MARIN CONSERVATION LEAGUE

Meeting of Parks and Open Space and Committee

November 10, 2022

DRAFT MINUTES

ATTENDEES: See end of minutes

The meeting by ZOOM was called to order by Chair Terri Thomas at 3:00 p.m.

Minutes for October 13 meeting were approved.

Meeting Summary : The meeting featured a recap of One Tam's "Sneak Peak on Peak Health" symposium, held October 26; other ongoing One Tam Community Science projects; Report on current status of Monarch Butterflies in Marin; and a review of the ongoing Regional Healthy Forest Strategy project led by GG Parks Conservancy.

1. One Tam Peak Health: Highlights of October 26 symposium

Yolanda Molette, Director of Conservation and Community Science for One Tam, began her presentation by crediting her collaborators __ Arellano, Director of Community Science, Rachel Keesel, Director of Conservation Management, and Allan Fish, Director of Golden Gate Raptor Observatory. She recounted One Tam's beginning efforts to ascertain the health of Mt. Tamalpais, which was kicked off in 2016 with a 2-day symposium. That event brought together the four collaborating public land agencies that share Mt. Tam, with Parks Conservancy staff, 60-some scientists, and many community partners in an unprecedented effort to view the ecology of the mountain holistically rather than a piece at a time. Thirty species and communities were identified as indicators of trends in ecosystem health of the mountain. A full report of the status of these indicators was published in 2016.

On October 26, One Tam reconvened the fifth annual event in the Peak Health series to revisit the question: "Is Mt. Tam at Peak Health?" – a so-called "Sneak Peak." The agencies came together and offered the overall answer as "Fair – there is a lot to do." What is new in 2022? An update document in preparation will (1) assess how each indicator is faring; (2) review progress in filling knowledge gaps for each indicator, including two "new" indicators – bees and bats; (3) document what actions have been taken to support the health of key indicators, such as the positive results from releasing juvenile pond turtles into Redwood Creek near Muir Beach; (4) new information needs such as for giant salamander; (5) new information sources that have developed since 2016, notably the countywide vegetation map using Lidar technology, and crowd-sourced biodiversity information obtained from citizens using the iNaturalist platform; and (6) a new climate assessment for indicator species produced by Pepperwood Preserve Foundation.

Yolanda gave a quick review of the Oct. 26 half-day event, which attracted 150 attendees and 17 speakers, and was live-streamed. A brief report card showed that, since 2016, species like salmonid fish remain in poor health, the serpentine barren endemics are in fair condition, Western pond turtle is still fair, Northern spotted owl is good, and two new indicator species, not reported on in 2016 – bees are "good" and bats are "good."

Other events on this topic will continue to take place or are in planning: "Marsh Mingle", Oct. 26; "Tamalais Bee Lab" (at Skyoaks), Oct. 29; Monarch Meet-up at Ft. Baker, Nov. 15; Peak Health at Muir Beach, Dec. tbd; Winter Walk, tbd; Virtual Forest Health, early spring, tbd; and Forest Health at Lake Lagunitas, May 6. Part 3 will be a Virtual Deep Dive on the topic in early spring, tbd. Stay tuned to

onetam.org/summit for updates. In response to a question about the number of native bee species on Mt. Tam: 32 genera, comprising 122 species.

2. Wildlife updates from October 26 One Tam Peak Health symposium,

Bill Markle, Supervisory Wildlife Ecologist with GGNRA, reported on several events in recent weeks, and then continued the update of the October 26 symposium by giving brief reviews on the status of key wildlife indicators. GGNRA commemorated its 50th anniversary recently with an event at Ft. Mason. He also reported that a Manager has been selected to head up the Golden Gate Biosphere Reserve programs, and will work from the Ft. Cronkhite office of GGNRA. The public lands members of the Reserve are working on a Climate Vulnerability Assessment at a regional scale. He also reminded this committee that comments are due on the Tennessee Valley Dam Removal and Restoration Project by Nov. 17.

Bill continued the October 26 Peak Health review with brief reports on several of the fish and wildlife indicator species. Anadromous fish continue to show poor health, with stable "poor" condition for coho in Lagunitas Creek and almost complete extirpation in Mt. Tam's south-facing watersheds, notably Redwood Creek. GGNRA will return its earlier coho headstart program in Redwood Creek. Steelhead appear to be stable, with some improvement noted in Olema Creek. Western pond turtles, monitored largely by volunteers, are in fair condition and are present in four of MMWD reservoirs. A headstart for the turtles conservation program was started in Redwood Creek, when juveniles were released between 2017 and 2021.Two metrics used to measure the health of Western pond turtle as an indicator species include comparing habitat occupancy and abundance over time. Climate change could have differing effects on pond turtles: more extreme events like drought and flooding could result in population loss, while decrease in summer fog could increase hatching success.

Bill also reported on the status of Northern spotted owl, whose health in Marin is better than in the rest of its range due to the relative absence of competitive barred owl populations found elsewhere in the traditional NSO range. The local NSO population is stable, and 80% of known nesting sites are occupied by a pair of owls each spring. Barred owl is the subject of intense research because the threat to NSO is real, and change can happen swiftly. Barred owl is larger, and has a wider, more varied diet than NSO (dusky-footed wood rat is primary prey of NSO).

Biologists have been studying bats on Mt. Tam, in partnership with U.S.G.S. (name?) for several years. As an indicator of ecosystem health, bats represent ¼ of mammalian diversity and perform important ecological functions. Thirteen species have been recorded on Mt. Tam, and their condition as measured by species richness and distribution, is considered "good." To monitor bat activity, 37 acoustic devices, part of a national bat study program, have been set up around Marin County. Their distribution and condition are also being tracked through a network of Motus Towers, widely distributed across the nation to track migratory wildlife. Bats are vulnerable to changes in the environment: they have high energetic demands, and are very sensitive to temperature change in their roosting sites. Climate change can bring other stressors: drought, fire and fire suppression, habitat loss and degradation, insect declines, and disease such as "white-nose" virus (?).

Bill also mentioned that GGNRA is monitoring possible coyote feeding problems in headlands areas. He responded to questions as follows: How many pairs of NSO are known in Marin? Ans: 110 (112?), not including possible pairs on private lands. He explained that the Wildlife Picture Index camera program, begun in 2014 and involving many volunteers, has been renamed Marin Wildlife Watch. He and Yolanda explained that Covid had a major impact on data entry, and now staff is developing newer, more efficient methods that will make use of A.I. technology in a virtual platform for image identification and analysis. In response to a comment questioning the "good" status of native bees, Bill said that there are "winners and losers" – 122 species, representing 32 genera, not all are faring equally well. The "Bee Lab," which is

portable, resides at Skyoaks. He said that bears also are being monitored on Mt. Tam, based on presence of "several individuals" sighted.

3. Monarch Butterfly Project

Mia Monroe gave a positive report on the status of Monarch butterflies in the Marin, prompted by what she calls this year's "Monarch Mania." After serious population declines for a decade and recent precipitous decline, this year's over-wintering populations are back in 100-fold increases – roosting at traditional sites like Natural Bridges, Pismo Beach, and Pacific Grove, and at new sites in the Bay Area (e.g. Alameda County, Albany Hill), as well as Marin's Bolinas Mesa site, where ~1,000 individuals are roosting in Monterey Pine trees. This indicates they are breeding inland and migrating to the Coast for over-wintering. The official Western Monarch Count lasts from Nov. 12 – Dec. 4, and will involve 100s of volunteers who have been well-trained in using iNaturalist. A One Tam field trip is scheduled for the afternoon on November 15, at Ft. Baker. A New Year's count has been added to track numbers that survive winter storms. These counts also record environmental conditions – temperatures, trees selected for roosting, etc. Other Community Science Monarch projects coming up: Western Mystery Challenge to learn more about Monarch behaviors, and Counts to track other habits of the Monarchs, such as in people's gardens.

Mia discussed two Monarch management issues: roosting in non-native, fire-prone Eucalyptus; and problems associated with availability of non-native milkweed. Eucalyptus poses a fire hazard, but also can support Monarch roosting, presenting a quandry – how to manage eucalyptus, a non-native pest species, for fuel reduction (e.g., clear out understory, thin, remove) without sacrificing Monarch habitat. Work is underway to assess where and how to manage groves. Tropical, non-native milkweed (*Aesclepius curassavica)* is perennial and can have a number of deleterious effects in the life cycle of Monarchs, thus posing a threat. It is banned from sale at local nurseries. Planting native milkweed (*Asclepius fascicularis)* in people's gardens is encouraged, but only in inland Marin locations, not near the Coast. The County is very supportive of Monarch butterfly conservation in Marin, in that Marin hosts one of the Northern-most populations that both breeds and over-winters locally. Dennis Rodoni's Resolution to that effect captures the County's commitment. Other initiatives underway: One Tam is assessing possible sites for milkweed on public lands. Native milkweed seeds can be obtained from CNPS and Marin Master Gardeners.

4. Marin Regional Forest Health Strategy

Danny Franco, Senior Project Manager with GG National Parks Conservancy for 12 years, presented a comprehensive review of the One Tam Forest Health Strategy initiated three years ago, supported by Cap and Trade Funds by way of the California Coastal Conservancy and Department of Natural Resources' Regional Forest and Fire Capacity Program (Department of Conservation and CalFire). The project has its foundation in One Tam's 2016 Peak Health report on Mt. Tamalpais, which, among other things, established metrics for measuring trends in ecological indicators of ecosystem health and identified data gaps – both in geographic coverage of the mountain and in consistency of data. One Tam convened an interdisciplinary working group consisting of staff from the four One Tam land agencies and outside experts, and applied (successfully) for the grant to fund further study of forest health. Five key forest types have been under study: Coast Redwood, Douglas fir, Bishop Pine, Sargeant Cypress, and Open-stand Oak Woodland.

The working group defined resilience for each forest type, and constructed a spatial model so as to identify which areas would qualify as "high treatment areas" – due to the presence of pathogens, poor conditions, disease, other stressors. They also researched areas where co-benefits such as fire hazard reduction could be realized.

They developed a conceptual framework for each of the five forest types – a detailed "map" of all conditions, threats, potential approaches, etc. that could be coordinated into models to guide implementation of later projects. These will be included in the final document. They have also engaged many community groups for feedback, and have met with the Federated Indians of Graton Rancheria (FIGR) to ensure that recommendations from indigenous peoples (with traditional tribal knowledge) are incorporated into the final document.

Danny also provided the background from which the working group developed "forest health" models for each forest type. This included making extensive use of the (recent) Countywide fine-scale vegetation map to discern composition and distribution of forest types (and 34 different forest communities), presence of forest disease, structural dynamics, and fire history dating from 1851. To identify Priority Treatment Areas, they mapped disease impacts, potential type-conversions, prevalence of non-native species, and wildfire hazard and proximate communities, integrating also intersections with values, such as cultural, natural resources, and water storage in order to identify multi-benefits to be achieved in future treatment projects.

The final report of the Forest Health Strategy is in process and is expected to be completed in early 2023. In response to questions, Danny noted that the work is regional and landscape-level in scope and relies almost entirely on remote data. For example, there was no budget to ground-truth the map analysis, nor does the study include any detailed information on wildlife or water yield. It will serve more as a decision support tool, helping land managers to home in on areas of concern in their forests.

It was agreed by all attendees that this was an information-packed meeting!

The meeting was adjourned shortly after 5:00.

Minutes by Nona Dennis

Next meeting December 8, 2022

ATTENDEES: Terri Thomas, Nona Dennis, Al Baumann, Larry Minikes, Rick Holland, Susan Stompe, Robert Eichstadt, Greg Zitney, Pam Reaves, Jane Medley, Kate Powers, Arlin Weinberger, Eva Buxton, David Long, Vicki Nichols, Betsy Bickle, Amory Willis, Bob Miller, Mike Swezy, Doreen Smith, Sharon Farrell, Jean Olive-Lammers, Barbara Salzman, Aviva Rossi, Carolyn Losee, Kerry Keefe; Bill Merkle, Mia Monroe, GGNRA, One Tam; Yolanda Molette, Danny di Franco, Parks Conservancy, One Tam.