NEWS FROM MARIN CONSERVATION LEAGUE

January – February 2022

GOLDEN GATE BIOSPHERE RESERVE:

A Treasure Surrounds Us

by Alison Forrestel, adapted by Nona Dennis

Marin County conservationists who are aware of the existence of the Golden Gate Biosphere Reserve may be unaware of its origins or its intent. Alison Forrestel, Chief of Natural Resource Management and Science, Golden Gate National Recreation Area, recently related the fascinating story of the Biosphere's origins and history – including political obstacles – to MCL's Leadership Circle. The following is an adapted version of her remarks.

The Golden Gate Biosphere Reserve covers the wild and working landscapes of Sonoma, Marin, San Francisco and San Mateo Counties as well as the coastal waters of the Greater Farallones and Cordell Bank National Marine Sanctuaries and surrounding waters out to the edge of the exclusive economic zone, 200 nautical miles offshore. It encompasses more than 17 million acres of land and sea and surrounds urban areas where more than 2.5 million people live. It extends from Mount St. Helena to Mount Tamalpais and Mount Umunhum; includes Redwood forests from Armstrong Redwoods State Nature Reserve to Muir Woods to Purissima Creek Redwoods Open Space Preserve; waterways from the Russian River to Redwood Creek to Pescadero Creek; and seabird colonies of the Farallones to the marine life in the depths of the continental shelf.

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Photo: Jaclyn Sherman, Fisheries Watershed Aide, Marin Water

A Coho salmon migrating up San Geronimo Creek on 12/15/21. Pacific salmon are returning to creeks and streams in Marin watersheds in numbers not seen in decades.

Fish Passage and the Power of Water:

Highlights from MCL's Parks and Open Space Meetings

by Terri Thomas

Last Fall, as California was reaching the end of its driest water year in a century (from October 1, 2020 to September 30, 2021), MCL's Parks and Open Space Committee (POS) hosted presentations by aquatic ecologists that shed light on how scant precipitation and low stream flows impacted Marin's populations of salmon. September's presentations showed data and trends from 1998 to the present based on the monitoring of Lagunitas Creek by Marin Water, and of streams monitored by the National Park Service, in particular Redwood Creek. Although several Marin streams have salmon that sporadically spawn in them, not all creeks in Marin are monitored. The new water year (beginning October 1, 2021) has brought welcome rain and a few surprises!

Salmon lows and highs

LAGUNITAS CREEK – Jonathan Koehler, Marin Water Fisheries Biologist, reported in September that due to extreme drought and predicted reduced rainfall in winter 2021/2022, Marin Water submitted a Temporary Urgency Change Petition (TUCP) to the State Water Board. The action would eliminate November's pulse water releases (typically not used by Coho for migration) and reduce base flow between December 2021 and April 2022 from 25 cubic feet per second (cfs), (20 cfs in Dry Years), to 16 cfs base flow. The requested changes were based on high-resolution modeling of habitat suitability sites for Coho spawning. The sites were determined to be sufficient for the short term. Normal base flow would then be returned on April 1.

Fish Passage cont. p. 4

A Message from the President

Changes Underway for Marin Conservation League

As we enter 2022, I'd like you to know about some of the exciting changes currently taking place at MCL.

First, we're implementing **MCL's 2021–23 Strategic Plan** that our entire Board was engaged in creating. The Strategic Plan aims to increase our advocacy impact by improving how we communicate, increasing organizational capacity and effectiveness, and integrating climate change understanding and justice, equity, diversity, and inclusion principles into everything we do.

We're adopting more policy positions on newer issues.

- **We've approved advocacy positions** on greenhouse gas emissions reduction and on wildfire prevention while protecting native species and habitats.
- **We're developing positions** on sea level rise, biodiversity, carbon sequestration, housing in an era of state mandates and more.

We're beginning to communicate our advocacy positions and our work more clearly.

- **We adopted seven main goals** that can help people understand what we're doing and trying to accomplish.
- **We're upping our communications game.** While continuing our excellent Newsletter, we're revamping our website and eNews, among other changes—many thanks to Katie Rogers, our new full-time Communications and Outreach Manager.

We've added new leadership, including Terri Thomas as chair of Parks & Open Space Committee, Kate Powers as Newsletter editor, and Rich Jensen as Treasurer — each continues to work closely with their predecessors Nona Dennis and Ken Drexler. We aim to support emerging leaders and recruit more Issue Committee and administrative leaders as Board members or friends of MCL.

We've strengthened our administrative backbone, thanks to Office Manager Martha Richter Smith working with Rich Jensen and others.

I also want to emphasize something that has not changed. We continue to have terrific advocates: smart, skilled, good people with expertise that are passionately committed to Marin's environment who are quite prepared to develop and advocate tirelessly for MCL environmental policies that are science-based, practical, and solutions-oriented.

I'll leave you with this. You know that Marin Conservation League has been around for 88 years. In the past, the word "Conservation" in our name primarily meant preserving Marin's unique natural lands. Now "Conservation" also means preserving the biodiversity of native species and habitats on those lands — under threat from climate change, invasives, pathogens, and pests. Through our support for the Renewal of Measure A (see article in this issue), we're advocating for both types of conservation.

Why the changes? We want Marin Conservation League to continue to "...preserve, protect and enhance the natural assets of Marin in a changing environment" for many years to come. Stay tuned for more to come.

Robert Miller

Marin Farmlands – *partnering in climate mitigation*

by Nona Dennis

In December 2021, the Marin Resource Conservation District (MRCD) was awarded a $1 milllion grant by the State Coastal Conservancy (SCC) to enable expanding an existing Carbon Farm Program in western Marin County. It was a major boost for a program that, with limited funding, has been planning and implementing carbon farming projects to improve soil productivity, water sustainability, and greenhouse gas sequestration on ranches in western Marin County since 2013. The SCC grant was matched by funds from eight partners, including the County of Marin and the County's Measure A, for a total of $1,667,000.

The grant outlines an ambitious program to be carried out under MRCD direction: 1) implement 15 to 20 carbon farming practices on eight ranches with existing Carbon Farm Plans (CFP); 2) prepare detailed designs for 15 to 20 more carbon farming practices for future implementation; and 3) prepare CFPs for six newly participating ranches. As an added benefit, it will also provide hands-on carbon farming and agricultural training to disadvantaged and disenfranchised communities. Notably, the award will contribute to achieving the County's Climate Action Plan 2030 goals for reducing greenhouse gas (GHG) emissions.

Marin's best kept conservation secret – Marin RCD

The MRCD generally flies under the radar in Marin, rarely publicized and supported by a lackluster website that does little to promote the district's work. Yet MRCD's record of fostering conservation through enhancement of water, soils, and wildlife habitat, primarily on farmlands, is legendary. As a Special District established in 1959, the MRCD, along with 99 other RCDs in California, covering about 80% of the state, is authorized under the Public Resources Code to "seek cooperation of local, state, and federal agencies on issues of local concern for the purposes of soil and water conservation, water quality protection, GHG reduction, carbon sequestration, and fish and wildlife enhancement on public and private lands."

The MRCD's basic role in the County is to bring together state, federal and local agencies to assist private landowners in projects to conserve soil and water resources. Services extend to approximately 250,000 acres, but they mostly work in the watersheds of Stemple (Estero de San Antonio), Walker, and Lagunitas Creeks in western Marin. Since 1983, the MRCD has

Marin Farmlands, cont. p. 3

Renewing Measure A in 2022 is not an option; it's a MUST!

On June 7, voters will have the opportunity to renew Measure A — the ¼ cent sales tax measure passed in 2012 to enable protecting and maintaining the County's open spaces and parks, promoting local parks and recreation, and permanently preserving farmlands that make up the pastoral landscape of almost one-third of the county. From 2013 to the present, we have witnessed in all three categories major accomplishments benefiting the environments of natural and working lands, as well as outdoor benefits to urban lands and people across the county, made possible by Measure A.

MCL continues to advocate for renewing the measure with essentially the same general allocations as the expiring Measure A program, but with several important adjustments:

65% to County parks and open space preserves, including 13% for land acquisition at its current level and adding itemized sub-allocations for wildfire risk reduction and for equity;

20% to preserve and steward the farmlands that cover almost one-third of the county, with a quarter of that amount going to Marin Resource Conservation District to assist all farmers, whether or not under easement, in restoring habitats and implementing many carbon-beneficial projects and practices; and

15% to cities and special districts, a widely popular program that has given every resident an opportunity to weigh in on local environmental and recreational priorities.

NEXT STEPS: On January 20, the County Parks and Open Space Commission will consider a proposed Expenditure Plan and make a recommendation for the Board of Supervisors' consideration on January 25. The final Board hearing will be on February 1. March 11 is the deadline for putting the measure on the ballot for the June 7 election. Watch MCL e-bulletins for reminders of future meeting dates and times. And look for the March-April Newsletter to tell how you can help MCL in the campaign to PASS MEASURE A!

By the end of last year, public discussion was centered on the apportionment of tax revenues. Public interest in reducing wildfire risk was high, whereas popularity of investing public dollars in private farmlands was low. Public interest in expanding equity programs was also high. In the former two cases, MCL believes the public needs more information. People need to know how many Measure A funds are currently being used to reduce vegetative wildfire risk, especially in the interface between public open space and residential neighborhoods. In addition, the public should also understand that the vast majority (90%) of Marin's public lands are federal, state, or water district-owned. Marin County Parks Department is responsible for managing only one-tenth of these lands. In reality, a multitude of fire management programs are underway, working in close collaboration.

The public also needs to better understand the environmental and public benefits — connected wildlife habitats, wildfire risk protection from managed grazing, water quality management, clean air, local food security, and others — that accrue from preserving private farmland from future development. Conservation easements offer the only guaranteed assurances that Marin's agrarian landscape will remain undeveloped. Zoning alone cannot do this. On the other hand, all farmers, whether under conservation easement or not, can benefit from Marin Resource Conservation District's assistance in restoring and enhancing their riparian corridors, sequestering soil carbon, and improving their land's resiliency to drought and other effects of climate change. MCL agrees with renaming the program "Farmland Stewardship Program."

Marin Farmlands *from p. 2*

administered over $25 million in government and private foundation grants, covering projects such as watershed-wide erosion control, creek restorations, and road repair projects. In 2014, District services expanded into east Marin to assist streamside residents with watershed stewardship, restoration, and regulatory compliance.

What is carbon farming?

For the past ten years, the MRCD has been managing projects involving carbon beneficial practices, working with the Marin Carbon Project (MCP) partnership that pioneered carbon farming on three Marin ranches. Carbon farming comprises a suite of practices that directly or indirectly improve the rate at which CO2 is taken up by plants (i.e., removed from the atmosphere) and through photosynthesis is converted to plant material and soil organic matter. The intent of sequestration is to store more carbon in plant biomass and the soil than is released back to the atmosphere. Carbon farming adds to an array of conservation "best practices" that have been developed over years of ranchers' cooperation with the USDA Natural Resources Conservation Service (NRCS), such as riparian restoration and stream habitat improvements, field borders and filter strips, establishing trees and shrubs, windbreaks and hedgerows, range composting, and prescribed grazing. A CFP takes a "whole-farm" approach and puts carbon management at the center. By instituting practices that directly and indirectly increase carbon storage, a CFP also improves soil health and increases the soil's water-holding capacity to withstand periods of drought. The whole-farm planning approach also enhances insectary and wildlife microhabitats by planting biodiverse hedgerows, windbreaks, and/or cover crops that strengthen farmland's resilience to climate change. Thus, benefits accrue to the entire watershed.

How carbon farming began in Marin

Marin's Carbon Farming Program is based on work by the Marin Carbon Project collaborative, which was initiated in 2008 by Nicasio

Marin Farmlands, cont. p. 11

Fish Passage and the Power of Water *from p. 1*

An extended program of monitoring would begin at the time of TUCP implementation to measure whether reduced stream flows would be damaging to fish passage and spawning. Expanded surveys of Coho spawner (female fish ready to spawn) were planned throughout the mainstem reach, from Peters Dam, at the north edge of Kent Lake, to the tidal zone. Surveys monitor fish condition, predation, water depth, and velocity. Electronic devices called data loggers at Peters Dam and Tocaloma Bridge, would be increased from one at present, to four. They measure temperature, dissolved oxygen, turbidity, conductivity, and other water quality indicators. Stream conditions include riffles — the shallower, faster moving sections of a stream, and pools – where water gathers and remains more still. Marin Water would monitor twelve riffles upstream and downstream of the Tocaloma Bridge. Redds, the female nests of eggs, and fry, the earliest fish phase, mostly occur in pool sites. These sites would employ photo-monitoring techniques.

In September, adult Coho numbers were somewhat below the long-term mean. Steelhead, similarly, were below the ten-year mean. Neither count was alarming. Steelhead smolt counts (12 to 15-month juveniles), however, were extremely low relative to the long-term median. If monthly monitoring during the period of reduced base flows identified potential impacts to target species, several steps would be required: 1) Flow releases would be increased in 1 to 2 cfs increments; 2) Agencies would be consulted/ monitoring would increase as needed; 3) Operations would be adapted to avoid impacts.

REDWOOD CREEK - Darren Fong, Aquatic Biologist with Golden Gate National Recreation Area (GGNRA), reported that GGNRA monitors Coho at three life stages, focusing mainly on the spawner stage. While the National Marine Fisheries Service (NMFS) has 136 redds as a target for recovery criteria for the Redwood Creek watershed; the actual count has continued to remain far below that, in the single digits.

In 2017, the National Park Service (NPS) initiated a "Coho Jump Start" project, with the aim of bypassing the risk of predation when fish mature in the ocean. About 200 juveniles were captured and taken to Warm Springs Fish Hatchery in Sonoma County to grow. They were then reintroduced to Redwood Creek as adults to spawn. Likely due to the last few years of drought, the project didn't meet expectations. In 2020, less than 5 redds were observed; this past water year, only one.

EDITOR'S NOTE

Good tidings!

This winter, as storms began filling creeks and reservoirs, excitement spread at the sightings of Pacific salmon across Marin's watersheds, making their way upstream in numbers and in reaches not documented in decades, if ever before. Their abundance has spread joy in witnessing the power of nature to rebound.

This issue details efforts that support restoration, preservation and protection of natural systems and native species. As we begin 2022, we celebrate not only the power of nature, but the power of the people and partnerships who, with shared vision, plan, design and implement policies and projects that oftentimes are decades in the making yet are critical to our resilient future. Public support is fundamental to this work.

Photo: Morgan Cantrell, Friends of Corte Madera Creek Watershed

A Chinook, upstream, in San Anselmo Creek. Many Chinook are survivors of the millions bred in hatcheries in recent years and released near the mouth of SF Bay. Without a natal stream to return to, they follow the scent of rain.

Numerous conditions may explain why: Redwood Creek is not a year-round open creek system; it lacks complexity, deep pools, and connectivity with its floodplain; during dry years there is not enough flow to breach the sand bar at Muir Beach; and there is not a lot of refugia for winter high flows. In summer, Muir Beach wells draw water from the creek, and though there are habitat protection stipulations in the permit, the creek downstream often runs dry, with only isolated pools.

December updates

Following an atmospheric river event and storms in October, an unprecedented pulse of fish sightings began in Lagunitas and Redwood creeks. The flow of water broke through sand barriers and filled streams. Several other creeks had first-time sightings of Chinook salmon spawners, including Olema, Woodacre, and Pine Gulch Creeks as well as in Cascade Canyon.

Though the TUPC for Lagunitas Creek had been granted, the atmospheric river set records for October both in inches of rainfall and flows in Lagunitas Creek, which made the need to reduce flows moot. Following November's storms, 60 Coho were seen, the most in mid-November in 20 years. Chinook, Pink and Chum were also observed.

cont. next page

Fish Passage *from p. 4*

Photo: Jonathan Koehler, Marin Water

Pools and riffles are important to salmon viability.

In Redwood Creek, the sand bar at Muir Beach broke, algae were scrubbed away leaving loose, clean gravel, and fish responded. Spawning was observed throughout the Redwood creek system. Chinook were spotted in the creek for the first time in at least 20 years and were seen all the way up into the State Park reaches of Bootjack and Fern Creek. Chinook and Coho were observed in deep pools, and as of December, over 20 redds were present!

All this good news, however, doesn't guarantee success. Marin's agencies will not only continue to monitor flows to ensure adequate spawning habitat but will build on the steady work of restoration. Planning, design, and implementation project by project, will continue as the threat of future droughts still looms. Approximately 4,500 feet of Lagunitas Creek and thirteen restoration sites are currently in phases of design and seeking funding for implementation in 2024. In Redwood Creek, more intensive habitat enhancements and watershed restoration are anticipated by both the National Park Service and State Parks, including a groundwater recharge project, with the goals of improving creek health and building resilience to climate change.

In the months to come, MCL's POS committee will be following updates on progress, including the spawning surveys and the survival of this year's young; the possibility of increasing alternate sources of potable water for State Parks and Muir Beach to ensure the least possible flow interruptions to Redwood Creek; and an update on the Redwood Creek Vision document and process. MCL POS meetings are continuing by Zoom on second Thursdays, from 3 to 5 pm.

NATURE NOTE

Pacific Salmon

by Terri Thomas

Salmon are anadromous fish. They are born in freshwater, spend most of their lives at sea, and then undergo physiological change to migrate back up the freshwater streams in which they were born to spawn. There are five species of salmon that live in the Pacific — Chinook, Pink, Chum, Coho, and Sockeye. Though life cycles vary among species, the life histories of all are similar to those of the Coho.

Coho (Oncorhynchus kisutch) are also called silver salmon. While living in the ocean, Coho have silver sides with dark spots. In December when migrating back up freshwater streams, the silver color turns bright red. A large, mature Coho averages 28 inches in length and weighs six to ten pounds. During spawning, females create depressions in gravel with their tails where they deposit their eggs (redds), which males then fertilize by releasing a milt over the eggs. Coho stop eating once they leave the ocean, and after spawning, they die. The salmon carcasses bring important nutrients back to creeks from the ocean.

Photo: Jonathan Koehler, Marin Water

Freshwater phase of Adult Coho Salmon spawning. Female (right) creating depression in gravel with tail for eggs; male will release milt to fertilize them.

The young hatch after 6 weeks. Emerging in late winter or spring, they will spend one to two years in the creek, then migrate to the ocean, if conditions permit. There they will spend one to three years before returning to their natal creeks to spawn and die. Marin County residents and visitors are fortunate to have opportunities to see these fascinating migrations in local creeks!

Unfortunately, all species of Pacific salmon have been in decline since the early 1900s. Their decline is attributed to a combination of poor water quality due to habitat degradation or destruction, climate change, and overfishing. All species of Pacific salmon are now protected under the Endangered Species Act.

Golden Gate Biosphere Reserve *from p. 1*

The Biosphere was designated by UNESCO, the United Nations Educational, Scientific and Cultural Organization, in 1988 in recognition of both the incredible biodiversity as well as the diverse human uses of the Coastal San Francisco Bay Area. It is the only Biosphere Region in the United States where land, sea, and urban center meet. We can enjoy world class music and food and art, and yet this incredible abundance of biodiversity is right at our doorsteps!

50 Years of Man and the Biosphere (MAB)

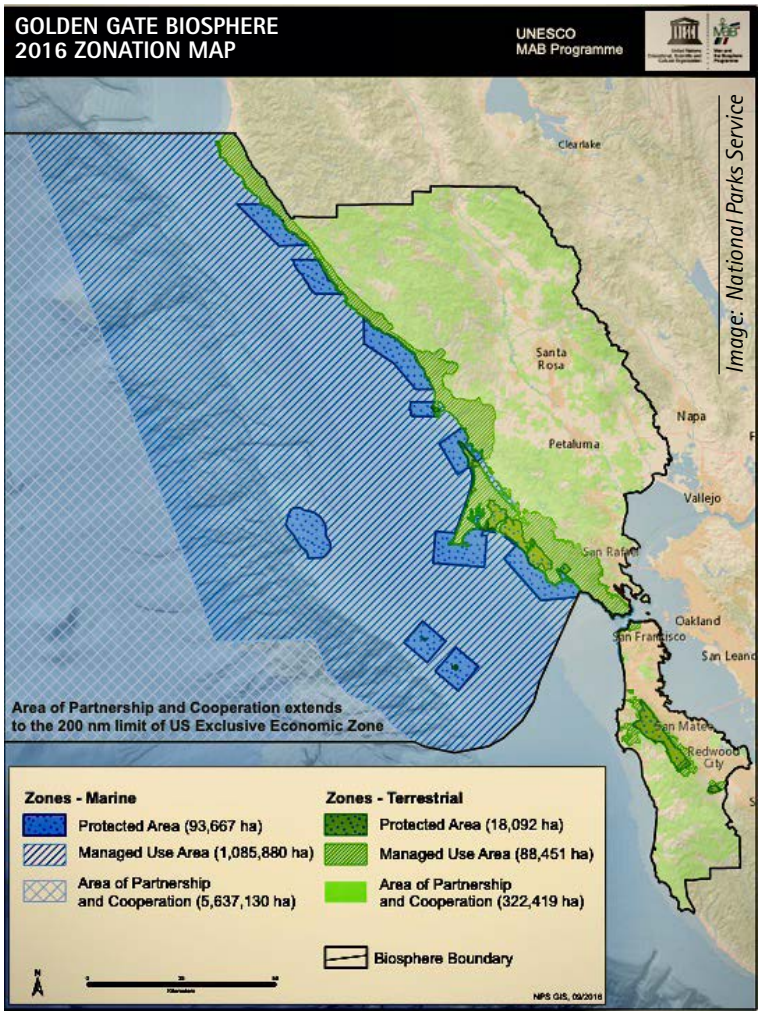
UNESCO's Man and the Biosphere Programme (MAB) was created in 1971 with a vision of promoting a sustainable connection between people and nature through the designation of living laboratories – 'biosphere reserves' – that could demonstrate nature-based solutions for sustainable development. Out of that ambitious concept, a global movement took shape. In 2021, the World Network of Biosphere Reserves, consisting of 669 Biosphere Regions in 120 different countries, celebrated its 50th Anniversary.

The MAB's goal was to engage both natural and social sciences in the rational use and conservation of the resources of the Earth's biosphere as a means to improve the global relationship between man (humans) and the environment. Over the ensuing years, that goal has advanced to a conceptual foundation in which biodiversity can no longer be considered independently from human social, cultural, spiritual, and economic needs. Humans must be involved as an integral element in the protection of biodiversity. To meet the challenges of the 21st century, biosphere reserves foster the conservation of genetic resources, species, ecosystems and landscapes, and, at the same time, foster sustainable economic and human progress.

Designating the Golden Gate Biosphere

Consistent with the MAB goals, the two keystones of being a designated biosphere reserve are biodiversity and sustainable development. Even a quick glance confirms the biodiversity of our region. We are one of 25 global biodiversity hotspots; located on the Pacific flyway with dozens and dozens of migratory bird species; support exceptionally high levels of endemism and rarity; and are a land of highly diverse ecosystems where a typical day hike might pass through five or more completely different ecosystems.

We also have an outstanding legacy of sustainable uses of land and waters. For example: the ranches and rangelands of Marin provide for habitat and biodiversity while engaged in organic agriculture and local food production; our waters are habitat for sustainable fisheries; coastal towns and parks offer nature-based tourism; and the Presidio Trust model of community development centers parks and biodiversity.



The Golden Gate Biosphere (initially the "California Central Coast Biosphere Reserve") was first recognized by the United Nations in 1988. Laurie Wayburn, Bay Area conservationist, who had been working abroad with the Man and Biosphere program, saw the value of having a biosphere reserve in the Bay Area and was instrumental in securing seed money from the San Francisco Foundation and pushing through the designation against strong political headwinds in Washington D.C.

The Golden Gate Biosphere's designation occurred in spite of the U.S. having withdrawn as an active UNESCO member several years prior. The designation of the U.S. biosphere reserves was so controversial at the time that a National Park Service employee working in Washington D.C. who supported biosphere reserves in the U.S. was told by his colleagues to "destroy any documents related to the formation of the U.S biosphere reserves."

The Golden Gate Biosphere included nine original partner land and water managing entities around Marin, San Francisco and San Mateo Counties: the National Park Service with Point Reyes National Seashore, Muir Woods National Monument and Golden Gate National Recreation Area; Mount Tam, Tomales Bay, and Samuel P. Taylor State Parks; Audubon Canyon Ranch; two Water Districts – Marin Municipal Water District, the San Francisco PUC's Peninsula Watershed lands; two academic institutions – Stanford University's Jasper Ridge Biological Preserve, UC Davis' Bodega Marine Reserve; Farallon National Wildlife Refuge and the Greater Farallones National Marine Sanctuary. The original extent of the Biosphere was restricted to these entities' lands and waters and was just shy of a million acres.

Laurie Wayburn's original goal in the creation of the Golden Gate Biosphere was to break down silos between state, federal and local land and water managers to think across boundaries. Jurisdictional boundaries of our

Biosphere Reserve, cont. next column

Biosphere Reserve *from p. 6*

Photo: Cordell Bank National Marine Sanctuary

Cordell Bank National Marine Sanctuary is one of the Biosphere's collaborative partners. Cordell Bank's unique geology and oceanic features support a diverse and abundant marine community on the continental slope and shelf.

Photo: TripAdvisor

Samuel P Taylor, one of three State Parks in the Biosphere, is home to 2,800 acres of redwood forest and grasslands. Of the 600 acres of old growth redwood, some can be seen at the trailhead of Pioneer Tree Trail.

parks and marine sanctuaries are meaningless in the natural world! That idea was forward thinking at the time. Since then, we have come a long way with such collaborative efforts as One Tam and Together Bay Area.

Other early goals and visions could not be realized, such as region-wide ecological monitoring and research programs and restoration at the biosphere scale. Lack of funding was a persistent problem. In fact, a prohibition on using federal funding to support U.S. biosphere reserves was written into an appropriations bill in 1997. As a consequence, the Biosphere slipped in and out of dormancy after the mid-1990s.

Redesignation and looking ahead

In 2016, all the U.S. biospheres were required to go through a UNESCO redesignation process. The U.S. had once again withdrawn from UNESCO, creating an extra barrier for redesignation. The Golden Gate Biosphere partners worked hard to assemble the required review document and to stay solvent through this process. But approximately one-third of the U.S. biosphere reserves were dissolved due to a lack of support and capacity for redesignation. (The U.S. currently hosts 47 biosphere reserves.)

The Reserve's redesignation in 2016 was accompanied by dramatic expansion from under a million acres to over 17 million acres. The nine original partner organizations expanded to 14 (and counting). All of the open space in Marin, Sonoma, San Francisco and San Mateo Counties beyond the boundaries of the original nine partner organizations was added and waters out to the edge of the exclusive economic zone were added.

Where is the Biosphere today and where is it hoping to go? Early this year, with seed funding from the California Landscape Stewardship Network, the Biosphere partners engaged in a series of retreats to connect and explore a shared destination, prioritize and clarify goals, and finally galvanize and celebrate. Some accomplishments and next steps emerged:

- The Biosphere was renamed 'Golden Gate Biosphere Network' to recognize the network of partners;
- A part-time dedicated coordinator was assigned for the near-term;
- A communications plan was initiated, and the peregrine falcon was selected as the Biosphere's logo, apt because of its connection to both land and sea and its ability to live in both wild and urban places – and most important, because of its inspiring conservation story: From just four peregrine falcons remaining in the entire state in the mid-1970s, now more than two dozen pairs are nesting just in the Bay Area;
- An indigenous outreach group is meeting with tribal leaders whose lands and territories are inside the Biosphere, hoping to bring them in as Biosphere partners; and
- A climate change vulnerability assessment and adaptation plan for our most sensitive species and habitats at the scale of the Biosphere is projected – a perfect example of a project that needs to happen at a bioregional scale.

Alison concluded her story with calculated optimism for the future. Much of what happened in the 1980s is happening again now. Today's challenges are not new, and they have been overcome before. Where the Golden Gate Biosphere has succeeded over the last almost 35 years has been due to adequate funding and capacity, and to individual people – not only those directly involved in the Biosphere Network, but the many individuals and organizations who are committed to the future of our bioregion. The problems we need to solve in the decades to come require thinking beyond boundaries – thinking big!

Status Update: San Geronimo Commons

Last year at this time, MCL's newsletter reported on the Trust for Public Land's (TPL) development of a Vision Framework (Framework) for the future of their 157-acre property in San Geronimo Valley. The Framework was the culmination of an extensive community engagement process. Permanent protection of the land and conservation priorities emerged as key elements. Technical analysis, led by Trout Unlimited and Environmental Sciences Associates, provided the underpinnings for the Framework's restoration priorities and a restoration footprint for the site. We recently checked in with TPL's project manager, Erica Williams. She provided the following exciting news.

Roy's Dam and Pools becomes Roy's Riffles

Last October, removal of Roy's Dam and concrete fish ladder were completed during an extensive multi-agency restoration project. What was once turf and concrete are now water-receiving floodplains and side channels on five acres of creek habitat along a quarter mile stretch of San Geronimo Creek. In removing the highest priority fish barrier in central California, this project provides critical habitat for endangered salmon and other wildlife. According to SPAWN, Marin County's population of Coho salmon is considered to be one of the strongest remaining in California and critical to the recovery of the species throughout central California.

This project was conceived several years prior to TPL taking ownership of the property. As new landowner, TPL honored the agreement the prior landowner had with SPAWN.

With the first October atmospheric river event, Roy's Riffles saw over five inches of precipitation and water flowing through the newly created, more complex and stable creek channels — flows as large as 3,000 cubic feet per second. Additional rain brought spawning salmon much to the delight of recent San Geronimo Valley visitors. "The restoration is magnificent. I hadn't been there in a long time; the creek is sinuous and gorgeous now", exclaimed former Contra Costa RCD Watershed Coordinator and previous SPAWN volunteer, Carla Koop, who stopped by after seeing over 20 salmon in Lagunitas Creek and its tributary at Devil's Gulch.

This winter, SPAWN is seeking volunteers to plant thousands of native plant and tree species grown in their nursery to stabilize the newly cut slopes and to form the base of a healthy and resilient riparian forest. For more information visit www.seaturtles.org/events

Future creek and floodplain restoration

TPL is currently working with its restoration partner, Trout Unlimited, to begin planning and design of the key restoration priorities and footprints as identified in the Framework. This will begin first in the San Geronimo Creek floodplain and wildlife corridor of San Geronimo Meadow (the former front nine of the golf course), on the south side of Sir Francis Drake Boulevard. The Framework also envisions future restoration planning and design for Larson Meadow (the former back nine). Integrating trails, where they are determined to be a compatible use, is expected to be part of both Meadows restoration projects. TPL will provide an update in the New Year on the planning and design scheduled for 2022.

Photo: Erica Williams

Recently completed restoration of San Geronimo Creek at Roy's Riffles.

Permanent protection

Last May, MOST (Marin Open Space Trust) and TPL announced they are partnering to place a conservation easement over both of the Meadows on the property as well as San Geronimo and Larsen Creeks. Permanent protection of the land emerged as a central goal of TPL's Vision Framework, and a conservation easement is one of the most durable ways to achieve that goal. The easement will retire the potential for development and prevent water from being diverted for irrigation, returning it to the streams. The conservation easement does not include the 22 acres of land around the former clubhouse building and community garden.

The TPL/MOST partnership is a good one. According to their missions: MOST is committed to protecting Marin County's remaining open space lands which have significant habitat, aesthetic, and linkage values for the benefit of current and future residents. TPL works with local partners across the country to create parks and protect land for people, ensuring healthy, livable communities for generations to come.

In December, MOST announced it had been awarded over $3 million from the California Wildlife Conservation Board and California Natural Resources Agency. MOST expects the complex easement process to be finalized in coming months. Once finalized, MOST will hold and monitor the conservation easement over the Meadow parcels in accordance with the terms of the easement agreement. The Trust for Public Land will continue to own and manage the property until a long-term conservation owner and steward is found.

In the meantime, as implementation of TPL's Vision for the property in the San Geronimo Valley is moving forward, TPL continues to be in discussion with the County about its interest in acquiring the Clubhouse portion of the property for a new firehouse that will serve the area. Currently, the community gardens are still in use. Williams said TPL continues to issue use permits for the property that are consistent with conservation and public access goals. She said recently elementary and middle school cross country teams have been enjoying the trails for their meets and that locals and other folks enjoy hiking, walking, biking and other forms of passive recreation on the property. "The last two years, people have coexisted on the land very beautifully."

If you have any questions about the property, please contact The Trust for Public Land at erica.williams@tpl.org.

MCL AFTER HOURS

NEW STATE HOUSING LAWS: IMPACTS ON MARIN

Join us for an evening presentation on recent State housing laws and how they affect the review and development of housing at a local level in Marin County.

California is in a housing crisis. Progressively over the past four or five years, new State legislation was passed to promote development that would increase housing supply. All jurisdictions are required to comply, though new laws can override or dramatically impact local ordinances and regulations. Our presenter, Barbara Kautz will walk us through the complicated, often confusing new legislation.

WEDNESDAY
Jan. 12, 2022 ~ 7 - 8:30 pm

Register:
bit.ly/MCLafterhours

Barbara Kautz is a Partner at the law firm of Goldfarb & Lipman and is well-known throughout the Bay Area for her knowledge of affordable housing and land use law. Her practice includes CEQA compliance, real estate, economic development, and fair housing.

Before becoming an attorney, Ms. Kautz worked for 30 years as a planner, community development director and assistant city manager, concluding her planning career as Community Development Director and Assistant City Manager for the City of San Mateo. She is author of **In Defense of Inclusionary Zoning: Successfully Creating Affordable Housing.** *Barbara has been a Marin County resident for over 40 years.*

What is a Conservation Easement?

A conservation easement is an interest in real property established by a legally binding agreement between a landowner and a qualified non-profit organization (often a "Land Trust") or unit of government. It is designed to constrain, on a specific property, the property rights otherwise available to the landowner, in order to achieve certain conservation purposes. The conservation easement "runs with the land", meaning it is applicable to both present and future owners of the land. The grant of conservation easement, as with any real property interest, is part of the chain of title for the property and is normally recorded at the local county recorder's office.

The conservation easement's purposes will vary depending on the character of the particular property, the goals of the land trust or government unit, and the needs of the landowners. For example, an easement's purposes (often called "conservation purposes") might include any one or more of the following:

- Maintain and improve water quality;
- Perpetuate and foster the growth of a healthy forest;
- Maintain and improve wildlife and migration corridors;
- Protect scenic vistas visible from roads and other public areas; or
- Ensure that natural and working lands are protected.

The terms of conservation easements vary depending on the desired outcome, but generally they eliminate or substantially constrain subdivision and other development rights.

The most distinguishing feature of the conservation easement as a conservation tool is that it enables users to achieve specific conservation objectives on the land while keeping the land in the ownership and control of landowners for uses consistent with the conservation objectives.

Unlike land use regulation, a conservation easement is placed on property voluntarily by the owner whose rights are being restricted. The restrictions of the easement, once set in place, are perpetual (and potentially reduce the market value of the remaining ownership interest in the property). Appraisals of the value of the easement, and financial arrangements between the parties (landowner and land trust), generally are kept private, unless there is public funding involved.

The landowner who grants a conservation easement continues to own and manage the land and may receive significant state and federal tax advantages for having donated and/or sold the conservation easement. In granting the conservation easement, the easement holder has a responsibility to monitor future uses of the land to ensure compliance with the terms of the easement and to enforce the terms if a violation occurs.

Although a conservation easement prohibits certain uses by the landowner, such an easement does not make the land public. Most conservation easements confer no use of the land either to the easement holder or to the public. Some conservation easements confer specific uses to the easement holder or to the public. These details are spelled out in the recorded legal document that creates the conservation easement. The MOST/TPL easement, for example, is designed to protect the San Geronimo Commons' conservation and conservation-compatible public access values.

In California, conservation easements are specifically authorized by statute, in state Civil Code Section 815. Created in 1979, the statute reads, in part:

> *815. The Legislature finds and declares that the preservation of land in its natural, scenic, agricultural, historical, forested, or open-space condition is among the most important environmental assets of California. The Legislature further finds and declares it to be the public policy and in the public interest of this state to encourage the voluntary conveyance of conservation easements to qualified non-profit organizations.*

For more information on conservation easements, go to the California Council of Land Trusts (www.calandtrusts.org) or Land Trust Alliance (www.lta.org) or California Civil Code Section 815, et. Sec.

Status Update: The Future of State Route 37

State Route 37 (SR 37) is the east/west connector that runs along northern shorelines of San Pablo Bay. The 21-mile roadway stretches from US 101 in Novato to I-80 in Vallejo. It connects job markets and housing within Marin, Sonoma, Napa and Solano counties. It serves not only commuters, but visitors to the Napa and Sonoma wine country and to events at Sonoma Raceway. It is the North Bay's most heavily traveled east/west highway, used by an estimated 40,000 vehicles per day.

Because of its congestion and periodic flooding, the roadway is the subject of corridor planning by the Caltrans. The highway has been divided into segments. Segment A, from Novato east to Sonoma County's SR 121, is 4 lanes — 2 lanes in each direction, 7 miles long, and is impacted by storm-related flooding and land subsidence. Segment B, from SR 121 east to Mare Island is 10 miles of two-lane roadway, one lane in each direction on either side of a concrete median. The stretch is highly congested causing travel delays during both weekday commute periods and on weekends. Segment C is the 4-mile stretch between Mare Island and Interstate I-80. Most of SR 37 is predicted to become permanently submerged as sea levels rise, with some portions of the roadway completely inundated by 2050.

Simultaneous to serving as a heavily-used transportation corridor, much of the landscape also serves as one of the Bay Area's largest remaining tidal marsh environments, known as the San Pablo Baylands. The highly sensitive marshes and ponds support millions of waterfowl stopping to rest and forage before continuing their journey on the Pacific Flyway. Five waterways flow under SR 37 into the Bay. They include Novato Creek, the Petaluma River, Tolay and Sonoma Creeks and the Napa River. Several agency partners, including federal and state agencies, as well as environmental and conservation organizations, have invested millions of dollars over the years in ecosystem planning, wetland acquisition, and habitat restoration on nearly 30,000 acres of the Baylands.

In December 2015, a Memorandum of Understanding (MOU) was signed by the four North Bay County Transportation Authorities "...to develop an expedited funding, financing and project implementation strategy for the reconstruction of SR 37 to withstand rising seas and storm surges while improving mobility and safety along the route". The Metropolitan Transportation Commission (MTC) and Caltrans were subsequently added to the MOU. The officials and agencies representing these interests began meeting regularly as the **SR 37 Policy Committee.** In 2017, the urgency for solutions, not only to relieve congestion, but to prepare for future flooding and sea level rise, increased as winter storms and king tides flooded portions of Segment A and forced closure of the roadway for 28 days.

The segments of SR 37 and the creeks and rivers it crosses

Caltrans is seeking input from local community members who rely on SR 37. Opportunities include an upcoming **virtual public meeting on January 25, 2022,** followed by focus groups (for those who have not yet been engaged) and online activities including a survey and interactive web map. Information can be found at:

https://dot.ca.gov/caltrans-near-me/district-4/d4-projects/d4-37-corridor-projects/37-planning-environmental-linkages

In June 2017, in response to accelerating plans to both redesign and rebuild SR 37, the Sonoma Land Trust convened a group of wetland land managers, restoration practitioners, and others working on conservation and restoration of the San Pablo Baylands. The stated purpose of the **SR 37—Baylands Group** is to ensure that the redesign is compatible with and advances the ecological restoration and conservation goals for the San Pablo Baylands and improves the climate resilience of both the built infrastructure and natural ecosystems.

Caltrans and MTC along with the four Transportation Authorities have embarked on various concurrent studies and projects. Planning has included both interim fixes as well as long-term solutions for the corridor. Currently there are six Caltrans State Highway Operation and Protection Program (SHOPP) projects underway including maintaining pavement and bridges and addressing flooding. MTC has led a Design Alternatives Assessment (DAA) for Segment B and, in December, completed a DAA for Segment A combining the studies for both segments. These studies address both congestion and sea level rise and are designed to inform long-term "Ultimate" solutions for the corridor.

Currently, Caltrans is leading a **SR 37 Planning and Environmental Linkages (PEL) Study** for the entire corridor. This is a new process intended to integrate planning through early collaboration and establish buy-in from stakeholders. It also is intended to streamline subsequent NEPA and CEQA environmental processes before specific projects are approved.

MCL has been engaged as an interested party and stakeholder since the beginning of **SR 37 Policy Committee** meetings and throughout the **Caltrans PEL process. MCL supports the work of the SR 37—Baylands Group** and believes those who will be affected by the final output of the PEL, and other studies, include future generations who will experience the impacts of climate change and sea level rise and who will ultimately be paying for whatever alternatives are selected.

The PEL process is now refining evaluation criteria and developing alternative solutions. This is a critical time in the planning process. **It's important to ensure that integration of ecological resiliency is carried forward into the criteria by which alternatives will be judged.**

The PEL process is due to finalize this summer. How all these concurrent planning and design processes will ultimately integrate and what form an Ultimate SR 37 Project, as described by the PEL, will take is still unclear. **Continuing to participate is key.**

Marin Farmlands, *from p. 3*

Native Grass Ranch owners John Wick and his wife Peggy Rathmann and Marin agroecologist Jeffrey Creque, Ph.D, working in concert with the University of California, Berkeley. Subsequent additions to the collaboration include UC Cooperative Extension, Marin Agricultural Land Trust, MRCD, NRCS, Point Blue Conservation Science, Marin County Agricultural Commissioner, County of Marin, Environmental Defense Fund, the Carbon Cycle Institute, and others.

In reality, carbon farming may trace its origins to an "Aha!" moment at the Nicasio Native Grass Ranch. MCL's November-December 2013 issue reported on a MCL field trip to the Ranch, hosted by the ranch owners. After purchasing the ranch in 1998, Wick told us that he had removed grazing livestock in an attempt to restore native habitat, only to find the grassland invaded by brush. He engaged Creque to help manage the land. Over several years, through strategic rotation of seasonal grazing, native grasses began to appear along with ground bird habitat. Observing the return of one deep-rooted species, Danthonia (oat grass), whose seeds may have been in the soil for centuries, Creque mused, "I expect that this management is increasing soil carbon!"

Photos: Marin RCD

Compost is delivered, then staged, before being spread in a thin layer over the soil.

There is far more to the story behind Creque's observation and Wick's and his initiation of the MCP in 2008. It included engaging Dr. Whendee Silver of the University of California as science advisor to conduct controlled experiments in the application of compost to the land. And it included a host of partners noted above. The MCP initiated pilot tests of three CFPs in 2013 and continued to undergo further development of the concept, increasing in scale and ultimately becoming a sustainable county-wide program. As Creque's work, voluntary until 2013, became fulltime, he formed the Carbon Cycle Institute (CCI) to provide financial and technical support for the MCP.

Becoming part of Marin's climate solution

Always the overarching question behind the MCP's evolution has been how agriculture, known worldwide as a net carbon emitter, might become a climate change solution rather than a problem. County inventories of GHG emissions had already revealed Marin's agriculture sector as contributing 9% of emissions countywide (32% when counted only in unincorporated lands). When the County's 2015 Climate Action (CAP) was adopted, only the three pilot CFPs had been completed, but they were an important demonstration of the potential for agriculture to become a net carbon sink. By the time the CAP 2030 update was adopted December 8, 2020, 19 CFPs had been completed, encompassing 8,307 acres of Marin farmland, and 20 additional farmers had expressed interest in having a plan for their own operations. Many farmers, waiting to invest in a costly CFP, had already instituted climate-beneficial practices. Before predicting achievable reductions in GHG emissions through farmland sequestration in the updated CAP, however, the County needed to understand the feasibility and both the mitigation value and full costs and burdens of instituting each practice constituting a Carbon Farm Plan, and at a scale that encompassed all suitable agricultural lands in the county.

Chapter 7 in the CAP 2030 presents this analysis, a story that will be detailed in a subsequent article in this Newsletter. Among conclusions in Chapter 7 is the projection that, based on the proven success of the MCP's foundational work, an achievable goal of a Carbon Farm Planning initiative by Drawdown Marin, could take in as many as 60 farms across 30,000 acres by 2030, with a carbon sequestration equivalent to reducing 55,752 MTCO2e. The eventual target would include 180 farms across 90,000 acres by 2045.

The work to achieve these goals is supported by agricultural partners and numerous agricultural producers in unincorporated Marin who are eager to apply carbon farming practices. In many instances, however, they face continuing economic and other pressures that threaten their operations. Continued carbon farming depends on working lands, notably grazing, to be successful! In turn, the success of GHG mitigation through sequestration can only be achieved with meaningful financial and programmatic support. Carbon farming alone is not a complete solution, but it is proving to be a major piece of climate mitigation.

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Issue Committee Meeting Schedule
(subject to change—check website)

Land Use and Transportation:
1st Wed. of the month, 10:00 AM—12:00 PM

Parks and Open Space:
2nd Thurs. of the month, 3:00 PM—5:00 PM

Fire and Environment Working Group:
2nd Mon. of the month, 3:00 PM—5:00 PM

Climate Action Working Group:
3rd Fri. of the month, 9:00 AM—11:00 AM

Agricultural Land Use:
Meets quarterly, 4th Fri. of the month, 9:30—11:30 AM

North Marin Unit: Check website for times

Marin Conservation League was founded in 1934 to preserve, protect and enhance Marin County's natural assets. MCL is a non-profit 501(c)3 organization. All contributions and memberships are tax-deductible to the extent allowed by law.

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It's time to renew your membership!

Benefits of Membership include:

- **INVITATIONS TO EVENTS** that connect you with others interested in protecting Marin's natural resources;

  After Hours – MCL's informative online talks on environmental issues by local experts

  MCL's Walks into Conservation History

  MCL's social gatherings, we look forward to seeing you when it's safe again to gather!
- **MCL'S BI-MONTHLY NEWSLETTER,** keeping you immersed in Marin's environmental topics;
- **AN INVITATION TO MCL'S SPECIAL LEADERS CIRCLE EVENT**, for those who contribute $250 or more in a calendar year;
- **AN INCOME TAX DEDUCTION** of your charitable contribution.

Join or renew your membership by submitting payment in the envelope inserted in this newsletter, or online at www.marinconservationleague.org/donate

Thank you!