MARIN CONSERVATION LEAGUE POLICIES FOR VEGETATION MANAGEMENT TO REDUCE WILDFIRE RISK

I. PURPOSE

The upsurge of wildfires in California has captured the state's attention and the fear of its residents. Millions of residents throughout the San Francisco Bay Area live within areas of high fire hazard. The extreme wildfires that caused horrific numbers of deaths and destroyed staggering numbers of homes in the North Bay in recent years have demonstrated the continuing high risk of wildfire. Marin County is no exception.

To address this concern, vegetation treatment programs to protect communities against catastrophic wildfire are being implemented in Marin. Marin Conservation League (MCL) believes vegetation management actions should be designed to preserve Marin's biodiversity and to maintain or improve ecological conditions. The United Nations Educational, Scientific, and Cultural Organization included thirteen protected Marin wildland areas in the Golden Gate Biosphere Reserve in 1988, recognizing the global significance of its habitats and biodiversity. The California Floristic Province, including Marin, is recognized by Conservation International as one of the 26 biological hotspots in the world.

This policy is intended to guide MCL as it considers public positions and advocacy related to future community-based wildfire risk reduction programs and projects and seeks to provide guidance on how to avoid impacts to natural resource values.

It does not address other factors that are part of a comprehensive program to minimize the destructive effects of wildfire, such as home-hardening, residential development in the wildland-urban interface (WUI), emergency response, and evacuation.

II. BACKGROUND

Numerous fire scar studies in Marin derived from long lived redwood trees shows that before European contact, indigenous people used fire frequently throughout the landscape. The cultural use of fire created many stable vegetation types maintained by frequent burning. It is presumed that large scale intense wildfires were rare for many vegetation types. The natural fire regime (defined as fire frequency, size, intensity, and other characteristics) for particular plant communities that existed in prehistoric times from human cultural burning and lightning is recognized as a "natural fire regime."

The current wildfire regime in Marin is a consequence of many factors such as past logging practices, changes in live and dead fuel resulting from decades of fire suppression, invasion of wildlands by non-native species such as broom, tree mortality resulting from Sudden Oak Death, expansion of neighborhoods into wildlands, and increased human sources of ignition. Climate change is accelerating wildfire activity driving long term droughts, peak heat events, lengthening of fire season (summer-fall drought), and general climate warming.

Large scale catastrophic fires in northern California are largely driven by winds. Every fall high pressure systems create low humidity and high temperatures along with strong winds from the northeast when vegetation is at its driest and most combustible state. The incredibly destructive Tubbs Fire (2017) and Camp Fire (2018) were wind-driven and burned through dense neighborhoods, where the houses became the fuel. Heavy winds pass embers in advance of the flaming front causing spot fires and igniting houses and other structures. These wind-driven fires will burn through any and all vegetation regardless of type or condition.

Marin has experienced large scale fires driven by winds in the last 100 years. In 1923 a wind-driven fire started in Ignacio and burned 40,000 acres, traveling south to Bolinas and to the edge of Fairfax. The 1929 Great Mill Valley Fire, although only 2,500 acres in size, burned downhill from Mt. Tamalpais driven by wind. In the end, 117 homes were lost. Today in the same footprint, it would be more than 1100 homes. In 1945 the Mill Fire burned 20,000 acres threatening communities before winds shifted. These kinds of fire events can be repeated and would be more destructive now due to increased development.

MCL believes that vegetation management projects designed for community safety should recognize all of the essential values provided by the rich array of Marin's plant communities. These include, in addition to being the primary production that supports all life, essential nesting, foraging, and shelter habitats for native wildlife. Vegetation stabilizes slopes and captures and stores carbon which, in turn, creates healthy soils, enables the soil to absorb more water, intercepts the erosive forces of rainfall as it slows and spreads storm runoff, prevents downstream flooding, and filters sediment and other pollutants before storm water enters our creeks.

Trees, shrubs, and other vegetation also offer aesthetic and economic benefits to homeowners, including privacy and scenic views that increase property values, modulate climate by providing shade and protection from wind, thereby lowering ambient air temperature and reducing both direct energy costs as well as the indirect costs of power infrastructure. Sequestration of carbon by woody vegetation is extremely important for Marin's carbon budget.

Fire affects air, soil, water, flora and fauna. At low intensities and severity, such as with prehistoric fires and prescribed fire, smoke effects are minor, and effects on soil nutrients, flora and fauna can be positive. With intense or severe wildfire, however, the effects on all of these elements can be disastrous. Therefore, vegetation as fuel can be managed to reduce the chances that lives or property will be lost to wildfire, and to maintain and, to the extent possible, restore ecosystems.

III. MARIN CONSERVATION LEAGUE WILDFIRE POLICY RECOMMENDATIONS

This MCL Wildfire Policy recognizes five broad areas of vegetation management practice and related concerns: 1) defensible space around homes; 2) fuel reduction next to communities in the WUI and in wildlands; 3) ecosystem restoration of fire adapted ecosystems 4) monitoring

and reporting of project outcomes for evaluating program effectiveness; and 5) public education and training programs. This policy is applicable to both public and private lands.

MCL Wildfire Policy Goal:

Actions to reduce wildfire risk should ensure ecosystem protection to the greatest extent possible, whether building fuel breaks, creating defensible space, grazing to reduce fuel, "limbing up" trees, mowing, and reducing ladder fuels or other vegetation treatments for reducing vegetation as fuel. Protection needs to be afforded to sensitive and rare native habitats, including wetlands, riparian, oak woodlands, perennial grasslands, and habitats of special-status species such as serpentine. Actions should avoid type conversion of native to non-native habitats and should either reduce or eliminate invasive species populations. Bird nesting habitat should be protected. Slope instability and erosion should be avoided. Opportunities to increase habitat conditions for special-status species or convert stands of highly flammable trees such as blue-gum eucalyptus and non-native pines to low-flammable oak woodlands, or other native habitats should be pursued. The opportunity to improve biodiversity one yard at a time exists as communities shift to more fire-smart landscapes. Additional opportunities exist to restore ecosystems to more fire adapted conditions.

1. Defensible Space Around Residences and Structures

CAL FIRE defines "defensible space" [1] as "the buffer you create between a building on your property and the grass, trees, shrubs, or any wildland area that surround it." In general, it is the space needed both to protect your home from igniting and to protect the firefighters defending your home. Defensible space is legally required by state law and may have California Environmental Quality Act (CEQA) implications.

[1] Defensible Space

Defensible Space is required by Public Resources Code 4291. For definition and requirements see: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=4291 .

Two CEQA categorical exemptions are associated with Defensible Space:

- Class 4 15304 (b) *New gardening or landscaping, including the replacement of existing conventional landscaping with water efficient or fire-resistant landscaping).*
- Class 4 15304 (i): *Fuel management activities within 30 feet of structures to reduce the volume of flammable vegetation, provided that the activities will not result in the taking of endangered, rare, or threatened plant or animal species or significant erosion and sedimentation of surface waters. This exemption shall apply to fuel management activities within 100 feet of a structure if the public agency having fire protection responsibility for the area has determined that 100 feet of fuel clearance is required due to extra hazardous fire conditions.* This exemption does not apply if the project results in the taking of special status species or significant erosion and sedimentation of surface water. Also, any portion over 100 feet from a structure is not exempt, and may require further CEQA documentation.

MCL encourages practices that improve ecological conditions in residential landscapes while at the same time securing homes and properties against the risk of wildfire.

Recommendations for Defensible Space to protect structures:

1. MCL recommends a currently accepted defensible space approach to work from the structure first and move outward. Hardening structures to wind-blown embers is the first step.
2. Focus fire smart garden management strategies on plant placement, vertical and horizontal spacing, maintenance (e.g., regularly removing all dead material), and appropriate hydration.
3. Remove invasive non-native plants.
4. Focus on replacement plants that are local natives.
5. Recognize that California native plants and Mediterranean-climate-adapted plants tend to need less water to be hydrated and, in fact, can be weakened or killed by too much water.
6. Discourage reliance on lists of "combustible plants" that include native plants unless there have been specific flammability studies on those plants in our area. All plants are combustible given the right conditions.
7. Inspect treatment areas during bird nesting season in order to avoid and protect active nests.
8. Retain large woody plants to improve carbon sequestration, pruning as necessary.
9. Use best available practices for disposal or recycling of biomass removed from wildfire prevention projects.

2. Fuel Reduction Projects in Wildlands and the Wildland Urban Interface.

Projects in open lands adjacent to communities include linear fuel breaks and other activities to reduce wildfire intensity near homes and allow fire fighters a safer opportunity to control a fire in low to moderate intensity events. These projects often occur on public lands and could include shaded fuel breaks, grazing, prescribed burns, as well as mechanical, manual or chemical removal of biomass.

Approximately 60,000 acres—18% of the county's land area—fall within the WUI where homes and other structures are adjacent to or intermixed with open space and wildland vegetation. A recent assessment based on the tax assessor parcel data shows that there are approximately 69,400 living units valued at $58.5 billion within the WUI.

Almost 85% of Marin County's land base (332,800 acres) is protected from development through open space, park and watershed lands and agriculture. Marin County hosts 143,000 acres of publicly protected federal, state, county, and water district open space lands. These lands share similar goals of preserving ecosystems, native biodiversity, native plant communities, wildlife habitat, and maintaining water quality as well as a range of protections

from wildfire. Marin's agricultural community plays an important role in stewarding working lands, sequestering carbon, and protecting aquatic systems.

Recommendations for vegetation management in open lands

1. Give priority to projects in high fuel load areas adjacent to communities where non-native plants are prevalent.
2. Conduct habitat assessments on all projects before and after site treatment. Post treatment assessments need to be continued at regular intervals to ensure that non-native plants are not invading treated sites.
3. Special-status Species - If habitat for special-status species is present, surveys, mapping, and mitigation measures shall be conducted/identified by qualified biologist according to legal protocols. "No disturbance" buffers sufficient to avoid impacts will be clearly marked in the field.
4. Ensure no net increase of non-native vegetation cover on treatment sites and preferably aim to reduce percentage of non-native cover.
5. Vegetation reduction projects that use goats or sheep shall not be implemented in plant communities of greater than 5% relative herbaceous cover by native plants or in areas with over 50 percent slope. Herbivores shall only be used when non-target native vegetation is not susceptible to damage, is dormant or has completed its reproductive cycle for the year.
6. Support prescribed fire use to support appropriate ecosystems and assist in fuel reduction.
7. Projects should be scheduled to avoid the active nesting season of potential native bird species within or adjacent to the treatment site. The active nesting season shall be defined by a qualified biologist. If the active nesting season cannot be avoided, a qualified biologist should conduct a survey for nesting birds. The project should either be postponed when feasible or be designed to minimize impacts on nesting birds. Additional requirements may be imposed for bird species which are special-status pursuant to state or federal law. Buffers for wildlife, including nesting sites and burrows should be identified in the field by a qualified biologist.
8. The California Department of Fish and Wildlife have established rarity rankings for "sensitive natural communities" that need to be addressed in environmental review processes of CEQA and its equivalent. No new fuel breaks should be created in natural communities with rarity ranks of S1(critically imperiled) and S2 (imperiled). No new fuel breaks should remove more than 5 percent of the native vegetation relative cover from a stand of natural community vegetation in sensitive natural communities with a rarity rank of S3 (vulnerable) or in oak woodlands. In forest and woodland sensitive natural communities with a rarity rank of S3, and in oak woodlands, only shaded fuel breaks should be installed, and they should not be installed in more than 20 percent of the stand of sensitive natural community or oak woodland vegetation (i.e., if the sensitive natural community covers 100 acres, no more than 20 acres will be converted to create the fuel break).

9. Projects should be evaluated for erosion and potential for sedimentation into downstream water bodies. If project treatments may result in bare soil areas, they should be treated prior to seasonal rains to prevent loss of soil and sediment discharge into wetlands, riparian areas, and fish and other native wildlife habitat.
10. Protect wetlands and riparian areas from habitat damage and sedimentation.
11. Treat smaller diameter fuels and allow large down logs, snags and live fuels to be retained.

3. Vegetation Management for Biodiversity and Habitat Restoration in Wildlands.

Ecological restoration actions seek to improve fire resiliency in appropriate fire-adapted plant communities by restoring degraded or damaged habitats to conditions associated with a natural fire regime and natural fire intervals (e.g. reducing non-natives, removing young Douglas-fir seedlings and saplings under oak woodlands, seasonal mowing or prescribed fire to reduce non-native annuals and promote native perennial grasses).

Ecological restoration treatments may have multiple objectives:

- restoring fire adapted ecosystems that resist high intensity fire and associated property and watershed damage, such as by removing small, easily ignited fuel.
- improving ecological health by returning appropriate fire frequencies to the landscape while avoiding too frequent fire intervals;
- providing locations to conduct research and monitoring on prescribed burning to educate the public and plan burning more effectively in the future.

<u>Recommendations for vegetation management for restoration:</u>

1. Focus on vegetation communities where the vegetation condition has departed significantly from a natural fire regime.
2. Although restoration activities occur in remote locations, goals related to improving ecological health and restoring watershed conditions could be integrated into WUI fuel reduction projects.
3. For forests treated for ecological goals, incorporate prescribed burning where appropriate to maintain conditions in future years. Prescribed fire can reduce wildfire hazard by reducing fuel loadings, create a seedbed of bare mineral soils which is advantageous for some plant germination, stimulates seed germination, initiate open sunlight, reduce vegetative competition, release nutrients directly into the soil, improve forage and range conditions, increase insolation of the soil, and increase yield.
4. Study opportunities for increased carbon sequestration and soil moisture retention in treated stands.

4. Monitoring and reporting of project outcomes for evaluating effectiveness

As funding increases the scope and scale of vegetation management for wildfire protection across Marin, the need to identify success criteria and/or metrics and establish monitoring protocols become crucial. Lead agencies need to work together to measure overall vegetation management to reduce fire risk with ecological sound practices. In addition, agencies should use remote sensed data to determine the effects of treatments on forest stand structure and estimate expected changes in lower fire intensity or flame lengths. Project funding should always include post project monitoring for environmental success and any necessary remediation or maintenance.

MCL believes that lead agencies for wildfire risk reduction projects should report annually how they have assessed and mitigated the environmental conditions of implemented projects.

Recommendations for monitoring reports:

1. Total acreage treated by treatment type and % reduction in fuel loads.
2. Total acreage comprising maintenance of past work.
3. Changes in invasive species vegetation cover relative to the goal of no net increase in non-native plants.
4. Any changes in population size and distribution in special status species including documentation such as maps, mitigations implemented, and subsequent mitigation success.
5. For grazing projects, vegetation cover prior to treatment, treatment dates, slope, acreage and number of goats, and vegetation cover post grazing over time.
6. Best management practices included in each project.

5. Public education and training programs

Communication to residents, landscape professionals and gardeners, fire inspectors, and fire protection officials regarding fire ecology and ecologically important attributes of vegetation management for fuel reduction should be supported by key public education agencies such as FIRESafe MARIN, UCCE Marin Master Gardeners, California Native Plant Society, Marin Municipal Water District, and others. MCL supports increased public information regarding ecologically sound practices associated with wildfire prevention and protection. Particularly important is messaging to residents and their gardeners/landscapers about their landscapes and action in wildlands near their communities. Also, fire inspectors need increased education regarding ecologically sound practices supported by easily disbursed educational materials for advising residents.

Recommendations for public education and training:

1. Advance key messages to elected officials, fire agency staff and the public including fire behavior, role of wildland fire in ecosystems, actions that land management and fire agencies take to reduce risks, and the need for partnerships among agencies, tribes,

residents, fire protection agencies, and communities to understand and approach fire prevention.
2. Interact with key educational agencies to continue improved messaging regarding ecologically sound practices. Support creation of public information materials to improve knowledge of ecological services around homes, biomass resource recovery and carbon sequestration, and ways to prevent fire while ensuring ecological health.
3. Increase media involvement in furthering ecologically appropriate fire prevention through press releases and direct contact with media thereby increasing their understanding of the role of fire
4. Support ongoing training program for inspectors to know both non-native and native plants and a checklist of ecological items to include in the inspections.

References:

1. Keely and Syphard, 2019
2. Fremontia – Journal of the California Native Plant Society, California Fires, Challenges and Proposed Solutions (March 2020).
3. East Bay Regional Parks District. A review of Ecological Grazing Management Approaches Applicable to EBRPD Rangelands
4. Cal Fire VTP https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities

Additional Sources: Marin Community Wildfire Protection Plan, Marin Wildfire Prevention Authority, Ecologically Sound Practices committees, Fire and Environment Resilience Network, Marin Chapter of the California Native Plant Society, Marin Audubon Society, and MCL Newsletter articles.