Spring 2016

Point Blue Quarterly

Conservation science for a healthy planet.

Food For Thought

Agriculture—for wildlife and people

Left: Ellie M. Cohen. **Photo by:** Miki Goralsky.

Ellie M. Cohen,
PRESIDENT AND CEO OF POINT BLUE CONSERVATION SCIENCE

The Conservation Food Web

With temperatures in the upper 30s and howling winds, I was chilled to the bone as the sun rose over the high desert of northeastern California. But it was well worth it! In the distance were roughly 50 Greater Sage-Grouse. Males were strutting about with their chests puffed out and tail feathers spread wide, in courtship displays for the few females in the lek. I could barely hear their mating calls that sound like air bubbles slowing rising out of water. How very special to experience this rare spectacle in the sagebrush steppe.

The early morning birding was part of an inspiring tour of the Susanville region. Thanks to our rangelands partnership with the Natural Resource Conservation Service, we met with ranchers, land trust staff and others, learning about their ecological and economic opportunities and challenges. Point Blue scientists work with agricultural producers to help address these issues, leveraging federal Farm Bill dollars to enhance conservation on their lands.

On the state level, California's budget proposes over $100 million for climate-smart agriculture, including the new Healthy Soils Initiative[1] and the pioneering Sustainable Agricultural Lands Conservation Program. These efforts help protect agricultural lands and reduce sprawl to cut greenhouse gas emissions, increase soil carbon sequestration, and secure water supplies.

In early March, I was an invited panelist in Sacramento at a symposium to catalyze legislative and regulatory support for natural solutions to climate change.[2] Just as I was to speak, Governor Brown made a surprise visit. He conveyed the urgent need for "natural infrastructure," such as tidal marshes to buffer shorelines from rising sea levels. He was passionate about the value of managing agricultural lands—including his family's ranch—to help solve the climate crisis while also feeding a growing human population and supporting California's economy.

I was proud to then highlight Point Blue's work at the forefront of climate-smart conservation science. With your generous support, we will continue collaborating with public and private land stewards, especially those who produce the food we eat, to find multi-benefit solutions for birds like the magnificent Greater Sage-Grouse, other wildlife, and our communities!

[1] See **cdfa.ca.gov/oefi/healthysoils/**

[2] For the agenda: **its.ucdavis.edu/wp-content/uploads/Agenda-3_9.pdf**. For a PDF of my presentation: **pointblue.org/about-pointblue/our-team/president-ceo** ("Featured Work and Resources")

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Above: Snow Geese rest in a flooded agricultural field. **Photo courtesy:** © Robert Woodward.

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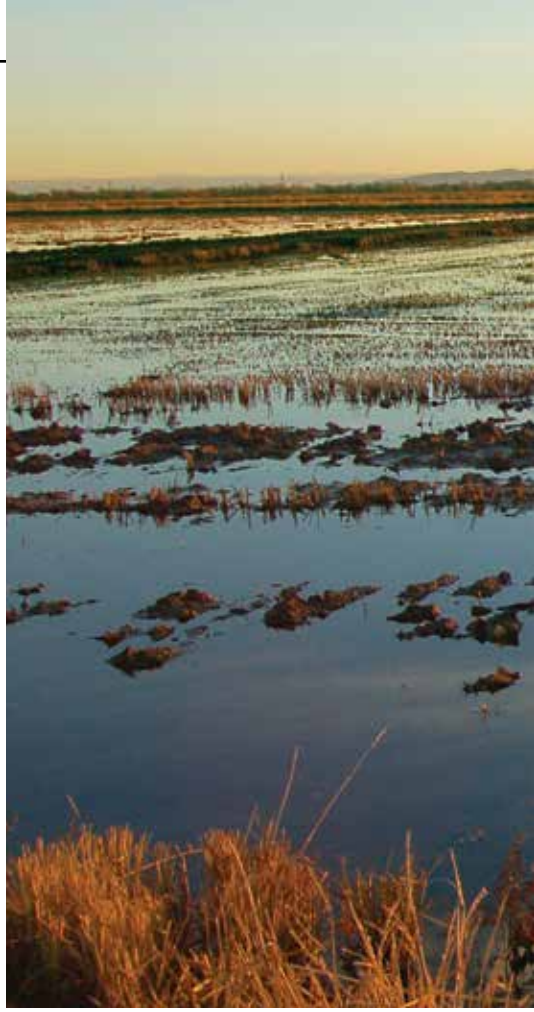
Left: Unseen but essential are the anchovies that support this feast! **Photo:** Santa Cruz Whalewatching.

Center: Wendell Gilgert carries a spade when exploring soil connections. **Photo:** Point Blue.

Right: Grass-fed cattle ranching and soil restoration are joined in a working-land experiment. **Photo:** William Milliott, TomKat Ranch.



Does a helping of rice in your bowl make you think about wetlands, well-being, and waterbird populations? Connections among these many benefits do exist—and are vital for all concerned.

Making the most of water in California's Central Valley

Water in California: these words have enormous significance in public policy, for people and for wildlife, especially as climate change impacts the ecosystems that sustain us.

With California's growing population and vulnerability to extreme events such as drought, water is more precious than ever. It's essential that we manage landscapes in ways that yield as many benefits as possible from the water we use.

This multiple-benefit approach, a hallmark of climate-smart conservation, is the lens through which Point Blue views ecological stewardship.

One region where we employ this approach is California's Central Valley, where just 200 years ago a vast complex of permanent and seasonal wetlands occupied four million acres. Lush habitats supported countless migratory birds, fish, and other wildlife.

Today the Central Valley is dominated by large-scale agriculture, and only 5% of historic wetlands remain. But flooded agricultural fields—intentionally flooded during the pre-irrigation, growing, or post-harvest season—abound. Globally important supplies of rice and corn (for grain) grow here, as well as alfalfa and irrigated pastures.

Reducing air pollution was a major reason for adopting flooding as an agricultural practice in the region 25 years ago. Previously the main method for decomposing straw after the harvest was burning the stubble, which had severe detrimental effects on air quality.

Now, flooded croplands have become a vital alternative to natural wetlands for the survival of wildlife populations.

Vast numbers of waterfowl, shorebirds, and other birds rely on the Central Valley during migration, for stop-over and wintering sites, and for breeding. The Central Valley Joint Venture[1] recently estimated that populations of wetland-dependent birds visiting the valley during the non-breeding season need some 170,000 acres of flooded rice and corn in order to survive and thrive. This is in addition to the flooded habitat in refuges and private wetlands—essential to conserve.

How can we ensure that the water used to flood agricultural fields generates the greatest results possible—especially as we face a future in which water is increasingly scarce?

A multi-benefit approach

Point Blue is committed to advancing the science to understand both the multiple benefits and potential trade-offs of flooded agriculture. We summarized the issue for our partners and for policy-makers, and here are some of the key points. On the plus side, Point Blue's research along with other scientific studies dem-

[1] Point Blue is a leader in this bird and wetland conservation partnership. centralvalleyjointventure.org

onstrate how flooded fields, especially on rice farms, provide important habitat for wetland-dependent birds throughout the year.

In addition, human communities gain economically from recreational activities centered on the Snow Geese, Sandhill Cranes, and other migratory birds that flock to managed wetlands and flooded fields to roost and feed.

And people's safety may depend on seasonal flooding in selected places in the Central Valley. The Yolo Bypass near Sacramento allows excess rainwater to spread out over agricultural fields and wetlands rather than flooding and damaging roads, buildings, and other infrastructure.

By incorporating croplands that provide resources for migratory birds into floodways, we can create multiple-benefit investments that provide room for farms, reduce the risk of urban flooding, and support habitat for migratory birds and anadromous fish!

Addressing trade-offs

Critiques of flooding farmlands to enhance crop productivity consider it an overly intensive use of limited water. Yet flooded rice and alfalfa, so vital for birds and other wildlife, use 8% and 18%, respectively, of the water used for all crop types in California. And when we look at the total amount of water directed to agriculture in California, only about 2% of that is needed to meet the needs of wetland birds in flooded rice and corn grown for grain.

Flooding fields also produces substantial amounts of methane, a powerful greenhouse gas that contributes to climate change. Globally, rice production accounts for 9% to 11% of total emissions from agriculture. However, methane is also a natural byproduct of healthy wetlands, and California has lost over 90% of its wetlands.

Management actions that reduce methane production are essential, and Point Blue is conducting research with partners to advance these urgent efforts. But reducing the amount of wetlands (including flooded agriculture) will likely have negative impacts on bird populations. We need to assess and test management actions that can reduce emissions while also benefitting wildlife and our communities.

How we manage our limited water resources in California is a complex and pressing issue. With our partners, Point Blue is helping test new approaches to California's water challenges. Our work in the Central Valley aims to ensure that flooded agriculture provides essential habitat and other benefits with minimal negative impacts.

Catherine Hickey, Tom Gardali and Kristin Sesser from our Pacific Coast and Central Valley Group all contributed to this article.

Above: Flooded rice fields in the Sacramento Valley. **Photo:** Annie Amos / Creative Commons.

Small fish, many values

WHAT'S A FISH WORTH?

How would you rate the value of a sardine or anchovy—or a swarm of these small fish so numerous they seem like an endless resource? Aside from Caesar salad, what value do sardine or anchovy have for people?

Marine scientists at Point Blue hypothesize that an anchovy, herring, or small squid might be more valuable if left in the ocean rather than fished—not only ecologically but economically as well!

Consider events in the waters of Monterey Bay in 2014 and 2015. As observed by our colleague Nancy Black, a naturalist at the Monterey Bay Whale Watch, about 100 humpback whales arrived in nearshore waters there in late 2013—and stayed. The reason? Food! They had followed enormous schools of anchovies at a time when forage fish for marine mammals were scarce elsewhere.

The whales feasted, and people flocked to Monterey Bay to witness the spectacle. The natural marvel became a boon to the region's tourism economy, and it continued for a surprisingly long time.

It could have gone on longer, but the fish that kept the whales occupied represented a different kind of prosperity in the eyes of some. In the autumn of 2015, some 3,000 metric tons of anchovies were harvested from Monterey Bay. The humpbacks went looking for food elsewhere; and with the whales, so too went many tourists.

What became of that mass of anchovies that were fished? They were exported to Australia to be used as bait. Their one-time value on this market was $100 per metric ton—a fraction of the whale-watching revenue they generated while schooling in the waters of Monterey Bay.

The lesson learned: fishes' many values for people often are greatest when the fish are left in the water! When we can thrive financially from the same resources that enable whales to thrive, people might make different choices and leave small fish in the ocean.

Seldom encountered on restaurant menus, small species such as herring, sardines, and squid, along with juveniles of larger fishes, comprise the so-called forage fish.[1] Along with krill, they are essential food sources for larger fish—salmon, halibut, albacore—as well as for fish-eating seabirds and marine mammals.

Forage fish left in the water can be several times more valuable to people than when they are harvested. They increase the value of commercial fisher-

Above: A "ball" of sardines. **Photo:** Bill Abbott / Creative Commons.

[1] Learn about the importance of forage fish in California's Marine Protected Areas, at pointblue.org/blueplanet.

ies such as salmon, they contribute value to marine tourism, and they enhance the ocean's capacity for carbon sequestration.

To date, no one has quantified these values. Point Blue scientists Dr. Jaime Jahncke, California Current Program Director, and Cotton Rockwood, Senior Marine Ecologist, are determined to do so, using the Central California National Marine Sanctuaries as a case study. With data from many sources they will evaluate and compare the worth of forage fish between competing uses in our human economy—one extractive, fishing; and the other non-consumptive, such as wildlife viewing.

Making a scientific case for the dollar value of forage fish left in the ocean can ultimately lead to greater total benefit for people, as it certainly does for humpback whales and other marine life!

— **Claire Peaslee, Cotton Rockwood and Jaime Jahncke, PhD**

Food For Thought!

I recently sat down to a dinner of grilled salmon, brown rice, sautéed veggies, and a sweet juicy apple. The aroma rising from my steaming plate, the colors and shapes of the ingredients, promised savor, succulence, and all the satisfaction a deeply nourishing meal can deliver.

How wonderful to consider that our most delicious foods can be grown, managed and harvested in ways that are healthy for our planet, too!

This issue of The Quarterly gives us a chance to reflect on the many connections between the foods we eat, the ecosystems that produce them and our role in preserving the ecological processes that are essential to our collective well-being.

Fish. Grains. Eggs and beef. Fruits and vegetables. How can we better care for the landscapes and seascapes that generate our foods? And how can we secure a future for the wildlife that also depend upon these systems?

Hunger for knowledge about such questions motivates a great deal of the work at Point Blue, and that curiosity is essential to addressing today's pressing environmental challenges.

As sampled in the pages of this Quarterly, Point Blue's work gives us plenty of food for thought!

—Susan Lee Vick
Chief Advancement Officer

Photo: Point Blue

Rebecca Shaw, PhD
Chief Science Officer, World Wildlife Fund, and Point Blue Science Advisory Committee member

Innovative commitments

OPPORTUNITY!

In April 2014, Walmart's CEO Doug McMillon assembled a group of CEOs from its leading supplier companies and NGO partners to solicit input on how to advance environmental sustainability in its business practices. After brainstorming, the unlikely partnership chose to focus on increasing the sustainability of commodity crop production in the United States.

Today, the group is working on the ground with farmers to reduce greenhouse gas emissions and water pollution and to increase sustainable water use, soil health and habitat on America's farmland. And they're doing so even as they work to increase food production to meet the needs of a growing human population.

We have been awash in corporate announcements about increasing the sustainability of their business practices, purportedly resulting in desirable environmental outcomes. By example, just look at the storm of corporate greenhouse gas emission reduction commitments that have come out of the Paris climate talks in December.[1]

The problem is, it's hard for us to tell whether the commitments will result in concrete and measureable outcomes for nature. The changes are hard to implement and, on their face, these commitments are counter to both standard business practices and corporate bottom lines. And who is measuring and monitoring the progress toward the commitments to ensure they are met?

What should a die-hard conservationist, like me, think about these commitments?

After all, I have spent much of my career estimating the effects of commercial activity on wildlife, clean air and water, and climate change, and developing strategies to counter their impacts. I have worked closely with governments and partner non-profit organizations to develop the science, planning, financial, legal, and policy tools to protect wildlife and natural resources from development.

So what should I think of the fact that the number one company on Fortune Magazine's Global 500 list (Walmart) is working on the ground with farmers on our issues —our issues of sustaining environmental resilience and health?

I think we should recognize it for what it is: a great opportunity for us!

With the fundamental shift in how corporations perceive their business risks associated with environmental degradation, they are changing business practices to address those risks—risks to their supply chain, their brand, and their license to operate.

Often they are doing so without the knowledge of the natural world and how it functions—how species migrate, how water flows through ecosystems, how carbon is stored—and this lack of knowledge can lead to perverse outcomes, even with the best intentions.

An example of this is how food supply-chain demands for increased water use efficiency in cropland can lead to saving water that is then used to plant more crops acres instead of restoring rivers.

This gap in knowledge and data is the next big opportunity for conservationists that have long been accustomed to building natural resource management methodologies and strategies. All we need to do is to better understand the challenges faced by corporations in meeting these commitments and work closely with them to develop the science and tools that will support both economic and environmental outcomes we both seek.

Walmart's commitments and its supplier commitments are real, and I find the challenge of helping them meet those commitments both daunting and exhilarating.

It is the shift I had always hoped would happen. Let's embrace it and go!

[1] greenbiz.com/article/whos-who-among-cop21-commitments

STUDY SITES Sacramento Valley ricelands

Our truck rolls to a stop along the edge of a rice field. We shut off the engine, enveloped in darkness. Already we hear the din of goose chatter. As we climb out, the chatter gets louder. We start to pick out the individual voices… Greater White-fronted Geese, Tundra Swans, widgeon, pintail, small sandpipers, more.

The first daylight glows on the horizon, and the voices begin to mingle with heavy wingbeats. Many silhouettes appear against the sky. Some of these waterfowl, their stomachs full after spending the night eating waste grain in the rice field, are heading to refuges and other managed wetlands for the day. This great shift will repeat itself every dawn and dusk for much of the winter.

Rice farms in the Sacramento Valley are important for wildlife and can serve as surrogate wetlands. In summer, rice provides food, cover, and nesting sites for Mallards, Black Terns, Black-necked Stilts, and herons and egrets, among other wildlife. In winter, some rice fields are flooded to help decompose the residue from the last harvest and to provide food and cover for migratory waterbirds such as geese, swans, ducks and shorebirds. Nearly five million waterfowl use the Central Valley in winter and can get up to 60% of their food resources from rice.

Point Blue and our partners have been working with farmers since the mid 1990s to study waterbird use of rice fields. Rice farms are a useful system for measuring the effects of wildlife-friendly agriculture on waterbirds and showing conservation organizations how best to work within agricultural systems. And most rice farmers take pride in providing habitat for migratory birds (see page 19)!

We also work with the Natural Resources Conservation Service (NRCS) to help introduce new conservation practices to farmers. NRCS's Waterbird Habitat Enhancement Program provides cost-share benefits to farmers willing to create specific kinds of habitat on their land—with more than 120,000 acres included in the program so far! Practices include leaving water out in fields later into the winter and reducing tillage to provide more waste grain as food—all while the land continues to grow food for people.

In the California conversation about costs and benefits of land-use practices (see page 4), Point Blue's collaborative work in the Sacramento Valley finds a win-win scenario for people, birds, and conservation—on rice farms.

Above: Snow Geese (primarily) in Sacramento Valley ricelands. **Photo:** Leslie Morris / California Rice Commission .

Kristin Sesser
Avian Ecologist, Pacific Coast and Central Valley Group

After working with Point Blue on her MS degree, in 2011 Kristin joined our team evaluating waterbird response to rice management in the Sacramento Valley.

AT THE JUNCTION OF FOOD PRODUCTION AND

Conversation

Three years ago Kevin Boyer and Wendell Gilgert met during a visit to a California ranch where progressive conservation measures were taking root. They discovered common ground and began aligning their life work, focused on the potential and need to secure ecological benefits on ranches and farms while also sustaining an agricultural economy and open space.

Drawing on his success managing philanthropic funds, Kevin created and now directs the Regenerative Agriculture Foundation. Wendell leads Point Blue's Rangeland Watershed Initiative (RWI), aimed at restoring the natural capacities of working ranchlands to hold more water in the ground, support plant and wildlife diversity, pull carbon out of the atmosphere into the soil, and more.

Recently the two reflected on their vocation and its origins.

Kevin: I can trace the inspiration for my work to having spent much of my childhood living at 5,000 feet in the Sierra Nevada mountains and spending my free time chasing animals through Sequoia National Park. Much later, I was completing a history degree in Ireland and began to understand the connection between the health of the natural community and that of the human community. Back in California I began working to strengthen rural communities, toward better social and environmental outcomes. I'm convinced that better management of our agricultural lands, especially our rangelands—as Point Blue is doing through the RWI—is the most important social and environmental action we can take.

Wendell: I was raised on a family farm in eastern San Joaquin County. Growing up, I saw my home geography profoundly changed following the construction of a flood control dam. What had been mostly dryland farming and livestock grazing was transformed into intensively farmed cropland. In less than ten years the land went from rolling oak savannah grasslands, meandering sloughs, and beautiful riparian vegetation to squared crop fields with sterile streams and field borders.

Reading Aldo Leopold's *A Sand County Almanac* in high school crystallized my deep respect for the land and fostered my vocation of facilitating land management stewardship.

Kevin: Ranchers' goals almost always include abundant biodiversity and better functioning water, mineral, and energy cycles. These are folks who appreciate and love nature, just like the rest of us who may live in urban/suburban areas. The big difference is that their livelihoods, families, and histories rely directly on nature—meaning they sometimes have to make the difficult calculation between environmental and financial outcomes.

CLIMATE-SMART REGENERATIVE PRACTICES

on the land

So the best thing we can do is help them figure out how to align financial, social, and environmental outcomes and achieve their goals. In my new role at the Regenerative Agriculture Foundation, a main goal is bridging the divide between the philanthropic community and organizations like Point Blue that support producers through research, education, and advocacy.

Wendell: Five years into the Rangeland Watershed Initiative, we have 14 Partner Biologists working in NRCS district field offices up and down California. Our model is a past success, a project where livestock producers within a Coast Range watershed managed their animals to increase perennial flowering plants and grasses, improve soil health as well as wildlife habitat, and keep land in open space—all while realizing a financial profit. The RWI has the goal of securing similar benefits by working with producers on over a million acres of rangeland in California.

Kevin: Compounding the benefits in this way certainly fits in my overall goal—thriving communities. Thriving urban communities that are well fed and clothed with wholesome, fresh food and fiber and have plenty of clean water. Thriving rural communities that include strong local economies and reject extractive industries. Farmers and ranchers who are fiscally thriving while still enjoying the traditional lifestyles they value. And thriving ecological communities that are biodiverse and have well functioning energy, mineral, and water cycles.

I define Regenerative Agriculture as a system that improves one, many, or all of these layers of community. The success of any one of these pieces of the puzzle depends on the success of all the others.

Wendell: My future vision intimately involves our ability to learn from our current and past actions. We're finding and rediscovering ways to get every drop of snow, fog, dew, or rain into the soil profile to be held, stored, and slowly released. We're working with producers to adjust their grazing strategies to allow for more vigorous plant growth and photosynthesis. Those adjustments enhance the ability of plants to utilize carbon dioxide, a problematic greenhouse gas when overabundant in the atmosphere as it is today. Planned livestock herbivory on California's more than 40 million acres of rangeland can be a major hedge against climate change.

It's at the intersection of thoughtful, innovative land management and stewardship that we're finding climate-smart conservation and restoration solutions—moving us toward the regenerative working landscapes that Kevin and I envision.

Left: Wendell Gilgert (left) and Kevin Boyer.
Photo: Claire Peaslee / Point Blue.

Meet Kat Taylor

A recipe for food and ecological health

One of Point Blue's great friends confidently inhabits a world that she's working—unconventionally—to change. Paradox? Only until you sit down with Kat Taylor for an hour's conversation.

Recently we had the chance to do just that. We wanted to learn more about Kat's philosophy and her work that involves Point Blue. The landscape setting for our partnership is TomKat Ranch, Kat's 1800-acre "learning laboratory" in the coast range of San Mateo County, an hour south of San Francisco.

Growing up in California, spending her time mostly out-of-doors, Kat was "raised in a nature ethic." She understood that "we live within natural resource and ecological limits, and we have to tend to the planet that is so gracious to host us." This stewardship ethic underlies the work at TomKat Ranch. According to Kat, "Here beef and eggs grow on grasses and pastures only. At the same time, the soil ecosystem grows healthier."

Kat calls this "ecological ranching" where cattle are used to improve the soil. She explains "That's really where all the action is. That's where the microbial community, literally billions of organisms that live beneath the surface of the earth, are harvesting carbon from the plants in a complex exchange."

The working hypothesis is that livestock can be managed to promote the growth of perennial grasses with extensive root systems, which creates the conditions for building soil carbon. As Kat says "This is a complicated but elegant symphony of activity that we're trying to achieve through animal agriculture."

She adds, "Healthy grasslands can have soil comprised of 8% or more of carbon-based organic matter. We're worried that today this is reduced in many cases to less than 2%. This means that much of the carbon held in grassland soil has escaped into either the ocean or atmo-

Left: Kat Taylor is an active rancher at TomKat Ranch. **Photo:** Bob Stent. **Above:** Grass-fed beef are raised in the coastal hills south of San Francisco. **Photo:** William Milliott / TomKat Ranch.

sphere. That's what we're wrestling with right now, in terms of climate change."

TomKat Ranch is an economic as well as an ecological experiment. According to Kat, "We have an endowment to manage the ranch and therefore are not dependent on what is produced there for our livelihood. This allows us to take risks and figure new things out. Ideally we 'de-risk' new approaches. Then fellow ranchers, who share the same ecological values but also need to pay their bills, can feel confident that new approaches will be good for their bottom line as well as for nature."

Measuring the results scientifically is essential in this experiment, in order to know with confidence what's working. Says Kat, "I'm lucky in the company I keep, walking through life with scientific research and support. Most notably, Point Blue has had a presence in monitoring, framing, and evaluating the agricultural work at TomKat Ranch since the start. Your datasets help us understand what's going on."

Point Blue ecologists work in partnership with Ranch staff to carry out monitoring and research at TomKat on birds, plants, soils, streamflow, and weather. Our scientists confer with ranch managers on the fine details of current practices, desired future scenarios, and grazing and conservation plans.

"As the partnership has evolved, other benefits have shown up. Point Blue was willing to really integrate into operations at TomKat Ranch, which is important—not to have just 'drop-in scientists.' And Point Blue has a much larger community of partners, scientific and land managers—a consortium of data-practice and outcome specialists—so our work has more meaning in that context."

Community is a big part of the TomKat Ranch mission. Activities there involve people from many walks. Kat says, "We have an educational foundation and a "learning lab" where we share information with decision makers, policy people, producers, and scientists. Over time we are all trying to figure out solutions together."

This is big work. What keeps Kat Taylor inspired? The answer harkens back to her childhood on San Mateo County ranches and her connection with the living world. "I never remember to say this, but it is pure joy to walk on a well managed conservation ranch and be respectful of the wild. And if you have joy in your life it's much easier to sustain any effort."

Chances seem good that Kat Taylor's effort at TomKat Ranch and in the world will be sustained well into our future!

PARTNERSHIP

Sonoma County Water Agency – Grant Davis, General Manager

John Parodi
STRAW Restoration Manager, Education and Outreach Group

Working with Point Blue's partners and our communities, John guides the planning and installation of dozens of habitat restoration projects each year.

Water is our most precious resource. Adequate volumes of clean water flowing through our creeks and rivers are critical for wildlife, nutrient transfer, flood control, and our quality of life. Maintaining this supply of clean water is becoming increasingly challenging in the face of a changing climate. Under Grant Davis's leadership, the Sonoma County Water Agency (SCWA) is up to this challenge through its progressive, nature-based approaches.

Among the agency's core functions: providing drinking water to over 600,000 residents; wastewater management for 60,000 customers; maintaining nearly 100 miles of streams and detention basins for flood protection; and restoring habitat for three federally protected fish species.

Because of Grant's long-term, nature-based approach, SCWA is one of Point Blue's most innovative and effective local partners. One area where this has been true is in our cooperative work restoring Sonoma County watersheds.

Grant reflects on our shared missions: "Point Blue provides critically important science that helps inform our understanding of a changing climate, which will also improve our collective response."

Grant also has been instrumental in Point Blue's STRAW Program (Students and Teachers Restoring a Watershed) since its inception. He helped catalyze STRAW's first project, in 1992, and has been a true visionary and mentor to guide this program's growth.

Grant says, "I am not aware of a more effective hands-on restoration and education program than STRAW. Imagine the positive impact on our region of more than 500 student led-riparian restorations! It is literally the best investment one can make in our community!"

The restorations that STRAW has been planting with SCWA since 2005 exemplify Grant Davis's innovative approach. In the upper watersheds around many of Sonoma's communities, restoring habitat helps replenish groundwater, take carbon out of the atmosphere, reduce erosion, increase flood protection, and improve water quality for steelhead and coho salmon!

In addition, SCWA is revegetating creeks all along their courses, with a goal of 100% riparian cover for the county's streams. Shading the waters helps cool temperatures, reduce evaporation, and limit the spread of channel-clogging invasive plants. Ultimately, enhancing these natural functions will allow streams to evolve and adapt to a changing climate.

With Point Blue's headquarters in Sonoma County, we're grateful that "all things water" are under Grant Davis's leadership. He makes sure that environmental health and adapting to a changing climate are part of any conversation regarding water supply, treatment, and flood control. Having set new standards for how our water should be managed, SCWA is a true model for communities around the globe to follow.

Right: Grant Davis attends STRAW's 500th restoration, in 2015. **Photo by:** Claire Peaslee.

"One important upcoming opportunity to support essential ecosystem conservation is to tell your friends about 'AA for the Bay.' AA will appear on the June ballot in the nine Bay Area counties and will provide significant long-term support for the protection and restoration of San Francisco Bay." — *Grant Davis*

MEET THE TEAM

Kristy Dybala, PhD

Senior Research Ecologist,
Pacific Coast and Central Valley Group

Please give us a view into what you do in your job.

My primary role, working with other Point Blue staff and our partners, is to help find answers to complex conservation questions. I see this as a lot like detective work—studying the clues to solve a puzzle. Here, the clues are data, and we often need multiple types of data from different sources to build a more complete picture. For example, I recently pulled together several kinds of data from the Central Valley—on shorebird populations, land cover, and satellite imagery of surface water. From this I built a model to help us understand when during the year shorebird habitat is limiting. Based on this, we can make recommendations for wetland restoration and management.

Why is this sort of science important today?

The conservation challenges we face are large and complex, and the data we collect is invaluable for helping us understand how the world works. It's essential that we pull together all the best available scientific information to learn as much as we can and look at conservation questions from many different angles. For example, how will a certain management plan or restoration design affect wildlife, soil health, water quality, and carbon sequestration? It's also critical that we anticipate how climate change will affect ecosystems—and make sure the decisions and strategies we adopt today will still work in the future.

What was your path into the role you now have at Point Blue?

My first field job after graduating from college was as an AmeriCorps member with the Marin Conservation Corps, working on habitat restoration and wildlife monitoring projects throughout the Golden Gate National Recreation Area. At one point this involved helping out a bunch of interns from the Palomarin Field Station who were mist-netting at a restoration site on Redwood Creek. That's how I first learned about Point Blue. Within a couple of years, I had become one of those interns, and I never really left!

In 2006, I started on a PhD in ecology at UC Davis, and built my dissertation research on the long-term data sets at Palomarin—projecting the impacts of climate change on songbird survival rates. I'm thrilled to still be on the Point Blue team, working with people who share my passion for finding solutions to conservation challenges.

What keeps you energized and hopeful as a scientist?

I find hope in the creativity and dedication of the people I work with. It's inspiring to see the wide range of conservation issues Point Blue staff are currently working on and also to hear their plans and ideas for the coming years. With such an amazing breadth of expertise and also our extensive network of partnerships, I have no doubt that we will accomplish our goals.

Left: Ryan Berger prepares to cut fishing gear tangling a whale. **Photo:** Bob Talbott / MMHSRP Permit 18786

Below: California Gulls at Mono Lake. **Photo:** Justin Hite.

RESPONDING TO ENVIRONMENTAL CHANGE ON TWO SHORES

Near Monterey Bay, Point Blue Biologist Ryan Berger played a lead role freeing a humpback whale from fishing gear on April 21st. First reported by a sport fisher, the whale had crab lines running through its mouth and around its head and fins. Members of the California Whale Rescue Network followed the humpback for five hours, then Ryan used a special implement to make two strategic cuts in the tangle, allowing the whale to swim free.

Stationary fishing gear in the ocean poses ongoing threats to marine mammals. This year commercial crab fishers had only a short and late season to try and make their livelihoods, so the density of gear was great. Earlier, the shellfish were off-limits due to a toxin load associated with changing ocean temperature and chemistry.

Cooperating with members of the fishing community to make gear safer for feeding and migrating whales is a priority for the Rescue Network. For more information, see Ryan Berger's story in the fall 2015 Point Blue Quarterly.

At Mono Lake, California Gulls depend on islands in the lake for safe nesting areas, but low water levels this year threaten to make some major nesting islands accessible to coyotes.

Precipitation over the past winter was far from enough to make up for four years of drought in California. Mono Lake's level has dropped by six feet since 2011. This year Los Angeles Department of Water and Power modified its schedule for water diversions from Mono Basin.

Over the past several years, Point Blue biologist Kristie Nelson has seen California Gulls abandon two small colonies on former islets after coyotes gained access via shallow water. The lake has continued to drop to a point where the majority of the nesting population now is susceptible to coyote predation.

Kristie is helping partners from California State Parks and the Mono Lake Committee examine ways to protect gull colonies, as this year's breeding season begins. Find updates at monolake.org.

bites

Dana Earl.

Quinn White.

WELCOME, DANA AND QUINN

Point Blue is excited to welcome two dynamic new members of our Advancement team this spring. Dana Earl joins us as Director of Insitutional Philanthropy, and Quinn White as Associate Director of Insitutional Philanthropy.

Each has strong and extensive experience in institutional fundraising. Dana most recently was Director of Foundation Relations at American Rivers, and Quinn was Development Manager and Grant Writer at Bay.org.

And both have strong reasons for choosing to apply their talents at Point Blue. Says Dana, "Point Blue's work impacts each and every one of us. Climate change is one of the biggest problems our planet faces, and Point Blue's scientists are working to address that every day through research, partnerships, and outreach. I'm eager to help grow and build support for Point Blue in the years to come."

Adds Quinn, "I'm very excited to join the Point Blue team to fundraise for bold, climate-smart scientific initiatives on a hemispheric scale. I look forward to developing a deep understanding of the breadth of work being undertaken by our scientists."

These two experts are working directly with Chief Advancement Officer Susan Lee Vick, who says, "Dana and Quinn will be enormous assets to Point Blue as we expand our pivotal conservation work and focus on securing long-term funding that will sustain the organization for decades to come. We are delighted to welcome both of them to Point Blue!"

POINT BLUE CALENDAR

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.

MIST NETTING AND MORE JUNE 5 – PALOMARIN FIELD STATION, MARIN COUNTY, CA

See songbirds up close, meet our intern biologists, and learn about long-term bird monitoring that drives our climate-smart conservation.

BIRD AND CONSERVATION EVENT – JULY

Exciting plans are taking shape as this Quarterly goes to press. Watch for details soon!

CONSERVATION ON WORKING LANDS AUGUST 7 – JENNER HEADLANDS, SONOMA COUNTY, CA

Enjoy an inside view of our innovative Rangeland Monitoring Network and a special chance to visit a beautiful area not yet open to the public.

SCIENCE EVENTS

4TH OCEAN CLIMATE SUMMIT MAY 17 – SAN FRANCISCO

Meredith Elliott presents on monitoring to inform ocean climate indicators. Ellie M. Cohen speaks on nature-based solutions.

CONSERVATION BIOLOGY CONFERENCE JULY 17–20 MADISON, WI

Sam Veloz, PhD presents on novel methods for projecting vegetation response to climate change.

NORTH AMERICAN ORNITHOLOGICAL CONFERENCE AUGUST 17–20 WASHINGTON, DC

A reprise of the climate-change projection paper (above) will be delivered by Sam Veloz, PhD.

focus

A birder's feast

Feeding Frenzies

Feeding frenzies happen when there is a hungry population of animals and a sudden infusion of food. There are many examples of such events in birds, but frenzies are not limited to Aves. Orcas go crazy in a pod of sea lions, and sea lions lose any composure they may have had when gobbling at a salmon run.

Among land-based creatures, birds are second only to insects in the frequency and variety of their frenzies. Depending on the kind of event, different species are attracted, and the diversity can be of great interest to birders.

Ciconiformes (herons and egrets) gather as if by magic at drying wetlands, where stranded amphibians and fish become easy pickins'. In California, the occasional Little Blue or Tricolored Heron shows up among the Great Blue Herons and white egrets.

Herring runs at Central California estuaries are frenzied by cormorants, loons, grebes, gulls, and huge numbers of mixed species of diving ducks, sometimes including a Tufted, a Long-tailed, or even an eider.

A school of young anchovies in a tidal slough may be savaged by egrets running on the shore, Red-breasted Mergansers below the water, and terns plunge-diving from the air. There is nowhere for the fish to shelter, and the whole forage may begin and end in a few minutes.

When larger anchovies (or sardines) school in quiet waters of bays, bigger fish, porpoises, or pinnipeds may variously press them towards the surface. That attracts cormorants, gulls, and Brown Pelicans, which use their different strategies to decimate the prey from above.

For people who seek the rare, feeding frenzies on the open ocean (sometimes seeable from shore with a good scope) are most exciting. Causes vary, from the sudden appearance of drifting pelagic red crabs, to upwellings of euphausid shrimp (krill) and dead rockfish, squid outbursts, fish parts discarded from boats (unrefined shark liver oil is most attractive) or, best of all, the broken-up remains of a dead whale or seal.

When this type of event happens near shore, a good birder may be able to pick out fulmars, shearwaters, and the occasional Parasitic Jaeger or albatross from the more usual suspects.

When it happens well offshore, especially near the continental shelf break (where seabirds from all compass directions tend to concentrate), the unexpected is practically routine. Large numbers of Black-footed Albatrosses (and occasional individuals of four or five other albatross species) are often first on the scene. If stinky organic oil is present, so may be storm-petrels. In season, curious Sabine's Gulls and Arctic Terns will arrive and, consequently, the pirates—Pomarine and Long-tailed Jaegers and skuas!

Feeding frenzies are life-and-death, survival-of-the-strongest events. For the participants, there are winners and losers. For field ornithologists, they can be wildly exciting and intellectually challenging.

Above: Pelicans, gulls, and shearwaters feast on schooling anchovies. **Photo:** Sophie Webb.

Rich Stallcup (1944–2012) was a Point Blue co-founder and our naturalist extraordinaire. His knowledge continues to deepen our appreciation of all things wild. Read the entire Focus archive online at **pointblue.org**.

Point Blue Staff

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

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We gratefully acknowledge all our generous donors on our website. Please see **www.pointblue.org/supporters**. Thank you!

FARALLON PATROL Our Farallon Islands Program relies upon the skills and generosity of volunteer skippers in the Farallon Patrol for year-round transportation 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 Point Blue Quarterly.

"I've got something to show you guys!" said Don Bransford, as soon as we arrived. A rice farmer we've worked with (see page 9), Don had specially phoned us but kept us in suspense. We hopped into his truck and drove through the fields, then stopped at a seemingly insignificant spot. Don waited a moment, then pointed, saying "There it is!" A white bird was poking its head out of a hole in the roadside. The yellow eyes looking back at us appeared to be those of a Burrowing Owl, but this unique individual was leucistic (pale but not albino). Knowing and sharing our affinity for birds, Don wanted to show it to us. His enthusiasm for wildlife on his farm is a characteristic that many of our landowner partners share with Point Blue biologists. What a treat! — *Kristin Sesser* **Photos:** Don Bransford

Point Blue
Conservation science for a healthy planet.

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

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