

# the **Wire** SWCA

News from SWCA Environmental Consultants

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# CELEBRATING 40 YEARS

By Joseph J. Fluder, III, CEO



This year **SWCA celebrates its 40th anniversary as a company**. Back in 1981, our founder Steven Carothers never could have imagined the growth and innovation his fledgling consulting firm would see over four decades. From humble beginnings in a windowless office in Flagstaff, Arizona, to a nationwide firm with more than 35 offices and nearly 1,200 employees, we couldn't be more proud. Through it all, we've stayed true to our values and our purpose statement: to preserve natural and cultural resources for tomorrow while enabling projects that benefit people today.

In this issue of *The Wire*, we're showcasing what we've always done best: Sound Science and Creative Solutions. For example, we're sharing a story about our team of scientists and technical experts helping clients go above and beyond on their projects ("Doing Things Right in the Powder River Basin," page 3). On

page 8, we tell a fascinating tale from the field, wherein mice and birds had an interesting conflict, and it shed light on the importance of invasive species work (see "If You Give a Mouse an Albatross"). Next, we share three important examples of natural disaster resilience and restoration and the lessons we learned from each ("Coast to Coast Resilience," page 12). And finally, we showcase some stunning photography from our staff photo contest ("Scenes from the Field: 2020 in Photos," page 15).

As we put 2020 in our rear view and prepare for the coming year, I am encouraged by all the challenges we've overcome not just recently, but over the past four decades. Addressing these challenges head-on has led to SWCA's growth and success. I'm proud of the ways we've adapted and innovated in partnership with our clients, and I'm excited to look ahead to the next milestones. ■

*Joseph*



NEARLY  
**1200**  
EMPLOYEES



CELEBRATING  
**40 YEARS** 1981  
2021



MORE THAN  
**37** OFFICES



## DOING THINGS RIGHT IN THE POWDER RIVER BASIN

By Kayla Shockley, Kimberly Ip, and Gina Wagner



The Powder River Basin (PRB) stretches from southeast Montana to northeast Wyoming within the northern Great Plains. Its rolling green grass and sage-covered plains serve as both a topographic drainage and geologic structural basin. The Basin is bordered by the Bighorn Mountains to the west and Black Hills Uplift to the east. To the south, it is framed by the Casper Arch, Laramie Mountains, and Hartville Uplift. In addition to being an important ecological treasure, the Basin is rich in important resources like coal, crude oil, and natural gas.

PRB has been experiencing a resurgence in oil and gas production due to advances in horizontal drilling and hydraulic fracturing. These technological advances have made it a popular spot for companies to enter. The challenge for oil and gas companies is meeting the demand while also considering landowners, the environment, state and federal agency requirements, and a constantly changing regulatory landscape.

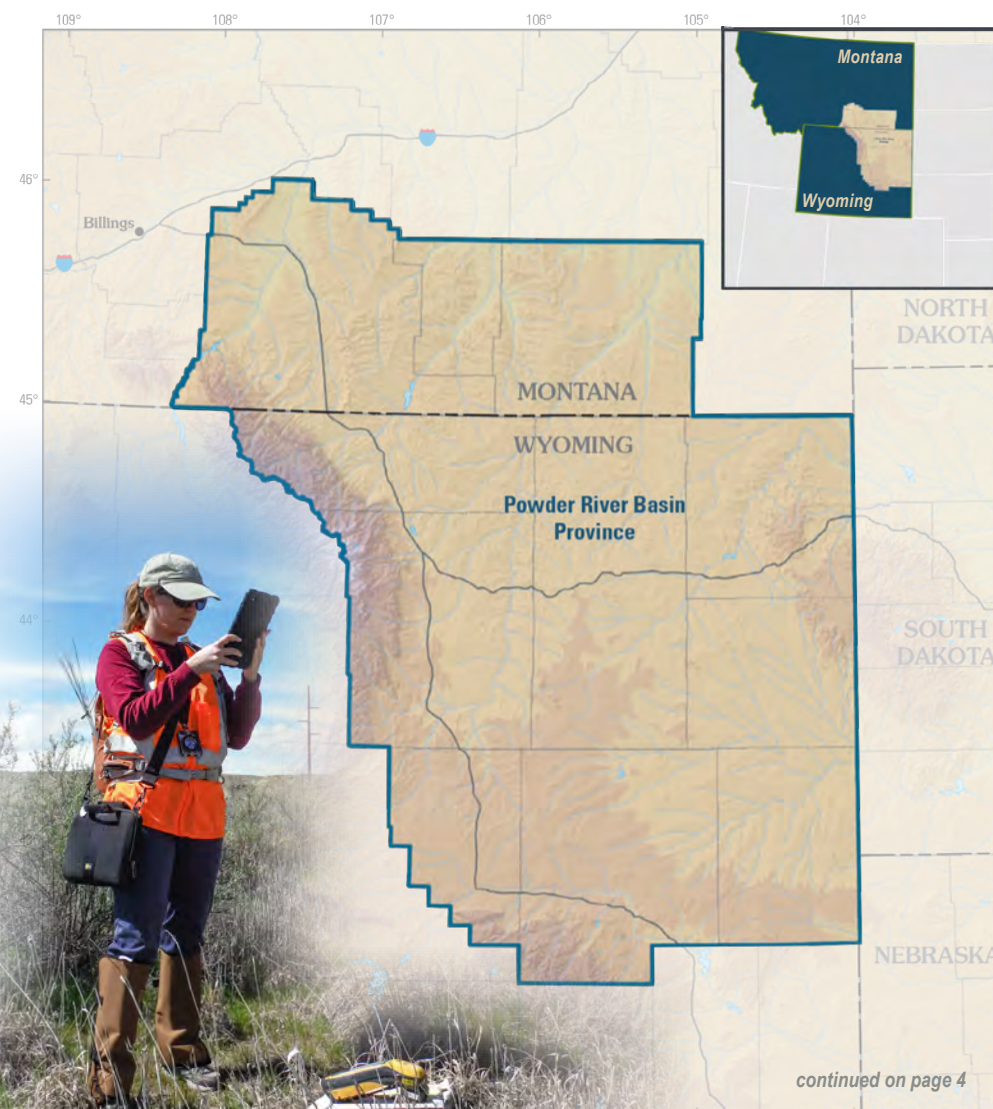
One company, Thunder Creek Gas Services, L.L.C. (Thunder Creek) has been in operation in the Powder River Basin of Wyoming since 1999 and has been a subsidiary of Meritage Midstream for 7 years, providing oil and gas producers gas gathering and processing services. Thunder Creek's services include natural gas gathering, compression, treating, processing and transportation.

One of Thunder Creek's biggest challenges is meeting their producers' needs, schedules, and budgets while also satisfying landowner requirements and multiple agency requirements (Wyoming Game and Fish Department, Wyoming Department of Environmental Quality, Wyoming State Engineers Office, BLM, USFWS, U.S. Army Corps of Engineers, Wyoming SHPO). Agency requirements may conflict with producer needs/schedules/budgets. And Thunder Creek often has a short window to build and get a pipeline tested and operational. Balancing all those factors is a delicate dance.

Given the schedule and cost restraints associated with their projects, it seems counterintuitive that an oil and gas company would focus so much of their attention on environmental concerns. And yet, that's exactly what Thunder Creek is doing. Over the years, Thunder Creek has developed its own system of best practices in order to protect natural and cultural resources and water systems. Why? Because they have learned that proactively doing things the right way best serves clients, the community, stakeholders, and the environment in the long run. Here's how:

### POWDER RIVER BASIN SYSTEM AND PROJECT SCOPE

The Thunder Creek pipeline gathering system covers nearly the entire PRB. The PRB is drained by two major systems—the Powder River drainage basin, which flows generally north



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into the Yellowstone River, which then joins the Missouri and Cheyenne River Drainage Basin, which flows east-northeast into the Missouri River. These drainage basins and their tributaries are home to numerous natural and cultural resources, including bald and golden eagles, ferruginous hawks and other raptors, greater sage-grouse, and Ute ladies'-tresses; prehistoric and historic settlements and activity areas including prehistoric open camps and stone circle sites, and lithic scatters; and historic homesteads, ranching complexes, mining-related resources, trails, and roads.

While a few of their projects have involved federal lands and have thus been subject to very defined permitting requirements, the majority of Thunder Creek's projects are located entirely on private or State of Wyoming-managed land, and do not involve a federal surface management agency. SWCA provides a full range of environmental regulatory and compliance services for Thunder Creek's projects, including natural and cultural desktop analysis and field surveys; SWPPP permitting, inspections, and reporting; and BLM and USFS permitting, when a federal nexus is involved. Thunder Creek has worked with SWCA to craft a robust environmental program for their PRB system that ensures full compliance with federal and state laws and regulations, including the Clean Water Act, Endangered Species Act, Migratory Bird Treaty Act, National Historic Preservation Act, Wyoming State Executive Order on Greater Sage-grouse, and Wyoming stormwater regulations.

**“More than 200,000 miles of pipeline crisscross our country. Generally buried underground, they are the safest and most efficient way to move large amounts of natural gas, crude oil, and related products. These are the products we depend on every day to heat our homes, generate electricity, and cook our food. Pipelines also reduce air and water pollution by eliminating the need for trucks and ships on our roads and waterways.”**

—Meritage Midstream



Pipeline Project Before Reclamation



Pipeline Project After Reclamation

**Proactively  
doing things  
the right way  
best serves clients,  
the community,  
stakeholders, and  
the environment in  
the long run.**



### BEING GOOD LAND STEWARDS AND GOOD NEIGHBORS

The nature of Thunder Creek's work means that they will have a presence in the PRB for years to come. They realized that not only should they consider their current environmental requirements, but that they should also look further down the road. As Thunder Creek's Associate General Counsel and Vice President of Land, Kate Broome explains, "The core of the Thunder Creek pipeline system was built over the last several decades across family ranches that still exist today. Taking care of the land and maintaining good working relationships with these ranches over the last two decades has been beneficial to our ability to conduct current and future business."

In fact, Thunder Creek's corporate values statements include being good neighbors: "We are guests on the land and must be good stewards of the environment. We work closely with landowners and strive to have a positive impact on the communities where we work by supporting local businesses and nonprofits."

But what exactly does it mean to be a good steward and neighbor? "We have over 1,600 miles of gas gathering and residue pipelines and

118 miles of NGL pipeline with a total processing capacity of 380,000 Mcfd. This makes us the largest natural gas midstream company in the Powder River Basin," says Adam Schorger, Survey and GIS Manager. Thunder Creek's projects are located on land owned by almost 250 different landowners. Thunder Creek's environmental and land departments have spent countless hours cultivating relationships with landowners and other stakeholders. Thunder Creek uses their strong environmental program to demonstrate their commitment to being good neighbors and land stewards – laying down matting in wet areas to prevent rutting and erosion issues, avoiding construction during critical wildlife time periods to avoid wildlife disturbance, and rerouting pipelines to protect historic properties.

Good communication with the landowners minimizes maintenance in the long run and quickly gets the land back in working condition, Broome says, "so, our approach not only positively affects our bottom line over time, but also creates a positive working relationship with the landowners."

### HOW TO ESTABLISH INDUSTRY BEST PRACTICES

Thunder Creek has realized over the years that it's more cost and time effective to enact solutions (like avoidance or mitigation) voluntarily and not always wait for an agency to direct them. They know that if they implement best practices (like raptor nest avoidance, for example), future changes in regulation or enforcement may not impact them because they're already doing it.

### BEST PRACTICES IN ACTION FOR NATURAL AND CULTURAL RESOURCES

For compliance with the Bald and Golden Eagle Protection Act (BGEPA) and Migratory Bird Treaty Act (MBTA), Thunder Creek has SWCA do desktop analysis, field surveys, and construction monitoring for eagle and raptor nests. Wyoming has various sources of data on



eagle and raptor nest locations, which are very helpful in quickly identifying projects that could potentially impact these species. If nests are identified in a desktop analysis or field survey, Thunder Creek will first try to reroute its project to stay outside of the buffer distance recommended by USFWS Wyoming Ecological Services Office. If avoidance isn't possible, Thunder Creek will follow USFWS seasonal timing recommendations, meaning that they won't construct during the breeding/nesting season period that USFWS recommends for each raptor/eagle species. Thunder Creek follows these recommendations to be protected in case the regulatory situation changes in the future and incidental take of migratory birds is considered prohibited again. If Thunder Creek cannot avoid or restrict their construction schedule, then they commit to construction monitoring (and often post construction monitoring) of active eagle and raptor nests. SWCA sends avian biologists to monitor nests that are within a certain distance of active construction. If the avian biologists observe any behaviors that indicate potential disturbance, then Thunder Creek works with SWCA to come up with a mitigation strategy to get the project done while still protecting the resource.

For waters of the U.S. (WOUS), when weather conditions or land access restrictions prevent full delineations of potentially jurisdictional WOUS crossings (and subsequent threatened and endangered species assessments and historic property evaluations), Thunder Creek will either bore the crossing or reroute the project to avoid the crossing. This prevents any surface disturbance of potential WOUS. Boring can be expensive, but Thunder Creek would rather pay that cost than accidentally impact an unevaluated area that potentially contains a wetland.





When Thunder Creek uses Nationwide Permit 12, they make sure to follow all general and regional permit conditions, including having SWCA perform field surveys to make sure general conditions 18-21 for endangered species, migratory birds, bald and golden eagles, historic properties, and artifacts are met.

Thunder Creek understands that cultural resources throughout the PRB are important to landowners and other stakeholders, and has made it a practice to protect known historic properties and sites of potential traditional or religious cultural significance to Native American tribes through avoidance by reroutes or boring. Their understanding is that landowners and the community are aware of such resources and want them protected.



NGL Pipeline Construction

Photo credit:  
Meritage Midstream

### 3 Reasons You Might Want to Utilize Industry Best Practices on Your Next Project:

**1** Thorough due diligence on the front end of a project mitigates risk and reduces cost on the back end of the project.

**2** By embedding best practices into your workflows (and staying consistent) you can better track data and budget surrounding environmental costs and be better prepared to budget for future projects.

**3** Legal regulations are always evolving. Staying on the forefront and being proactive in mitigation and avoidance can ensure that you are engaged and knowledgeable about new regulations that may be coming up and avoid unexpected project delays.

#### LOOKING AHEAD

By being proactive about their environmental work and using Industry Best Practices, Thunder Creek has avoided many resource issues and surprises for their projects. They've already accounted for them and taken steps to mitigate them. Hayden Truscott, EHS Manager, says, "Our pipeline projects and well connects team has developed over time. The team now consists of a group of professionals with a variety of expertise who review and approve each project. The team completes a pre-job check list prior to initiating construction activities. The checklist helps us to identify potential environmental impacts and any issues that have been identified concerning historical or culturally sensitive sites. This allows the team to make the appropriate decisions and potentially any reroutes to ensure that we mitigate any compliance issues that could arise on a construction project." They recommend this approach to other companies wanting to do long-term work in one geographic area. You can juggle your own needs with clients and stakeholders and the environment. It may require more time up front, looking

at desktop analysis, looking at potential sensitive cultural and natural resources, and creating plans to address them. But the payoff is long-term success on multiple fronts.

The "Industry Best Practices" that have made this project successful in Wyoming are twofold:

- Embedding environmental mitigation and avoidance into workflows and evaluating any concerns with all construction projects to ensure compliance of Federal and State regulations regarding protection of wetlands, wildlife, and historic properties and other significant cultural resources.
- By integrating a landowner review phase into the initial pipeline routing and incorporating their feedback when economically viable.

Visit [Meritage Midstream's website](#) to learn more about Thunder Creek. ■

**“Thunder Creek has a list of values that we embrace that include both “Integrity” and being a “Good Neighbor.” We believe respecting cultural landmarks and the wildlife aligns with both of these core values. Industry Best Practices such as active mitigation and avoidance have been embedded in our workflows, and this demonstrates our commitment to being good stewards of Wyoming and its diverse resources.”**

-Engineering Manager, Dain Santarelli



reroute to cross a non-contributing segment of the trail. In rare cases where this is not an option—only twice in the past 4 years—they bore a significant depth beneath the trail so that the surface and any potential subsurface cultural material remains intact. This is done with the assistance of SWCA's cultural resource specialists who determine adequate avoidance entry and exit locations and monitor these activities to ensure no physical impacts occur.

Drone photo credit: Robert Kline,  
Thunder Creek Gas Services



# IF YOU GIVE A MOUSE AN ALBATROSS

By Emily Knapp and Alyssa Albertone



On the northern end of the Hawaiian archipelago, there is a small island with a big problem: mice are eating birds!

At **Midway Atoll National Wildlife Refuge**, scientists discovered that the common house mouse (*Mus musculus*) was eating seabirds alive while they sat on their nests. While some have suggested that the unusual predation was instigated by the starvation of the mice, who started feeding on the seabirds after their foraging habitat, golden crownbeard (*Verbesina encelioides*), was eradicated from the island, others have pointed out that the predation was not detected until several years after most of the golden crownbeard had been removed.

Instead, other ecological conditions may be to blame, including changes in the timing of the boom-and-bust cycle of mice populations due to seasonal precipitation fluctuations, resulting in a high number of starving mice at a time when seabirds are steadfastly protecting their eggs.

While the exact cause of the albatross deaths remains unknown, the motivation to protect these birds, as well as hundreds of thousands of other seabirds, native plants, and arthropods, is strong.

## THE RIPPLE EFFECT OF ERADICATING GOLDEN CROWNBEARD

Originally brought over during World War II, golden crownbeard – a member of the sunflower family – is the most notorious invasive species on the atoll. The plant creates head-high, impenetrable thickets, which at one point covered 70 percent of Midway Atoll.

Seabird nesting habitats were shrinking in the face of this resistant species. While the birds like shade, the plant created such a dense cover that the birds had difficulty getting to their nesting sites, taking off, and raising their young. Consequently, the yearly population growth had severely diminished.

The plan of action seemed easy: remove the invasive plant and the seabirds would be able to flourish. For years, Friends of the Midway and U.S. Fish and Wildlife Service (USFWS) have been working to eradicate the invasive species, first by mowing and herbicide, and now solely by hand pulling.

Laysan albatross, Black-footed albatross, and Short-tailed albatross on Sand Island.



Midway has the largest albatross colony in the world!



black-footed albatross  
(*Phoebastria nigripes*)



Laysan albatross  
(*Phoebastria immutabilis*)



short-tailed albatross  
(*Phoebastria albatrus*)



Laysan duck  
(*Anas laysanensis*)

Ultimately, the eradication of golden crownbeard was a huge success: seabird populations have since expanded into the open spaces and have eagerly started nesting. However, there are often unpredictable consequences to other species when implementing landscape level changes.

## SAVING THE SEABIRD POPULATION

Midway has the largest albatross colony in the world. It is home to nearly a quarter of all nesting black-footed albatross (*Phoebastria nigripes*) and nearly half of all nesting Laysan albatross (*Phoebastria immutabilis*) worldwide. Midway is also home to the critically endangered Laysan duck (*Anas laysanensis*), as well as the short-tailed albatross (*Phoebastria albatrus*), which recently started nesting on Midway.

Many seabirds, including those on Midway Atoll, evolved in areas without predators, resulting in a lack of anti-predator response. So, when the mice began eating the birds, they had no defense mechanisms to shield themselves from the attacks.

"It was terrifying when we saw that the mice were eating the albatross alive while they were sitting on their eggs," says wildlife biologist, James Breeden.

SWCA, in partnership with the USFWS and Island Conservation, is now working to eradicate the common house mouse from the area and mitigate mortality to the local bird populations.

"We knew that the only long-term solution was to eradicate the mice to prevent more damage to the albatross colony," says James. "The challenge was removing the mice without impacting the non-migratory Laysan duck."



James and his team designed and built special devices to capture the ducks.



The unique design herded the ducks through a tunnel and into a shoot system.

The ducks were captured safely and without being harmed.



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Top three photos (pages 10-11) show the team releasing Laysan ducks into a freshwater seep on Eastern Island.



The Laysan ducks are transferred to Eastern Island (and photo below).



## THE TRANSLOCATION OF THE LAYSAN DUCK

The Laysan duck is one of the most endangered species in the Northern Hemisphere. Globally, there are fewer than 1,100 Laysan duck both in the wild and captivity. Wild populations of the species can only be found on Laysan Island, Midway Atoll, and Kure Atoll.

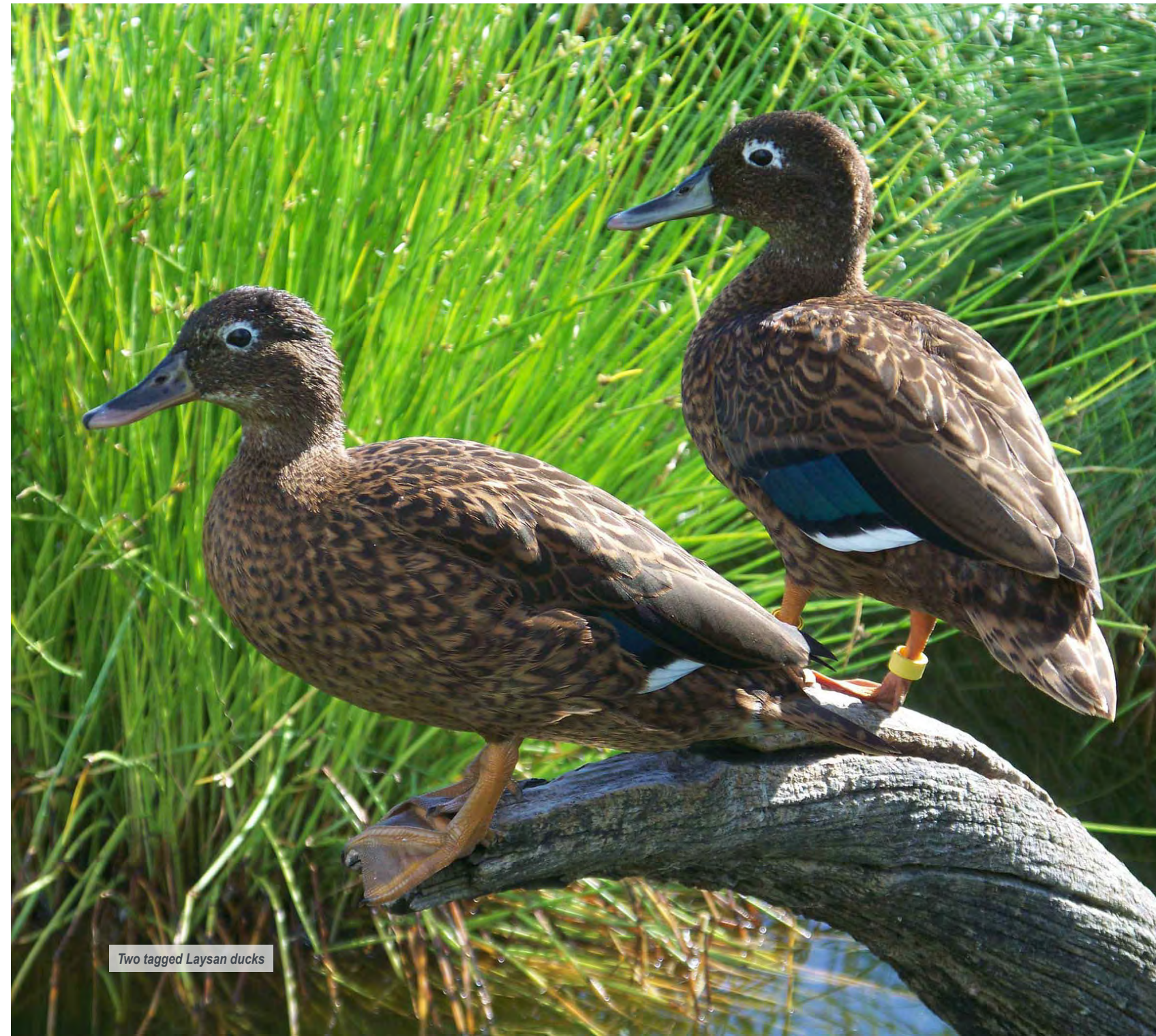
Midway Atoll, home to nearly one half of the known Laysan duck population, is composed of three islands: Sand, Eastern, and Spit. The common house mouse only occurs on Sand Island. The plan is to use a helicopter to apply a toxicant over Sand Island that will eradicate the mice. However, studies have shown that Laysan ducks are also prone to ingesting the toxicant. To reduce non-target impacts to the Laysan duck during the mouse eradication, the team decided to move the ducks approximately one mile to Eastern Island, where the common house mouse does not exist, and the ducks would be safe from the toxicant during and immediately after the bait application.

With help from the USFWS, James and his team developed new techniques to capture and move the ducks. The team pulled heavy inspiration from cattle herding systems as well as funnel trapping techniques that James discovered through some books on old European hunting techniques. Using James' unique designs, they built special devices to herd the ducks through a tunnel and into a shoot system, allowing them to carefully move the ducks without hurting them.

The ducks were then given a primary feather trim so they could not fly after being translocated to Eastern Island. The mouse eradication also coincides with the Laysan duck's molt schedule. Once the mice have been eradicated, the ducks will go through their flight feather molt and be able to travel freely among all islands of the atoll.

## LOOKING AHEAD

James' team hopes that with the move to Eastern Island, the ducks will thrive, and the mouse-caused deaths will stop, after the bait application process occurs on Sand Island. Preliminary work in 2020 resulted in the translocation of 409 ducks safely. Due to COVID concerns, the project is on hold until 2022. When the eradication project starts up again, the team will move up to 600 ducks to Eastern Island. ■



Two tagged Laysan ducks



# A COAST-TO-COAST FOCUS ON RESILIENCE AT SWCA

By Anne Cabrera and the Disaster Resilience Team

Changes to our climate can be felt and measured in communities all across the country, but the climactic impact on natural disasters can be devastating. Disasters like drought, wildfires, and hurricanes are increasing in frequency and intensity, so government agencies and local communities are taking proactive approaches to reduce the social and economic cost of damages. By taking a closer look at our recovery strategies and building disaster resilience into mitigation plans from the beginning, we can all be better prepared to weather future events. SWCA is making an investment in our communities to increase disaster resilience and help reduce the costs of damages and the recovery efforts that follow. As a leader in ecological services like coastal restoration, natural channel design, and green infrastructure projects, SWCA is focused on developing and delivering creative solutions based on sound science.

Here we highlight three recent examples of disaster resilience and recovery from across the country, what we learned from each, and how it informs our approach moving forward.

## POST-FIRE RESTORATION

In the early summer of 2018, a fire was burning just east of Ute Park, a small community in northern New Mexico, consuming 30,000 acres in the first 3 days. The Ute Park Fire grew rapidly, threatening structures and closing highways, resulting in evacuations of area residents. When the fire was fully contained, 20 days after the first report, a total of 36,740 acres had been burned, damaging, disrupting, and threatening the long-term health and function of area watersheds. As with most large wildfires in the western United States, there was concern about the potential post-fire effects on natural resources, the quality of the water supply, wildlife habitat, and cultural resources in or near the fire-damaged area.

As soon as it was safe to enter the Ute Park Fire burned area, SWCA worked with the New Mexico Department of Homeland

Security and others to create a Damage Assessment and Burned Area Emergency Rehabilitation Plan. SWCA analyzed first and second order fire effects on soils, water, and vegetation. This project gave us the opportunity to collaborate with SWCA employees across specialties and mobilize staff from different offices around the West, a true OneSWCA effort. Our engineers and watershed scientists worked to mitigate flooding impacts to municipal and agricultural water infrastructure, control erosion, and establish native vegetation cover. SWCA worked with stakeholders at all levels to ensure this critical plan would work across jurisdictions to protect life, property, and infrastructure.

### Key Takeaway

The success of programs like the Ute Park Damage Assessment and Burned Area Emergency Response lies in taking a holistic approach to address post-wildfire issues. Considering various elements in the context of long-term restoration from the initial response, like emergency stabilization, suppression activity damage repair, and burned area rehabilitation, can have positive impacts on the overall recovery of the area. Involving various specialists with focuses in hydrology, geology, archeology, wildlife species, botany, and soils can ensure an integrated plan for recovery.



## LIVING SHORELINES COAST TO COAST

The effects of storms and the impacts of sea level rise are causing significant erosion on our nation's coasts. Many areas have historically battled erosion by building bulkheads, offshore groins, or sills from non-natural materials like concrete. In recent years however, living shorelines have been gaining attention as a natural alternative, using primarily native materials like vegetation, seagrass beds, and oyster reefs to stabilize the shoreline. These nature-based solutions provide significant advantages beyond erosion control. They create wildlife habitats, help to purify water and store carbon, and the resulting green areas are more aesthetically pleasing to residents and tourists. There have also been studies that show living shorelines provide more protection in major storms than hardened shorelines.

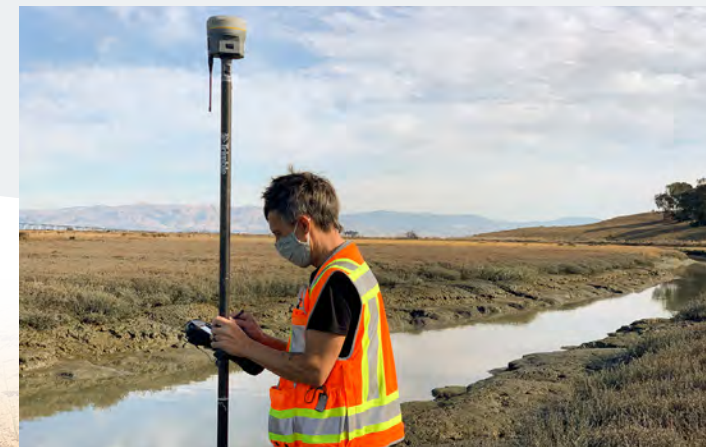
SWCA staff are collaborating on living shoreline projects on both sides of the country. On the East Coast, our team has worked closely with the North Carolina Department of Transportation to secure funding from the National Fish and Wildlife Foundation to repair damage from recent hurricanes. Working with the North Carolina Coastal Federation, SWCA developed a plan to address several sections of state highway where storms and rising tides flooded the road and eroded portions of the causeway. Not only does this type of damage result in expensive road repairs, but

the rushing sediment and debris washes into the marsh causing further damage to an already fragile ecosystem. Grant funding will be utilized to implement a nature-based stabilization approach that will include living shorelines and expanded tidal marsh areas.

On the West Coast, in Menlo Park, California, the SWCA team is working on an Equalization Basin Facility that is designed to prevent emergency overflow from short-term surges of incoming water. In this particular facility, the basins are surrounded by a levy that is being breached at a typical high tide with the potential for even worse impacts in a strong storm. This problem had been addressed by adding fill to the levy. However, this was only a temporary solution and adding fill reduced storage capacity in the ponds. For a more permanent and ecologically friendly solution, SWCA proposed a living shoreline. This project is currently underway and will partner with **Save the Bay**, a nonprofit organization, to utilize a wetland plant nursery on the site to propagate native plants for the project. In addition to the living shoreline protecting the existing facility, this approach will also allow for future expansion of the facility into water recycling and desalination.

### Key Takeaway

As we learn more about the benefits of having healthy natural areas as a source of protection for our built environment, we are looking for increased opportunities to help communities nurture and reinforce this green infrastructure. The ecosystem service of these green areas on infrastructure can be taken advantage of by conserving existing natural areas and restoring others, thereby increasing the capacity for natural storm protection along our shorelines. In addition to protection from future disaster, living shorelines also provide more ancillary benefits like improving water quality, increasing biodiversity, and promoting recreation within a community versus hard shoreline structures.



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## HELPING TEXANS' LONG-TERM RECOVERY FROM HURRICANE HARVEY

Hurricane Harvey, a devastating storm in August 2017, is estimated to have damaged over 300,000 structures, caused \$125 billion in economic harm, and resulted in more than 100 resident deaths along the entire Texas coast. Many residents and communities devastated by the storm were unable to repair the damages using limited state and local resources. The state applied for and received over \$5 billion in Community Development Block Grant (CDBG) funds from the U.S. Department of Housing and Urban Development to assist in repairing or replacing damaged infrastructure and homes, with more than 70 percent of the funds focused on benefiting lower income residents.

In 2018, SWCA was selected as the Primary Environmental Services Provider for the Texas General Land Office (GLO) division responsible for this disaster recovery. In this role, SWCA works closely with the state to provide technical assistance and guidance to those preparing environmental documents for infrastructure and single-family/multi-family residential recovery projects. Our work helps them comply with the many federal and state environmental regulations so that rebuilding can be done in a responsible manner. We also prepare the required documents when applicants aren't able to develop their own funding request. To streamline the environmental reviews for individual houses receiving CDBG funds, SWCA prepared 50 county-level Environmental Assessments that guide the review process. SWCA also provides the GLO with environmental studies including cultural resources surveys, wetland delineations, technical reports, and environmental site assessments. As of November 2020, SWCA has helped more than 8,000 homes and 40 multifamily complexes to become eligible for recovery funds.

### Key Takeaway

Rebuilding after a disaster is a top priority, but it is critically important to make sure steps are followed to rebuild correctly, so as to not jeopardize funding and also to ensure reconstruction activities do not create or compound environmental damage. Working with a team who understands environmental policy regulations and can help navigate these without slowing down recovery can be crucial to the success of rebuilding under federal programs.

### LOOKING AHEAD

The next natural disaster is not a matter of if, but when, and no region of the United States is immune to the devastating effects in one form or another. By being there for our communities and partners with mitigation and resilience strategies before disaster strikes, we can work to lighten the load when the time comes to rebuild together. Planning now for a future disaster's recovery is the best way to make use of these three key strategies:

- 1) taking a comprehensive and holistic approach to recovery,
- 2) incorporating the use of green infrastructure and natural lands as forms of protection, and
- 3) including team members who understand the policy requirements and regulations can set planning efforts up for success.

For more information about how we can help with disaster resilience and recovery, contact Anne Cabrera:

**Anne.Cabrera@SWCA.com** ■

## SCENES FROM THE FIELD: 2020 IN PHOTOS

2020 brought with it a lot of changes and challenges, yet our staff found ways to adapt and meet the needs of our clients and projects in beautiful ways. This is reflected in the stunning images we received as part of our 2020 staff photo contest. In the following images, we highlight various aspects of our work and the meaning we find. We hope you enjoy.



An SWCA biologist, wearing appropriate COVID-19 personal protective equipment (PPE), examines a Bolson Tortoise (*Gopherus flavomarginatus*), the largest terrestrial reptile in North America and a critically endangered species. **Matt Bandy**



Employees pose at a project site for the excavation of a 1908 railroad from a state penitentiary in Texas. **Chris Shelton**

# RESPONSIBILITY

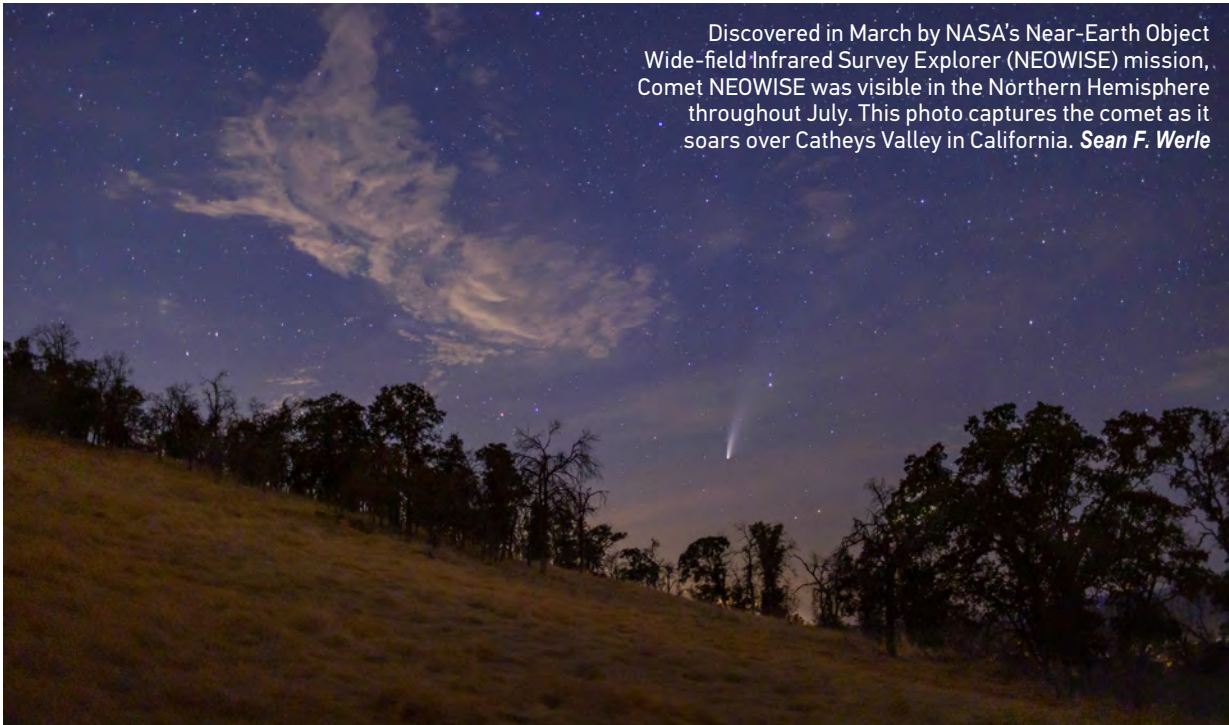


# NATURE'S MIGHT

Caused by a lightning strike in early June, the Bighorn Fire burned for more than a month in the Santa Catalina Mountains north of Tucson, Arizona. This photo captures the fire burning alongside the Milky Way. **Brianna Zurita**



The Bighorn Fire burned nearly 120,000 acres, threatening hundreds of homes and prompting multiple evacuations throughout the Catalina Foothills, before it was finally put out on July 23. An air tanker is seen here dropping slurry over the fire. **Brianna Zurita**



Discovered in March by NASA's Near-Earth Object Wide-field Infrared Survey Explorer (NEOWISE) mission, Comet NEOWISE was visible in the Northern Hemisphere throughout July. This photo captures the comet as it soars over Catheys Valley in California. **Sean F. Werle**



According to NASA, Comet NEOWISE looked like "a fuzzy star with a bit of a tail." Experts say this comet won't be seen again for another 6,800 years. This photo captures the comet from Joshua Tree National Park. **Sunny Lee**





There are about 7,500 known spotted blister beetle species worldwide, named for their defensive secretion of a blistering agent. Here, a spotted blister beetle (*Epicauta maculata*) cruises through the desert. **Hayden Ripple**



A desert ironclad beetle (*Asbolus verrucosus*) exhibits a defensive posture after being gently poked. The beetle, also known as the blue death feigning beetle, will sometimes play dead when threatened. **Par Singhaseni**

# P E R S P E C T I V E

An employee looks out over a canyon after hiking to a survey location. **Jaclyn Thompson**



Water pipes feeding down to a hydro electric station provide a dramatic vista. **Sunny Lee**



A lizard does push-ups in the sun. **Brandi Cummings**





A ferruginous hawk (*Buteo regalis*) sits with her three chicks near a wind farm construction site. **Eric Burnham**



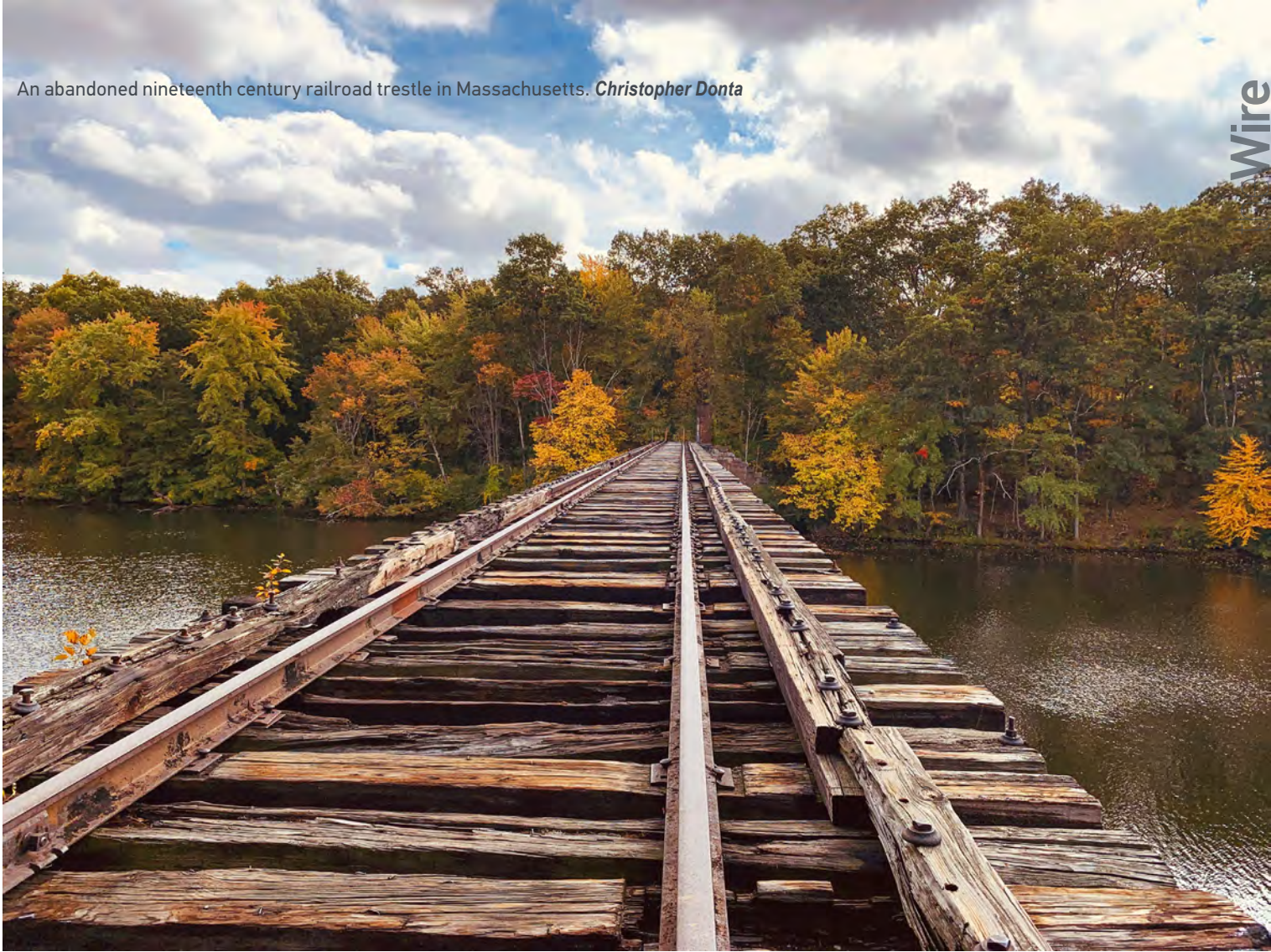
A red-tailed hawk (*Buteo jamaicensis*) calls from the sky during a preconstruction survey for large birds. **George Cummins**

# LIFE'S JOURNEY

Surveying among hoodoos in the San Rafael Swell. **Lisa Stenten**



An abandoned nineteenth century railroad trestle in Massachusetts. **Christopher Donta**



A praying mantis hides beneath the leaf of a Turk's Cap (*Malvaviscus arboreus* var. *drummondii*). **Michael Heimbuch**

Trilobites are a group of extinct marine arthropods and form one of the earliest-known groups of arthropods. This photo shows a fossil of a trilobite from the genus *Olenus*, found in California. **Sunny Lee**





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Close-up of a brightly colored desert horned lizard (*Phrynosoma platyrhinos*).  
*Par Singhaseni*



A pollinator visits a blooming pincushion cactus in Arizona. *George Cummins*



A bull frog hides in a Mosaic water plant (*Ludwigia sedioides*) at a botanical garden in Massachusetts.  
*Alison Holmes*

A picture-perfect view of Bow Brook and flowering water lilies in New Salem, Massachusetts. *Alison Holmes*

## NATURE'S BEAUTY



A passion fruit flower growing in a garden.  
*Sunny Lee*



continued on page 24



# FINDING JOY!

One of SWCA's wildlife ecologists keeps an eye out for birds near a campground during fieldwork. **Annie Lutes**

Close-up of a beehive in California. **Brandi Cummings**



SWCA Amherst Ecological Restoration staff install plantings along a recently constructed vegetated lift. **Remy Schneider**



A double rainbow visible after a monsoon while conducting bird surveys for a preconstruction wind facility. **George Cummins**



The Mexican spotted owl (*Strix occidentalis lucida*) is critically endangered in the U.S. and Mexico. These juveniles were found near a nest site. **Nathan Petersen**

Looking forward to meeting the needs of our clients and projects in 2021! Please visit us at [swca.com](https://www.swca.com). Additional photos (New Year, New Horizons) on back cover. ■





## 2020 RECAP

In 2020, SWCA's Give Back program supported 93 nonprofit organizations around the country, many local to our field offices. Employees volunteered 1,411 hours of their time at animal shelters, food banks, giving blood, sewing masks for front line workers, and more. An important highlight was the year-end Dare To Donate event, during which employees dared each other to complete fun or embarrassing dares in exchange for donations to disaster relief charities. SWCA employee donations and corporate gifts totaled \$112,391 across all giving campaigns during the year.

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## Dare To Donate Event

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## NEWS BRIEFS

### NEW HIRES AND PROMOTIONS



**ANNE CABRERA**  
Disaster Resilience National Director

Anne Cabrera has joined SWCA as the new National Disaster and Resilience Director. Anne is a highly regarded expert in the disaster recovery industry, working on behalf of state and local governments throughout the U.S. on major post-disaster activations since Hurricane Katrina in 2005. In this capacity, Anne helps clients plan and prepare for potential disasters, including creating or updating recovery plans, providing training sessions, and facilitating exercises with communities across the country.



**ARTHUR WASHINGTON**  
Director of People Support

Arthur Washington has joined SWCA as our new Director of People Support. He will be leading our Employee Relations and Compliance team, as well as our performance management, employee engagement, and Inclusion and Diversity programs. Art comes to SWCA with experience in human resources with a variety of organizations and responsibilities including employee development, diversity, talent acquisition, process improvements, compensation, succession planning, and recognition.



**DAREN PAIT**  
Director of Engineering

Daren Pait has been named SWCA's new Director of Engineering. In this role, Daren will supervise SWCA's engineering team, with a focus on engineering processes, designs, QA/QC, and client development. Daren has more than 20 years of experience in surface water design and environmental engineering, including natural channel design, wetland design, living shoreline design, hydraulic flood modeling, watershed management planning, flood mitigation, and stormwater management facility retrofit and design.



**MANDI MARTINEZ**  
West Region Business Development Director

Mandi Martinez has been promoted to SWCA's West Region Business Development Director. In this role, Mandi will be engaged in client-facing support, helping to build client and teaming relationships throughout the West and beyond, with a focus on the federal, transmission, and mining business sectors. Mandi has more than 15 years of experience in delivering environmental solutions throughout the U.S. Her previous roles at SWCA and elsewhere include principal investigator, cultural resources project manager, client manager, and cultural resources lead.



**ROB LACKOWICZ**  
Gulf Coast Region Disaster and Resilience Director

Rob Lackowicz has been named SWCA's Gulf Coast Region Disaster and Resilience Director. With other leaders in SWCA's Climate Driven Services line, Rob will work to expand SWCA's role in large-scale resilience and recovery programs into our Gulf Coast and Atlantic offices. Prior to joining SWCA in 2016, Rob focused on leading multi-office teams in environmental and cultural resource regulatory compliance efforts for large-scale disaster recovery programs, particularly those related to Hurricanes Katrina, Rita, Ike, Dolly, and Sandy.



**ANNE OLIVER**  
Vice President Great Basin/Pacific Northwest

Anne Oliver has been named SWCA's new Great Basin/Pacific Northwest Vice President. Anne has more than 25 years of experience in historic preservation and cultural resources management. Prior to joining SWCA in 2012, Anne worked as an independent consultant and as an architectural conservator. Anne is currently the Vice Chairperson of the Salt Lake City and County Building Conservancy and Use Committee, as well as a board member of the Rocky Mountain Chapter of the Association for Preservation Technology.



**CODY STROPKI**  
Rockies Region Disaster and Resilience Director

Cody Stropki has been named SWCA's Rockies Region Disaster and Resilience Director. With other leaders in SWCA's Climate Driven Services line, Cody will work to expand SWCA's role in large-scale resilience and recovery programs throughout the Rockies region. Cody brings an extensive knowledge of the disaster and resilience market and has a proven track record of building SWCA's presence in this market in New Mexico and beyond.

### NEW TECHNICAL DIRECTORS

SWCA has appointed four new technical directors to provide enterprise-level leadership for the company's Endangered Species Act, National Environmental Policy Act, Cultural Resources, and Water Resources practices. Each of these positions will drive continued growth and improvement of SWCA's foundational practices in each focus area. The new Technical Directors are:



**AMANDA AURORA**  
Endangered Species Act (ESA)



**MATT PETERSEN**  
National Environmental Policy Act (NEPA)



**SCOTT PHILLIPS**  
Cultural Resources



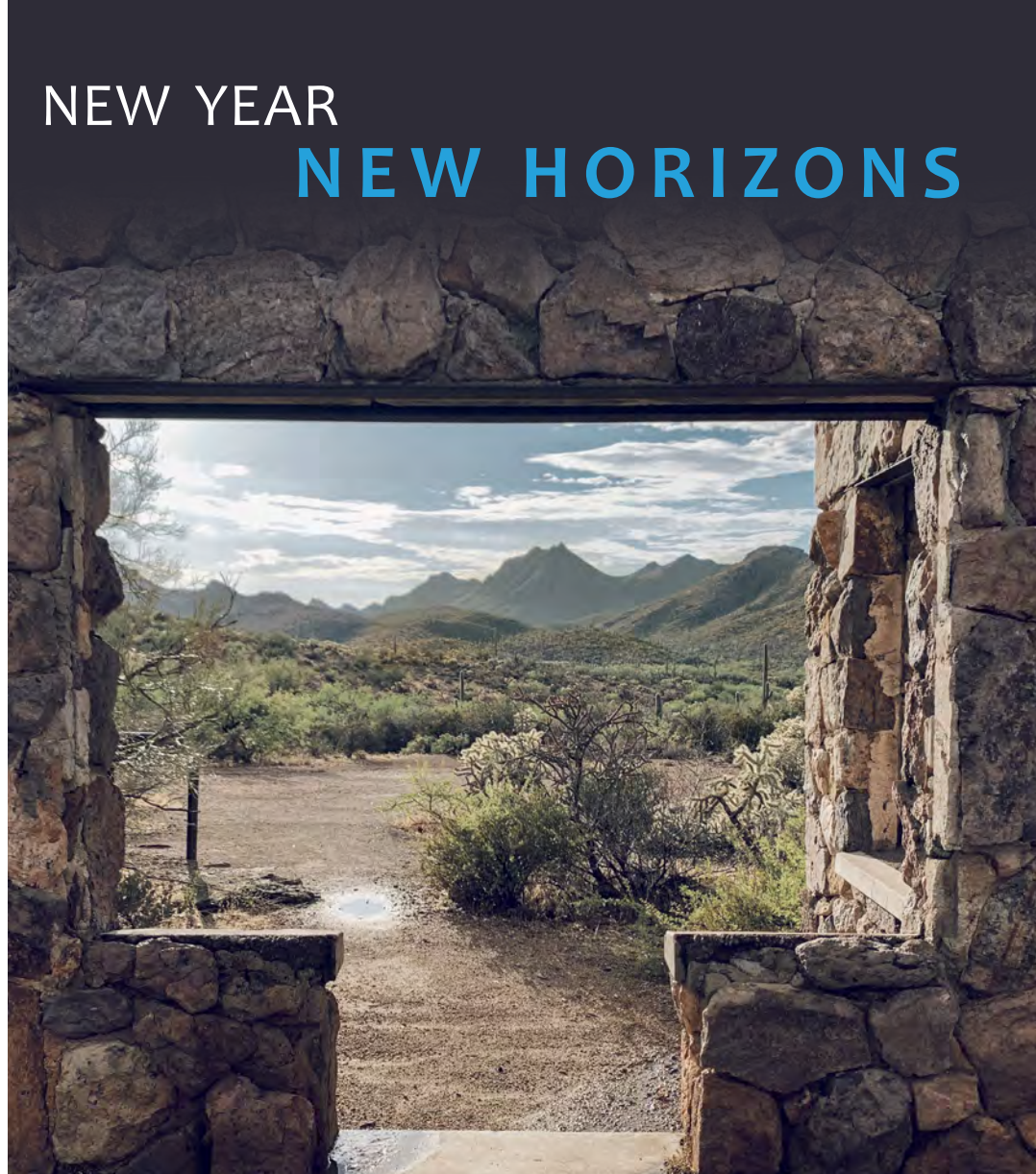
**NOAH GREENBERG**  
Water Resources





A juvenile Cooper's hawk (*Accipiter cooperii*) spotted in a backyard in California.

**Marty Kooistra**



Looking west into the Tucson Mountains from the Bowman Homestead in Arizona.

**Brianna Zurita**

SWCA

Environmental Planning, Permitting & Compliance | Ecological Restoration | Natural, Cultural & Water Resources | Air Quality | GIS | Landscape Architecture

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