

# Sketches

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# SAN DIEGO AUDUBON

*Early snow in the Lagunas*

Photos by Gerry Tietje

**Time to  
Reimagine...  
Time to  
Rewild**

*San Diego Audubon gives witness to the importance of the natural world, and recommits to the hard work of conserving it.*

White-breasted Nuthatch by Gerry Tietje



# Time to Reimagine...Time to Rewild

*San Diego Audubon gives witness to the importance of the natural world and recommits to the hard work of conserving it.*

*By David Stump, San Diego Audubon President*

**E**ach of us have our own story, our personal testimony, of how the natural world has transformed over our lifetime. At a macro scale, we know that the world population has more than quadrupled in the past century, atmospheric carbon is now dangerously high at 415 parts per million, and the percentage of land covered by wilderness has been reduced by more than two-thirds to just 36%. There has been a precipitous loss of biodiversity and native habitats on a global scale. Though nature is resilient, some of these losses may prove irreversible. We see the same patterns of loss clearly in our regional environment.

## **Our Mission**

*The mission of San Diego Audubon Society is to foster the protection and appreciation of birds, other wildlife, and their habitats, through education and study, and to advocate for a cleaner, healthier environment.*

## **Our Vision**

*We seek to shape a culture in San Diego where nature is a common interest of all—where people learn to appreciate, understand, and actively protect the natural world. As we inspire others to join us in strengthening this culture of conservation, our region's irreplaceable biodiversity will be more highly valued and vigorously protected.*

It's easy to be consumed by the huge scope of the problem. But we can't be discouraged from taking action to heal our environment. At San Diego Audubon, we are hard at work reimagining what successful conservation looks like, and how to achieve it. We know that our chapter and its many allies have key regional leadership roles in the growing movement to turn this crisis around. Every victory, big or small, fuels our hope for the future, and adds to our strengths as an organization.

Rethinking and redrawing the strategic map of our region's full scope of environmental challenges would be daunting even if San Diego Audubon were 10 times its size and strength—and yet that is what we face. Finding real-world solutions to the difficulties of shaping a viable culture of conservation, or at least pathways to those solutions, remains the central task. With the emerging potential of a friendlier political climate, the paths may be somewhat smoother, but they are still uphill. It is our task to ensure that elected leaders recognize the resolute will of nature's friends.

Audubon's nonpartisan stance has long been considered a wise course, as it has fought, often with success, for wildlife and habitat protections at all levels of government. The growing ferocity over the past three decades of hyper-partisanship, including the deep

divides on issues affecting the environment and climate crisis, reveal the risks and opportunities. We must always be mindful of both. The risks: marginalization, and the frustration of living with see-sawing political support for our key goals. The opportunities: building enduring, election-proof alliances with like-minded organizations, agencies, and corporate players—and widening our demographic profile so we are engaged with a much fuller representation within our communities. The one thing that needs to be established as non-partisan is the authority of scientific evidence. We must not be afraid to embrace and share established facts—calmly, knowledgeably, and with clear confidence in their implications.

San Diego Audubon has been looking strategically at how to build on these opportunities, and recent successes with ReWild coalition-building, led by Conservation Director Andrew Meyer (*see page 4*), underscore the shifting tides. A firm foothold in the coveted Millennial generation has been gained through the hard work of our Vice President Lisa Chaddock and the student leadership of the City College Audubon Club. Our staff and board leadership has made progress toward equity, diversity, and inclusiveness, and is laying the groundwork to go further, faster. The hard work of our Advocate program in promoting the AB 3030 bill was a factor, we humbly claim, in the governor's recent executive order to implement the

plan of setting aside 30% of the state's wild habitats, both land and sea, for protection. This may well give San Diego Audubon much-needed leverage to participate in habitat preservation initiatives in our region. A recent \$700,000 federal grant awarded to California Audubon for the restoration of Bombay Beach Wetland will re-energize the daunting efforts to restore the Salton Sea. A new bill being presented in Congress will tackle the severe threats to the Salton Sea and its surrounding communities at a level not achieved before. The list of successes goes on—as does the list of challenges and threats.

If there is any one issue that will test our capacity to “shape the culture,” it may be the climate crisis. Because it directly affects nearly all of the conservation needs we strive to address, it will loom unavoidably over our full agenda and the goals we set. Again, there are shifting winds on this matter, and San Diego Audubon is tacking hard into these winds to make as much progress on the regional level as we can—with the fierce intent of making any progress permanent. In fact, this one issue may well play directly to our strengths as an organization. Closely related to this is the imperative to protect, with long-term assurances, the biodiversity of our unique habitats. Ultimately, these efforts will succeed or fail based upon the depth

and breadth of the influence we and others can exert in the various arenas of public discourse. This is truly a tall order, but that is the task before us.

The first active verb in our mission statement is *foster* “...to foster the protection and appreciation of birds, other wildlife, and their habitats...” It conveys the sense of nurturing, with enthusiasm, what is good and right—in a manner perhaps with the character-building spirit of a favorite teacher we remember throughout our life. It distills the best of our thinking and feeling, incubating a deeper, more connected valuing of nature. It teaches us, as former SDAS president Peter Thomas says, to “cherish nature.” There is a second verb in our mission: *advocate* “...to advocate for a cleaner and healthier environment.” It is inclusive of human and non-human needs, and affirms our commitment to both environmental and social justice. These words breathe life into our goal of shaping a culture where nature is a common interest of all. They express motives that are both inspirational and aspirational. They project well-honed values, developed in word and action. They are part of our society’s DNA.

And let’s gratefully mention our irreplaceable sanctuaries: Silverwood Wildlife Sanctuary, our crown jewel, which has thrived under strong committee leadership and the heroic efforts of its resident manager, Phil Lambert. It is both a tremendous legacy and a treasure trove of conservation and education resources, anchoring our real-world commitment to our mission, with 785 acres of prime sage scrub/chaparral habitat to protect and preserve. Anstine-Audubon Nature Preserve, with its successful education programs designed and led by Education Director Rebekah Angona, extends our reach into the north county and helps underpin the long-term vision of having a county-wide presence within all of the region’s habitats.

To execute our mission and objectives, we are becoming, by necessity, increasingly **Smart, Strong and Good** through an open and creative interface of our professional staff, led with skill and dedication by Travis Kemnitz, and our deep pool of volunteers. A lean but powerful Communications Master Plan is being developed which will better synergize the influence of the increasing range of “products” we have created, from Share Our Shores to Nature Explore! to Ternwatchers. Thoughtful, well-conceived messaging and branding gives us both heft and scope. To underwrite these efforts, we have committed to an expanded, more comprehensive development strategy under the experienced guidance of Development Director Charlene Pryor.

*(Continued on next page)*

## Rewild the Planet?

The rewild concept and the subsequent conservation blueprints for environmental recovery that followed go back at least as far as 1990. Apparently coined and first used in print by the grass roots network *Earth First!*, rewilding was built on the alliterative ideas expressed as **cores, corridors, and carnivores**—recognizing three basic components of a biodiverse, healthy, and sustainable ecosystem.

**Cores** refer to what we think of as pristine habitat, with a community of plant and animal species thriving and in proper balance to one another. Such a bio-community requires as well a stable geographic/climatic setting that maintains the overall health of the full ecosystem and its individual species. It is maintained, in turn, by a network of interconnections with other natural systems.

**Corridors** speak to the pathways and routes of movement and dispersal that are necessary for the entire network to hold together. It includes pathways such as migration routes or trails to water sources, as well as the subtle web of connections, both spatial and temporal, that are vital to all living things.

**Carnivores** reveal the intricacies of the traditional food pyramid, where apex predators such as wolves, bears, eagles (or whatever species rise to the top tier within their food chain), are in proper balance with the living things lower on the pyramid, providing cascading benefits through the entire ecosystem.

At San Diego Audubon, these principles have helped shape our conservation efforts for decades. ReWild Mission Bay integrates the basic dynamics of the rewild philosophy in a highly focused way through the restoration plans for the northeast corner of Mission Bay. Silverwood and Anstine-Audubon, each within the parameters of their natural settings, both prioritize these concepts.

A Netflix documentary\*, *David Attenborough: A Life on Our Planet*, concludes a rather bleak assessment of the widespread and as yet unchecked destruction of the world’s natural habitats with a burst of confident hopefulness: *Planetary rewilding can save us, as well as the biosphere.* The task: Set aside a third of the earth’s land and ocean areas for nature to restore and replenish itself. If this sounds strikingly similar to the recent California action to attempt that very thing within our state’s boundaries, I’m sure that is not coincidental. Or consider this similar goal from the incoming federal administration: “Protecting biodiversity, slowing extinction rates and helping leverage natural climate solutions by conserving 30% of America’s lands and waters by 2030.” Similar programs are underway or being planned around the globe, and they include such a diverse list as the Yellowstone to Yukon Conservation Initiative, the European Greenbelt, the Gondwana Link (in Australia), and the American Prairie Preserve.

The political, economic and scientific breakthroughs needed to make these goals achievable will certainly be daunting. But it is an idea even a child can visualize, and the power of that image, combined with the authentic hope that we can turn around the human-caused changes in our climate, and ameliorate, concurrently, many societal ills, may well prove too powerful to hold back.

\*Also a book by Sir David Attenborough and Jonnie Hughes, *A Life on Our Planet: My Witness Statement and a Vision for the Future.*

San Diego’s newly elected mayor Todd Gloria with SDAS Conservation Director Andrew Meyer.



## Our Growing ReWild Mission Bay Coalition

The following list of 45 ReWild coalition members is a dramatic affirmation that the restoration project is not only alive and well, but growing in its support and potential impact.

American Federation of Teachers Guild, Local 1931  
Aqua Adventures  
Audubon California  
Beautiful PB  
BikeSD  
California Native Plant Society, San Diego C3  
Clean Earth For Kids  
Climate Action Campaign  
Community Congregational Church of Pacific Beach, United Church of Christ  
Endangered Habitats League  
Environmental Center of San Diego  
Environmental Health Coalition  
Friends of Famosa Slough  
Friends of Mission Bay Marshes  
Friends of Rose Canyon  
Friends of Rose Creek  
Islamic Center of San Diego  
Latino Outdoors  
McCullough Landscape Architects  
Mission Bay Fly Fishing Co.  
Montgomery-Gibbs Environmental Coalition  
Native Like Water  
Outdoor Outreach  
Renaissance  
Rose Creek Watershed Alliance  
St. Andrew's By-the-Sea Episcopal Church  
San Diego 350  
San Diego Audubon Society  
San Diego Canyonlands  
San Diego City College Audubon Club  
San Diego City College SACNAS  
San Diego Coastkeeper  
San Diego County Democrats for Environmental Action  
San Diego Democrats for Equality  
San Diego EarthWorks  
San Dieguito River Valley Conservancy  
SD Children and Nature  
Save Everyone's Access  
Sierra Club San Diego Chapter  
Southwest Wetlands Interpretive Association  
Stay Cool for Grandkids  
Surfrider San Diego  
Sustainability Matters  
Unite Here! Local 30  
WILD COAST

(Continued from page 3)

During our last long-range planning in 2015, we developed five strategies to support our vision to foster the growth of an enlightened and civically engaged populace:

1. Engage new and diverse audiences, including a special focus on families and youth.
2. Provide experiences in nature that are educational, inspirational, and restorative, strengthening the SDAS community of members, volunteers, donors, and partners.
3. Engage in direct conservation actions to preserve and improve habitat for wildlife, with a special focus on birds.
4. Influence public, corporate, and personal decisions to better protect and enhance the natural world.
5. Understand and leverage our unique brand and tell our story in a compelling fashion to inspire more people to rally to our mission.

Over the years since these strategies were adopted, we have made measurable progress, boosted by the tremendous learning curve required by the ReWild Mission Bay campaign and other major new programs. We are still years away from the realization of actual habitat expansion and restoration in Mission Bay, and we have many battles yet to fight, but we have gained and grown in public stature, are more seasoned in the ways of city hall, and are on surer footing in our foundational knowledge of what is needed and how to achieve it. Early this coming spring, our staff and board will convene to consider how best to frame our priorities and articulate our goals and strategies for the coming decade. This is a serious dialogue we invite you all to reflect on and engage in.

As we actively discover new ways to give our conservation and education efforts enduring effectiveness, and we look to establish valuable alliances in places both expected and unexpected, the future of our cause does in fact become more hopeful.



PHOTO BY CRAIG CHADDOCK

## ReWild Mission Bay!

by Andrew Meyer, Director of Conservation

*Major progress in this pandemic year gives us confidence for 2021*

2020 was a good year for the ReWild Mission Bay project and we're hopeful that 2021 is the year that we put the Bay solidly on the path to ReWilding. Last year, our ReWild Coalition grew to nearly 50 organizations, all joining voices with us to push for visionary restoration of our Mission Bay habitats. San Diego Audubon helped to bring a City of San Diego proposal for a new, wetland-rich, plan for the ReWild area to the Regional Water Board, and with our ReWild Coalition voices, we gave more than two hours of public comment in support of the



PHOTO BY BRIAN MAGNER

proposal and carried the day. It was a great success for all the work we've done since 2014 on our ReWild project. We now have the mechanism and funding to get the Wildest wetland restoration plan in front of the City and to make it a reality. In 2021, we will all need to work to ensure that plan is informed, robust, and the Wildest plan we can get!

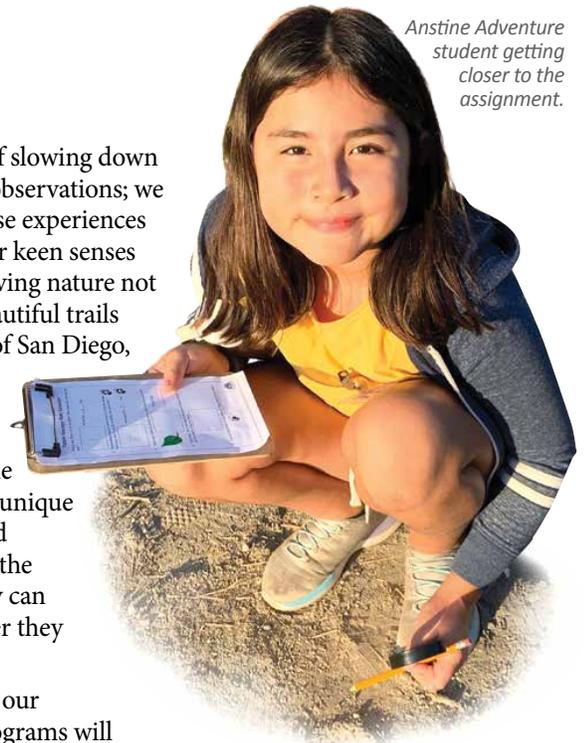
The Mission Bay habitats were taken from the birds that have used them for millenia, and they were taken from the Native Americans that have lived in this area since time immemorial. With a new plan, the City has the ability to restore habitats, improve water quality, increase our resilience to sea level rise, and reconnect us to our shared shoreline.

As we continue navigating through this pandemic, our once typical outings spent guiding students around canyon trails, digging holes for native plants, and troubleshooting binocular difficulties sometimes feel like things of the past. With many schools across San Diego still closed, our education programs have been adapting to meet the changing times. Though many of us have been heavily reliant on technology and screen time, we at San Diego Audubon are hoping to pivot instead into renewing a more personal connection to nature.

Prior to the pandemic, we have focused on helping students to explore nature within their community through field trips. Our field trips have generally taken place at an open space or trail near a school, where we have aimed to show students nature that is accessible in their daily lives. Since early 2020, we have had a unique opportunity to take that even farther and truly meet students where they are as they remain close to home. True to our mission, while we may not be able to show students our beautiful preserves, wildlife refuges, or canyon trails personally, we can still help them slow down and experience the beauty of nature in their own neighborhoods. In place of our naturalist-guided hikes, we have been creating nature kits—student centered, self-guided lessons that take students out from behind their computer screens for a walk in their neighborhoods. These kits include open-ended questions, pictures for reference, and science-based materials. Our hope is that students will not only use the lessons as a guide, but also create their own special experiences rooted in their senses of place and self. As students walk around their neighborhoods, each student will see different things and will be able to stop and focus on what really interests them. The kits encourage students to be as hands-on as possible, offering tools to enhance the learning experience. With lessons covering a range of topics, each kit emphasizes the

importance of slowing down and making observations; we hope that these experiences will train their keen senses to start observing nature not just in the beautiful trails and beaches of San Diego, but also in the small patches of grass along the sidewalk, the unique neighborhood canyons, and the bird calls they can hear even after they return inside.

We hope that our education programs will create the next generation of outdoor stewards. By offering these facilitated experiences, we hope our students will not only observe nature, but also recognize their natural environment as a vital component of their communities. As we move into the second half of the school year, we feel a renewed sense of excitement and appreciation. We especially look forward to seeing our students back in their classrooms and out on the trails. Until then, we remain grateful to our funders and to our schools for allowing us the creativity to encourage students' natural sense of curiosity, joy, and connection to the natural world around them.



Anstine Adventure student getting closer to the assignment.

## SAN DIEGO BIRD FESTIVAL 2021 *Update*

***The San Diego Bird Festival is an annual celebration of the wild birds and habitats of San Diego County. The dates are February 17-21, 2021, Wednesday through Sunday.***

This year has presented some interesting challenges for presenting the 2021 San Diego Bird Festival, but we are so proud of what we have come up with for you. As we've reported before, the 2021 festival is a "hybrid" format. What do we really mean by that? The hybrid format refers to a blend of in-person and online events. For 2021, we have pulled together a schedule of workshops and keynote speakers that will all be presented via zoom. We've also assembled a few field trips, all designed with low attendance capacity, so you can bird with experts while maintaining a safe distance from other people. We won't have a venue because there will be no gatherings of more than a dozen people at a time.

We're really pleased with the lineup of programs we have put together. There are really too many to mention all of them here! Our Wednesday evening speaker (February 17) is Rosemary Mosco, from Bird and Moon Comics. A science and nature writer, her comics are full of natural history facts that make you laugh first, and then they make you think. See her work at [birdandmoon.com](http://birdandmoon.com). On Thursday, February 18, we have Jody Enck with his talk about the diversity of birders, entitled "What Makes a Birder a Birder?" Friday, February 19 features Ted Floyd, editor of *Birding Magazine*, the flagship publication of the American Birding

Association. His presentation reveals the real reasons why we bird. And Saturday, February 20, our featured speaker is Julie Zickefoose, with a talk based on her book *Saving Jemima: Life and Love with a Hard Luck Jay*. Follow her exploits on [JulieZickefoose.com](http://JulieZickefoose.com).

For family day, Nicole Perretta joins us for the final keynote talk of the festival. She is famous for her knowledge of and ability to mimic bird sounds with her voice. You'll be hooting and quacking along from home! Thanks to Zeiss Sport Optics for making our online programs and family day presentations possible.

Usually when our registration system goes live, it is a stressful competition for seats in your favorite field trips. Because of the pandemic, there have been fewer people vying for those spaces, meaning that there is still a good selection of activities available. There is plentiful space on our three "Pelagic Trips." We also have "Birding the Border" trips every day. Representatives from Swarovski Optik, Kowa, Vortex, and Leica will co-lead several of the trips, and Redstart Birding will have a tent close to the field trip meeting sites for several of our festival programs.

We look forward to celebrating birds with you in February!

**You can view the entire schedule and register at:**  
[www.sandiegoaudubon.org/birding/san-diego-bird-festival](http://www.sandiegoaudubon.org/birding/san-diego-bird-festival)

# Silverwood Scene

*The winding trails of Silverwood's Mule Deer*

Phillip Lambert, Silverwood Resident Manager

The record-keeping of plants and animals at Silverwood Wildlife Sanctuary has been an ongoing task for its resident managers since 1966, and it provides solid data for tracking population trends for many of Silverwood's species. As an example, we can consider Mule Deer, our largest common mammal. The recording of Mule Deer sightings began when Frank Gander became our Resident Naturalist in 1966. In a *Silverwood Scene* article of May 1972 he wrote, "Our big buck was seen out on the road and jumped over the fence back into the sanctuary." In the 1974 September issue of *Sketches* he noted that only tracks had been seen that year, and in March 1976, he reported no deer had been observed in the sanctuary since October 4, 1973. Then, in December 1979, Silverwood manager Bob Nicolson wrote about a four-month old fawn, "Duke," who had been rescued by a local rancher after its mother was killed. Bob took the fawn in and raised it at Silverwood. In 1981, Bob stated, "Deer continue their daytime visits to the water in the observation area." After that, there were no other articles mentioning Mule Deer sightings in *Silverwood Scene* prior to my arrival.



*Silverwood's "two sisters," by Phil Lambert.*

Beginning in 1996, over my first fifteen years working here at Silverwood, there were occasional sightings of deer tracks. In 2005, tracks were found on the old Shell Rock Trail, and in 2008, some were noted on the Quail Trail near the Frank Gander Nature Education Center.

During 2009, Mule Deer tracks of both adults and fawns were becoming frequent along the Circuit Trail high up along the ridge. During the spring of 2010 a small herd of deer was frequently seen at the Silversprings site, and their scat was found within the Cienega near the observation area in October of that year. I finally got the first photograph of a doe at Silversprings.

These deer sightings seem to correlate with years of high rainfall. Mule Deer need a year-round source of water such as reservoirs, lakes and streams. During years with high rainfall the intermittent streams flow for a longer time, allowing deer to venture into more arid habitat. Silverwood has a year-round spring at the western base of Silverdome. It's possible that this small herd took up residence at Silversprings while migrating between the nearby El Capitan and San Vicente Reservoirs, and during the summer it began to rely on the spring for a source of water. During the early spring of 2011, a doe Mule Deer began to be a frequent visitor to the observation area and has often been seen drinking at the lower birdbath. Sightings of two additional females began on August 20, 2012.

In September 2014 we documented the first successful Mule Deer breeding record for Silverwood, involving what was deemed to be the resident doe. This female had been coming into the observation area for water on a regular basis since 2011. On the evening of July 6th she was seen entering the observation area near the birdbath, followed closely by two young fawns. Amazingly this doe was able to keep her twins hidden from the pair of resident coyotes.

Earlier that year in May, a Barona tribal member arrived at the front door with news they had received a call from the Barona Casino golf course employees that someone had brought in a fawn they had discovered on the course.



*From the archives: Rayne Lambert feeding newborn fawn, by Phil Lambert.*

We hurriedly drove over and picked up the very young animal, wrapped in a towel. As the employees did not know where it was found, we felt the best option was to bring it with us. I immediately made contact with the one person that rehabs fawns in San Diego, Shawnie Williams, founder and director of SD Fawn Rescue. She said a volunteer would be out to pick up the fawn, but not for two days. Luckily I had goat's milk on hand for just such emergencies. For the next two days my daughter Rayne and I bottle-fed the newborn fawn. On the third morning we heard a knock at the door. The volunteer had arrived to transport the fawn to Shawnie. It did take a couple of hours for my heart-broken daughter to come out from under her bed. These memories we still hold dear.

Soon after the rescue, a Barona tribal member arrived offering fresh venison from a deer his daughter had killed. He said that it was his

## Silverwood Wish List

With the fall season upon us preparations for public visitation and for our education programs are underway. Silverwood can always use volunteers to help out with the trail clearing and many other ongoing projects.

We are also becoming shorthanded on Sunday Hosts. Fresh air, sunshine, birds and flowers all come free while greeting visitors and relaxing for a few hours at the sanctuary.

If you would like to help, please call Phillip Lambert at number shown below. Thanks very much.

## Silverwood Calendar for January and February, 2021

Silverwood Wildlife Sanctuary is free and open to the public from 9 a.m. to 4 p.m. on Sundays only. Registration is required due our need to limit attendance for proper distancing of our visitors. *Please note that COVID-19 rules are in place during your visit, and should be followed at all times.*

To sign up for a visit, please log on to:

[www.sandiegoaudubon.org/what-we-do/silverwood](http://www.sandiegoaudubon.org/what-we-do/silverwood)

For further information, contact Phillip Lambert, Silverwood Resident Manager, by phone or email:

**(619) 443-2998 • [philscottlambert@yahoo.com](mailto:philscottlambert@yahoo.com)**

Silverwood is located at 13003 Wildcat Canyon Road, Lakeside, CA 92040.

daughter's first deer kill. In the Kumeyaay tradition when a member of the family kills their first deer no one in the family can eat it and it must be offered to other members of the tribe. Although I was honored to receive such a gift, Rayne wanted no part in the feast.

Two years later in November 2016, during our Silverwood Committee meeting in the observation area, we all got an opportunity to see our resident female Mule Deer with her newborn fawn, along with her two older daughters, who had also come in to drink. As the female and the two siblings moved away, and her newborn fawn lingered, a second fawn emerged from the foliage and stood alongside the first at the pool. We were never sure whether the second fawn belonged to one of the older daughters.

Today Mule Deer sightings at Silverwood and the surrounding areas have become a regular occurrence. In July of this past summer, while my niece was house-sitting our yurt, a Mountain Lion was observed along the main driveway, standing over a deer it had just killed. The carcass still remains where it fell, and it has become a main attraction for our Sunday visitors. We occasionally get reports of Mountain Lion sightings from neighbors in the Wildcat Canyon area.

Here at Silverwood we continue to frequently see the resident doe with this season's fawn, as well as several juvenile bucks. On October 5th of this season I observed, for the first time, two adult bucks sparring in the observation area for the rights to breed with our resident females. The drama of Silverwood's deer never ends.



Silverwood's observation area became a sparring ground for bucks. By Phil Lambert.

## Anstine Ambles *Brumation: What reptiles do when it's cold*

By Arminda Stump, Anstine Committee Member

We've all seen images of wild animals responding to winter weather: a polar bear mother curling up in her den to hibernate, or a squirrel wrapping its bushy tail around its nose as it settles down to sleep in a tree hollow. Yet in all these depictions, where are the reptiles? What do they do when it gets cold? They sleep, too, don't they? As with all differences between mammals and our *ectothermic* friends (animals who rely on environmental conditions to control their body temperature), the answer is a bit stranger than that.

In colder months, some mammals *hibernate*, sleeping through challenging weather and food scarcity. For example, polar bears can sleep for four to eight months of total inactivity—not eating, waking, or even urinating! Their heart rate and body temperature slow down, and their metabolic rate slows to a crawl. Through hibernation, some mammals can sustain the body while waiting out the frigid weather. In reptiles and amphibians, *brumation* is analogous to hibernation, but it differs in some ways. Animals who brumate slow down their breath, their heart rate, and their metabolic processes, but they don't stay asleep for months at a time. They're awake but drowsy and lethargic.



Desert Tortoise, by Arminda Stump

Why does brumation differ, and how is brumation advantageous to the reptile? Let's take a desert tortoise for example. Like a polar bear, a tortoise digs its own den. The tortoise, however, uses its den year round, to create a stable microclimate. Tortoises rely on having the temperatures in their dens be consistent, even when the weather outside shifts dramatically. As ectotherms, reptiles are much more vulnerable to temperature changes. While in brumation, the tortoise can remain in its burrow during the cool months, from October until March. A tortoise can venture out of its den on warmer days to eat, drink, and sun. Likewise, when the temperature is too hot or the air is too dry, the tortoise can enter a period of dormancy or torpor, known as *estivation*. Many desert animals slow down during the summer. Amphibians bury themselves in mud and wake when it rains. Even some mammals, such as ground squirrels, estivate.

The climate crisis is increasingly affecting these seasonal cycles. When climate is relatively stable, organisms evolve to match their behavior and their biology to the seasonal changes through the process of phenology. (*Phenology* is the match between climate and biological phenomena, such as plant flowering, insect metamorphosis, and bird migration.) Mismatched phenology occurs when organisms that rely on one another are out of sync. For instance, if changes in climate prompt flowers to bloom earlier than anticipated, insects and other pollinators may not be available to pollinate the flowers.

Similarly, the climate crisis may cause mammals to awake prematurely to find that their food sources are lacking. This lack may drive the mammals into our cities for easy meals, with the potential for deleterious human-mammal interactions. Animals who brumate aren't driven to such extreme behavior because they're able to take breaks from their torpor during even brief opportunities for finding food. They can take advantage of the odd sunny day and then slow down again during cold days.

Every species has its own story of survival, and it's important to learn from all of them so we can better adapt, too. One thing we can learn from brumation: Take time to care for yourself, enjoy the sunlight, and adapt to each day as it comes.

Several animals who brumate can be found at the Anstine-Audubon Nature Preserve, such as alligator lizards, fence lizards, skinks, nonvenomous gopher snakes, and rosy boas. Nearly all temperate-zone reptiles brumate. We hope you will have a chance to see them on your next visit. Be sure to spend some time at our pond or riparian area and perhaps catch a glimpse of the native amphibians.

Anstine is open to the public on Saturdays, 9 a.m.–12 p.m.  
Preregistration is required. Please visit our website for more details  
at: [www.sandiegoaudubon.org/what-we-do/anstine.html](http://www.sandiegoaudubon.org/what-we-do/anstine.html)



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San Diego, CA 92117

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Permit #37



## Join Our Flock

There are reasons why we call all of our loyal supporters *Friends*. Friends share common values and interests. They stand by you when you need them most. They're there for you in challenging times. Friends are essential! Your Friendship means a great deal not only to San Diego Audubon but also to the future of our region's birds, other wildlife, and their habitats. Friends come in many different shapes and sizes. From the least (tern) to the great (egret), all levels of support matter!

**Join or Renew as a Member.** Make monthly or yearly contributions, meet other bird enthusiasts, and enjoy member benefits, too.

**Make a Donation.** Make a tax-deductible gift to support our initiatives, our many programs, and both of our sanctuaries.

**Leave a Legacy.** Make plans today for a gift tomorrow and become part of our esteemed Golden Eagle Legacy Club.

**Volunteer.** Contribute your time and talents.

Visit [SanDiegoAudubon.org/JoinOurFlock](http://SanDiegoAudubon.org/JoinOurFlock)



Photos by  
Karen Straus



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# Sketches SAN DIEGO AUDUBON

**SKETCHES** is published bimonthly, in odd-numbered months. For details on submissions and deadlines, please contact: David Stump at [dwstump@icloud.com](mailto:dwstump@icloud.com)

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