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THE SANDERLING

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The Troubling Tale of Tricolored Blackbirds:

Struggling to survive in the "new California"

by Michael Montgomery

A breeding colony of tricolored blackbirds. Image from the Cornell Lab of Ornithology.

As the tricolored blackbirds climbed ever higher in the sky, UC Davis ecologist Robert Meese knew something wasn't right. The birds usually fly out from their nests in search of food, not up above them and then off into the distance, he thought.

The next morning, the entire colony—some 1,500 birds—was nowhere to be found.

Immediately, Meese realized the meaning of the odd behavior from the day before. The birds hadn't been foraging. They'd been abandoning.

Having failed to find enough of the nutrient-rich insects they needed to produce eggs, the females had simply given up, and the birds had moved on. Tucked away in the tules of this once-bustling breeding site in Colusa County, hundreds of empty nests were all that remained. Not a single one contained eggs.

When Meese recounted this story to me in May, the California Fish and Game Commission had just voted to list tricolored blackbirds as threatened under the California Endangered Species Act.

Hearing him describe those deserted nests, I could see why the birds might need protection. But only once I understood the incident in the wider context of the species' decline could I begin to understand how tragic it really was.

A male tricolored blackbird on a fence in Fresno County. Photo by Marcel Holyoak.

Blackbirds that blotted out the sun

Tricolored blackbirds, or tricolors, as they are known, have a habit that is unusual among North American land birds: they breed in groups.

Christy Wyckoff, a wildlife ecologist and tricolor specialist with the Santa Lucia Conservancy, calls these breeding colonies the "frat house that moved in next door."

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True to the nickname, they are noisy, gregarious, and huge. The colonies Wyckoff studies in Monterey County—at Fort Ord, Laguna Seca, and the Santa Lucia Preserve—are relatively small, with anywhere from 100 to 600 tricolors. Colonies in the Central Valley, on the other hand, can be enormous, with one in Kern County in 2017 having 17,500 birds.

Yet as big as those numbers sound, they are misleading. Tricolors are declining, and they have been since the 19th century. From a pre-industrial population that likely numbered in the millions, with individual colonies routinely exceeding 100,000 birds, the species is now down to a statewide total of 178,000, according to the most recent population survey, conducted in 2017. Since the birds are nearly exclusive to California, that means the whole species is down to 178,000 as well.

What's worse, the decline seems to be accelerating, with their population dropping by 55 percent between 2008 and 2017 alone.

Much of this is due to habitat loss, Wyckoff told me. And while that habitat loss has occurred throughout the state, nowhere has it been more dramatic than in the one place that has always been a mecca for tricolors: the Central Valley.

Tules as tall as trees

Before the arrival of Europeans, California's Central Valley was a sprawling patchwork of wetland and prairie, fed by the floods of the mighty rivers from the east and crisscrossed by millions of migrating waterfowl.[1,2]

As much as it was often a nuisance to settlers, this type of environment was ideal for tricolors. The dense, flooded wetland vegetation provided females with a perfect place to build nests that were hidden and well-defended from predators, and the nearby grasslands were a virtual buffet of insects to eat.

Artwork by Laura Cunningham depicting the San Joaquin Valley as it probably looked before the arrival of agriculture. Image from Timeless Environments.

One observer wrote in the mid-19th century of seeing "great clouds of blackbirds" rise from marshes where the tules—reeds similar to cattails—grew 20 feet high.[3] A biologist on a surveying expedition in 1852 recalled a single flock of tricolors that "number[ed] so many thousands as to darken the sky for some distance" as it passed.[4]

In the 150 years following the Gold Rush, all of that changed. Ranchers raised cattle. Colonists established towns. Farmers diverted rivers and drained marshes. Wherever possible, people converted the land to agriculture.

From 1900 to 2003, wetland cover in the Central Valley decreased by 94 percent. The amount of grassland, now almost entirely dominated by invasive species from Europe and Asia,[1,2] decreased by half, replaced by houses and fields of crops.

The obvious upshot of this is that the Central Valley became one of the most agriculturally productive places in the world, currently supplying more than a quarter of all food consumed in the U.S.

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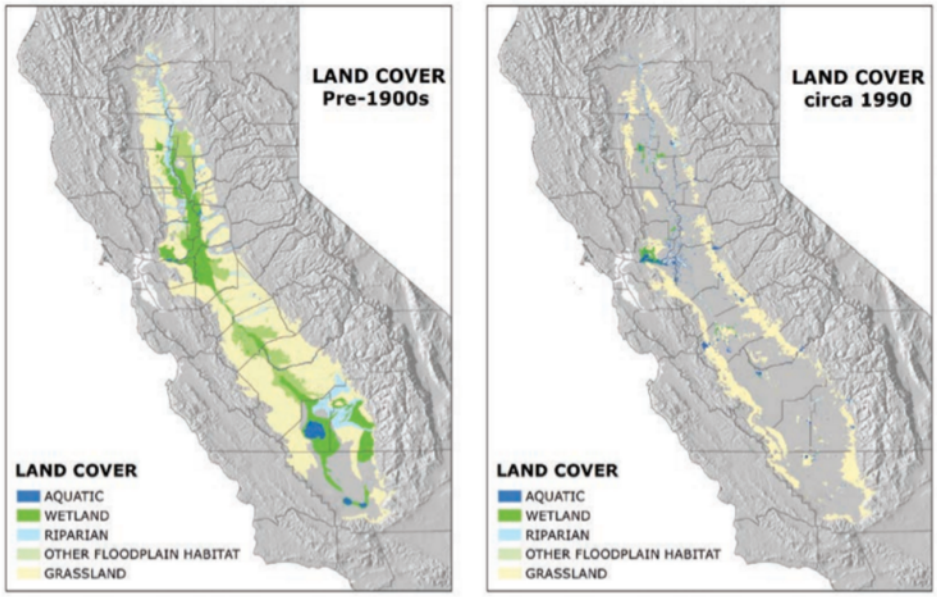
But for tricolored blackbirds, the transformation has been devastating.

Not only are there fewer wetlands and other suitable environments to breed in, forcing the birds to nest in grain fields or patches of invasive weeds like Himalayan blackberry,[5] but the nest sites that do remain are often far from a reliable food supply of insects.

Instead, nesting sites might be surrounded by almond orchards, lettuce fields, or suburban homes—not exactly good places to look for insects, especially considering the probable use of pesticides in all three. According to Meese, this is the crux of the problem.



Maps showing habitat loss in the Central Valley. Image from High Country News.

"[E]verybody has said [that] if we conserve nesting habitat, we'll save the species," Meese told me. "Nonsense. The birds need to eat. And if you surround the nesting habitat by almonds [...] that doesn't do much [good] for tricolored blackbirds."

Without access to insects, Meese explained, even an otherwise perfect nest site becomes unusable, and any attempted colony must be abandoned. The females simply can't produce eggs without the amino acids found in insects.

This is what Meese believes happened to the colony in Colusa County. In ten years of banding tricolors, he said he has seen it happen more and more frequently.

California's latest endangered species

Nominally, tricolors are protected under the federal Migratory Bird Treaty Act. The U.S. Fish and Wildlife Service also considers them a Bird of Conservation Concern. According to Meese, both designations have proved largely toothless.

"For decades, we've watched colony after colony get destroyed by harvest. [...] But there's never been a prosecution," Meese said, referring to the horrific occurrence of farmers harvesting grain while tricolors are still breeding in it.

Two months ago, that surprising lack of oversight changed. In a unanimous vote on April 19, the state Fish and Game Commission approved a petition to list tricolors as threatened under the California Endangered Species Act.

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As helpful as this protection may be in galvanizing farmers, who now face a fine if they harm the birds, Meese is skeptical of how much the listing will actually do. Unlike the federal Endangered Species Act, he explained, California's makes no provision for defining a species' critical habitat, which is arguably what tricolors need most.

"If it gets listed under [the federal Endangered Species Act], that's a very, very different scenario," he told me, adding that the U.S. Fish and Wildlife Service is in fact expected to release a recommendation on that possibility by August.

Even once critical habitat is defined for the species, it's hard to see their situation changing very much.

The massive wheels of California agriculture aren't grinding to a halt anytime soon, and it's unlikely farmers will voluntarily give up their land to make room for tricolors. Barring anything radical, a continuation of the birds' decline seems inevitable.

An open question among biologists is whether, in light of this decline, tricolors will eventually reach a population that is so small (relative to what it should be) that the species will never be able to recover.

Dairies, and the grain fields grown to feed their cows, are a particular draw for tricolors. The picture above is at a dairy near Moss Landing.
Photo by Blake Matheson.

"Over a hundred thousand animals may sound like a lot," Wyckoff said, "but one of the things we suspect is [...] that there is a population threshold."

Whether it's safety in numbers or better communication about resources, Wyckoff explained, tricolors evolved colonial breeding for a reason. Take away the high population density that makes that strategy possible, and the consequences could be dire.

Meese hopes the birds will be able to hang on, even at such relatively low levels as 80,000 individuals. But it's equally possible they could go the way of the passenger pigeon, another colonial breeder whose numbers were so reduced by the start of the 20th century that the species spiraled into extinction.[5]

Exactly when the population passes that "point of no return," or even if such a point exists for tricolors, remains a mystery. The species' social dynamics are still too poorly understood.

A flock of tricolors foraging in Santa Cruz County, with rows of strawberries in the background.
Photo by James Maughn.

"We suspect that there's some number out there," Wyckoff said. "We don't really want to find it."

Trying for tricolors

The existence of a population threshold isn't the only thing scientists don't know about tricolored blackbirds. Most of the year, the birds are largely unmonitored.

Only during the spring breeding season, when they congregate in single locations for extended periods of time, are they easy to study.

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According to Wyckoff, tricolors are especially hard to track in the wintertime, stopping in areas for only a few days. Since they nest and forage in multiple types of habitats, it's easy for population surveyors to miss a group or even a whole colony.

This is where everyday birders come in. The more people there are who can report tricolor sightings—and distinguish between tricolors and red-winged blackbirds, which isn't always easy—the more that scientists and policymakers can potentially learn, Wyckoff said.

If birders are serious about helping, they could even join the statewide population survey, which takes place every three years over a three-day period in April. During the survey, volunteers and professional biologists visit predetermined colony locations, estimate the number of birds they see, and enter their observations in the Tricolored Blackbird Portal, a website Meese developed in 2007.

Surveyors in 2017 went to a total of 884 sites in 44 counties throughout the state. That represents a more than fourfold increase over the number of sites visited in 2000.

On the surface, however, the results of the survey seem puzzling. The population actually appeared to increase over its 2014 level. But rather than a reversal of the decades-long trend, Meese—the 2017 effort's statewide coordinator—attributes this apparent rise to differences in the surveys themselves.

In particular, he points to the discovery of several large colonies in never-before-counted locations, one near Hollister and the other in eastern Monterey County, with 7,500 and 2,500 birds respectively. Both locations were brought to Meese's attention before the 2017 census by Debi Shearwater, of Shearwater Journeys, who participated for the first time as survey coordinator for San Benito County.

	Year			
County	**2008**	**2011**	**2014**	**2017**
Alameda	28	2,200	50	3,000
Contra Costa	358	0	N/R	30
Monterey	50	10	399	2,793
San Benito	66	N/R	80	11,226
San Luis Obispo	6,242	197	98	3
Santa Barbara	500	N/R	935	760
Santa Clara	50	0	0	344
Santa Cruz	220	0	0	0
Total	**7,514**	**2,407**	**1,562**	**18,336**

Tricolor population sizes in California's Central Coast. Figure from the 2017 survey report.

Shearwater's role is a perfect example of why individual awareness and familiarity with local regions are critical for the survey's success and accuracy.

"A lot of people will say it's increased effort," Meese said. "I disagree. It's increased effort as a result of an increase in knowledge. First comes the knowledge, then comes the effort. They're not synonymous. You can increase effort just by increasing the number of people surveying. But if those people don't know where the birds are [...] you don't expect to gain anything."

Nonetheless, there is a flipside to better survey coverage. Fewer gaps in the record, fewer black holes on the map, mean fewer places left to hide from reality. The more we know, the more worrisome the picture becomes.

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Robert Meese with a male tricolored blackbird in Yolo County. Photo by Sylvia Wright.

Bearing witness

As Meese watched the colony abandon its nests on that fateful afternoon, the birds weren't just leaving—they were giving up on breeding altogether. The species as a whole doesn't have that option.

Unlike individual colonies, which can breed multiple times and in multiple locations in a single season, and can potentially pick up and try again if an individual nesting site doesn't work out, tricolored blackbirds as a species don't have a second chance.

Except for a few locations in Oregon, Nevada, Washington, and Baja California, California is all they've got, and it is now radically different than what it was when tricolors evolved here. (Meese calls it the "new California.") If the state's environment continues to be inadequate for tricolors' needs, there is nothing the birds can do but make the best of it. Nesting and foraging in non-native vegetation—grains, blackberry patches, rangeland for cattle—is one way of doing that.

In the meantime, the least that Californians can do is take notice. On that front at least, the recent trend is encouraging, with the state-level protection as of April 19, and participation in the population survey at an all-time high.

Even amidst the tragedy of the mass abandonment, I can't help but be hopeful when I picture how Meese discovered it: standing at the edge of a marsh, rubber boots on his feet and homemade banding equipment under his arm, about to wade into the mud to study birds that were no longer there.

Those birds may have been abandoning, but at least someone was there to see it. Maybe next time we'll be able to stop it. To learn more or get involved in the survey effort, visit the Tricolored Blackbird Portal at https://tricolor.ice.ucdavis.edu/.

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FIELD TRIPS

Sat., June 23 – San Lorenzo Regional Park

For those who live and bird regularly on the coast, a trip to interior Monterey County during the breeding season can be eye-opening. Birds that seem like scarce gems on the coast—white-breasted nuthatches, Bullock's orioles, and western kingbirds—become downright commonplace as one ventures into the upper reaches of the Salinas Valley. This is our inspiration to plan a trip to San Lorenzo Regional Park in **King City**, an underexplored birding hotspot in Southern Monterey County. We'll carpool from the Laureles Grade Park and Ride at **7 a.m.** and bird the park from around 8/8:30 until lunchtime. **RSVP** to Amanda Preece at apreece24@gmail.com or (208) 520-8794.

TBA

Keep your eyes open for other potential summer field trips. Check the website or Facebook page for details.

LECTURES

The following events begin at **7:30 p.m.** at the Pacific Grove Museum of Natural History. Doors open at 7 with refreshments and socializing. Our monthly board meetings are 6-7 beforehand, and all Society members are welcome.

Tues., July 10 – Birding to Save Colombia's Birds, with Alvaro Jaramillo

Many birders may have heard that Colombia is the most bird-rich nation on Earth. So why is it not full of birders? The country is on an incredible upswing, coming out of a decades-long conflict involving the national government and the illegal drug trade, and it has seen a sharp turnaround in regards to travelers' safety. The birding, true to its reputation, is astounding. One of the most unique spots is the Santa Marta mountains, a range that is distinct from the more familiar Andes and home to an incredible number of species that cannot be found anywhere else on the planet. Santa Marta, the nearby dry forests, the coastal desert, and the Perijá Mountains to the east make northern Colombia an amazing way to begin dipping your toes in the country's unbelievable birdlife. And that's without even mentioning the three different subranges of the Andes found in Colombia, each with valleys rich with endemics.

Alvaro Jaramillo has been involved for the last couple years in a project with National Audubon that aims to promote conservation through economic development. The program seeks to train guides and create the necessary infrastructure to increase birding tourism in Colombia, with the goal that once people earn their living from the birding industry, they will be more keen to preserve the birds and their habitat. Come hear Jaramillo discuss this innovative program and introduce you to Colombia's amazing birdlife.

Tues., August 14 – Convincing Details and Other Birding Fiction, with Joe Morlan

As a birder, expanding our scientific understanding of which birds occur where and when requires a degree of advocacy. Often, it comes down to a declaration: "I saw this thing, and I can prove it." Many articles have been published detailing

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how to write convincing bird descriptions, but the question remains: who are we trying to convince? How many of those details are remembered correctly and how many are a product of wishful embellishment? Are we convincing a records committee, an eBird reviewer, or perhaps even ourselves?

Joe Morlan will discuss how to best prepare bird descriptions, while also exploring the importance of birding integrity. He will include a brief history of scientific and ornithological fraud in what promises to be an informative and entertaining presentation. Morlan has taught field ornithology at City College of San Francisco since 1978. He is the coauthor of *Birds of San Francisco and the Bay Area* and *Birds of Northern California*. He has served as Chair of the California Bird Records Committee and was the recipient of the 2010 American Birding Association's Ludlow Griscom Award for Outstanding Contributions in Regional Ornithology. (For more on Morlan visit the San Jose Mercury News.)

Tues., September 11 – <u>The Tricolored Blackbird: New hope for an endangered, near-endemic California species?</u>

One of California's most endangered and iconic bird species may have recently received a partial reprieve from extinction thanks to its recent listing under the California Endangered Species Act (see feature story above). Join California Audubon's Conservation Project Director **Samantha Arthur** for an important update on this special bird.

Meet the Editor

Now that I have two newsletters under my belt, I thought it might be a good time to introduce myself.

As I write this, I am finishing up my second year at the University of California, Davis. In February, after a year and a half of being undeclared, I decided on a major: Marine and Coastal Science, with a minor in Professional Writing and a minor in History.

Since 2006, I have been a local to the Monterey Bay region. I graduated from Carmel High School in 2016.

My interest in birding began in eighth grade, and I have been doing it on and off ever since. Some of my favorite local birding spots are Crespi Pond, the Ventana Wilderness, and my own backyard. If there's one bird I'd really like to see, it would either be a pileated woodpecker or a California spotted owl.

I love writing (as you may have guessed). Combining it with science, as I get to do in *The Sanderling*, is even better. Thanks for reading.

—Michael Montgomery, June 12, 2018

Looking for tricolors in the Yolo Bypass Wildlife Area.