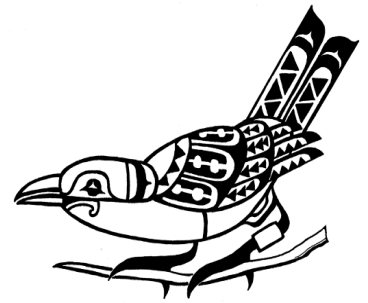


# The Klamath Bird

Newsletter of the Klamath Bird Observatory, Fall 2018



## KBO Science Applied

### Removal of the Klamath River Dams— An Amazing Opportunity for Study

*By Sarah Rockwell, Research Biologist*

Removal of the Klamath River dams, expected to begin in 2020 or 2021, represents the most extensive dam removal and river restoration project in United States history. It presents an amazing opportunity to study the ecological effects of large-scale dam removal, which are not currently well-understood. Elimination of the four dams would allow salmon to return to 300 miles of upstream spawning habitat for the first time in decades.



*Iron Gate Reservoir on the Klamath River © KBO.*

Salmon are important to the health of our forests—they carry marine nutrients to terrestrial systems when they swim up rivers to spawn and die. Fascinating results from previous studies have shown that songbirds achieve greater densities in salmon-bearing streams than in non-salmon-bearing streams and in areas below dams that salmon can access. One particular study found that American Dippers have improved body condition and more successful reproduction in salmon-accessible river and stream areas. These benefits to bird populations are associated with increased levels of marine-derived nutrients in their body tissues, demonstrating the importance of this natural flow of nutrients upstream from the ocean to our forests.

There may also be interesting opportunities to reclaim the former reservoir bottoms (exposed after dam removal when the reservoirs drain) as restored riparian or upland forest habitat. In fact, it will be important to monitor and aid this process, so that the newly exposed areas do not become recolonized with invasive, nonnative plants.

KBO's bird monitoring tools provide a science-based method to measure both the restoration of natural river processes and the ...

***Continued Page 4—Klamath River Dams***

### Birds Informing the Forest Restoration Design for South Fork Stillaguamish Vegetation Project

*By Jaime Stephens, Science Director*

Klamath Bird Observatory has partnered with the Stillaguamish Tribe of Indians, Sauk-Suiattle Indian Tribe, and Puget Sound Bird Observatory to form a technical advisory team which is working side by side with the Regional Forest Service Avian Conservation Program Manager and USDA Forest Service Mt. Baker-Snoqualmie National Forest staff to inform forest restoration planning. Collectively, this team has integrated focal species needs into planning for the South Fork Stillaguamish Vegetation Project and designed a robust monitoring strategy to measure ecological outcomes.

***Continued Page 4—Birds Inform***

### KBO's 2018 Annual Appeal

*By Shannon Rio, Board President*

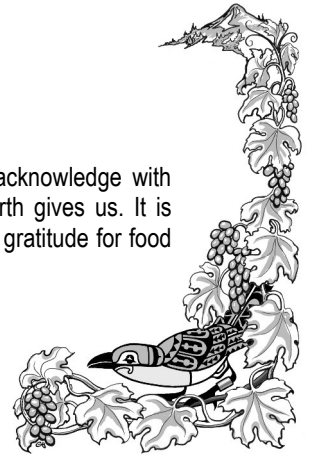
In this season of thankful giving, we acknowledge with gratitude the bounty of life that the earth gives us. It is truly a time worthy of ceremony around gratitude for food and friendship and family.

To complement this holiday season, we seek out ways to give back. It is in this reciprocity that we find a rich sense of wholeness and balance with the local community and with the larger world in which we live.

I am humbled by all that nature gives me as I love to walk in the woods, listen to and watch birds, and simply find a "sit spot" where I can meld with the natural world around me.

Please join me in this spirit of giving back by contributing to Klamath Bird Observatory. Our work involves collecting data and then sending scientific results to the agencies and organizations that can do good things for birds and their habitats. This is how our work results in conservation and protection of birds locally and on their migratory pathways. We receive so much from the natural world. So, plant a native shrub, put up a bird feeder, recycle and reduce the buying of things, donate to the Klamath Bird Observatory, and find creative ways to give back all year long.

***Many thanks from all of us at Klamath Bird Observatory!***



## President's Perch

*By Shannon Rio, Board President*

It can be easy to feel despair. Many bird species are in decline. Human population requires more resources than the earth has. Politicians must put science back at the forefront of decision making. Well, instead of pursuing THAT list of woe, I turn my mind and heart to a place of ONENESS, a place of connection to all living beings. We are of one mind that we want our children to go beyond surviving and to thrive. We ALL want an inner peace and inner strength to handle what life throws at us.

My personal intention is not to waste time on forms of fear or loathing or disappointment. I direct my life towards finding inspiration from people and from nature, finding connection with people and with nature. And I personally have two strong antidotes for despair: one is to go outside and walk in the forest, in the park, in wild places. And two is to give. In giving I find healing and wholeness.

Please consider donating to Klamath Bird Observatory and look around you for all the ways to give. Reflect on all you have been given and give back in kind. Thank you for your financial support of KBO and perhaps I will see you, walking and taking in nature's wonder.

In oneness, Shannon Rio

## Note from the Executive Director

*By John Alexander*

### KBO Science Applied

KBO strategically designs our science programs to produce results that are both nationally and internationally relevant as well as relevant to pressing local natural resource management challenges. We work with Partners in Flight and the North American Bird Conservation Initiative, two leading international bird conservation partnerships, to help inform priority bird conservation strategies and to align our ongoing work to achieve the broad conservation priorities locally. We then work through local partnerships we ensure our projects and results help inform efforts to protect and restore the lands and waters that surround and sustain us. In this edition of the Klamath Birds we highlight projects that exemplify this connection.

Our river restoration programs are now bringing years of applied science to help our region embark on the removal of the Klamath River's dams and ensure the success of what will be the country's largest river restoration effort. We are also planning to use new tracking technologies as a part of collaborative effort to answer critical questions about the entire lifecycle of migratory birds while identifying ways to save the local at-risk Oregon Vesper Sparrow. Several of our projects are helping to meet national conservation priorities through efforts to protect and restore oak woodlands and old-growth conifer forests in the Pacific Northwest. We also offer community science programs with opportunities for the public to get involved with some of our relevant conservation science projects.

Our continued efforts to achieve science driven conservation depend on the community that supports us and the partnerships that are an essential aspect of our success.

## Growth of Community Science

*By Ellie Armstrong, Biologist and Data Manager*

Citizen science has become a familiar term, describing amateur scientists within a community collecting data. The term citizen science does have some limitations though; the word citizen does not always represent the people who are collecting those data. A number of organizations, including the National Audubon Society, are spearheading an effort to transition from using the term citizen science to the more inclusive term community science, as citizenship is certainly not a prerequisite for collecting data or for having a passion for birds and conservation. Plus, it exemplifies the idea that a community can and should participate in the conservation of the habitats that surround it—and we like the sound of that.

Our concept and practice known as “conservation birding”, especially using eBird, is an easy (as well as fun!) way to contribute your observations to a greater body of knowledge. This community-driven database is both local and global—accessible and useful for everyone, including researchers. Our regional node of the worldwide eBird community science platform—**eBird Northwest**—is home to many community science project opportunities and resources for community birders.

Klamath Bird Observatory offers opportunities to participate in community science as well. You can join the community of volunteers who complete bi-monthly birding surveys at the Grizzly Peak Preserve, or plan to sign-up to help monitor the Short-eared Owl population throughout the state of Oregon. Other opportunities occur throughout the year with our Talk and Walk community education programming, single-day birding events, and multi-day birding expeditions—all announced via KBO's website, Call Note blog, Klamath Bird newsletter, and our Facebook page.

**To learn more about KBO's community science opportunities and how to get involved, contact Ellie Armstrong at [eea@KlamathBird.org](mailto:eea@KlamathBird.org).**

## Motus Wildlife Tracking System and KBO

*By Robert Frey, Biologist*

Try as we might and try as we have, there is still much more yet to understand about the movement ecology of migratory animals. And the need to know more is increasingly critical to preserving them in our ever-more human-influenced world. But a new generation of highly miniaturized digital radio-telemetry systems is allowing researchers to track the movements of radio-tagged individuals across great distances and lengths of time with unprecedented precision.

Foremost in these recent technological advances is the Motus Wildlife Tracking System (Motus, [motus.org](http://motus.org)). Motus is an international collaborative research network of automated radio-telemetry receiving stations. A receiving station consists of a reception antennae array that resembles the old-timey television aerial antennae and a microcomputer that translates and stores the received signal data. As a radio-tagged animal, for example a migrating bird, passes within 6-12 miles (depending on topography and other line-of-sight obstacles) of a...

**Continued Page 3—Motus**

## From Page 2—Motus

...receiving station it is detected. Those data are then uploaded to the central Motus database where they are archived and converted to visual tools for researchers, educators, and the general public.

Created and spearheaded by Bird Studies Canada, the Motus system has grown to over 100 collaborators who have erected over 400 receiving stations since 2013. There are stations on five of the seven continents but most are in the SE Canada and NE United States region. Receiving stations have been situated for discreet research projects as well as in coordinated over-lapping arrays which create an invisible radio-tag reception field in several areas through which any tagged animal is detected. To date, more than 10,000 individuals of more than 100 species have been monitored using the system, and published studies are already revealing more information about species movements than ever before.

KBO sees great potential in the Motus tracking system for answering our own conservation questions. For example, with our efforts to identify limiting factors for the Oregon Vesper Sparrow, an imperiled species whose dwindling numbers have been cause for recent alarm. Our initial work, begun in 2017 as part of a range-wide study coordinated by American Bird Conservancy, has focused on the isolated nesting population of the southern Cascades Plateau—at Lily Glen County Park and surrounding meadows northeast of Ashland, Oregon. We are pursuing funding to install a receiving station and attach tags to several dozen Oregon Vesper Sparrows there in 2019. Using this tracking information, supplemented with on-the-ground nest-searching, we would be much better able to describe this local population's nest success productivity and over-winter survival.



Motus receiving tower on a mountaintop in northern Colombia.

Building on the success of the Motus Network in eastern North America, the Partners in Flight Western Working Group has proposed to establish a western network. As this network grows, expanding the use of Motus technology, more precise movement data will help address pressing information needs for western birds to inform conservation actions within the next decade. Individual research project receiving stations, along with strategically-situated station arrays at key migration pathways, will create a network capable of stimulating much needed migration research in the west. It is an exciting time in conservation science with new technology providing information to answer questions that have gone unanswered for too long.

## Words on the Wind A celebration of birds in literature

### Acts of Spring

By Janet Ruth

*Sky above the Río Grande,  
above the Sandias,  
stretches pale cerulean,  
thin mares' tail clouds  
gallop in from the west—  
omens of change.*

*Cochiti Dam has paroled  
imprisoned water  
to make room for snowmelt.  
The river runs bank-full.*

*Cottonwood and New Mexico olive leaves  
clothe winter's bony fingers  
in lacy green gloves.*

*Beneath this arc of change,  
I stand among last year's rustling  
dead leaves and fallen twigs,  
strain to hear a whisper,  
to see a sign.*

*Bubbling from the silence,  
a saucy whistle, syncopation,  
clattering CHACK! CHACK!  
from a feathered sprite.*

*I twist and pry, peer and peek  
through foliage—  
nothing.*

*Completely still,  
the chatter mocks me.*

*My eyes in a fine frenzy rolling,\*  
ready to give up,*

*I am at last rewarded with a glimpse—  
Puck, in yellow and white robes,  
launches on olive wings  
into the heavens with a wink,  
then plummets free,  
back into the thicket—*

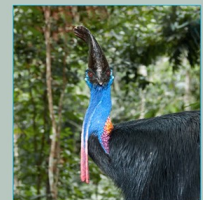
*yellow-breasted chat has returned.*

Reprinted by permission of the author—  
from her new book *Feathered Dreams:  
celebrating birds in poems, stories &  
images*—available from Amazon.com.

Editor's note: Art and science belong  
together. Janet Ruth is a, poet, artist, and  
ornithologist. She relies beautifully on her  
scientist's eye and artist's heart to recre-  
ate the magic encountered when we stop  
to watch and listen to nature.

*\*from A Midsummer Night's Dream by  
William Shakespeare*

### FEATHERED DREAMS



*celebrating birds in poems,  
stories & images*

JANET M. RUTH

Cover photograph Dave Krueper/feather art Janet Ruth © 2018 Mercury  
HeartLink Publishing.



### From Page 1—Klamath River Dams

...progress of revegetation of the old reservoir bottoms to enhance bird habitat. The response of riparian vegetation post dam removal can be confounded by a number of unknowns, such as sediment movements, changes in the water table, and seasonal flows. Our previous study on the removal of the Gold Ray Dam along the Rogue River in 2010 demonstrated the importance of being adaptive with restoration priorities and techniques as the ecosystem begins to recover. In 2018, KBO biologists spent time in the field along the Klamath River and its tributaries, both above and below the system of dams, to scout potential field sites and brainstorm possible study species.



*KBO Field Technician Tessa Wardle conducting survey © KBO.*

As the dam removal process moves forward, KBO is preparing for this important opportunity for ecological study. Despite the increasing number of dam removals planned in the U.S., dam removal science is in its infancy. Here in the Klamath-Siskiyou Bioregion, we are well-positioned with established science to inform dam removal planning, and to develop a monitoring strategy to inform adaptive restoration and measure return of ecological function to both riverine and terrestrial ecosystems. It will be important to measure the ecological response to dam removal—an aspect that is commonly overlooked—to understand its effects so that sound science can be applied to inform future dam removal efforts.

### Strategic Conservation Planning— KBO and Klamath Siskiyou Oak Network

*By Caitlyn Gillespie, Research Biologist*

As a science organization, KBO does a lot of field data collection to study birds as indicators of habitat change in restoration projects. However, another important part of the work we do is to participate in strategic conservation planning—a science-based process that helps regional conservation partnerships prioritize planning for the future.

Why prioritize? Both time and conservation dollars are limited, so...

**Continued Page 6—Strategic Planning**

### From Page 1—Birds Inform

A conservation planning framework that applies what we know about birds as indicators of forest structure and composition informs landscape-level restoration. Such planning strives to achieve restoration goals that benefit entire forests and the animals that inhabit them. We selected focal bird species that are representative of old growth forest conditions, and then, within the focal species framework, we included the needs of priority wildlife and plant species. By cross-walking a focal and priority species approach, we identified current and desired conditions, recommended prescription components, and we are now implementing monitoring to measure treatment effectiveness.

This vegetation project is occurring in densely stocked Late Successional Reserves (areas set aside to provide old growth habitat). The Mt. Baker-Snoqualmie National Forest has identified ~3000 acres where commercial thinning of trees <80 years of age would be both feasible and beneficial to old growth dependent species within a project area of 65,000 acres.

Restoration goals are to promote stand development and characteristics of old forests (e.g. broadleaf plants, structural diversity, standing dead trees, and coarse woody debris on the ground). Thus, thinning is designed to promote tree species diversity, structural complexity, and understory cover contributing to landscape scale goals for Late Successional Reserve habitat diversity over the long-term.



*KBO staff discuss current forest conditions with USFS foresters and biologists and additional partners working together to design forest restoration of the South Fork Stillaguamish Vegetation Project.*



**KBO is a member of the Klamath Siskiyou Oak Network. To learn more about KSON visit the web page listed under "Partnerships" at: [www.KlamathBird.org](http://www.KlamathBird.org)**

## Bird Bio: Oak Titmouse *Baeolophus inornatus* By Robert Frey, Biologist

If you see one you're likely next to an oak tree, or there's one very nearby. It's a plaintive little brownish-gray thing, but up close most folks would call it very cute with big black eyes and a small dark bill that seems to smile. And standing too close to that oak tree, you are likely to be scolded in a raspy 'tschick-a-dee'. Behold the wonderful Oak Titmouse.



Oak Titmouse © Jim Livaudais.

Formerly called the Plain Titmouse along with the Juniper Titmouse, it was split into two species in 1996—determined by their distinct songs, preferred habitat (oak versus juniper), and genetics. The Oak Titmouse is a year-round resident in oak habitats from southwest Oregon, south in western Sierra Nevada Mountains to southern Baja California (although absent from the California Central Valley and central Baja California). It is one of several birds that are very closely associated with oak habitats.

Its diet consists primarily of invertebrates, berries, acorns, and seeds. It forages on the twigs, branches, and trunks of trees and shrubs, sometimes hanging upside down to forage, and hammering seeds against branches to open them. Occasionally they will be seen foraging on the ground. Oak Titmice visit bird feeders regularly in winter months and are particularly fond of suet and sunflower seeds. They store food for short periods during times of abundance and have excellent short-term memory for storage locations. Researchers have found titmice use a cache spot's relation to a landmark such as a rock to find their hidden store with a high success rate.

The song of this titmouse is a series of whistled notes—the first note higher in pitch than the following one. The call is a scratchy "tsick-a-dee-dee" and reminiscent of a chickadee. It delivers its songs in an "eventual variety" singing sequence—in which a series of songs of the same type are repeated several times before switching to a new type. And this bird twitters (but doesn't tweet!); although rarely heard, both genders will emit a series of twittering notes (sounding like "sit-sit-sit") often combined with a quivering of the wings—a behavior associated with sexual excitement.

Its English common name makes perfect sense! Oak is for where it always is. Titmouse is derived from the Old Icelandic *tiir* meaning 'something small', and mouse a corruption of the Old English *mase*

for 'small bird.' Its scientific name *Baeolophus inornatus* is descriptive as well. *Baeolophus* means 'to have a small crest,' from the Greek *baio*s for short or small, and *lophos*—used by Homer to mean a crest on top of a bird's head. The Latin *inornatus* means 'without adornments' from *in* (a prefix meaning "not") with *ornatus* for 'ornate' or 'adorned.'

The Oak Titmouse is disappearing, along with the oak habitats they are so closely connected to. In Oregon, some 95% of previous oak woodland habitat is gone. The 2016 Partners in Flight North America Continental Plan determined the Oak Titmouse total population has already declined over 50% since 1970. The Plan estimated a half-life to extinction at 40 years—that is, in 40 years it is expected there will be 50% fewer Oak Titmice in the world than there are today. The species population is currently estimated at 580,000 individuals—by 2056 that number will be 280,000 and the species caught in a downward spiral toward extinction.

Discouraging as these declines are, KBO and others are working to turn things around. An important example is the collaborative Klamath Siskiyou Oak Network and their oak habitat restoration efforts underway in southwestern Oregon. This partnership of non-governmental organizations, private land owners, and government agencies has restored thousands of acres of oak woodland and chaparral habitat. Guides to oak habitat restoration for land managers and for private land owners have been created that provide information about oak habitat-associated bird species as indicators of the type and condition of oak habitat present—available at the Avian Knowledge Northwest website.

The Oak Titmouse is yet another canary in the big coal mine that is our world—another signal that things are not well.

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**From Page 4—Strategic Planning**

...identifying projects that have the most impact is important. Strategic planning helps identify species, habitats, and places that most need help, and the conservation actions that are likely to be effective. Ultimately, partnership-based strategic conservation planning is how we have the most impact at a regional scale for birds and their habitats.

Since 2011, KBO has been part of the Klamath Siskiyou Oak Network (KSON), a regional partnership dedicated to conserving oak habitats on private and public lands in southern Oregon and northern California. Oak habitats support a high diversity of birds and other wildlife species, but are threatened by conifer encroachment, invasive species, and fragmentation. KSON partners have successfully leveraged millions of dollars of public and non-federal resources to restore 3,000 acres of oak woodland in southern Oregon and northern California in the last five years, with an additional 3,400 acres of restoration planned.



Oak woodland © Frank Lospalluto.

Over the last few months, with the support of a grant from the Oregon Watershed Enhancement Board, KSON has been developing a Strategic Action Plan for oak conservation in the Klamath-Siskiyou Bioregion. Science-based maps of oak habitat help us identify priority restoration areas and set specific, measurable goals. When complete, the KSON Strategic Action Plan will serve as a road map for oak habitat restoration actions across the region for the next 10 years, and will enhance our ability to protect and restore oak habitats for birds and other oak-associated animals and plants.

**Riparian Restoration for Birds and Fish along the North Fork Salmon River**

*By Sarah Rockwell, Research Biologist*

This year KBO began a new partnership with the Salmon River Restoration Council (SRRC) in northern California. The Salmon River has a long history of human impacts, particularly due to 19th century hydraulic mining. The SRRC has plans to restore several deeply-impacted sites along the North and South Forks to improve watershed and stream health for fish and other wildlife.

KBO's role is to study the abundance and reproductive success of key bird species before and after the restoration actions take place. Successful restoration should meet multiple objectives, including benefiting birds and their habitats as well as in-stream habitat for salmonid fish. If not, revegetation plans can be adjusted to create better habitat for birds and other wildlife.

Our field work with the SRRC takes place at two different spatial scales. At two specific sites planned for future restoration, we can specifically measure bird response to restoration actions. We are also starting a long-term dataset monitoring the bird community along an 11 km reach of the river encompassing and extending beyond these sites, from which we can measure change over time.



KBO intern Ricky Murphy and Field Technician Tessa Wardle conduct a vegetation survey along the Salmon River © KBO.

This year our northern California crew was made possible by funding from the National Fish and Wildlife Foundation via a program called *Developing the Next Generation of Conservationists*. The program provides grant funding for youth from communities that are under-represented in the sciences to discover career opportunities available in conservation. We trained our two-person crew in nine different field methodologies (more than any past KBO crew!), including territory mapping, target-netting and banding, collecting reproductive index data, and vegetation surveys. Both crew members identified learning about the types of careers available in biology or conservation and gaining experience in multiple field techniques as primary motivations for joining our program.

As we tromped across riparian floodplains, mapping bird territories, finding Black-headed Grosbeak nests, swatting mosquitoes, and camping near the beautiful North Fork Salmon River for most of the summer, the crew gained a realistic appreciation of what a career in field biology entails, and how the data they collect contribute to research goals and are applied to address conservation priorities.

**Thank You to our Education Sponsors!**

Rogue Valley  
Audubon Society



## Science Delivery: Turning Science into Conservation Action

By Jaime Stephens, Science Director and John Alexander, Executive Director

Klamath Bird Observatory's research provides a foundation for conserving our most at-risk bird species. By conserving birds we conserve the health of our lands and waters. KBO works with many partners, including natural resources managers, to ensure that the science we produce is relevant and timely. However, our conservation success ultimately depends on ensuring that our science is used to help people who that can put our findings into action, on the ground.

KBO uses best practices in science delivery to tie our results to decisions that result in improved conservation action. Through partnerships we seek opportunities to apply our research findings to pressing management challenges. Each partner and opportunity is unique and calls for a variety of science delivery approaches, including peer-reviewed scientific publications and technical reports, scientific and management conference presentations, popular literature articles, decision support tools, and community education. However, our most valuable science delivery comes from building and maintaining relationships and regular personal communications with partners who make decisions that can directly benefit birds.

The relevance of specific research ebbs and flows with current events. For example, current discussions regarding the management and size of the Cascade-Siskiyou National Monument makes our years of studying the area timely. With our results in hand, we are able to respond to calls for science-based objective information about the Monument.

When we complete a research project, we cannot always know who all of our audiences might be. For example, a new political science advisor recently asked for a briefing on KBO's decades of wildfire research, giving us a new opportunity for our science to inform fire management policy. In this scenario, discussion, along with a one-page summary tying our research to the questions that are challenging decision makers today, become an invaluable science delivery approach.

When individuals, industry, restoration practitioners, federal agencies, and politicians take informed action to conserve birds, there is a far reaching benefit to the environment that we all depend on.



"Data Swirl" artwork © Gary Bloomfield.

A plethora of products and publications derived from KBO science is available at the KBO website, on our blog, and on Avian Knowledge Northwest.

Recent scientific journal publications include:

**"Using Regional Bird Density Distribution Models to Evaluate Protected Area Networks and Inform Conservation Planning"**  
in *Ecosphere*

**"Spatial Variation in Songbird Demographic Trends from a Regional Network of Banding Stations in the Pacific Northwest"**  
in *The Condor*

**"Habitat Selection of Riparian Birds at Restoration Sites along the Trinity River, California"**  
in *Restoration Ecology*

**"Short-term Response of Vegetation and the Riparian Bird Community to Dam Removal on the Rogue River, Oregon"**  
in *Ecological Restoration*

**"Post-breeding Elevational Movements of Western Songbirds in Northern California and Southern Oregon"**  
in *Ecology and Evolution*





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