanna, Oak Woodland, and Oak Conifer acres that have burned within the last 36 years (Fire Regime Class I) and increase the amount of Oak Chaparral acres that have burned within the last 100 years (Fire Regime Class III)

**Breeding Birds:** Increase the amount of Oak Woodland and Oak Conifer that have >75% of the focal bird species present; maintain the amount of the Oak Savanna and Oak Chaparral acres that have >75% of the focal bird species present



Acorn Woodpecker



Prescribed fire is an important tool that helps maintain healthy oak ecosystems.



Oregon White Oak

## **Monitoring**

The results of our assessment can be applied in an adaptive management framework. Using geospatial and site monitoring of KEA indicators, we will assess progress toward the desired future conditions of each oak ecosystem target in our region.

**Site-level monitoring** will be designed to measure changes in habitat conditions that result from restoration efforts. This monitoring will involve collecting data for measuring native plant cover and diversity, legacy oak density, fire regime class, and focal bird species diversity. Site level monitoring will be used to evaluate conservation outcomes that ensure the effectiveness of the restoration effort.

Landscape-level monitoring will use data from site-level monitoring that will be integrated into mapping tools. Mapping tools will scale up our monitoring of outcomes to measure the effectiveness of our target habitat restoration and protection efforts at larger scales (e.g., sub basin and KSON geography).

Cultural monitoring will be used to ensure cultural stewardship approaches are integrated into conservation implementation within the framework of this SAP, and that KSON conservation efforts enhance the traditional resources associated with the beneficial uses including sustainable foraging, gathering, and hunting for ceremonial and subsistence purposes. Tribal cultural monitors will also help to ensure that culturally significant sites are protected.



Bird monitoring for measuring ecological indicators



Black Oak Acorns

Prepared by Klamath Bird Observatory for Klamath Siskiyou Oak Network © 2020 - Version 1.0

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For more information, see the KSON website (www.klamathbird.org/partnerships/kson)

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