

The Klamath Bird

Newsletter of the Klamath Bird Observatory, Spring 2015



President's Perch *By Harry Fuller, KBO Board President*

✧ Registration for our 2015 Mountain Bird Festival started off strong and has been steadily increasing! It is especially pleasing to see so many birders planning to come from urban areas at low elevations (e.g., Portland and the San Francisco Bay Area). In these area folks never see a Green-tailed Towhee or White-headed Woodpecker at their local park. Bringing birders to the Rogue Valley will help build public understanding of the conservation efforts needed to preserve the montane habitats in our region. Festival-goers will also learn about the avian science that is practiced by Klamath Bird Observatory.

One Festival trip will go to regenerating riparian land once underwater behind Gold-Ray Dam. Other field trips will feature mist netting visits and birding in oak woodlands. Those woodlands are the focus of an ongoing restoration

program that KBO is an integral partner of.

The Cornell Laboratory of Ornithology's Brian Sullivan will be presenting a keynote speech exploring eBird, the most innovative and important citizen science effort since the founding of the Christmas Bird Count 115 years ago. Klamath Bird Observatory's Avian Knowledge Northwest decision support system incorporates information that originates from thousands of eBird contributors with the data we collect. The Festival will help raise the awareness and understanding of eBird within the context of broader conservation science efforts, thus making it even more valuable and far reaching.

The Mountain Bird Festival is a great way of bringing people, birds, and conservation together... for a greater good and for lots of fun!

In this issue: Bird habitats— modeling and conservation; Migrations and international capacity building; long-term monitoring, demographics, and climate change

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Note from the Executive Director *By John Alexander, KBO Executive Director*

✧ As this *Klamath Bird* edition goes to press the bird conservation community is celebrating International Migratory Bird Day, the migrant birds that weave our hemisphere together are flocking north to their breeding grounds, and with these birds our seasonal staff and interns are also migrating in for early season training and preparation for another field season in the Klamath-Siskiyou Bioregion. This year's Migratory Bird Day theme—"Restore Habitat, Restore Birds"—recognizes that habitat loss and degradation are primary threats to bird populations. This theme encourages us to get involved in habitat conservation and that is exactly what we are doing. While we continue our habitat-relevant long-term monitoring and research efforts, Klamath Bird Observatory is actively working with a diverse array of partners to apply results from our science to inform improved natural resource management planning and strategic habitat conservation.

We are also actively preparing for our 2015 Mountain Bird Festival, a community driven event. This event, focused on citizens and science elevating bird conservation, has rapidly become the cornerstone of our community education program. Our Festival combines a celebration of birds with the stewardship ethic needed to ensure that our future is filled with bird abundance. Importantly, the Mountain Bird Festival also helps to fund habitat conservation, bird conservation science, and the work we do at KBO—every participant helps advance bird and habitat conservation by directly contributing to habitat protection, conservation science, and Klamath Bird Observatory's efforts to advance conservation through science, education, and partnerships. This event is brought to you through support from our community sponsors and our community volunteers.

Inspired by the support we receive from our partners, our community, and our volunteers—WE THANK YOU!

Habitat Restoration on the Trinity River

By Sarah Rockwell, *Research Biologist*, and Ellie Armstrong, *Trinity River Crew Leader*

✧ The pristine headwaters of the Trinity River originate high in the Trinity Alps of northern California and slowly wind down the granite peaks into the Klamath River, its waters seeking the Pacific Ocean. Natural rivers typically change their course slowly over time, but since the construction of Trinity and Lewiston Dams in 1964, the Trinity River has seen rapid changes. Alteration of river flows led to pools filled with sediment, a lack of seasonal flooding, and an increase in steep berms and vegetation, replacing historic floodplains. Salmon populations suffered drastic declines, and as a result the Trinity River Restoration Program was created in 2000 with the goal of restoring salmon spawning to pre-dam levels.

With major habitat restoration underway, it is important to monitor the effects on local wildlife populations that depend on the above-water riverine habitats. Riparian (streamside) vegetation provides habitat for breeding, migrating, and overwintering birds, and is also critical to the quality of the in-stream habitat upon which salmon depend. In the western United States, riparian zones make up less than 0.5% of the total land area, yet they support the most diverse bird communities in arid and semi-arid regions. Now riparian habitats cover only a fraction (less than 20%) of their former range in California. Their relative rarity on the landscape, yet high biodiversity, make riparian areas one of the most important habitats for the conservation of Neotropical migrants and resident birds in the west. Riparian habitat loss is considered one of the leading causes of declines in landbird populations in the western United States.

The Trinity River Restoration Program's rehabilitation projects provide an opportunity to ensure valuable riparian habitats for birds, as well as fish and humans. Scientists at Klamath Bird Observatory are using birds as ecological indicators, evaluating the health of streamside habitats as they are planted with native vegetation following rehabilitation projects. Data collected on the developing vegetation and the health of bird populations at different restoration sites is used to guide restoration and replanting designs implemented by the Program. As restoration proceeds and the landscape along the river continues to change, Klamath Bird Observatory will be on the job monitoring bird populations to ensure the maintenance of high-quality riparian habitats for terrestrial wildlife on the beautiful Trinity River.



Restoration construction on the Trinity River.
Photo © Ian Ausprey



Valdor Gulch restoration site, with willow and cottonwood plantings along the river. Photo © Sarah Rockwell



Riparian vegetation on the Trinity River with upland forest and the Trinity Alps in the background. Photo © Ian Ausprey

Oak Woodlands: Conservation for Resident and Migratory Birds

By Jaime Stephens, Science Director

✧ There are a number of bird species that depend on oak habitats throughout their annual life cycle, and each of them key in on different aspects of a healthy oak ecosystem. Oak savannahs, woodlands, and forests once covered contiguous expanses in the valleys that lie between the Coast and Cascade mountain ranges of the Pacific Northwest. However, oak habitats are now estimated to cover only 5 to 35% of their historic range, primarily due to development for housing and agriculture. As a result, oak woodland birds in this region are among the most at-risk—a higher percentage of these birds are in decline as compared with birds that depend on other habitats of the region. For these reasons, oak restoration has become a high priority.

As with all habitats, oak woodlands are inhabited by both migrant and resident birds. When we restore and protect habitats the year round resident species benefit, as do the migratory birds that overlap in range and habitat preference. For example, by promoting healthy habitat for our resident Oak Titmouse here in southern Oregon and northern California, we ensure adequate nesting cavities for the migrant Ash-throated Flycatcher as well. Likewise, ensuring adequate shrub cover for resident California Towhee, an oak-chaparral obligate, provides the vegetation that is favored by the migratory Blue-gray Gnatcatcher. This is true for promoting habitat for resident birds both here in the Pacific Northwest as well as in Mexico—protecting oak woodlands in Mexico for the benefit of resident species also helps migratory birds that use those same areas in the winter.

In southern Oregon and northern California, Klamath Bird Observatory's science is providing detailed information about birds and their habitat needs, and we are using our results to guide the restoration of oak habitat on thousands of acres. The habitat needs of our most at-risk oak-associated birds help to determine how much of a given oak type, such as savanna, woodland, or forest, is needed across a large landscape and helps to identify key habitat components to be enhanced through on-the-ground restoration actions. With oak woodland birds serving as indicators of healthy habitat conditions, we are informing large landscape design and site-specific treatment prescriptions to ensure investments in restoration result in healthy and resilient oak ecosystems for both resident and migrant birds, a diversity of wildlife, and for the well-being of our society.



The Resident Oak Titmouse (above) and migratory Ash-throated Flycatcher (below) need adequate cavities for nesting in Oak Woodlands.

Photos © Jim Livaudais



Ash-throated Flycatcher
5/30/20, Lower Table Rock Ore.
Photo © Jim Livaudais



Blue-gray Gnatcatcher
4/24/08, Upper Table Rock Ore.
Photo © Jim Livaudais

*Adequate shrub cover in oak-chaparral provides habitat for the migratory Blue-gray Gnatcatcher (left) and the resident California Towhee (right).
Photos © Jim Livaudais.*



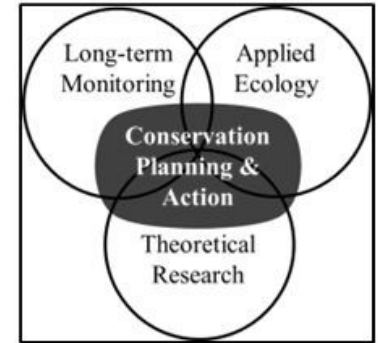
California Towhee
4/14/06, Denman Wildlife Area Ore.
Photo © Jim Livaudais

Klamath Bird Observatory's Conservation Model

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

✧ Klamath Bird Observatory's collaborative conservation planning approach is fueled with results from partner-driven science programs. These science programs use birds as indicators of the healthy and resilient ecosystems on which we all depend. The science involves three coordinated aspects:

1. Long-term monitoring that provides information about broad-scaled changes in the condition of our world;
2. More in-depth theoretical research about how natural and human influences effect our land, air, and water; and
3. Applied ecology projects that directly address priority natural resource management challenges.

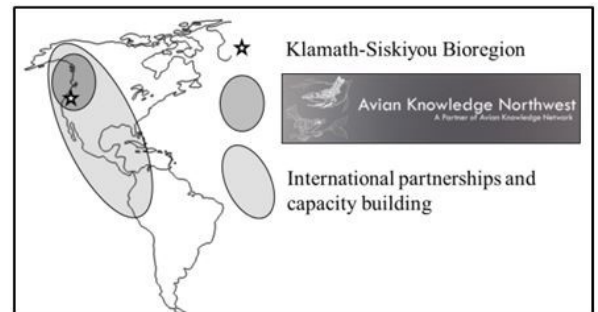


We bring results from our integrated science program to bear through an education and science delivery approach involving partner-driven engagement in conservation planning. With science, we are informing critical decisions being made today that will have lasting influences into the future.

SCIENCE-BASED CONSERVATION: LOCAL, REGIONAL, AND INTERNATIONAL

Klamath Bird Observatory's award-winning conservation model is applied at local, regional, and international scales.

1. We developed our model locally in the ruggedly beautiful and wildlife-rich Klamath-Siskiyou Bioregion of northern California and southern Oregon where we maintain intensive science and conservation planning efforts.
2. We now provide scientific resources and decision support across the Pacific Northwest region through the Avian Knowledge Northwest node of the Avian Knowledge Network.
3. Our intensive professional education and international capacity building programs expand our influence into Mexico, Central and South America, and the Caribbean where we actively support partners who are applying our model through a network of locally driven programs aimed at protecting birds throughout their breeding, migration, and wintering ranges.



KBO's CONSERVATION MODEL APPLIED: RESTORATION FOR OAK WOODLAND BIRDS AND THEIR HABITATS

Our work to advance oak woodland conservation provides a classic example of this model in action. Our science provides:

1. A clear sign that oak woodland bird populations are in decline;
2. Information about their habitat needs and the possible influence of climate change on their health and distribution; and
3. Results that tell us what kind of management actions benefit these species.

Armed with this information we identify conservation priorities and projects to benefit oak related species in Canada, the United States, Mexico, and Central America. We offer specific guidance for broad-scaled restoration of oak habitats in the Pacific Northwest. In northern California and southern Oregon we are partnering to design, fund, and evaluate specific restoration projects on public and private lands, ensuring on-the-ground benefits to birds. Our leadership in the Klamath-Siskiyou Oak Network (KSON) cultivates partnerships that have resulted in over \$6 million for on-the-ground restoration that is driven by our conservation planning approach. KSON oak conservation programs have been highlighted in the last two national State of the Birds reports and received the U.S. Department of Interior Partners in Conservation Award.

Long-term Monitoring in a Changing Climate

By Jaime Stephens, *Science Director*, and Jared Wolfe, *KBO-Arcata / US Forest Service Post-Doctoral Fellow*

✧ The concept of “shifting baselines” was developed for fisheries to provide a meaningful understanding of population change over long periods of time. For example, Atlantic Cod in the northern Atlantic have been depleted by over 95% since 1900 due to overfishing. Unbeknownst to northern Atlantic Fishermen in 2015, their cod fishing experiences are drastically different than the experiences of fishermen working in 1915—the baseline has shifted.

When environmental change occurs more slowly than human generation time, shifting baselines occur. Birds, like fish, are subject to shifting baselines, and understanding why these shifts take place is an important facet of conservation biology. Bird monitoring (capture, banding, and census) tracks bird populations over time to determine whether numbers of individuals are stable, declining, or increasing, and represents a meaningful way to identify shifting baselines. But the value of long-term monitoring data doesn't end there; 20 years of bird banding data from the Klamath-Siskiyou Bioregion is being used to identify additional and more subtle shifting baselines, such as changes in the timing of breeding and molting.

Our society and our environment are facing challenges from changing weather and climate. Existing data and continued monitoring are needed to understand how this relatively new stress will affect bird populations, many of which are already in decline due to habitat loss and degradation. Migratory birds have much to teach us about our changing world; they depend on multiple habitats over large geographic areas and these species may be at great risk from climate change. By studying phenology—how seasonal and inter-annual variations in climate influence plant and animal life cycle events (e.g. arrival on breeding grounds, onset of breeding)—we can better understand interconnected changes, help wildlife and their habitats adapt to a new climate scenarios, and prevent shifting baselines.

Klamath Bird Observatory and our partners have been mist-netting and banding birds in the Klamath-Siskiyou Bioregion since the mid-1990's. Of the 10 stations that KBO currently operates, all have been operated for over 12 years and half will reach the 20 year mark this summer. We are beginning to use these data to answer questions relevant to climate change and we are looking to expand our monitoring to meet the pressing information needs of the next century.

Rufous Hummingbird Migration: Adult Male First?

By Josée Rosseau, *Research Biologist and Oregon State University Graduate Student*

✧ In many species, adult males migrate first, selecting the best available habitat upon arrival. Early migration has been related to higher reproductive success and survival rates. Site specific studies tell us that adult males are often followed by adult females and then young birds, during migration. We wanted to know, how results from such site specific studies compare with information about population movements gathered at larger scales? To answer this question, we requested Rufous Hummingbird data from Avian Knowledge Network partners. With support from the Western Hummingbird Partnership Capture data were compiled from throughout North America; data were contributed by cooperators from the Klamath Monitoring Network, the Landbird Monitoring Network of the Americas, the Institute of Bird Populations, Nature Counts, and the USGS Bird Banding Lab.

We used these data to map and compare where and when Rufous Hummingbirds within each age-sex category (i.e., adult males, adult females, young male, young female) occur during their annual cycle, with specific attention to arrive on and depart from their breeding grounds. With these data we confirmed the patterns that had been described from the site specific studies—adult males do appear to migrate first. The results also brought to light previously undocumented large-scale movement patterns. For example, most of the Rufous Hummingbirds migrating to the southeastern United States in the fall are young males and females. We also see evidence of a late movement of adult females through California southbound migration, when most Rufous Hummingbirds are in the intermountain region.

These kinds of studies help resource managers address conservation priorities. Migration patterns, habitat associations all vary among age and sex categories. Adding such demographic resolution to studies of large-scale population distributions and movements will allow us to better target conservation action to the specific stages of a migratory species' annual cycle, when their populations are most limited.

Our International Programs ... Comings and Goings On

By Robert Frey, *Research Biologist*

✧ Klamath Bird Observatory applies a full life cycle approach in many ways including training and information exchange throughout the Americas. Since 1999, 53 biologist interns have come to work with KBO from outside the United States hailing from Argentina, Australia, Belize, Brazil, Canada, Colombia, Costa Rica, Ethiopia, Hungary, Jamaica, Mexico, Netherlands, New Zealand, Peru, Spain, Trinidad & Tobago, and the United Kingdom. The invaluable professional training opportunities found with the Klamath Bird Observatory increases their capacity to contribute to bird conservation efforts in their home countries on many fronts, furthering their own academic and professional careers.

Over these same years KBO has partnered with many organizations to present bird banding training workshops in Brazil, Colombia, Costa Rica, El Salvador, Jamaica, Mexico, Peru, and Trinidad & Tobago. Several hundred young biologists from throughout the Caribbean and Latin America have participated in these workshops, strengthening many much needed bird monitoring efforts in these vast regions traversed by our shared migratory birds. The workshops have also been effective connection points for several international interns coming to Klamath Bird Observatory.

The fledgling Trinidad & Tobago Bird Observatory is growing on the strong legs and hearts of former KBO interns Daveka Boodram, Carl Fitzjames, and Caleb Walker, in partnership with the University of West Indies, US Forest Service International Programs, and Klamath Bird Observatory. Their objective is to establish coordinated and standardized monitoring and to facilitate university research studies. A conservation education program is an integral component of their growth plan.



*Banding workshop session with KBO biologist Keith Larson
Kingston Parish, Jamaica 2004. Photo © Robert Frey*

Located along the Riviera Nayarit in western Mexico is the San Pancho Bird Observatory (SPBO). Education, outreach, and monitoring operations are up and running with support from Klamath Bird Observatory, Environment Canada, Rotary International, and the Western Hummingbird Partnership. SPBO's founder and director Luis Morales interned with Klamath Bird Observatory in 2012, expanding his bird monitoring methodology skills and mentoring with KBO senior staff in bird observatory organization and operations. During the past two winters, former KBO interns Tori Swift and Brandt Thibodeaux have worked with Luis to help his monitoring and research projects get off the ground.

Costa Rica Bird Observatories is a nationwide partnership promoting bird conservation, monitoring, and education in Costa Rica. Working in collaboration with the National Institute of Biodiversity, US Forest Service International Programs and Pacific Southwest Research Station, and Klamath Bird Observatory these observatories integrate the local efforts of scientists, nongovernmental organizations, and natural resource management decision makers. With the power of these partnerships, Costa Rica Bird Observatories serve as a model to be implemented across the Americas to enhance bird and habitat conservation.

Our International Programs involve recruiting international interns for our long-term monitoring and training programs, participating in international training projects, and providing support and increased capacity for partner organizations in the Neotropics. The adage "what goes around comes around" rings true to our ears with all of these comings and goings!

The Klamath Bird

Birds of a Feather Migrate Together

By Robert Frey, *Research Biologist*

✧ The phenomenon is storied and glorious—the great annual bird migrations. Still, for the billions of birds big and small navigating short and long distances to and from their summer and winter homes, much of their often complex full life-cycle is not yet well understood. The avian migratory behavior we see today evolved over a considerable time, since the last great global glacial period. More recently, a new migratory pattern related to that of birds has developed in some humans. Notably seen in the new up and coming generation of young conservationists who participate in Klamath Bird Observatory's research and monitoring projects here in the Pacific Northwest.

It all began in 1999 when a young biologist from Argentina found herself counting and banding birds here in "KBO-landia". Since then, Klamath Bird Observatory has hosted fifty-three interns who have traveled from seventeen non-US countries and five of the seven continents. Most of these individuals have come from the Caribbean and the Central and South Americas where, coincidentally, many of our migratory birds go. During the same period, more and more of our interns have been selected to join bird monitoring programs with KBO partner observatories in the Neotropics in an intentional, if not innate, migration after the birds'. The coming and going of this new generation of ornithologists must appear to the stars as a clumsy mimicry of the avian cyclic movements. And also much like the birds replacing worn feathers for fresh as appropriate for their activity in a different climate, these young ornithologists must replace their body coverings – t-shirts and shorts for long johns and fleece!



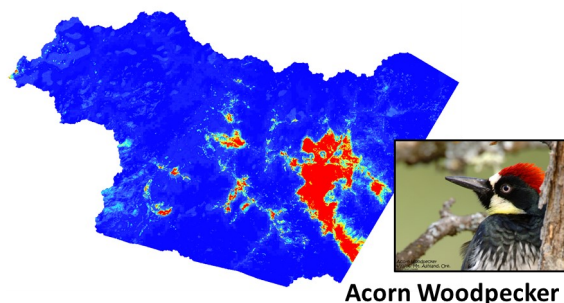
KBO intern Dai Shakura conducting a migration count at Tortuguero, Costa Rica 2002.

Using Models to Assemble the Bird-Habitat Puzzle

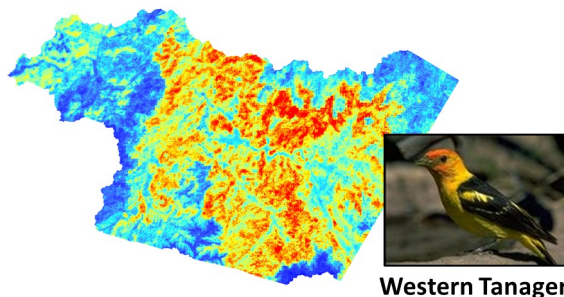
By Kate Halstead, *Research Biologist*

✧ Imagine trying to put together a puzzle in which most of the pieces are missing and the remaining ones are constantly changing. Sounds impossible, right? Yet this is what we face when we seek to understand the complicated ways birds select and use habitats across landscapes. Such landscapes are often in flux as a result of land use (e.g., logging), natural disturbance (e.g., fire), or natural forest succession. As ornithologists we have learned how to carefully implement field studies and collect data to answer important conservation questions relating to bird habitat use and distribution across ever changing landscapes. While it is impossible to observe all birds in all places at all times, these valuable data along with state-of-the-art modeling techniques are helping us to visualize dynamic landscape-scale distribution patterns of birds.

In bird research, "models" are mathematical equations used to predict whether a bird occurs in a specific area based on environmental conditions such as vegetation and climate. We are using models to create species distribution maps to show where birds are likely to occur across large landscapes. Recent technological and mathematical advances are contributing to more accurate, flexible, and powerful species distribution models. For example, we can merge our extensive and detailed dataset of bird observations with satellite imagery to predict which species, or group of species, are likely to occur at any 30 x 30 meter site across an entire landscape, whether it be the Rogue River Watershed, throughout the Klamath-Siskiyou Bioregion, or across all of western Oregon. We then use these maps to predict how bird distribution and the habitat conditions driving distribution, change over time. These models help us piece together the ecological puzzle that links changing landscapes to changing bird populations, giving us greater understanding of this complex and often beautiful picture. With these new insights, we are working with natural resource managers to help preserve and restore high-quality habitat for the migratory and resident bird species that are indicators of healthy and resilient landscapes.



Acorn Woodpecker



Western Tanager

Maps show the distributions of two common bird species across the Rogue Basin. Warmer light colors represent high-quality habitat for these species. Photos © Jim Livaudais (Acorn Woodpecker) and USFWS (Western Tanager)

Bird Bio: The Lifecycle of a Calliope Hummingbird

By Kaitlin Clark, KBO Outreach and Science Communications Intern

✧ The Calliope Hummingbird (*Selasphorus calliope*) is one star-clad, stellar little traveler. It is the smallest long-distance avian migrant in the world, equal in weight to a penny and only as long as your typical business card. It is the smallest bird you will see at the 2015 Mountain Bird Festival, and it is the smallest bird the 2015 Bird Banding Crew will catch at the Klamath Bird Observatory's banding station along the mighty Klamath River. The Calliope Hummingbird is a bit of a mystery; how does such a small bird survive breeding in chilly montane habitats and migrating a minimum of 3,500 miles annually with so many physical limitations? Further study is needed, particularly on their breeding habits.



Calliope Hummingbird © Jim Livaudais

While males set up breeding territories in open forest and alpine meadows, females will raise young in riparian trees or shrubs where they build their tiny sheltered cup nest. Calliope Hummingbird inhabit most western states and are encountered as far north as British Columbia. Prime breeding habitat typically occurs between 1,000 and 7,000 feet. Calliope can be found at elevations as low as several hundred feet in the Columbia River Gorge, and in the Sierra Nevada may breed at 10,000 feet along the timberline!

Calliope Hummingbirds feed by capturing insects on the wing foraging from sapsucker wells, and sipping nectar filled flowers as they prepare for an arduous migration.

Juvenile Calliope Hummingbirds are easily distinguished from adult males, who have a gorget of cascading carmine feathers arrayed in a starburst upon their throat, green backs, creamy-white under parts, and greenish wash to flanks. Tail feathers are dull gray with variable cinnamon edging at the base. Adult females resemble immature fledglings, with bright green or golden-green backs, creamy white

under parts, and a rusty wash to flanks and lower breast. The throat is evenly spotted dusky to brownish-bronze. Adult males and females and juveniles alike have a very short bill and tail with very long primary projection (i.e., the flight feathers reach beyond the length of the tail). When young birds are captured in mist nets, we can easily age them as juvenile based on the amount of corrugation (i.e., thin striations) on their bill. They will retain striations throughout the summer months.

Calliope Hummingbirds begin their journey as just-fledged juveniles in June, with a temporary set of freshly grown juvenal feathers. Within its first months of life the Calliope Hummingbird will face many challenges that that have substantial energetic costs. This

is likely why the juvenile does not replace the low-quality flight feathers it grew in the nest until after it completes its first fall and spring migration, plus its first breeding season. On these fresh feathers it migrates south and arrives on the wintering grounds in southwestern Mexico, typically sometime in September.

Calliope Hummingbirds overwinter in desert and semi-desert habitat, chaparral, and lowland brush, especially where there are ample nectar supplies. They are also found wintering on farms and ranches at lower elevations where salvia is present. On January 1st, the juvenile officially becomes an after hatch year bird, having survived the most risky part of its life, and in just a few more months will return to its northern breeding range for its first breeding season.

References:

Calder, W. A. and J.L. Calder. 1994. Calliope Hummingbird (*Selasphorus calliope*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: bna.birds.cornell.edu/bna/species/135

Western Hummingbird Partnership: www.westernhummingbird.org

Join KBO on Upcoming Events

2015 Mountain Bird Festival: May 29th - May 31st

Mark your calendar! The award winning Mountain Bird Festival is back, celebrating the natural wonders of southern Oregon and northern California. The 2015 Mountain Bird Festival will be held in Ashland, Oregon from May 29th-31st. Registration for the Festival is available on the Klamath Bird Observatory website at www.klamathbird.org.



Experience the Klamath-Siskiyou Bioregion at its best: come for the guided bird walks and keynote presentation (we welcome Brian Sullivan, eBird Project leader and birder extraordinaire). Stay for local foods, wine and brews of the Rogue Valley, fine art, and more. Observe Calliope Hummingbird, White-headed Woodpecker, Mountain Quail, Great Gray Owl, and many more species in their serene natural habitats.

The 2015 Mountain Bird Festival combines a celebration of the Klamath-Siskiyou Bioregion's spectacular mountain birds and the stewardship ethic needed to ensure thriving landscapes for humans and wildlife. Every citizen who participates in the Festival helps advance bird and habitat conservation in multiple ways. They contribute to habitat protection through the purchase of a Federal Migratory Bird Hunting and Conservation Stamp (a.k.a. the Duck Stamp), thereby supporting one of the most successful conservation programs in the United States. Festival attendees also purchase a Conservation Science Stamp with proceeds supporting Klamath Bird Observatory's regional science and education programs aimed at achieving sustainable natural resource management. Additionally, every Festival goer serves as a citizen scientist contributing field trip bird sightings to eBird Northwest, a rapidly growing database that advances our knowledge about birds and their habitats.

Klamath Bird Observatory Field Trips for Conservation:

Professional bird guide, author, and KBO Board President, Harry Fuller, offers unforgettable multi-day field trips. Visit www.KlamathBird.org or call Klamath Bird Observatory Headquarters at (541) 201-0866 for more information. Proceeds from these fee-based field trips support Klamath Bird Observatory efforts to advance bird and habitat conservation through science, education, and partnerships.

Malheur National Wildlife Refuge

2 Trips: June 5th-8th and 12th-15th (limited availability)

Migration at Malheur National Wildlife Refuge is an unforgettable birdwatching phenomena. These trips are in high demand. Join us to see what Oregon birdwatching is all about! \$500 registration fee includes a \$300 tax-deductible donation.

Yellow Rails of the Klamath Basin

July 19th-20th 2015

Yellow Rails are infamous cryptic marsh-stalkers. They are highly sensitive to habitat disturbance and difficult to observe; perhaps one of the least viewed birds in North America! There is critically important habitat for Yellow Rails throughout the Klamath Basin; did you know that Klamath Marsh National Wildlife Refuge hosts approximately 50% of the western population?! Join us in search of this notorious nemesis bird of the night! \$300 registration fee is a tax-deductible donation.

Support Klamath Bird Observatory!

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Your contributions help KBO advance bird and habitat conservation through science, education, and partnerships!

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Please help make bird and habitat conservation work; make your tax-deductible donation today:

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I never for a day gave up listening to the songs of our birds, or watching their peculiar habits, or delineating them in the best way that I could.

—JOHN JAMES AUDUBON



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