Δ

the Wrentit

Issue 9 / Fall 2015 / pointblue.org



Point Blue Quarterly

8

Conservation science for a healthy planet.

6

THE HEART OF OUR SCIENCE



Ellie M. Cohen

PRESIDENT AND CEO OF POINT BLUE CONSERVATION SCIENCE

The Point Blue Quarterly is published quarterly by the Board of Directors of Point Blue Conservation Science (founded as Point Reyes Bird Observatory). Edited by Claire Peaslee with assistance from Point Blue staff. Printed on recycled paper (100% post-consumer waste) using agri-based inks.

© 2015. pointblue.org.

A Climate-Smart View

Inspiration about our living world often comes from varied sources that coincide. An illustration of this happened during my Bird-A-Thon count this year, with The Boarderline Birders, our Point Blue Board of Directors' team.

On a memorable early October day, we stopped to look for birds in a riparian woodland near Bolinas Lagoon, called Pine Gulch. To our surprise, the nearby shoulder of the road was completely filled with cars: birders from the region were looking for a rare Blue-headed Vireo. Point Blue ecologists had sighted this eastern U.S. vagrant the previous day at Pine Gulch, site of one of our long-term ecological monitoring studies.

Though our team missed the vireo (by just a few minutes!), we did spot a dozen other bird species in the beautiful habitats at Pine Gulch.

As we birded, we received another kind of ecosystem insight. Wendell Gilgert, our Rangeland Watershed Initiative Director, had joined us for the day. He gave us a lesson in "reading the land," and one team member asked, "What do you see here, and why?" Wendell and Geoff Geupel, Emerging Programs and Partnership Director, spoke about assessing this habitat in the context of the entire watershed, from the source of the creek upstream to the impact of estuarine high tides. All this information guides what management actions might be taken to improve the site ecologically, for birds, fish, other wildlife, and the human community nearby.

This is the essence of climate-smart conservation. While most conservation actions necessarily occur on a very local scale, climate-smart conservation calls for designing and managing those efforts in an ecosystem framework – so we literally do not miss the forest for the trees. Climate-smart conservation considers carbon, water, and biodiversity simultaneously. It aims to ensure that our actions result in multiple benefits to society, from clean water and carbon sequestration to healthy wildlife populations.

This Quarterly highlights how individual species – from Wrentits to whales – inspire Point Blue scientists in climate-smart conservation leadership. Indeed, our search that early October day to see as many bird species as we could, including the elusive rare vireo, inspired us all to be ever more committed to conserving the ecological processes that sustain them and us!

Contents



4

DISENTANGLING A HUMPBACK WHALE Rescue Team

By Ryan Berger

Above: Trained specialists work together to free a humpback whale from fishing gear. Photo by Bart Shelby.





A SHOREBIRD'S WORLD

Patterns perceived through a Long-billed Dowitcher's eyes.





A tiny, bold songbird in the mountains' most vital habitats.



10 WRENTIT WISDOM

Landscape change that affects both wildlife and humans.

IN THIS ISSUE

- 2 From the President
- 12 Partnership
- 13 Study Sites
- 14 News Bites
- 15 Calendar
- 16 Meet The Team
- 17 Focus
- 18 Donor Thanks
- 20 Lasting Legacy

INDEX

climate-smart 2, 5, 12, 13, 14 informing resource management 2, 5,

6, 7, 9, 10, 12, 14, 15, 16 online tools 11, 14, 16 partners / partnerships 5, 12, 15 , 16

rapid environmental change 5, 6, 10–11, 12, 13, 14, 16

On The Cover:

Alissa Fogg holds a Western Wood-Pewee she captured along a forestmeadow edge in the Sierra Nevada, in 2008. **Photo by** Jim Tietz, Point Blue.

Left: Probing shorebird habitat.
 Photo by Lizzie Condon, Point Blue.

Center: Vital edges within forests. **Photo by** Ryan Burnett, Point Blue.

Right: The Wrentit inhabits a changing landscape. **Photo by** Tom Grey.

Disentangling a humpback whale Rescue Team

by Ryan Berger

One of the great juxtapositions in my life took place this past summer, when I was out on the Pacific Ocean, offshore of San Francisco, on a 15-foot inflatable boat being pulled along by a 30-foot whale that was tangled up in fishing gear.

I knew exactly why I wanted to be there at that moment. But I suddenly pictured my comfortable Illinois childhood, surrounded by seas of corn and bean fields, and wondered "How on Earth did I get here?" Since the task at hand demanded all of my focused attention, I snapped back to working with my teammates to free that whale. And we succeeded. And it was immensely rewarding.

Rewards that come from disentangling whales, which is a passion of mine, include valuable results for conservation science. Saving one long-lived individual matters in the bigger picture. This is because large whales are slow to mature and to reproduce; many of the world's whale populations have been depleted by commercial whaling; and smaller wildlife populations are more vulnerable to extinction.

Working to free individual animals also helps us learn why and how whales become entangled in the first place, supporting collaborative efforts to keep such events from happening. Already, adjustments to commercial fisheries gear have reduced risks to whales; agencies have implemented management plans that limit harm to whales; and Marine Protected Areas at whale "hot spots" protect critical habitat.

Ultimately, I feel a sense of personal responsibility for trying

Above: The rescue team at work. Photo by the Whale Entanglement Team under MMHSRP Permit 18786.

Right: Ryan Berger on Southeast Farallon Island. Point Blue photo.

to reduce a whale's suffering directly caused by interaction with humans. If we did not intervene, the end for that whale would likely be a slow and painful death. I simply cannot sit by and watch that happen.

An expert team

Since 2011, I have belonged to the Whale Entanglement Team (WET) operating off the West Coast. This group of volunteer professionals, representing several non-governmental organizations, has a shared passion for marine mammal



Field ecologists at Point Blue often find ourselves connected to our study species in surprising ways. The science we deploy, to guide climate-smart conservation, is textured by insights into the living fabric that humans share with wildlife. We can see deeper into ecosystems by understanding the language of Adélie Penguins, the drive of an elephant seal pup to survive, the spunk of a Western Bluebird first to nest in a streamside restoration. Our entry into such creatures' lives for a time, as told in this Quarterly, nourishes a passion for the work we do.

conservation and a wealth of experience doing this work.

Being a member of WET requires the ability to keep a cool head in high-stress, intense situations. Also needed: comfort being on the open ocean, familiarity with whale behavior, and training in specific techniques and tools used in disentanglement efforts.

When I received the call about the whale described here – a young humpback off the coast of Monterey – I was on my two-week break from the Farallon Islands. Suddenly I was part of an adventure spanning the next four days, working with dozens of partners from sun-up to sundown from Point Sur to the Farallones.

The whale was severely entangled in crab-fishing gear, in ways that it probably couldn't survive. The line tightly wrapped its right flipper and part of its head, including its blow hole and mouth. Yet the animal was still on the move!

By tracking its position with a satellite buoy that we attached, we could stay with the whale day after day and continually cut off pieces of entangling rope. This process is often slow and methodical, because our primary concerns are human and animal safety.

On the last day, as the whale swam from Half Moon Bay to the Farallon Islands – dragging our small boat behind it – I gained a new respect for these animals' toughness. And when I had the opportunity to make the final cut to the rope, and saw most of the remaining gear fall away, relief and accomplishment flooded over me.

Active solutions

The problem of whale entanglement is growing, with reports doubling over the last few years. In California alone, some 30 incidents have been reported this year. Though most of the entangling gear is from commercial fisheries, we certainly are not putting blame on fishermen. Instead, we are working to develop strong relationships with this group, to share perspectives on how to mitigate the problem.

Recently I was named a co-investigator under the permit issued by the National Marine Fisheries Service to our West Coast Whale Entanglement Team. This is a big step for me personally and professionally and can lead to greater Point Blue involvement in the disentanglement network. I can't express enough my thanks to my teammates at WET and Point Blue for their support for my involvement in this endeavor.

> Ryan Berger is a Biologist in Point Blue's California Current Group. For the past five years he has led our winter research with U.S. Fish and Wildlife Service on the Farallon Islands.

As a conservation science organization with a focus on the ocean food web, especially in light of climate change, our work to learn how human-caused impacts affect individual whales helps us find ways to conserve the entire population. Point Blue plays an active role in whale disentanglements in central northern California. One of our goals is to lead expansion of the stranding and disentanglement networks to the Sonoma–Mendocino coast. Addressing another concern that is growing worldwide – ship strikes to whales – Point Blue and partners developed Whale Alert–West Coast to provide real-time information about aggregations of whales along the West Coast, particularly within National Marine Sanctuaries. —Jaime Jahncke, PhD, Director, California Current Group



Most people who notice birds will vividly recall an encounter that changed their perspective of the world. For me the experience was not only vivid: it focused my career.

It happened while I was exploring the Klamath Basin, along the California-Oregon border. This once vast freshwater wetland is an important stop-over site on a migration route that shorebirds have traveled for millennia. I had my first up-close encounter there with a flock of Long-billed Dowitchers – several hundred near the water's edge, feeding intently. They were surprisingly active, using their long bills in a motion like a sewing machine, probing rapidly for worms in the mud. I approached them very slowly, and to my surprise the birds did not perceive me as a threat. Eventually they all flew off, in the blink of an eye – and then I understood why a dowitcher's only predator is the fastest bird in the world, the Peregrine Falcon. These were the most agile birds in flight that I had ever seen: their lightning-fast turns were a thing of beauty.

Just a few weeks prior, these travelers had been more than 2,000 miles north, in the Arctic. Their annual migration garnered my interest both personally and professionally. I wanted to learn about their movements in detail, but this meant we had to catch them first. Unfortunately for us, Long-billed Dowitchers inhabit muddy wetlands where we humans just don't belong. I soon learned that the only way to capture them was to immerse myself in their world – to think like a dowitcher.

Into a dowitcher's world

After many hours of observations and failed attempts, I learned a few tricks. First, these are gregarious birds when not breeding, so I attracted them using a recording of dowitchers vocalizing while feeding. But this only worked before dawn, so my team had to slog through dark, mucky wetlands each morning to set up large nets that could capture birds drawn to the sounds of their friends.

The phenomenon of movement is a basic characteristic of life, essential to plants' and animals' ability to survive rapid environmental change. Habitat loss and climate change make understanding the movements of plants and animals more important than ever. Our research with Long-billed Dowitchers is revealing spatial patterns of habitat use that are key to managing water in California's Central Valley to benefit both wildlife and human communities. When we know where a species is... why it chose a this wetland or that rice field... we can inform large-scale conservation decisions aimed at making water use efficient for multiple uses, from waterbirds to wetlands to walnuts.—*Tom Gardali, Director, Pacific Coast and Central Valley Group*

Seeing through the eyes of the Long-billed Dowitcher



by Blake Barbaree

Before releasing each dowitcher, we attached a minuscule radio tag to its feathers, making it possible for us to track the bird during its stay in the Klamath Basin and its migration south into California's Central Valley. This would give us new and valuable insights about ways to manage California's water to benefit both birds (and other wildlife) and human communities.

Finding these radio-tagged birds presented a new challenge, one that required thinking like a dowitcher from another perspective – high in the air. While in the Central Valley and San Francisco Bay Estuary, dowitchers move throughout a vast network of humanaltered wetlands and flooded agricultural fields. Tracking their movements here was only possible by flying (like they do), covering long distances carrying an antenna to relocate their signals.

After hundreds of hours spent in small planes on this quest, I understood how hard it can be for freshwater wetland specialists like Long-billed Dowitchers to find places to feed or rest. Most of

Above right: Flocking dowitchers, still in breeding plumage, along with smaller shorebirds. Photo by Peter LaTourrette. Above left: Blake prepares to release a tagged dowitcher. Right: Aerial search for radio signals (antenna at right). Point Blue photos.

their natural habitat has been altered or destroyed, and they rely on islands of wetlands in a sea of land developed by humans.

New perspectives

The insights we're gaining show when and where the management practice of flooding wetlands and agricultural fields can be most beneficial for dowitchers and other wetland-dependent birds (while also saving water for human use and other ecosystems in California).

Seeing through the eyes of a dowitcher has given me new perspective on our

shared environment. We share water and the services that wetlands provide. We share the benefits of flooded agriculture, both taking our meals from there.

Through the eyes of a dowitcher, it is clear to me that conservation needs to span large scales in order for species to move, to survive. And conservation actions with multiple benefits – for ecosystems and for people – are the building blocks for a future with thriving wildlife and human communities in California and beyond.

Blake Barbaree is an Avian Habitat Ecologist in Point Blue's Pacific Coast and Central Valley Group.



Into the Habitat Mosaic

by Alissa Fogg

8

Sometimes, very meaningful connections in ecology center on quite ordinary species. Take my experience with the Western Wood-Pewee – a small bird, quite commonplace, and drab in color.

When I was in graduate school at Humboldt State University, studying the effects of grazing in Sierra Nevada meadows, the pewee surreptitiously became my study species – mainly because it was much easier to observe than other songbirds that skulk deep in understory foliage.

My graduate advisor joked that the pewee's Latin name, *Contopus sordidulus,* means 'little-footed sordid fellow' – which does describe the bird's drab, gray appearance. But the name misses the mark by emphasizing tiny feet rather than long wings, which power an epic annual migration to and from South America.

It also ignores pewees' aerial acrobatics as they snatch insects out of habitat openings. Pewees exploit edges – the juxtaposition of unlike habitats such as meadows and forest.

Their spunky, outgoing behavior made them the perfect study species. I spent hours documenting pewees' foraging bouts, finding their nests, and tracing their territory boundaries along meadow edges. I nicknamed individuals: 'Snappy' was noisy about shutting his bill when he caught flying insects; 'Tough Guy' scolded me relentlessly after I caught and color-banded him.

I also enjoyed watching them fight off Steller's Jays that tried to prey on their nests. I hypothesized that pewees' aggressive behavior helped to also protect nearby nests of the 'skulking' bird species (such as MacGillivray's Warbler, Song Sparrow, and Lincoln's Sparrow).

Pewees packed their territories along the forested edges of meadows and were nearly absent in adjacent closed-canopy forest. This finding turned out to be significant in understanding mountain





Following the Western Wood-Pewee

ecosystems. The juxtaposition between wet meadow and drier forest habitats can translate to increased insect abundance and diversity, especially aquatic insects (which, incidentally, don't fly very well and are easy for birds to catch).

Post-fire forests in the Sierra

Fast-forward to my graduation from Humboldt, in 2009, and the beginning of my career with Point Blue in the Sierra Nevada. A major focus of my work has been documenting the importance of post-fire forests for biodiversity. Fire is now a growing presence in forests in the western U.S., but it has shaped habitats here for a very long time.

Hiking around burned areas, some very recent and some much older, I was excited to see and hear pewees. Lots of pewees! Nearly as many as in my graduate study meadow sites. This time, their 'sordid' dark-grey plumage lent them perfect camouflage against the charred tree bark. Their calls echoed loudly across the forest of snags – which we are learning is highly important habitat. Fire creates a mosaic of burned and green vegetation as it crawls across a forest floor and flares into the canopy. Western Wood-Pewees zero in on this patchwork. Post-fire areas can support a lush layer of herbaceous vegetation, similar to what is found in meadows. This is because fire stimulates the seedbed in the soil and opens the forest floor to sunlight.

Driving biodiversity

Habitat management in the Sierra has traditionally emphasized protecting oldgrowth, dense forest. But what I learned from pewees, and the species with which they co-occur (such as Chipping Sparrow and Olive-sided Flycatcher), was that the mosaic of different habitats created by meadows, riparian thickets, and fire tend to drive avian biodiversity.

Habitat fragmentation can have a bad reputation. But in western forests fragmentation created by natural disturbance such as fire is the key to providing foraging and nesting locations for many species.

Much of Point Blue's work in the Sierra Nevada is focused on enhancing habitat mosaics – places where islands of rare habitat intersect with the coniferforest "sea." These special habitats, especially meadows and burned forest – and the areas where they intersect with mature conifer forest – support a disproportionate amount of the biological diversity in the Sierra. We work cooperatively to restore meadows, to better manage habitats following a fire, and to align our forests to the future fire regime – in order that the many species adapted to habitat medleys can continue to thrive, at the edges. —*Ryan Burnett, Director, Sierra Nevada Group* Protecting and restoring meadows is a popular way to promote and maintain a habitat mosaic. In contrast, letting fires burn (and thinning forests to create more openings for shrubs, oaks, and wildflowers to regenerate) can make a lot of people squirm.

Yet if Western Wood-Pewees are brave enough to migrate annually from South America, aggressively defend their nests, and colonize habitats that many see as burned-over wastelands, then we can be bold enough to try new restoration techniques – including letting some fires burn – to benefit the many species reliant on habitat edges in the Sierra.

Alissa Fogg is the Central Sierra Program Leader in our Sierra Nevada Group and also a Partner Biologist in Emerging Programs and Partnerships.

Left: Alissa surveys the habitat mosaic and lush ground cover less than a year after the 2013 Rim Fire near Yosemite. Photo by Ken Etzel. Above: Western Wood-Pewee. Photo by Tom Grey. Below: Alissa bands a pewee in meadow habitat. Photo by Jim Tietz, Point Blue.



9

Wrentit Wisdom Inhabiting a landscape of change

I crouched uncomfortably, with my legs bent and my back tilted awkardly as I strained to stay still. Peering through binoculars, I finally spotted the nest full of baby Wrentits. Their mother, though cautious, had led me to them, and my heart raced with excitement. Over the last month, this female Wrentit had proved elusive, a shadow in the coastal scrub at the edge of my vision, then – poof – gone.

I was a summer intern at Point Blue's Palomarin Field Station, within the Point Reyes National Seashore, a protected landscape of beaches, coastal scrub, and dusky forests of Douglas fir. In the course of my internship, I became obsessed with Wrentits, and this continues to fuel the conservation work I do today.

Why the obsession? Wrentits are about the size of a small plum, dull brown in color, with seemingly no outstanding features. To most they may seem quite plain, almost boring. Unlike most people, I had the opportunity to spend hours upon hours in their territories, getting to know them as a species and as individuals. I soon noticed their feisty character: their pose with an upright, defiant tail; and their piercing black pupil within a straw-colored iris, an eye that seems inquisitive, sharply alert, and also indignant that you would dare block this bird's intended path.

As they flit and hop through the brush, Wrentit pairs often let out a soft "churr." When they notice you, they will crank up their churring to a racket, to challenge your very presence. I was immediately drawn to this fearless demeanor.

As an intern I had to keep track of local birds' nest successes (young that leave the nest) and failures (young that die before they can leave). I learned that most Wrentit nests fail. Despite its plucky personality, this species is no

Insights that Point Blue gains from closely studying birds at the Palomarin Field Station are invaluable for understanding the ecology of species and how our actions affect ecosystems. Unfortunately, we cannot study all locations and habitats as intensively as we do at our long-term field sites. Geographic Information Systems (GIS) enable us to take what we have learned where we conduct our monitoring and fill in the gaps between our observations. At Point Blue, we are using our field expertise in combination with cutting-edge GIS technologies to ensure that highpriority conservation areas are protected, enhanced, and restored – so that species will have the best chance to adapt to climate change and human modifications to our shared environment.—*Sam Veloz, PhD, Director, Climate Adaptation Group* match for snakes, chipmunks, and scrubjays, all nest predators that will eat eggs or young right out of any nest they find.

Personal habitat

My own "nest" growing up was within a very different landscape, a vast tangle of paved roads with forests of concrete buildings and towering street lamps. Wilderness was always "out there" beyond my reach and disconnected from city dwellers. In inner-city Los Angeles, gangs were my threats, and to deal with them I had to develop (or feign) my own fearless personality.

During my first summer as a Point Blue intern, as I tromped through sage and poison oak near the Palomarin Field Station, Wrentits showed me that we were linked by more than just personalities. Documenting their struggles to raise successful nests, I became very aware of their threats from nest predators. Taking a step back, I realized that although the Seashore was protected, millions of people lived within an hour's drive, in a very urban world much like my own childhood stomping grounds. Urbanization poses threats of its own to wildlife. Though worlds apart in some ways, Wrentits and humans share an interconnected and limited landscape.

Today, with climate shifting at a fast pace, both humans and wildlife must find



by Dennis Jongsomjit

ways to shift or adapt in response. The ways that humans adapt will have big consequences for wildlife. The Wrentit in particular will feel these effects: it is a sedentary bird, seemingly averse to taking flight. Because of this characteristic, Wrentits need well-connected landscapes where they can move in response to the changing environment.

Left: Wrentit. Photo by Tom Grey.

Right: Dennis Jongsomjit contemplates an undisturbed landscape. **Photo by** Rosie Sigloch.



How can GIS help us understand the changes affecting people and wildlife? In one example, we asked where various bird species can live, in relationship to one another, as the climate warms. Here the Wrentit's range is shown in red, the Rufous-crowned Sparrow's in blue. Their distribution and the amount of range overlap (shades of purple) are likely to be very different in the future. This graphic appeared in a paper called "Niches, models, and climate change: Assessing the assumptions and uncertainties," by lead author John A. Wiens, PhD, with Dennis Jongsomjit one of four co-authors (Proceedings of the National Academy of Sciences, 2009).

Mapping changes

The puzzle of how we will all share landscapes, as climate and land use force many things to shift, spurred my current interests in Geographic Information Systems. This is a set of tools used to map and analyze changes across the landscape, allowing us to make more effective conservation choices.

At the Point Reyes National Seashore, a human desire for open spaces, together with a valuable opportunity, led to land and habitat protection in the 1960s. Today, more than ever before, we must learn to adjust and shift in ways that will help, not hinder, wildlife species as they also are forced to shift. This will take more than human desire and luck. It will require us all to understand that wildlife is not "out there" but in fact is a very integrated part of our world.

> Dennis Jongsomjit is a GIS Specialist in our Climate Adaptation Group.





PARTNERSHIP

California Landscape Conservation Cooperative – Deb Schlafmann



A key partner in our climate-smart conservation efforts is the California Landscape Conservation Cooperative, or LCC. It is one of 22 LCCs established by the U.S. Department of Interior in 2010, bringing scientists together with natural resource managers to address climate change and other human impacts on nature.

California's LCC is a national model of success, largely due to the leadership of Coordinator Deb Schlafmann. Says Point Blue CEO Ellie Cohen, "Deb has a special ability to bring diverse players to the table to make measurable progress on climate-smart conservation."

Point Blue first partnered with Deb in 1999, in the newly formed Riparian Habitat Joint Venture (RHJV). This voluntary, multi-stakeholder effort produced the first of nine habitat conservation plans in California to guide policy and actions on the behalf of songbirds.

Point Blue biologist Geoff Geupel helped form the RHJV and says, "Deb's positive energy, enthusiasm, and willingness to collaborate were instrumental in building a diverse and collaborative conservation partnership of federal, state, and non-government agencies. Geoff adds, "Later, as head of USFWS's innovative Partners for Wildlife Program, Deb helped us build partnerships with private ranchers and landowners – the foundation for our current Rangeland Watershed Initiative."

Point Blue helped get the California LCC off the ground in 2010 and now helps lead it. Ellie Cohen chairs the statewide Steering Committee, and Grant Ballard, PhD, serves on the Science–Management Team.

Deb values our partnerhip, saying: "Point Blue's expertise in climate science and bird use of California habitats has been a real asset to our LCC. Their ability to help others strategize the best approaches to reducing climate impacts meets a challenge our leaders are struggling with. Very few other organizations or agencies are adequately addressing this.

"There are four qualities Point Blue has mastered that I believe are essential:

• They provide products that resource managers will actually use, because they spend time listening to users and understanding their needs.

- They are agile and stay relevant with current science and also constant changes in agencies' priorities.
- They keep an eye on the future and are leaders in keeping the natural resource community focused on the long-term.
- Equally important, Point Blue staff are fun to be around! What else could you ask for in a great partner?"

She adds, "I currently have a unique opportunity to work with inspirational and courageous people. And that's good, because it's going to take the best of our human capacity to shift away from our long-time tendencies. Imagining life 50 to 100 years from now – and acting on that vision – takes creativity, trust, and teamwork.

"Working with individuals like the staff at Point Blue, who recognize the challenge ahead of us and step up to take it on, is motivating!"

The California LCC is held in very high regard across the U.S., and we at Point Blue have very high regard for Deb Schlafmann!

STUDY SITES

Coastal Monitoring at Vandenberg Air Force Base

by Dan Robinette

Picture a huge military preserve, where some of the least altered coastal habitat in California stretches for about 40 miles. Brandt's and Pelagic cormorants nest along steep coastal bluffs that offer protection from predators. Pigeon Guillemots dart in and out of crevices in the rubbly coastal rocks, bringing bite-sized fish to their growing young.

And 14 miles of magnificent coastal dunes provide a glimpse of a Califor-



nia coastline that existed before settlement and development.

This is Vandenberg Air Force Base, in southern California – the locus of longterm, broad-scope work by Point Blue.



Here, our investigation of the diet of the endangered California Least Tern is changing the way this species will be managed in the future. Our study of the threatened Western Snowy Plover is showing managers that this land-based breeding species also belongs to the nearshore marine food web!

These are elements of a new program within Point Blue's California Current Group. Our Coastal Marine Program grew from lessons learned at Vandenberg and now reaches from the Mexican border to northern California.

Coastal marine species worldwide now face unprecedented threats, from coastal

Dunes, lagoon, and coastal bluff habitats at Vandenberg. **Photo by** Jamie Miller, Point Blue.

> Inset: A pair of Least Terns Photo by A.Morris, VIREO

urbanization to the impacts of climate change. Our 17-year partnership with the Department of Defense at Vandenberg is assessing a host of management decisions, including restoration of dune habitats that will be increasingly vital in the context of sea-level rise, especially since the dunes at Vandenberg are among the only ones in California that are not constrained by highways and other infrastructure.

As any scientist will tell you, meaningful experiments require "controls" – experiments conducted in the absence of the effect you are trying to investigate. The nearly pristine habitats at Vandenberg provide one of the best possible natural controls for studying human impacts to coastal habitats throughout California.

> Dan Robinette is a Senior Scientist and the Coastal Program Leader in our California Current Group.



SEA CHANGES: EL NIÑO SIGNALS

Common dolphins that prefer warm waters schooled offshore of northern California. Ocean-going red crabs that often signal El Niño conditions appeared in our plankton trawls. Krill, abundant when cold water wells up, became scarce and so did whales.

These were among the findings in our September research cruise with NOAA National Marine Sanctuaries. The ocean in north-central California is already experiencing this year's record warm-water event known as El Niño Southern Oscillation.

Our pioneering at-sea research in the California Current has built an unprecedented database to detect patterns and support protection for vital marine resources. Learn more at www.pointblue.org/ACCESS.

CALIFORNIA'S CLIMATE SUMMIT

Common Dolphins. NOAA photo.

California's 2015 Climate Summit took place in early November in Sacramento. This state-of-the-art annual conference drives climate-smart conservation forward by bringing together managers and scientists.

Point Blue is part of a host group, the California LCC (see page 12). We presented on resource managers adapting in a world of change, on choosing climate models for resource management decisions, and on citizen science. We also co-hosted an interactive session demonstrating online tools.

Details can be found at http:// californialcc.org/events/2015southwest-climate-summit

WETLANDS AND SEA LEVEL IN SF BAY

The Baylands and Climate Change: What We Can Do is a landmark report by many partners, including Point Blue, convened by The California State Coastal Conservancy.

It calls for employing natural processes, such as protecting and enhancing wetlands, to better equip San Francisco Bay for rising seas. For wetlands to keep pace with sea level, sediment is essential!

This and other findings are summarized at http://baylandsgoals.org/ science-update-2015.

SATELLITES, WATER & SHOREBIRDS

Point Blue ecologist Matt Reiter, PhD, is part of a scientific effort to help meet the habitat needs of major shorebird populations in California's Central Valley. Water on the ground is the crucial factor.

Matt developed computer models using Landsat satellite data to understand where and when water is present. He says, "We can show patterns of changing habitat availability through the year."



Our work is part of the Bird Returns program, led by The Nature Conservancy (TNC) in partnership with Point Blue, Cornell Lab of Ornithology, and Audubon California. Using the satellite data, TNC and California rice farmers provide "pop-up habitat" for shorebirds in flooded fields.

This project is featured in a NASA video¹ and in Audubon Magazine² online. ¹ www.nasa.gov/feature/goddard/satellite-data-helps-migrating-birds-survive ² www.audubon.org/news/3-ways-teamwork-helps-birds-survive-californiasdrought

RESTORATION SEASON

Point Blue's STRAW Project (Students & Teachers Restoring A Watershed) has kicked off an ambitious new season. From November 2015 through March 2016, we will work with more than 2,000 students from 46 schools, in the classroom as well as outdoors. Students will plant hundreds of native trees and shrubs along stream courses and tidal marsh upland boundaries. Our STRAW team, including four new interns for the coming year, will guide some 48 restoration days at 18 sites!

RECOGNITION

Point Blue Conservation Director Catherine Hickey received the California Rice Commission's Circle of Life Award in June 2015. It recognizes her leadership in helping find innovative ways to manage rice for waterbirds and other benefits, while enabling rice growers to participate in wildlife-friendly practice.

The Wildlife Society presented Point Blue with the prestigious Group Achievement Award, for outstanding work on behalf of wildlife over the past three years. Geoff Geupel accepted the award at the group's 2015 meeting in Winnipeg.

POINT BLUE CALENDAR

: SCIENCE EVENTS

CALIFORNIA RCD'S	One of several Point Blue talks for the Resource
ASSOCIATION	Conservation Districts is
NOV 18–20	"Rewatering California, one
YOSEMITE	ranch at a time."

CATTLEMEN'S		
& WOMEN'S		
CONVENTION		
NOV 19–21		
SPARKS, NV		

Point Blue Partner Biologists engage with participants about our Rangeland Monitoring Network.

MARINE MAMMALOGY CONFERENCE DEC 13–18 SAN FRANCISCO

Our five major talks focus on wildlife populations, public-private partnerships, citizen science for resource protection, and more.

MEMBER EVENTS

Point Blue offers visits to our field sites where members can learn about our cutting-edge studies. Explore **www.pointblue.org/walks** or contact Lishka Arata at 707-781-2555 x 354 or larata@pointblue.org.

WINTER	Learn about great Central
WATERBIRDS	Valley bird populations
DEC 6, 2015	and Point Blue's work to
SF BAY DELTA	conserve their habitats.
BIRD-A-THON	Save the date for dinner
PARTY	and a celebration at Point
JAN 23 , 2016	Blue's headquarters in
POINT BLUE	Petaluma, California.
WETLAND	Experience riparian and
BIRDS	wetland bird abundance on
FEB 6, 2016	Bolinas Lagoon while learn-
BOLINAS, CA	ing of Point Blue's research.



MEET THE TEAM

Each Point Blue Quarterly spotlights a member of our team.

Michael Fitzgibbon Chief Technology Officer

Explaining how Point Blue makes powerful information available for evaluating and understanding change.

What is Informatics? Please tell us about your work here.

We transform field observations of our own and of partners all across the country into information that drives better decisions about managing habitat.

I lead a team at Point Blue that works at every level, from supporting individual staff computers, to creating websites, to managing our very large databases.

We use powerful information tools, called Informatics, to manage scientific observations of birds and the natural world in order to ask questions – about change.

We can ask whether land management practices have been successful, for example. And we can ask what to expect in the future, given climate change and other ecosystem stresses.

How do you detail the importance of this?

Ecology and conservation science today are as much data sciences as they are field science. Understanding the complexity of ecosystems and how wildlife responds to change requires vast amounts of information, processed using computers. Think about what's involved in modeling weather patterns. Instruments all over our planet provide continuous data to huge teams of meteorologists, who process the information into weather reports and forecasts.

Then, farmers deciding when to harvest, planners choosing the best building designs for certain locations, and other people managing ecosystems and landscapes can use information to make adaptive decisions.

Point Blue gathers much smaller amounts of data, but we carry out many of the same kinds of activities: compiling, organizing, curating, querying, modeling, and communicating. The questions we ask are about biological responses to human-caused effects – both harmful, such as carbon emissions, and helpful, such as habitat restoration.

What was your professional pathway into this role?

I started at Point Blue (then PRBO) in 2007 as a volunteer, to help develop a strategic plan for the new Informatics division. Soon afterward, I joined the staff. After 20-plus years in tech, where I led teams designing and developing software products, I decided to pursue my passion for conserving our natural world. In grad school at U.C. Berkeley I had studied environmental planning and landscape architecture.

Point Blue was a place where I could combine all of my career interests together.

Is there another source of your passion for conservation?

Definitely! I love the outdoors – from the enormity of the high Sierra (where I go backpacking with my wife), to searching for an oystercatcher on the shore of Bodega Head, to weeding our garden.

Tell us about some ways that our work at Point Blue gives you hope.

Creative team thinking here has led to innovative tools like Our Coast, Our Future,¹ providing sea-level rise estimates to land managers and planners. Our suite of Data Science applications empowers our own scientists and many partners.

By getting information into the hands of as many people who need it as possible, we aim to support decisions for resilient and sustainable ecosystems for wildlife and people alike.

¹Explore "Our Coast Our Future" at http://data.prbo.org/apps/ocof.





International Heartbeats

Long-distance migratory birds are citizens of continents or hemispheres, not countries or states. They know nothing of political boundaries or politics, human industry or culture.

Most of what they do know is hard-wired within their deoxyribonucleic acid. Their instincts tell them when to onload fuel,



when to journey, where to replenish, how far to go, where to shelter, on what to feed, and how to keep from being killed. They are perfect travelers – never carrying the baggage of self-pity or pride.

Just as our migratory nesting birds go to or toward the tropics in autumn, some species of high-latitude breeders

> come to or toward temperate realms. By the end of September, most Wilson's Warblers, Olive-sided Flycatchers, and Swainson's Thrushes (to name a few) are gone.

> But Townsend's Warblers, Ruby- and Golden-crowned Kinglets, Varied Thrushes, and Golden-crowned Sparrows are among the species arriving to winter here. Some are still on the move in early December.

Because a large chunk of Earth's avifauna is migratory, and because birds need natural habitat at both ends of their travels (and in between), international understanding by humans all up and down the map is necessary in order for us to intervene on the birds' behalf.

Understanding comes from education and observation. Education is the transfer of knowledge, which comes from research in the field. Partnering with scientists and their governments throughout the Americas is how to ensure the security of migratory bird populations.

Where natural habitats have been altered, they can be rebuilt or replaced. Restoration is possible if humans allow or encourage it. This is a matter of education – and also a responsibility. We are the ones who broke it; we must fix it.

Birds are beautiful, exuberant, and wonderful free spirits that bring wildness, color, and music with them wherever they travel. We humans should not only provide for their survival but should welcome them to our properties and honor them within our hearts.

Rich Stallcup (1944–2012) was a PRBO cofounder and our naturalist extraordinaire. His knowledge continues to deepen our appreciation of all things wild. Read this complete essay and the entire Focus archive online at **www.pointblue.org/focus**.

Above: Golden-crowned Sparrow is one of the songbird species whose migration route Point Blue has detected using lightweight data recording tags. **Photo by** Chris McCreedy, Point Blue.

Left: Restoration is possible! Participants in Students & Teachers Restoring A Watershed (STRAW) plant one of the 500 restorations completed to date. **Point Blue photo.**

Point Blue is deeply grateful to Point Reyes National Seashore, the Farallon National Wildlife Refuge, and Cordell Bank and Greater Farallones National Marine Sanctuaries for providing facilities and field stations where we work.

Thank You For Your Support

Your gifts make it possible for Point Blue Conservation Science to reduce the negative impacts of changes in land use, climate, and the ocean on birds and ecosystems.

MAJOR DONORS AND FOUNDATIONS We are very grateful to the following supporters for gifts of \$250 and more (April 1 to September 30, 2015):

Anonymous 11th Hour Project Cheryl Abel Anonymous (5) Harold C. Appleton Arising Fund Autodesk Bank of Marin Carroll and Susanne Barrymore **Richard Bates** Lorraine Bazan Katie Beacock S. D. Bechtel, Jr. Foundation Thomas C. Benet Bently Foundation Biomarin Blackie Foundation Jerome and Judy Blackman Aubrey Blue Avis Boutell Robert K. Brandriff Ruth H. Brandt Phyllis Browning Joelle Buffa Mark S. Butler California Native Plant Society - Marin Chapter

Sue Carlisle Allen Carlson Anne Chadwick Charitable Fund Christiano Family Fund Everett Clark Carole Clum Susana Conde Paul Cooley Robert Coon Cordell Bank National Marine Sanctuary Joyce Cox Richard A. Cuneo Carol Dettling Thelma Doelger Trust for Animals John Donnelly Judith J. Dugan Robert J. Erickson Expeditionary Learning Fullerton Family Foundation Richard and Luisianna Gale Ana Galutera Geoffrey Geupel Geoffrey Gordon-Creed The Griffith Family Foundation Sherman Gromme

Dolores M. Hansen Shirley Hicklin Fund at Marin Community Foundation Gail Hillebrand Jane Hoe Julie Howar Donald K. Howard Diane Ichiyasu Ellen Jacobs Thomas and Elizabeth M. Jones, III Robert Judd David Junkin James Kelso Kimball Foundation Harvey King Peter Knapp Margaret Kolar Ellen F. Krebs Karen Kustel Peter La Tourrette Andy Lacasse John W. Ladd Jude Laspa Susanne Lawrenz-Miller David A. Loeb Ewan Macdonald and Kirsten Walker Macdonald

The Raymond L. Manley and Annmarie E. Manley 1990 Trust Helene Marsh Mylon Marshall Bob Mauceli Helen and Thomas Merigan Charitable Trust Susanne Methvin Michael Nelligan New Belgium Brewing Company Nikon Precision Inc. Benjamin Olewine Benjamin and Ruthmary Parmeter Sarah J. Powell Patricia Preston John Rathkey RHE Charitable Foundation Micah Rimer The Estate of Jacqueline L. Robertson John Rotenberry Judith Rothman The San Francisco Foundation Ed Sarti Kenneth and Marjorie Sauer

Anne J. Schneider Fund Jovce Schnobrich Schwab Charitable Fund Cyndy Shafer The Shark Trust Martin Shore Alec Shuldiner Gary B. Stacey Lynne E. Stanley The Biz and Livia Stone Foundation Marilyn M. Strand Joe Straton Marcia S. Syufy Stephen A. Thal Samuel Thoron Garv W. Tietz TomKat Charitable Trust Topaz Solar Farm LLC The Volgenau Foundation Connie Weatherup Jan H. West Katherine D. Wheeler Mason Willrich John Wilson Matthew Zlatunich

GIFTS HONORING We are grateful for the following memorial and honoring gifts (April 1 to September 30, 2015):

IN HONOR OF

- Ryan Burnett: Valarie and Riley Neel Megan Elrod and Mark
- Dettling: Carol and Robert Dettling; Carol and Charles Elrod Carleton Eyster: Russ and Suzi
- Bennett; Avis Boutell and Alice Miller Carol Heiman-Greene: Laura
- Heiman

Bill Junor: Susan Wider Debby L. Cohen Molloy: Ellie Cohen and Miki Goralsky C. John Ralph: Norbert and Catharine Ralph Jonathan Shore: William Shore Martin and Karen Shore Kathryn W. Vick: Ms. Susan Lee Vick IN MEMORY OF Michael Allen: Emily Allen; Angela Moskow Helene Belz: Virginia and Pierre Chomat Darren Bohan: Rosemary Spyhalsky Helen Burns: Mrs. Shirley Sekioka Richard Dwyer: Jennifer Ann Vallee Ryan Hoe: Jane Hoe Jack Jones: Collin Cochrane

Mary Eriffin-Jones: Ewan Macdonald and Kirsten Walker Macdonald Duane A. Lea: Ms. Anna Marie Bovill Lea Jeffrey R. Maurer: Christopher M. Tonra Tony Sklarew: Ellie Cohen and Miki Goralsky Matthew D. Solem: Joy and David Solem Rich Stallcup: Pierre Beaurang; Ms. Phyllis Browning; Sandra and Robert Chilvers; Mary Anne Cowperthwaite; Gary and Pamela Donkin; Scott and Claudia Hein; Alan Hopkins; Marcia Johnson; Carolyn H. Pendery; Mark J. Rauzon; Cyndy Shafer and Michael Nelson; Kay G. Sibary; Toby Symington Nancy Swadesh: Mr. Robert J. Erickson

IN-KIND GIFTS We greatly appreciate recent in-kind donations from:

Inger M. Laursen Bovine Bakery Ellie M. Cohen and Miki Goralsky Lagunitas Brewing Company FARALLON PATROL Our Farallon Islands Program relies upon the skills and generosity of volunteer skippers in the Farallon Patrol. They provide essential transportation year-round between the mainland and our research station at the Farallon National Wildlife Refuge. We acknowledge all Patrol skippers in our Annual Report, and we thank those who made runs during each calendar year in the winter issue of the Point Blue Quarterly.

Left: A brood of Snowy Plover chicks, perfectly camouflaged. At our study site on the southern California coast we are learning that this land-based species also belongs to the nearshore marine food web (see page 13). **Point Blue photo.**



Point Blue Board and Staff



A Long-billed Dowitcher in winter plumage. **Photo by** Tom Grey/tgreybirds.com.

BOARD OF DIRECTORS

Ed Sarti, Chair Ellie M. Cohen, President and CEO Megan G. Colwell, Vice Chair Ivan Samuels, Secretary Carolyn Johnson, Immediate Past Chair Ana Galutera, Chair, **Finance Committee** David Ackerly, PhD Martha Ehmann Conte Edith Eddy Rob Faucett Simon Francis Stuart Jacobson Jeffrey Kimball Peter Norvig, PhD Mary Power, PhD James F. Quinn, PhD Robert S. Shwarts

HONORARY BOARD MEMBERS

Ted Eliot William S. Foss Jack Ladd, Chair, Audit Committee Ann Stone Stephen Thal

SCIENCE ADVISORY COMMITTEE

David Ackerly, PhD, Chair Ellen M. Hines, PhD Adina Merenlender, PhD Peter Moyle, PhD Peter Norvig, PhD Mary Power, PhD James F. Quinn, PhD Hugh Safford, PhD Rebecca Shaw, PhD

PRESIDENT AND CEO Ellie M. Cohen

CHIEF FINANCIAL OFFICER Padmini Srinivasan

CHIEF SCIENCE

OFFICER Grant Ballard, PhD

CHIEF ADVANCEMENT OFFICER

Susan Lee Vick
CHIEF TECHNOLOGY
OFFICER

Michael Fitzgibbon

CALIFORNIA CURRENT Jaime Jahncke, PhD, Director Ryan Berger Russell Bradley Meredith Elliott Julie Howar Jamie Miller Cotton Rockwood Dan Robinette Jim Tietz Peter Warzybok

CLIMATE ADAPTATION Sam Veloz, PhD,

Director Nathan Elliott Megan Elrod Dennis Jongsomjit Nadav Nur, PhD Leo Salas, PhD Julian Wood

EMERGING PROGRAMS AND PARTNERSHIPS

Geoffrey R. Geupel, Director

Breanna Owens

Navit Reid

Aaron Rives

Tiffany Russell

Briana Schnelle

Kelly Weintraub

Suzie Winquist

INFORMATION

TECHNOLOGY

Deanne DiPietro

Officer

Noah Eiger

Fayvor Love

Martin Magaña

Rene Mejorado

Douglas Moody

PACIFIC COAST AND

Tom Gardali, Director

CENTRAL VALLEY

Blake Barbaree

Renée Cormier

Kristy Dybala, PhD

Mark Dettling

Jennifer Erbes

Carleton Evster

Dave Dixon

Zhahai Stewart

INFORMATICS AND

Michael Fitzgibbon,

Chief Technology

Corey Shake

Director Ryan DiGaudio Bonnie Eyestone

 Bonnie Eyestone
 Elizabeth Porzig, PhD

 Wendell Gilgert
 Mel Preston

 Maria Harding
 Matt Reiter, PhD

 Kolten Hawkins
 Nat Seavy, PhD

 Alicia Herrera
 Kristin Sesser

 Kate Howard
 W. David Shuford

 Benjamin Martin
 Lynne E. Stenzel

 Chris McCreedy
 Kristin Sesser

SIERRA NEVADA

Doug George

Carlene Henneman

Catherine Hickey

Kristina Neuman

Diana Humple

Gary W. Page

Ryan Burnett, Director Brent Campos Alissa Fogg L. Jay Roberts, PhD

OUTREACH AND EDUCATION

Melissa Pitkin, Director Emily Allen Lishka Arata Jennifer Benson Leia Giambastiani Gina Graziano Andrew Mealor John Parodi Claire Peaslee Kenneth Rangel Laurette Rogers Isaiah Thalmayer Vanessa Wyant

ADVANCEMENT

Susan Lee Vick, Chief Advancement Officer Nancy Gamble, Director of Philanthropy Stacey Atchley-Manzer Kiley Lucan Eve Williams

FINANCE AND

ADMINISTRATION Padmini Srinivasan, Chief Financial Officer David Adams Lee Callero Karen Carlson Marilyn Kihara Heather Kurland Laurel Schuyler

SEASONAL STAFF (April 1 to September

30, 2015)

Billy Abbott Jade Ajani Richard Aracil Elizabeth Bartholomew Jacy Bernath-Plaisted Xeronimo Castaneda Emma Cox Jenna Dodge Martin Frye Taylor Gorman Wyatt Hersey Eric Irvin Joey Leibrecht Brent Leverle Dan Lipp Jeff Moker Lauren Morgan-Outhisack Kristie Nelson Alyssa Olenberg-. Meltzer Annie Schmidt Cari Lynn Squibb Josh Stagner Trevor Watts Wendy Willis

GRADUATE STUDENTS

Anne Cassell Richard Chasey Helen Chaura Kate Davis Kathleen Grady Sarah Hameed Ryan Hartnett Mike Johns Rachael Olliff Bret Robinson Corinne Ross Zack Steel Anna Studwell Mike Thayne Mike Valainis

Jonathan Vargas INTERNS

(April 1 to September 30, 2015) José Basaldua Zoe Burr Emma Chiaroni Hannah Conley Rosa Cox Grace Crain Laurel Ann Curry Bryan Day Parker Forman Sean Gee Jessica Greer Jason Gregg Eva Gruber Julia Gulka Esther Haile Kaya Halpern

Oliver James Edward Jenkins Daniel Johnston Elizabeth Kain Anna Kennedy Dan Maxwell Kyle Marsh Natalie Okun Emma Purvis RJ Roush Adam Searcy David Sherer Robert Snowden Rhianna Stavish Candace Stenzel Tyler Winter

9

RESEARCH ASSOCIATES

David G. Ainley, PhD Sarah Allen, PhD Frances Bidstrup Jules G. Evens Mark Herzog, PhD Ellen Hines, PhD Aaron Holmes, PhD Steve N. G. Howell David Hyrenbach, PhD John P. Kelly, PhD Borja Mila, PhD Mark Rauzon Annie Schmidt, PhD Stacy Small, PhD Jane C. Warriner Sophie Webb John Wiens, PhD David W. Winkler, PhD Steve Zack, PhD

Good News Reported by The Nature Conservancy

California Governor Jerry Brown recently signed into law three bills emphasizing the use of nature-based solutions to enhance the state's resilience and protect its communities and ecosystems from the growing threats posed by climate change. And President Obama released new policy guidance directing federal agencies to incorporate the value of natural or "green" infrastructure and ecosystem services into planning and decision making.

Point Reyes Bird Observatory Fund

To honor our history and sustain our bird conservation foundation, we established the Point Reyes Bird Observatory Fund.

Donations to the Fund support our long-term bird ecology studies at our Palomarin Field Station (in Point Reyes National Seashore) and the Farallon Islands (at the Farallon National Wildlife Refuge).

Please visit **www.pointblue.org/prbofund** to learn more.



Point Blue Conservation Science 3820 Cypress Drive Suite 11 Petaluma, CA 94954 t. 707.781.2555 f. 707.765.1685 e. pointblue@pointblue.org **pointblue.org** Non-Profit U.S. Postage PAID DMS

Advancing nature-based solutions to climate change, habitat loss and other environmental threats through bird and ecosystem science, partnerships and outreach.



If you, like visionary conservationist and writer Aldo Leopold, can't imagine a world without wild things, please consider making a gift to Point Blue Conservation Science in your will. With a small amount of planning now, you can make a powerful, positive impact for the future of birds, other wildlife, and human communities.

Join our flock! Become a Tern Society member by adding Point Blue to your will or trust and join us for Bird and Conservation Walks, the annual Tern Society Lunch, and other special events.

Have you already included Point Blue, PRBO, or Point Reyes Bird Observatory in your will? Please let us know so we can thank you for your thoughtful commitment and welcome you to the Tern Society!

Questions? Please contact: Stacey Atchley-Manzer, Associate Director of Philanthropy — 707.781.2547 or legacy@pointblue.org.