

# The Mountain Chickadee

Newsletter of the Sangre de Cristo Audubon Society  
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Photograph by Tom Taylor

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Woodhouse's Scrub-Jay  
Photo: Cornell Lab of Ornithology

*The Sangre de Cristo Audubon chapter represents a landscape that has been occupied for millennia by peoples of diverse cultural backgrounds. We honor that diversity and believe that just as we strive to protect biodiversity, we must include and respect the diversity of the many people and cultures that call northern New Mexico their home.*

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## The Future of Our Forests

Editor's note: Dr. Craig Allen, a long-time research ecologist with the U.S. Geological Survey stationed at Bandelier National Monument, is a world-renowned authority on forest, fire and landscape ecologies, as well as the consequences of climate variability and change, including drought, wildfires and broadscale tree die-offs. During more than 35 years of federal service, he authored more than 120 publications and also established and led the Jemez Mountains Field Station (now the New Mexico Landscapes Field Station), which continues to generate a rich legacy of ecological data and unrivaled understanding of landscape change in northern New Mexico.



Craig Allen

Allen retired from the USGS in 2021. He is currently an adjunct professor at the University of New Mexico's Department of Geography and Environmental Studies, and continues to study the interplay of wildfires, drought, climate warming and the disturbing changes they are increasingly causing in southwestern forests. He recently talked with the Mountain Chickadee about the future of our forests (this is an edited version of his comments).

### **Mountain Chickadee: Are we already seeing intertwined effects of climate change and longtime fire suppression in our forests?**

Craig Allen: Yes and yes. Here in northern New Mexico, in the Jemez and increasingly in the southern Sangre de Cristos too, we know this as well as anywhere on the planet. Hotter-drought stress from warming is now driving the lower range of ponderosa pine further upslope with every dry period. Meanwhile there's the densification of most forests due to a century of fire suppression. Instead of 100 trees per acre there's now often 1000 trees per acre, all competing for limited water. This is making bark-beetle outbreaks more severe – there are so many stressed host trees. Now we've got warming and a multi-decadal drought on top of that.

There was a recent outbreak here of Janet's looper, a defoliating caterpillar. Previously it had only been recorded in southern New Mexico. It feeds in winter on high-elevation Douglas-fir and spruce needles, but only when temperatures are warm enough. It doesn't kill trees initially, but weakens them so they're more susceptible to bark beetles and drought. It had never been recorded here, and then the population blows up in 2017-2019. This outbreak is another clear signal of climate change expressing itself on the landscape.

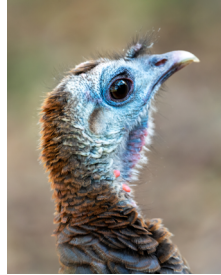
Warming amplifies multiple tree-killing processes – direct stress from drought, insect outbreaks, and also wildfire. They're driving a pattern of ecosystem transition, from conifer-dominated forests to shrublands and grasslands.

**(Continued on P. 7)**

## Female Birds Get Their Due - and Their Day

A few years ago, the naturalist and writer Kenn Kaufman wrote an essay about how there's this huge bias among birders to only go after male birds or to only appreciate and study male birds. And it's not just birders - it's common among photographers, scientists, and even in ornithological collections at museums. It's been found that many collections used for research primarily have male birds, so if genetic studies are conducted, or there are descriptions of species, female birds aren't included.

Why aren't we studying female birds more? Part of the reason is that it is hard to even identify a bird as female, let alone collect enough data to draw conclusions! As birders and ornithologists, we assume that many female birds are duller, quieter and less behaviorally complex than their counterparts. But recent science has exposed the myth behind this idea. A 2014 study on global avian species revealed that female birdsong is both common and critical in evolution, and recent fieldwork confirmed this in passerines such as Cerulean Warblers, with the females' calls serving a unique purpose from the males'.



Female Wild Turkey  
Photo: Michele Lomanto

Overlooking female birds permeates to the sciences, to the extent that only 8% of land-bird conservation plans take habitat needs of female birds into consideration. Not treating female Golden-winged Warblers separately has conservation implications; females use lower-elevation habitats in the non-breeding season, which has led to a

twofold higher decline in female warblers than males due to higher deforestation in those areas. Female Kirtland's Warblers select for more intact habitat and are thus more prone to population declines. And nesting female birds may be more prone to impacts of extreme weather events than males.

In 2019, a group of five of us (we call ourselves the Galbatross Project) came up with the idea for [Female Bird Day](#) each May to boost appreciation for female birds. A lot of us have found that if we slow down and focus our attention on trying to identify female birds, it deepens our interest, and we've actually become better birders.

But we still have a lot of work left to change the skew in birding and ornithological practice. Part of that includes growing our literacy around female birds - and that's where Female Bird Day comes in. This year, from May 28-30, we ask you to focus solely on females as you bird. Challenge yourself to use behavior, vocalizations and other sex-specific clues to ID species. Then tell us about the techniques you used with this [simple form](#).

We welcome sexing tips on any species from the continental U.S., Alaska and Hawaii (and yes, that includes House Sparrows). To get an idea of the information we're looking for, check out [this sample spreadsheet](#). Your notes and efforts will help us build a library of female-bird knowledge for the public.

Editor's Note: This article has been adapted from essays by Purbita Saha and Joanna X. Wu, founding members of the Galbatross Project.

## Sangre de Cristo Chapter Activities

### Meetings and Programs

#### The Quail of New Mexico

Casey Cardinal, Game Bird Biologist

Wednesday, March 9 - 7:00 pm via Zoom

Casey will cover the four different quail species that can be found in New Mexico. She will talk about life history traits, species ranges and habitat requirements, population trends and factors that influence populations growth and decline. She will also give an overview on some interesting research that has come out on the different species in recent years.

#### The Joy of Migration

Robert Templeton, Retired NM Teacher/  
Educator at Veracruz River of Raptors

Wednesday, April 13 - 7:00 pm via Zoom

At any location, birds fall into one of four categories: all-year species, migrant summer breeders, winter visitors or transients. Driven by seasonal cycles, these biotic "masters

of mobility" create an ever-changing mix of species that provides birders with a rich opportunity to connect with the fundamental cycles that shape life on earth. New abundance maps and extravagantly rich migration animations from [eBird](#) reveal a new level of detail. Robert will share simple tools for connecting with and understanding migration in your location!

### Field Trip

#### Upper Los Alamos Canyon

Saturday, May 7, 2022

Leader: Rene Laubach, [renelaubach@gmail.com](mailto:renelaubach@gmail.com)

We will walk 3.8 miles from scenic upper Los Alamos Canyon to Los Alamos Canyon Reservoir and back. The service-road grade is fairly easy and permits good group viewing. We will be seeking Red-naped Sapsucker, flycatchers, vireos and warblers as well as resident species such as Acorn Woodpecker and Steller's Jay. Limited to 8 participants. Meet at 8 a.m. at the junction of West Road and Omega Road (just east of the Los Alamos County Ice Rink), where there is ample parking.

# Audubon Southwest

## Randall Davey Audubon Center and Sanctuary

The [Randall Davey Audubon Center and Sanctuary](#) has reopened, with masks required for all indoor spaces. The



grounds are open Monday to Saturday, 8:00 a.m. to 4:00 p.m., closed Sundays (and in January). Stroll the gardens as birds visit the bird feeders, or walk the trails and enjoy the natural beauty and serenity of the 135-acre wildlife sanctuary.

Bird walks are conducted every Saturday at 8:30 a.m., except in January and on holiday weekends. The Center is located at 1800 Upper Canyon Road, Santa Fe.

### Historic House Tours

Step back in time as you stroll through the old Santa Fe style home of the artist Randall Davey (1887-1964). This docent-led tour will give you an opportunity to view some of Davey's most spectacular works of art, as well as a beautiful collection of Spanish Colonial and European antiques. Tours are held every Friday at 2:00 p.m., with masks required. Cost is \$5 per person. Please reserve your spot by calling 505-983-4609 X28, or click [here](#) for more details. Thank you and stay healthy!

## New Anthology on the Gila Wilderness

How does a person, a group, a state, a nation, celebrate a place? How do we sing Happy Birthday in a language the earth might understand? Fortunately, there are hearts and minds in this world who have wrestled with these kinds of questions. And so, with the guidance and wisdom of publisher Torrey House Press, and editor Elizabeth Hightower Allen, "First & Wildest: The Gila Wilderness at 100," will launch in late April 2022.

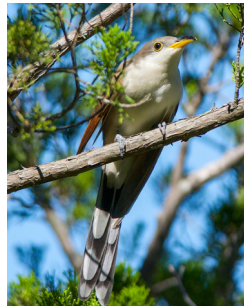
This new anthology celebrates the centennial of Aldo Leopold's bold initiative to protect the rugged, mountainous area around the Gila River as the nation's first wilderness. The lyrical, impassioned essays, photographs and poems include contributions from U.S. Senator Martin Heinrich, best-selling author Pam Houston and Nuevomexicana wildlife biologist Leeanna Torres. In a recent review, Rachel Jagareski notes that these and other evocative voices in "First and Wildest" pay tribute to the Gila's natural beauty, dig into its ecological importance, and wax poetic about its restorative powers. The collection also aims to broaden views of wilderness management to be more inclusive. The anthology, Jagareski says, is a great addition to the literature of the Southwest.

WildEarth Guardians

## Key Part of the Rio Grande in Focus

The "Isleta Reach" of the Rio Grande is a hotspot of avian activity, and one of New Mexico's key remnant landscapes along this important river's nearly 1,800-mile length. Because of this, Audubon Southwest and numerous federal, state, and local partners are focusing conservation and rehabilitation efforts here.

The Rio Grande in New Mexico today is much different than it was 100 years ago. Confined between flood-control levees for much of its extent, with much of its water diverted for cities, homes and farming, the river is not as wild as it once was. However, the Isleta Reach retains much of its historic function, and is a place where native species such as the Southwestern Willow Flycatcher and Western Yellow-billed Cuckoo - both protected under the Endangered Species Act - still thrive. Spring floods scour the floodplain, and Rio Grande Cottonwoods and Goodding's Willows tower over sandbars, mudflats and dense stands of coyote willows.



Yellow-billed Cuckoo  
Photo: Mary Miguez

The Isleta Reach begins at the south boundary of the Pueblo of Isleta, south of Albuquerque, and ends 48 miles further south at the San Acacia Diversion Dam. To expand our work in this remarkable riparian habitat, Audubon has launched the [Isleta Reach Hub](#) after nearly a year in the making. This new resource utilizes a web-based Geographic Information Systems tool - a configurable online platform that engages viewers

(including lay people) with interactive maps, data and web applications tools. It will allow researchers, conservationists and others - and especially the Isleta Reach Stewardship Association (IRSA) - to promote up-to-date information about projects along this stretch of river. In addition to maps and data, the Isleta Reach Hub contains aerial imagery, scientific studies and info on bird species, recreational opportunities and more.

The idea for this hub developed organically via input from members of IRSA, a passionate group of individuals dedicated to the long-term stewardship of the riparian habitat in their own backyard. IRSA members needed a way to distribute and store information about the Isleta Reach. The hub is designed to be both educational and entertaining - you can scroll through time-series photos to see how the river has changed, search for birding hotspots, or read about Audubon's habitat rehab projects.

We hope the hub will help focus attention on the challenges and exciting opportunities found in the Isleta Reach, and allow us to better connect with our community members. For questions or feedback related to the hub, email Elija Flores at [elija.flores@audubon.org](mailto:elija.flores@audubon.org).

# Environment

## Your Life List May Be Out of Date

In recent years it has come as a surprise to many birders to suddenly discover that the Summer Tanagers are no longer tanagers at all: They're grosbeaks! And that blackbirds and orioles are no longer almost at the end of the bird book; they now have a place before the wood-warblers!

Ornithology has seen a revolution in the last few decades, with taxonomy - the naming and ordering of birds, their families and orders - undergoing dramatic changes that may seem counterintuitive to those not steeped in bird science. Why, for example, were falcons moved away from hawks and eagles, to right next to the parrots, and the parrots to just before the songbirds? There have been many lower-level changes in bird species and their names, too, mainly in the splitting of a single species into two or more. A dramatic example is the Rufous Antpitta, a cute little bird of Andean cloud forests that was shattered into 12 species.



The Cassia Crossbill, recently split from the Red Crossbill.  
Photo: Doug Kieser

What's causing all of these changes, and what does it mean? The major cause is the dramatic improvement in scientists' ability to study and analyze bird DNA and genetics. But although this lab work has led to tremendous insight, birders have also made important contributions to our knowledge of avian life. Field observations of many rare birds, or ones once thought rare, have taught us much more about their differences and similarities.

A change in the grouping of bird families and orders, while interesting from a scientific point of view, doesn't have much impact on bird conservation. The splitting of species, however, is a much different story. A newly recognized species may be very rare, and therefore immediately classified as threatened. The widespread Gray-cheeked Thrush is not a threatened species, for example, but when the Bicknell's Thrush was split from it, this new species, once considered just a separate subspecies, was quickly recognized as vulnerable. This happens fairly often when species are split because what was once a larger population becomes two or more smaller ones, and population size is an important criterion for determining threatened status.

Most conservation efforts are directed toward distinct species. (An exception is the U.S. Endangered Species Act, which recognizes subspecies and even Distinct Population Segments.) It's much easier to attract attention to the plight of a threatened species than it would be if that same creature was part of an unrecognized subgroup. It's also much easier to raise funds and bring legal or regulatory resources to bear for a species' conservation. That's why the revolution in bird taxonomy makes a difference to conservation groups: We now have more species to which

we must direct our efforts, but we can also more easily attract public and government attention to these species.

Daunting? Yes. But the goal of conserving all birds becomes ever clearer. So hold on to your life list and keep your eyes peeled. One analysis has shown that if the current rate of species-splitting continues, there eventually may be as many as 18,000 bird species in the world - almost twice the current number.

American Bird Conservancy

## Who's the Biggest Jerk at the Feeder?

The interactions between birds in the park or at your backyard feeder may look like chaos, but they're actually following the subtle rules of a hidden avian social order. Armed with a database of almost 100,000 bird interactions, experts have decoded that secret pecking order and created a continentwide power ranking of almost 200 species — from the formidable Wild Turkey at the top to the tiny, retiring Brown Creeper at the bottom.

Their work illuminates an elaborate hidden hierarchy. Northern Mockingbirds and Red-bellied Woodpeckers are pugnacious for their size, but both would give way if a truly dominant bird like an American Crow descended upon the feeder. Tiny chickadees get pushed around by just about everybody. The oblivious Mourning Dove outweighs many rivals but proves relatively peaceful. The most chaotic birds overall are probably the goldfinches and their cousins the Pine Siskins, said Cornell University ornithologist Eliot Miller. "They show up in flocks and they get in tons of squabbles both with themselves and everybody else."

A small minority of bird rivalries are too complex for simple ranking. For example, the House Finch almost always dominates the Purple Finch, and the Purple Finch almost always dominates the Dark-eyed Junco, but when House Finch and junco face off, the junco often dominates.



Dark-eyed Junco  
Photo: Christine Haines

The rankings stem from data collected by the long-running [Project FeederWatch](#), coordinated by the Cornell Lab of Ornithology and Birds Canada, which relies on some 30,000 backyard birders around the U.S. and Canada who report species and behavior at their feeders during the winter. Most interactions between birds end quickly, without combat; a widely recognized hierarchy helps birds avoid costly fights. But while body mass is generally a good predictor of bird dominance, woodpeckers dominate even some birds that outweigh them. "They spend their lives hammering on trees," Miller said. "Their entire morphology is built to enable striking hard objects. So another bird is really not an issue for them."

Washington Post

# Climate Crisis

## Crypto's Dirty Secret: Carbon Emissions

Eric Adams, the mayor of New York City, thinks cryptocurrency and its associated blockchain technology are the future. Adams says crypto should be taught in schools, and took his first three paychecks in bitcoin payment. And he's not alone. The mayor of Miami announced last year that the city plans to accept tax payments in bitcoin and let employees draw their salaries in the cryptocurrency. Many nonprofits are unfortunately beginning to accept donations in cryptocurrency, too.

But producing, or "mining" cryptocurrency is notoriously environmentally unfriendly, and in an era of climate crisis, could also be hazardous. According to Digiconomist, a single bitcoin transaction uses the same amount of power that the average American household consumes in a month - or roughly a million times more in carbon emissions than a single credit-card transaction. Globally, the carbon footprint of bitcoin mining is greater than the United Arab Emirates' and just below the Netherlands'.

People should be concerned about the climate impacts of blockchain, or "proof-of-work," technology required to produce cryptocurrencies such as bitcoin and ethereum, said Benjamin A. Jones, an economist at the University of New Mexico. Such currencies require competing "miners" to validate transactions on their blockchains, rewarding them with new currency. However, this "mining" process requires enormous, power-hungry computing equipment, which uses energy generated mainly from fossil fuels, creating air pollution and carbon emissions, said Jones.

He recently co-authored a paper that estimated that in 2018 each \$1 of bitcoin value created in the U.S. was associated with \$0.49 in health and climate damages - meaning that the negative human-health costs and climate impacts of bitcoin mining were equivalent to half the per-coin value. "Bitcoin mining is imposing significant societal costs... even on those who do not use bitcoin or cryptocurrencies," Jones said.

Since mining crypto requires so much power, it is often situated near the cheapest, least-regulated sources of energy. Crypto-related mining already has an impact on local communities such as Seneca Lake, NY, where residents say the lake has heated up so much due to the increased power demand that it feels like a hot tub. Carbon emissions from the power plant there were up almost tenfold in 2020. Texas has a problem too. After China's crackdown on bitcoin mining, many miners moved to Texas, where the electrical grid is deregulated. Environmentalists say the extra pressure on Texas's grid could cause more blackouts of the sort that happened last year, when households were plunged into dark and freezing conditions. Other places around the country are restarting coal-fired plants to power bitcoin mining.

As the deputy legislative director of the Sierra Club, Patrick Drupp, said: "It is beyond absurd that as the climate crisis

only deepens, fossil fuel power plants are having their lives extended and even reopened in order to virtually 'mine' cryptocurrency... It's clear that the status quo of letting bitcoin and other cryptocurrency miners pollute our climate and communities at an exponential rate is unsustainable, unwise and in need of urgent action."

The Guardian

## Troubling News at Both Poles

It's a commonly said that the Arctic is warming about twice as fast as the rest of the world. But that figure is misleading, scientists reported at a recent meeting of the American Geophysical Union. Since 1990, the Arctic has actually warmed four times faster, an amplification caused by melting sea ice and other factors. One reason for the discrepancy: Climate scientists often use 60°N to define the "Arctic" boundary rather than the more technically correct 66.6°N, lumping in lower latitudes where there's less amplification. Another reason: Many analyses use data from earlier time periods when light-reflecting pollution blocked Arctic warming. As a result, the researchers say, the true toll of global warming on the Arctic has been underestimated.

Meanwhile an alarming crackup has begun at the foot of Antarctica's vulnerable Thwaites Glacier, whose meltwater is already responsible for about 4% of global sea level rise. An ice sheet the size of Florida, Thwaites ends its slide into the ocean as a floating ledge of ice 45 kilometers wide. But now, this ice shelf, riven by newly detected fissures on its surface and underside, is likely to begin breaking apart in the next decade or two.



King Penguins are among the species threatened by rising sea levels  
Photo: National Science Foundation

Once the ice shelf shatters, large sections of the glacier now restrained by it are likely to speed up, says Ted Scambos, a glaciologist at the University of Colorado, Boulder. In a worst case, this part of Thwaites could triple in speed, increasing the glacier's contribution to global sea level in the short term to 5%. Robert DeConto, a glaciologist at the University of Massachusetts, Amherst, said the oceans are simply getting too warm for these marine ice sheets, which formed in conditions much cooler than today. "This marine-based ice is not going to come back," he said.

Science

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## Effort to Protect Caja del Rio Gradually Taking Shape

The Caja del Rio plateau southwest of Santa Fe is arguably one of the most culturally historic regions in the Southwest and possibly all the Americas. The landscape here is a colorful and magical blend of Indigenous, Hispano and “modern” American history written on the land. It’s also a critical crossroads for wildlife, connecting the northern edge of Cochiti Pueblo, the eastern edge of Bandelier National Monument and the uplands of the Valles Caldera National Preserve with valuable winter habitat. Nineteen miles of wild and untamed Rio Grande intersect this landscape, providing a critical migratory route for waterfowl, raptors, songbirds, bighorn sheep, elk, deer, bear and cougar.

Sadly, the Caja is being threatened by many external forces. Los Alamos National Laboratories has proposed new power and internet lines - and a highway - which could irreversibly fragment the land, scar its cultural resources and degrade wildlife habitat and connectivity. Illegal dumping, unregulated motorized abuse, vandalism and many other issues are slowly but surely degrading Caja’s remarkable integrity.

Nevertheless, there is a great deal of hope for this one-of-a-kind landscape. Over the past year, environmentalists and Native American partners have been organizing a formidable community-led effort to permanently protect the Caja. Local ranchers and Hispano communities are talking among themselves about maintaining traditional uses and access. Grazing permittees, land-grant heirs and acequia parciantes are also integral voices in the planning process. U.S. Sens. Martin Heinrich and Ben Ray Lujan, U.S. Rep. Teresa Leger Fernandez, Interior Secretary Deb Haaland, state Land Commissioner Stephanie Garcia Richard, Santa Fe County Commissioners Rudy N. Garcia, Henry P. Roybal and Anna Hansen, and Santa Fe Mayor Alan Webber have visited the area and are committed to working with local stakeholders to ensure their voices are heard in discussions about protecting the Caja.

Conversations are continuing regarding involvement of local Hispano and Puebloan communities – including Cochiti, Tesuque, Kewa (Santo Domingo) and Jemez pueblos - in assisting federal agencies to manage the land in harmony with their shared heritage of stewardship. In the coming months, New Mexico Wild and its partners will continue robust community outreach and will be holding public meetings throughout Santa Fe County.

New Mexico Wild

## Lead Poses New Threat to Bald Eagles

The bald eagle, whose resurgence is considered one of the great conservation success stories of the 21st century, is facing a serious new threat: lead poisoning. Researchers who tested the feathers, bones, livers and blood of 1,200 bald eagles and golden eagles found that nearly half of them had been exposed repeatedly to lead, which can result in slow population growth and death.



Bald Eagle/Todd Harless USFWS

Scientists believe that the primary source of the lead is spent ammunition from hunters who shoot animals that eagles then scavenge, usually during the winter, according to the study, which was led by

scientists from the United States Geological Survey, Conservation Science Global, Inc. and the U.S. Fish and Wildlife Service. The effects of lead poisoning are devastating and can prevent an eagle from digesting food properly, eventually leading to starvation. It also can cause loss of locomotion so severe that an eagle will lose the ability not only to fly, but also to move at all.

The study, which examined bald eagles and golden eagles from 38 states, is the first to look at the effects of lead poisoning on the bird populations on such a large scale, said Todd E. Katzner, a research wildlife biologist at the U.S. Geological Survey. Bald eagles decades ago had been killed off largely by the widespread use of the synthetic insecticide DDT. A ban on DDT in 1972 and conservation efforts helped the population to rebound, with the bald eagle being removed from Endangered Species Act protection in 2007.

Many hunters, concerned about effects not only on wildlife, but also on game meat consumed by humans, have been moving away from lead ammunition and have begun using copper bullets. “Hunters are conservationists,” said Bryan Bedrosian, a co-founder of Sporting Lead-Free, a hunters and anglers group based in Wyoming. “This does not need to be a polarizing issue.” But some hunters hesitate to switch because of tradition, a mistaken belief that copper bullets are less effective, or because they have a backlog of lead bullets. In January 2017, the U.S. Fish and Wildlife Service issued a policy to phase out the use of lead ammunition and fishing tackle used on national wildlife refuges, one of the last acts by the Obama administration. The Trump administration reversed the decision less than two months later. The service recently declined to say whether that policy would be reinstated as a result of the new study.

New York Times

# The Future of Our Forests

(Continued from P. 1)

## MC: What types of forest will be the most affected?

CA: All of them – already we see die-offs emerging in every major forest type globally. And it's not just forests, it's vegetation everywhere. The climate is changing rapidly enough that it's forcing ecosystems all up and down elevational gradients to begin to reorganize. The One-seed Juniper that locally dominates low-elevation woodlands is more resistant to drought for sure. But hotter droughts hurt junipers too, manifested more as partial dieback; often they'll lose whole branches yet survive. Most conifers that are stressed enough lose needles first, start to die back from the top down, then become vulnerable to bark beetle attacks. Even in the highest local forests, bark beetles are killing spruce and fir trees. Meanwhile, oaks, maples, and aspen – these broadleaved, woody plants - can increase by resprouting after fire.

## MC: What will our forests look like in the future?

CA: Trees will be shorter, and forests will be younger, dominated by more drought-tolerant species. Conifer forests will further transform into aspen stands, oak shrublands and grasslands.

Overall we expect the distribution of species to move upslope and north. But big, high-severity wildfire patches are removing the mother-tree seed sources that essentially all of our conifer species require to reproduce. Many conifers will no longer be able to survive on their current sites. And old conifer forests are really in trouble. Big old trees, which are disproportionately important for a lot of reasons, are disproportionately vulnerable to hotter droughts.

## MC: What do these changes mean for bird life?

CA: Birds are closely tied to particular habitats. Inasmuch as these forests change structurally, the avifauna will change, too. In the Jemez we've lost 100,000 acres of old conifer forests to recent fires – the east flank is dominated by different ecosystems now. The towhees are happier, but Western Tanagers are hard to find. Many songbirds, from warblers to Hermit Thrushes, also need forest canopies that are gone.

Cavity nesters often do quite well for a while after a big fire, but that's a onetime pulse. Come back in 10 years and 90 percent of the snags they use for nesting are on the ground. I love nuthatches, chickadees, woodpeckers and creepers. It's all the forest birds I miss in these huge high-severity burn patches. There are winners out there, but the forest birds are much diminished.

## MC: Has the Forest Service's approach to forest ecosystem management improved?

CA: They've come a long way. There have been tensions at times in the past. My critique of the forest service is that in this region, over the last 20 years, they have been relatively slow to recognize the threat of climate change. They have been mired in administrative challenges. But everyone's on board now with the idea that these systems are at the beginning of big changes.

Understory-focused thinning is often a needed precursor to restructure the fuel conditions so that one can manage subsequent fires successfully. But the ability to use prescribed fires and managed wildfires as tools is always at risk of being politically constrained. During last year's severe fire season, prescribed fires were shut down nationwide on Forest Service lands, and currently there is political pressure to go back to full suppression of all wildfire, which got us into this fix.

## MC: There's much we don't know about nature and climate change. Should this make us cautious about restoration efforts?



Craig Allen examines a tree killed in the Las Conchas Fire. USGS photo

CA: We've long known enough to be taking action. Ecologically-based treatments are our best hope for old historical forests and for all the wildlife that depends on them. But we definitely need to keep learning. We continue to be surprised by things like the Janet's looper outbreak. So we need to continue learning and adapting, and that learning has to be collective, not just scientists, not just land managers, but society at large. Which includes monitoring the effects of treatments.

That's been a weakness for public-land managers.

## MC: To what extent will replanting efforts help with mitigating the effects of climate change?

CA: I would put more energy into preventative efforts, rather than trying to put band-aids on landscapes that have been blown out. But if we don't want to just accept that these former conifer forests are for the foreseeable future going to be shrublands, then some investment in planting makes sense.

But it's challenging. There are places that have been replanted three times since the Las Conchas Fire, where 90 percent of the seedlings are dying each time. We're trying to figure out how to improve planting through microsite selection: shade, slope, aspect, soils. There's learning going on, but more is needed. Then there's the question of genetics. Can we move certain species through assisted migration? One could be the alligator-bark juniper. It's dominant in the Gila National Forest, but the southern Jemez has been its northern limit. It's more resilient to the kinds of wildfire we get now; it can resist and resprout.

## MC: It's not all bad, is it? Climate change could benefit parts of some ecosystems - do you agree?

CA: Sure – ecosystems are inherently dynamic, and insect outbreaks and wildfires are natural agents of change and landscape diversity. But I'm not upbeat about the ongoing and projected upward trends in hotter droughts and large, high-severity wildfire patches. They're disruptive of historical ecosystem patterns and processes that we both appreciate and depend on, like mountain-forest watersheds. They're bad for ancient trees, water supplies and Western Tanagers.

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Tom Jervis Janie Zackin

### Southwest Audubon Council Delegates:

Tom Jervis  
Gordon Smith

## Looking for Rare Birds?

As many birders already know, the dial-in Rare Bird Alert for New Mexico, long maintained by the New Mexico Ornithological Society, has become inactive. Most birders now use the Cornell Lab of Ornithology's eBird to keep up with nearby sightings of rare or unusual species. The massive eBird database enables birders to research everything from recent sightings to species occurrence and diversity at more than 127,000 hotspots in the U.S. alone, and it can be searched in ways too numerous to describe here.

If you're interested in recent sightings of rare species in the Santa Fe area, you can find them at [this link](#). However, please note that this info is for the Santa Fe metro area only and does not include nearby areas; for that info you would need to do a separate search on eBird for each area of interest. You can also sign up to receive daily alerts of rare sightings in your area and/or in neighboring locations. To get started, go to [eBird](#) and sign in, or click on Create Account.

## Audubon en Español

Audubon ha lanzado su sitio web en español para conectar con las audiencias hispanas y disfrutar juntos de la naturaleza y la protección de las aves y sus hábitats. Visita Audubon en Español (<http://www.audubon.org/es>).

Es de nuestro reconocimiento que la Sociedad Audubon de Sangre de Cristo es digna representante de un precioso pedazo de tierra que ha sido ocupado durante milenios por personas de raíces culturales diversas. Respetamos profundamente dicha diversidad y creemos que del mismo modo bregamos por la protección de biodiversidad, debemos incluir y honrar la diversidad de los muchos pueblos y culturas que reconocen el norte de Nuevo Mexico como su propio hogar.

## Contact your Congressional Representatives - Let them know that protecting the environment is important to you!

Senator Martin Heinrich  
U. S. Senate  
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Toll free 1-800-443-8658  
Santa Fe Office: 505-988-6647  
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Senator Ben Ray Lujan  
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