State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 94534
(707) 428-2002
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

July 15, 2025

Ms. Crystal Acker, Supervising Planner
Permit Sonoma
2550 Ventura Avenue
Santa Rosa, CA 95403
Crystal.Acker@sonoma-county.org

Subject: ORD20-0005 Draft Sonoma County Comprehensive Cannabis Program Update (State Clearinghouse No. 2023020144); Sonoma County

Dear Ms. Acker:

The California Department of Fish and Wildlife (CDFW) received a draft Environmental Impact Report from the County of Sonoma (County) for the Sonoma County Comprehensive Cannabis Program Update (Project) pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines. CDFW previously reviewed and commented on a Mitigated Negative Declaration (MND) and Notice of Preparation (NOP) related to the draft Environmental Impact Report (State Clearinghouse No. 2021020259 and 2023020144, respectively).

CDFW is submitting comments on the Environmental Impact Report (EIR) to inform the County of Sonoma, as the Lead Agency, of our concerns regarding potentially significant impacts to sensitive resources associated with the proposed Project. CDFW is providing these comments and recommendations regarding those activities involved in the Project that are within CDFW's area of expertise and relevant to its statutory responsibilities (Fish and G. Code, § 1802), and/or which are required to be approved by CDFW (CEQA Guidelines, §§ 15086, 15096 and 15204).

REGULATORY ROLES

CDFW is a Trustee Agency with responsibility under CEQA (Pub. Resources Code, § 21000 et seq.) pursuant to CEQA Guidelines section 15386 for commenting on projects that could impact fish, plant, and wildlife resources. CDFW is also considered a Responsible Agency if a project would require discretionary approval, such as permits issued under the California Endangered Species Act (CESA), the Lake and Streambed Alteration (LSA) Program, and other provisions of the Fish and Game Code that afford protection to the State's fish and wildlife trust resources. Likewise, to the extent implementation of the Project as proposed may result in "take", as defined by State law, of any species protected under CESA (Fish & G. Code, § 2050 et seq.), or state-listed rare plant pursuant to the Native Plant Protection Act (NPPA; Fish and Game Code

§1900 et seq.) authorization as provided by the applicable Fish and Game Code will be required.

California Department of Food and Agriculture (CDFA) regulates cannabis cultivation and issues licenses to cultivate. In order to obtain an Annual License to cultivate cannabis, applicants must demonstrate compliance with Fish and Game Code 1602. Additionally, according to the *CDFA Reference Guide for the Applicant Attachments*[1], applicants must demonstrate full compliance with CEQA by conducting project-specific review. The County should ensure that the Cannabis EIR appropriately evaluates and covers ministerial cultivation sites to adequately meet CDFA licensing requirements.

Sonoma County Cannabis Ordinance Description

The County of Sonoma proposes to adopt amendments to the County Code, Chapter 26 and new Chapter 38, to allow expanded ministerial permitting for commercial cannabis cultivation in agricultural and resource zoned areas. The County of Sonoma also proposes a general plan amendment to include cannabis within the definition of agriculture. This proposal would expand ministerial permitting of commercial cannabis cultivation in agricultural and resource zoned areas of the unincorporated county (Land Intensive Agriculture (LIA), Land Extensive Agriculture (LEA), Diverse Agriculture (DA), and Resources and Rural Development (RRD) Zoning Districts). It would not include the coastal zone.

COMMENTS AND RECOMMENDATIONS

CDFW offers the following comments and recommendations to assist the County in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources, including:

COMMENT 1: Risks of the "Crop Swap" Provision Under Ministerial Permitting Pathway

***Issue*:** The EIR includes a "crop swap" provision that allows existing permitted agricultural lands to transition to cannabis cultivation through ministerial approval, without a discretionary use permit or project-specific CEQA review. A crop swap is defined under Sonoma County Code Section 26-18-115 (C)(4)(h) as the replacement of active cultivation of perennial or row crops with outdoor cannabis cultivation or the reuse of an existing nonresidential structure for an accessory cannabis use or indoor or mixed light cannabis cultivation, involving no or negligible expansion of use. While the intent is to avoid impacts to biological resources, the crop swap provision fails to account for the ecological differences between traditional agriculture (e.g., vineyards, row crops,

[1] https://www.cdfa.ca.gov/calcannabis/documents/ApplicationAttachmentsReferenceGuide.pdf

orchards) and cannabis cultivation, which often involves materially different infrastructure, operating hours, chemical inputs, and water use patterns. The provision also lacks safeguards to ensure biological resource impacts are not exacerbated by these changes, particularly for aquatic and riparian ecosystems.

By allowing cannabis conversion through crop swaps without new environmental review, the County risks allowing significant impacts to biological resources without mitigation, in conflict with CEQA's requirement to avoid or substantially lessen impacts through enforceable measures (CEQA Guidelines §§15021, 15064, 15126.4). This also conflicts with CEQA's intent to evaluate and disclose environmental consequences before project approval (CEQA Guidelines §§15002(a), 15063, 15064, 15070). Under CEQA Guidelines §15300.2(c), a project is not eligible for exemption or ministerial processing if "there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances." Despite similar footprints, crop swap projects involving cannabis cultivation can present biologically "unusual circumstances" compared to their predecessors, making ministerial permitting potentially inappropriate.

***Evidence of Impacts*:** Although the footprint of cultivation may remain the same in size, cannabis operations introduce distinct biological impacts that can be greater than previous agricultural uses and result in significant impacts to biological resources:

- Water Demand Timing and Quantity: Cannabis is typically cultivated during peak summer months (June–September) when streamflows are at their lowest. Even if total annual water demand is similar to prior crops, cannabis irrigation can disproportionately affect dry season baseflows critical to salmonids, amphibians, and aquatic invertebrates. For example, for a crop swap from grapes to cannabis, overall water use may be "net zero", at an annual timescale but grapes may use more water in the spring during frost protection events versus cannabis plants in late summer when seasonal water availability is much lower. Shallow or hydraulically connected wells may exacerbate flow depletion (Barlow & Leake, 2012; Grantham et al., 2012).

- Infrastructure Intensification: Even without increasing cultivated acreage, crop swaps may involve more intensive infrastructure such as hard packed gravel surfaces, extensive use of plastic materials (e.g., geotextile mesh, hoophouses, grow pots, netting, irrigation supplies), water tanks, fencing, lighting, vehicle traffic, road improvements, etc. These features can increase habitat fragmentation, create barrier effects for wildlife, increase waste and debris, result in loss of habitat and pollution pathways to nearby streams or wetlands.

- Cannabis cultivation often involves importation of potting soil and amendments that can be a vector for sudden oak death or other pathogens.

- Lighting and Nighttime Disturbance: Unlike many traditional crops, cannabis operations may involve nighttime lighting for security and/or greenhouse operations, which can disrupt circadian rhythms of wildlife, especially species that rely on darkness for migration, foraging, or reproduction (Longcore & Rich, 2004; Gaston et al., 2013).

- The crop swap provision does not require a Biotic Resource Assessment unless the parcel is located in federally adopted critical habitat. This fails to account for sensitive biological features (e.g., burrows, wildlife corridors, wetland margins) that may have developed or persisted on currently farmed or previously farmed but partially fallowed land.

***Recommendations*:** CDFW recommends Sonoma County Code Section 26-18-115 (C)(4)(h) be updated to include additional prohibitions and proposed crop swap conversions be limited to parcels that meet the following additional criteria:

1. “Perennial crops” proposed for conversion do not include grasslands such as hayfields or pastures.

2. Crop swap shall be limited to the same cultivation infrastructure as existing (e.g., planted in the ground without use of gravel hard-pack surfacing, imported potting soil, rows of plastic pots, geotextile materials or hoophouses.

3. No new lighting.

4. No stream or wetland is present on the parcel or within 150 feet of the proposed cultivation area or related infrastructure.

5. Proposed water use is the same (net-zero) seasonally using a monthly or finer resolution timescale.

6. No new grading or construction of buildings, facilities, or infrastructure is proposed even if no grading permit is required.

7. No nearby record of any special status species or their habitat is recorded in the California Natural Diversity Database (CNDDB).

Crop swaps that do not meet the above criteria should be ineligible for ministerial permits and instead require discretionary review.

Additional Ministerial Considerations

Cannabis cultivators applying for an Annual License from the Department of Cannabis Control (DCC) must have an LSA Agreement or written verification from CDFW that one

is not needed. CDFW must comply with CEQA to issue a finalized LSA Agreement. With consideration to crop swap projects under the EIR, CDFW may determine ministerial exemptions on certain projects require discretionary CEQA analysis.

COMMENT 2: Land Use Planning and Ministerial Permitting

***Issue*:** The proposed Ordinance provides detailed mapping and analysis of sensitive biological resources, including biotic habitat areas, critical wildlife corridors, and special-status species occurrences (Figures 3.4-11 and 3.4-12; Table 3.4-21). CDFW appreciates the County's effort to incorporate spatial conservation data into the environmental review process. However, the EIR does not clearly integrate this information into enforceable permitting mechanisms that preclude ministerial approval of cannabis cultivation in areas with high biological value. Instead, the EIR allows ministerial permits without a Biotic Resource Assessment (BRA) for "crop swap" projects on parcels that are not located within adopted federal critical habitat (CH) in compliance with proposed County Code Section 26-18-115(C)(4)(h)(7). The BRA determination has a notable limitation in that ministerial approval can be allowed in areas with special-status species if a project is located in an area that is not considered CH. Neither CDFW Species of Special Concern (SSC) or CESA-listed species have CH designations unless also listed under the federal Endangered Species Act. CDFW is particularly concerned if ministerial approval is allowed for any project that can cause impacts to a CESA-listed species through impacts to habitat where no CH has been designated. Areas with known or potential habitat for CESA-listed species could result in "take" under CESA (Fish and Game Code §2080), for which a CESA Incidental Take Permit (ITP) would be required.

***Evidence of Impacts*:** Special-status species occupy or move through areas that may not fall within current zoning overlays or CH but are nevertheless ecologically significant. Habitat fragmentation from road building, fencing, infrastructure development, and vegetation removal, even in areas lacking formal designation, can lead to significant long-term degradation of species movement and persistence (Beier & Noss, 1998; Crooks & Sanjayan, 2006).

Habitat fragmentation is a prime threat to biodiversity, reducing the ability of species to migrate, disperse, and maintain viable populations (Beier & Noss, 1998). Wide-ranging species such as mountain lions (*Puma concolor*), bobcats (*Lynx rufus*), and American badgers (*Taxidea taxus*) require intact landscape linkages for foraging and reproduction. Even intermittent disturbances from fencing, vehicle traffic, and noise can disrupt breeding and migration behaviors (Riley et al., 2006). The Sonoma County Vital Lands Initiative (2021) and regional conservation assessments by the Sonoma Land Trust and others have identified priority conservation areas based on species richness, climate resilience, and connectivity. Cultivation projects in these areas pose risks of

cumulative habitat loss and edge effects that are not adequately mitigated through parcel-scale assessments alone.

***Recommendations*:**

1. For projects located within high-priority conservation areas identified by the Sonoma County Vital Lands Initiative, mapped wildlife corridors, or known occurrences of special-status species (via CNDDB or other agency databases), CDFW recommends separate Use Permit and individual CEQA analysis. Alternatively, CDFW supports cultivation prohibition in those areas.

2. Using available spatial data (e.g., CNDDB, California Native Plant Society (CNPS) Inventory, Sonoma Land Trust wildlife corridors, and BH/RC overlays), the County should develop a GIS-based exclusion map at a parcel-level scale to screen out areas where ministerial permitting is not appropriate. This approach would increase transparency and consistency in permit decisions.

3. Prior to expanding the ministerial permitting program, the County should perform a regional habitat and impact assessment to evaluate the additive effects of cannabis cultivation on ecological networks and species movement. This could be integrated with the County's ongoing Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) planning efforts.

4. Biotic Resource Assessment requirements for ministerial projects should be expanded to include if impacts to any special-status species habitat could occur and not be limited to federally designated critical habitat. For example, if habitat for a California species of special concern would be impacted, ministerial approval should be excluded.

COMMENT 3: Groundwater Use

***Issue*:** While the EIR includes general prohibitions on surface water diversion during the dry season and references the State Water Resources Control Board (SWRCB) Cannabis Cultivation Policy, it does not provide a comprehensive framework to evaluate or mitigate streamflow depletion from near-stream wells. The EIR states that wells within 500 feet of a "blue-line" stream must either prepare a "net zero water plan," be located within designated Groundwater Availability Zones 1 or 2, or demonstrate adequate water supply. However, simply being located within a mapped groundwater zone does not reliably indicate a lack of hydrologic connectivity to streams. Streamflow depletion due to groundwater pumping is well documented, and even modest pumping rates can reduce baseflow, especially in unconfined or shallow alluvial aquifers near streams (Barlow & Leake, 2012; Winter et al., 1998). These impacts are particularly concerning in watersheds that support endangered and threatened aquatic species.

***Evidence of Impacts*:** Several tributaries in Sonoma County, such as Dutch Bill Creek, Green Valley Creek, and Mark West Creek, are critical to the recovery of Central California Coast coho salmon (*Oncorhynchus kisutch*), California Coastal Chinook salmon (*Oncorhynchus tshawytscha*), steelhead trout (*Oncorhynchus mykiss*), and California freshwater shrimp (*Syncaris pacifica*). These species depend on perennial or seasonally intermittent streams for juvenile rearing during the dry season (NOAA 2012). The grow season for cannabis cultivation includes summer months (CDFW 2018) during times when stream flows are generally at their lowest (SWRCB 2010). Most Sonoma County fish-bearing tributaries are already subject to large numbers of diversions that are cumulatively affecting the amount of water available for instream habitat. The exact number, location and extent of diversions are unknown. However, in many watersheds, parcels that do not have access to municipal water sources often extract water from the stream. This is typically either through direct diversion from the stream or from near stream wells that intercept subterranean stream flow, or from groundwater wells. Groundwater extraction has the potential to impact groundwater dependent resources and reduce streamflow, especially during the late spring and summer months which is a critical time period for the state federally endangered coho salmon and federally threatened steelhead. Pumping from hydraulically connected wells during this critical period can substantially reduce instream flows, thereby reducing the quality and quantity of aquatic habitat (Grantham et al., 2012; Deitch et al., 2009).

Groundwater and surface water are hydraulically connected in many North Coast watersheds. According to Woolfenden and Nishikawa (2014), modeling in the Santa Rosa Plain showed that increased pumping led to measurable reductions in baseflow in adjacent streams, even during winter months. These findings are particularly important considering the expansion of cannabis cultivation in rural upland areas, where wells are often sited in unconfined aquifers with shallow water tables and proximity to fish-bearing streams.

***Recommendations*:**

1. Require site-specific hydrologic assessments for all wells within 500 feet of surface water bodies, including ephemeral, intermittent, and perennial streams. These assessments should be prepared by a licensed hydrogeologist or professional engineer and should evaluate well-stream connectivity, potential well drawdown effects, and cumulative impacts on instream flows (particularly during the dry season).

2. In order to avoid a concentration of cannabis cultivation sites in a particular watershed, which could result in potential significant impacts, CDFW recommends that prior to issuing permits for new cultivation, the County defines watershed-scale limits or caps on cannabis cultivation based on hydrologic carrying capacity. Without a defined cap on the number of cultivation sites,

analysis of environmental impacts should assume that all parcels meeting zoning criteria could be used for cannabis cultivation. Using existing models (e.g., the HUC12 watershed scale), the County should evaluate how much cumulative cannabis and hemp cultivation (and associated water use) can be sustained in each watershed without causing significant impacts to aquatic resources. For all cultivation sites, disclosure of the amount of water to be used from each water source, and a current, site-specific analysis of water availability should be required, and the County should reserve the discretion to modify permit conditions. Please note that possession of an active appropriative water right does not guarantee that an adequate water supply is available to support fish and wildlife resources.

3. Additionally, surface water diversions (including subterranean stream flow) are subject to notification under Fish and Game Code 1602. The proposed Ordinance should require projects with surface diversions to comply with 1602 and notify CDFW for all surface diversion activities.

4. Incorporate seasonal forbearance periods for wells near streams, consistent with the SWRCB Cannabis Policy. Forbearance requirements should apply to any well drawing from a hydraulically connected aquifer, not just direct surface water diversions.

5. Require off-stream storage for sites using surface water or shallow groundwater near streams. Adequate wintertime storage capacity (e.g., tanks or ponds) must be demonstrated prior to planting, in order to support summertime irrigation needs without active diversion or pumping during low-flow months. CDFW supports the development of water storage in tanks, and therefore recommends removing the limitation of a maximum 100,000-gallon new water storage for ministerial projects.

6. “Adequate water supply” should be defined in the EIR to include consideration of ecological flow needs, not just water availability for agricultural use. The term should be linked to site-specific conditions, and documentation should include a water budget, crop demand estimates, and supporting technical analysis.

COMMENT 4: California tiger salamander (*Ambystoma californiense*; CTS)

***Issue*:** The present range of the Sonoma Distinct Population Segment (DPS) of CTS is predominantly located on the Santa Rosa Plain, but according to CNDDB, the present and/or historical range also include areas outside of Petaluma, Penngrove, Cotati, and southwest Sonoma County. The EIR correctly identifies the Santa Rosa Plain as a critical area for the Sonoma County DPS of the federally and state-listed endangered CTS and includes protective measures such as the 1.3-mile buffer around known

breeding sites and exclusion of cultivation from these areas unless the species is delisted. However, the EIR does not include protective measures to mitigate all potentially significant impacts to CTS where:

- CTS occurrences are documented in areas outside the formally designated Santa Rosa Plain, such as parts of rural Petaluma, Penngrove, Cotati, and southwest Sonoma County;

- Impacts to upland and dispersal habitat are allowed under the ministerial pathway (crop swap).

Please be advised that actions related to cannabis cultivation activities within CTS habitat, including but not limited to, site grading, access improvements and installation of fencing could result in "take" of CTS. A CESA Incidental Take Permit (pursuant to Fish and Game Code Section 2080 et seq., "ITP") is required in advance of any activities that can cause take of CTS. Issuance of a CESA ITP requires CEQA documentation and compensatory mitigation for covered species habitat impacts. Therefore, CDFW will not be able to rely on the draft EIR for ministerial approvals that allow impacts to CTS habitat requiring CESA take authorization.

***Evidence of Impacts*:** CTS is endemic to California, with isolated populations in Sonoma and Santa Barbara counties (Bolster 2010, U.S. Fish and Wildlife Service (USFWS) 2014). CTS relies on seasonal wetlands or freshwater ponds for successful reproduction and adjacent or accessible terrestrial habitat for migration and aestivation, making the quality of both aquatic and terrestrial habitat essential for CTS survival (Bolster 2010). Upland habitats must contain underground refugia, such as mammal burrows, that CTS depend upon for food, shelter, and protection (Laredo et al. 1996). Threats to CTS include habitat loss/conversion and fragmentation, including dispersal habitat between breeding pools and upland refugia. CTS spend the majority of their lifecycle underground (Trenham et al. 2000) and are susceptible to being crushed during ground disturbance. CTS is also threatened by competition with and predation from invasive species (USFWS 2017). Introduced species such as bullfrogs and sunfishes have had a negative effect on CTS (Bolster 2010). Larval populations undergo large fluctuations, with most populations containing less than 100 breeding pairs (Pechmann et al. 1991, Bolster 2010). Fluctuating *Ambystoma* populations were found to be susceptible to recruitment failure during stochastic events (Pechmann et al. 1991).

Over the past 25 years, land development has increased dramatically within the Santa Rosa Plain, including low- and high-density land use and agricultural conversion (USFWS 2016). The current core range of Sonoma County CTS encompasses approximately 18,000-20,000 acres of fragmented habitat. The species can migrate up to 1.3 miles between a breeding pond and upland burrows (Orloff 2011). CTS spend

approximately 95 percent of their lifetime in underground burrows, emphasizing the importance of protecting potential upland habitat in addition to wetland breeding ponds (Trenham 2001).

Pesticides and fertilizers used in cannabis cultivation could decrease fitness or survival of, or cause abnormalities in, *Ambystoma* species, mostly at the larval stage if contaminants drift into breeding pools (Egea-Serrano et al. 2012). Ponds and vernal pools can quickly accumulate these types of pollutants from run-off, making CTS particularly sensitive to pesticide exposure. Concentrated toxins in rodenticide-treated grain placed in ground squirrel burrows could come into direct contact with the permeable skin of CTS (Bolster 2010). Rodenticides that control small mammal populations would also reduce available burrows, making the habitat no longer suitable for CTS (Laredo et al. 1996). Lack of underground refugia could cause longer migration trips and resulting mortality of CTS as a result of exposure to predators, heat, and other elements (Laredo et al. 1996).

Construction or modification of perennial ponds has been shown to provide breeding habitat for invasive bullfrogs that prey on and compete with sensitive amphibians (Kiesecker et al. 2001, Bolster et al. 2011, Fuller et al. 2011 Kupferberg and Fury 2015). Perennial ponds can also provide suitable habitat for non-native tiger salamander and hybrids.

Grading and filling of habitat can result in crushing CTS, collapsing underground burrows and trapping CTS within, and reducing or fragmenting breeding or non-breeding habitat.

Roads can result in amphibian mortality and fragment habitat as well as create barriers to movement (Trombulak and Frissell 2000). Off-road vehicles can crush and reduce burrow density and alter wetland habitat.

Artificial lighting can disrupt the production of melatonin in *Ambystoma* salamanders if they are exposed to it, altering metabolic rates and reducing tolerance to high temperatures (Perry et al. 2008). Additionally, *Ambystoma* salamanders could miss the cue to migrate if there is artificial light, which could affect breeding.

The Santa Rosa Plain Recovery Plan (USFWS, 2016) emphasizes protection of upland habitat and dispersal corridors in addition to aquatic breeding pools. Landscape fragmentation and unregulated development in areas not currently mapped as critical habitat, but which are used by dispersing CTS, could have a significant impact on population recovery.

1. ***Recommendations*:** Expand exclusion zones for ministerial permitting to include areas within 1.3 miles of all known CTS occurrences, including outside the formal Santa Rosa Plain boundary (e.g., rural areas of Southwest Petaluma,

Penngrove, and East Cotati). Data from sources like CNDDB, USFWS critical habitat mapping, and local surveys should be used to inform this expanded buffer.

2. Require full CEQA review under the County's Use Permit process for any cultivation project proposed in areas with suitable CTS habitat, regardless of zoning or CH status. Site-specific assessments should consider upland burrow habitat, not just aquatic features.

3. Require ITPs from CDFW for any project with potential to impact CTS through direct take such as through habitat alteration, or barrier creation. The County should not approve ministerial permits in such cases.

4. Restrict the use of rodenticides, herbicides, and synthetic pesticides in areas with suitable CTS habitat, and prohibit the use of rodenticide-laced grain in ground squirrel and gopher burrows.

Due to the presence of contiguous suitable habitat features and migration potential throughout the Santa Rosa Plain, it is vital to protect this habitat to allow for recovery of the species. This should be accomplished by ensuring adequate avoidance, minimization, and mitigation measures are required through individual CEQA review and document preparation. Site analyses should take into consideration species life stage history, proximity to suitable upland and breeding habitat, and potential habitat availability on each individual project site.

COMMENT 5: Protection of Biotic Resources

***Issue*:** The EIR requires that cannabis cultivation projects submit a BRA prepared by a qualified biologist to determine the presence or potential presence of special-status species or sensitive habitats (Mitigation Measure 3.4-1a). While the requirement for a BRA is appropriate in concept, the EIR does not provide adequate performance standards, survey protocols, or agency oversight to ensure consistency and rigor in biological impact evaluations. The absence of standardized methods and formal review undermines the reliability of BRAs and increases the risk that projects in biologically sensitive areas will be incorrectly deemed eligible for ministerial permitting.

The BRA serves as the primary (and sometimes only) mechanism for identifying and avoiding impacts to sensitive biological resources. Without enforceable standards for field survey timing, methodology, or reporting, there is a high likelihood that BRAs will vary in quality and completeness. This increases the potential for special-status species or sensitive habitats to go undetected, particularly for cryptic or seasonally detectable species. The EIR also does not require BRAs for the ministerial pathway, unless a project is located in federally adopted critical habitat.

***Evidence of Impacts*:** Many special-status species in Sonoma County, including California red-legged frog (*Rana draytonii*) and CTS, use marginal or previously altered habitats for foraging, dispersal, or estivation. Agricultural lands, for instance, may support significant populations of ground squirrels (*Otospermophilus beecheyi*), which provide essential burrow habitat for amphibians and reptiles (Alvarez et al., 2013). Additionally, "disturbed" land may retain seed banks of sensitive plant species that can germinate under the right conditions (Barbour et al., 2007). Because many species are cryptic or only seasonally detectable, their presence can be missed by a one-time, non-protocol survey, especially if conducted outside of the correct window. Inconsistent survey methodologies and the absence of County- or agency-level verification increase the risk that projects in important habitats proceed with ministerial approval despite the presence of sensitive biological resources. Moreover, the proposed process does not incorporate CDFW when reviewing BRAs in determining whether there are potential species impacts on a site. CDFW is concerned with not being included in the review process to provide feedback and/or comments on the BRAs prior to determining if a project may impact sensitive or special-status species.

Recommendations: CDFW would like the opportunity to review existing and proposed cultivation sites for potential impacts to sensitive natural resources. To assist in ensuring effective, efficient and timely review, applicants should initiate the permitting process with the County, and the County should refer projects to CDFW, similar to existing procedures for other project referrals. By applying to the County first, applicants would be provided with a permit tracking number to reference, and contacts with CDFW could be handled more efficiently with a complete application. Therefore, the proposed Ordinance should be revised to reflect that applications and BRAs will be referred to CDFW after submission to the County. BRAs should evaluate all species habitat potential, including Species of Special Concern (SSC). Sites with potential to impact special-status species, including SSC or their habitats, should not qualify for ministerial permitting and should apply for a Use Permit.

In such cases where take of a special-status species is determined to be likely, early consultation with CDFW is encouraged because significant modification to a subsequent project activity and mitigation measures, and an additional CEQA environmental document, may be required. Additionally, take of species listed under the federal Endangered Species Act would require a separate authorization from the USFWS and/or National Marine Fisheries Service.

CDFW recommends the following:

1. Require that all BRAs follow current protocol-level survey guidelines for special-status species and habitats where available. Protocols and guidelines that generally represent what CDFW believes to be the best available methodology for the intended purpose can be found here:

https://wildlife.ca.gov/Conservation/Survey-Protocols. Survey windows must align with species' detectability periods, and reports must include a surveyor's qualifications, methodology, and limitations.

2. Establish a County-level biologist and/or designate third-party reviewers to screen BRAs. If the BRA identifies the presence or likelihood of special-status species, there should be the opportunity for CDFW consultation.

3. Develop and publish a standardized BRA template to improve consistency across consultants and ensure all relevant environmental attributes (e.g., CNDDB/CNPS review, presence of wildlife movement features, habitat quality scoring) are included.

4. Require habitat value be assessed cumulatively, not just based on current vegetation cover. For example, a site located between two high-value habitats may function as a wildlife movement corridor regardless of its own vegetative condition.

COMMENT 6: Riparian/Wetlands Setbacks

***Issue*:** The EIR establishes improved riparian buffer distances for cannabis cultivation (150 feet for perennial streams, 100 feet for intermittent streams, and 50 feet for ephemeral streams (Table 3.4-1)) and generally prohibits development within these zones. This approach is broadly consistent with best management practices (BMPs) and the State Water Resources Control Board's (SWRCB) Cannabis Cultivation Policy. However, given the unknown variability of site-specific cannabis activities, proposed setbacks may not be enough to conclude no adverse effects on any special-status fish. While the EIR prohibits "vegetation clearing or disturbance" within buffer areas, it does not clarify whether indirect disturbances such as run-off or erosion from existing roads, increased light, noise, vehicle activity, or drainage modifications will be considered in buffer enforcement. In continuation, these setbacks may not adequately prevent deleterious materials, including wastewater discharge and other pollutants, from entering wetlands and/or streams.

***Evidence of Impacts*:** Riparian buffers serve multiple critical ecological functions: maintaining bank stability, filtering sediments and nutrients, moderating water temperature, and providing shade, forage, and cover for fish and wildlife. A minimum of 100 feet on both sides of a stream is needed to maintain basic aquatic habitat functions, and wider buffers (>150 feet) are necessary in steep, erosion-prone, or biologically rich areas (Sweeney and Newbold, 2014).

Insufficient buffers can lead to increased sedimentation, loss of riparian vegetation structure, and degradation of habitat for sensitive aquatic species such as coho salmon (*Oncorhynchus kisutch*), California freshwater shrimp (*Syncaris pacifica*), and foothill

yellow-legged frogs (*Rana boylii*). These species depend on intact riparian corridors for breeding, cover, and foraging. During winter wet-season conditions, polluted runoff such as from fertilizers used to cultivate cannabis, has a higher potential to enter streams. Wetlands that are hydrologically connected to surface water can transport pollutants and waste material associated with cannabis cultivation. Riparian buffers help keep pollutants from entering adjacent waters through a combination of processes including dilution, sequestration by plants and microbes, biodegradation, chemical degradation, volatilization, and entrapment within soil particles. As buffer width increases, the effectiveness of removing pollutants from surface water runoff increases (Castelle et al. 1992). There is substantial evidence showing narrow buffers are considerably less effective in minimizing the effects of adjacent development than wider buffers (Castelle et al. 1992, Brosofske et al. 1997, Dong et al. 1998, Kiffney et al. 2003, Moore et al. 2005).

***Recommendations*:** The County should evaluate each cultivation site individually and reserve the right to require greater setbacks in some cases. Additionally, CDFW recommends the following:

1. All sites should be evaluated for potential wetland features within the required BRA. Sites with signs of wetland features should be delineated by a qualified professional to determine the appropriate setback distances from constructed areas. The EIR should clarify that buffer zones apply to all cannabis-related infrastructure, not just grow areas or structures.

2. Define acceptable buffer modification criteria in the EIR and ordinance. Deviations from minimum setbacks should require a site-specific ecological buffer effectiveness analysis conducted by a qualified professional such as an ecologist with supporting data (e.g., slope, soil type, vegetation cover, and proximity to aquatic habitat).

3. Incorporate additional buffers for wetlands, springs, and seeps. These features are often unmapped but support rare species and contribute to watershed hydrology. A minimum 100-foot buffer should apply to these habitats unless otherwise approved in writing by CDFW and RWQCB.

4. Prohibit artificial lighting, pesticide storage/use, and loud mechanical operations within setback areas. Include time-of-day restrictions for activities near streams and riparian corridors during breeding or migration periods.

5. Encourage or require habitat enhancement within setbacks, especially on previously disturbed lands (e.g., riparian replanting, invasive species removal, erosion control). These measures can provide ecological value and resilience to edge effects.

6. Require improvements or relocation of any existing roads within setbacks that contribute sediment, erosion or other pollution to waters of the state.

COMMENT 7: Tree Removal, Oak Woodland Conversion, and Vegetation Impacts

Issue: The proposed Ordinance identifies potential significant effects to sensitive plant communities, large trees (≥20-inch diameter at breast height [dbh]), and oak woodlands (Impact 3.4-4), and includes Mitigation Measures 3.4-4a and 3.4-4b. However, it does not establish specific significance thresholds for cumulative oak woodland loss or mature tree removal, which may allow biologically important conversions to occur incrementally under ministerial permits. It also relies heavily on tree replacement or on-site mitigation, but does not sufficiently evaluate whether replacement is feasible or ecologically equivalent. Lastly, it does not provide clear mechanisms to assess cumulative loss of oak woodland or old-growth trees. Without clear thresholds, impact accounting, or regional analysis, the EIR cannot ensure that oak woodland conversion and vegetation loss will remain less than significant over time. Without defined mitigation ratios, habitat quality assessment tools, or offsite compensation mechanisms, the EIR lacks the ability to ensure no net loss of important, functional tree cover or oak woodland habitat.

***Evidence of Impacts*:** Oak woodlands and old-growth forests provide critical habitat for hundreds of species, including acorn woodpecker (*Melanerpes formicivorus*), pallid bat (*Antrozous pallidus*), and numerous pollinators and native understory plants. These systems also serve as carbon sinks, watershed protectors, and landscape connectors (Gaman & Firman, 2006). Oak regeneration is slow, and replacement planting is often unsuccessful without intensive site preparation, irrigation, and long-term management (McCreary, 2001). CEQA Guidelines §15126.2(a) require evaluation of both direct and indirect impacts, including habitat loss and degradation of natural communities. Additionally, §15130 requires analysis of cumulative impacts, especially for resource areas affected by incremental development. Incremental tree and canopy loss across multiple sites may not individually reach CEQA thresholds but can result in significant cumulative degradation of wildlife habitat and ecological function (Spero et al., 2018).

***Recommendations*:**

1. Establish significance thresholds for tree and woodland conversion. For example, projects resulting in oak woodland loss should be considered potentially significant and ineligible for ministerial approval.

2. Establish cumulative impact tracking across ministerial permits, such as the County maintaining a GIS-based system to monitor oak woodland removal and canopy loss regionally.

3. Prohibit removal of mature or legacy trees (e.g., >36-inch dbh, or estimated >100 years old).

4. Require off-site mitigation for all tree removal exceeding on-site replanting capacity, with a preference for conservation easements, native habitat restoration, or purchase of appropriate credits from an approved mitigation bank.

COMMENT 8: Lighting and Noise Impacts on Wildlife and Riparian Ecosystems

***Issue*:** The EIR identifies lighting and noise as potential impacts to wildlife, particularly special-status species. While the EIR includes mitigation requiring downward-shielded lighting (Mitigation Measure 3.4-2a) and some general noise thresholds (e.g., 90 dBA for equipment operations), the proposed measures do not adequately address cumulative, indirect, or chronically disruptive effects, especially to sensitive species inhabiting or dependent on riparian ecosystems. Cannabis cultivation often involves nighttime operations (e.g., security, harvesting, trimming), lighted greenhouses, and intermittent noise sources such as generators, vehicle traffic, and mechanical equipment. These disturbances, when located near riparian corridors, may significantly degrade habitat suitability for species like nesting birds, bats, California red-legged frog (*Rana draytonii*), foothill yellow-legged frog (*Rana boylii*), and northern spotted owl (*Strix occidentalis caurina*).

The EIR does not mitigate light and noise impacts to less-than-significant because it fails to establish relevant light or noise thresholds based on species sensitivity, does not include distance-based buffers for lighting or noise near riparian corridors or BH zones, and lacks timing restrictions during peak breeding, nesting, or migration periods.

***Evidence of Impacts*:** Sensitive species, wildlife, and their habitats may be adversely affected by increased and artificial night lighting, even temporarily due to night construction activities. Light plays a vital role in ecosystems by functioning as both an energy and an information source (Gaston et al. 2012, 2013). The addition of artificial light into a landscape disrupts this role, altering the natural circadian, lunar, and seasonal cycles under which species have evolved. Artificial lights result in direct illumination, altering the natural patterns of light and dark, and sky glow (i.e., scattered light in the atmosphere), which can extend the ecological impacts of light far beyond the light source (Longcore and Rich 2004). On cloudy nights in urban areas, for example, the sky glow effect can be of an equivalent or greater magnitude than high-elevation summer moonlight (Kyba et al. 2013). The addition of artificial light into a landscape can impact a broad range of system processes, including:

- Activity patterns

- Availability and detectability of food resources

- Movement, navigation and migration
- The timing of phenological events
- Physiological functions
- Foraging behavior and predator-prey interactions
- Phototaxis (attraction and movement towards light)
- Circadian rhythms (both physiological and behavioral)
- Causing disorientation, entrapment, and temporary blindness

Noise pollution can also trigger stress responses in wildlife, interfere with acoustic communication (particularly in birds and amphibians), and displace species from otherwise suitable habitat (Francis et al., 2012). The EIR's use of a 90 dBA threshold, which is primarily intended to avoid direct injury or acute disturbance, is inadequate for protecting sensitive species. Studies have shown that even chronic noise levels of 40–60 dBA can alter nesting success in birds and reduce habitat use by amphibians and mammals (Barber et al., 2010; Shannon et al., 2016).

Despite these well-documented impacts, the EIR also does not clearly define riparian buffers as protection zones from light or noise. It also does not require mitigation for disturbance beyond generic equipment limitations. Without stronger design and timing standards, lighting and noise impacts will reduce the effectiveness of riparian setbacks and fragment wildlife corridors.

Under CEQA Guidelines §15126.2(a), the EIR must analyze all significant environmental effects, including those that are indirect or cumulative. Furthermore, Appendix G of the CEQA Guidelines requires evaluation of whether a project would interfere with wildlife movement, nursery sites, or result in habitat degradation through indirect disturbance such as noise or light.

Recommendations: CDFW recommends that the County strengthen its lighting and noise requirements in the following ways:

- Designate riparian setbacks as light and noise protection zones**.** No permanent or temporary lighting or noise-generating activity shall be permitted within 150 feet of perennial streams and 100 feet of intermittent streams unless expressly designed and mitigated for wildlife sensitivity.
- Specify biologically relevant lighting design criteria. Require all lights to be <3000K (amber or warm-spectrum), fully shielded, and motion-activated. Lighting

near riparian areas or BH zones should be limited to security-only use and shut off from dusk to dawn. Interior greenhouse lighting visible externally should also comply.

- Establish operational noise limits based on sensitive receptor criteria**.** Instead of a flat 90 dBA threshold, adopt biologically informed criteria such as 45 dBA max at the riparian buffer edge during nighttime hours. Nighttime equipment uses (e.g., generators, trimming machines) should be located as far as possible from aquatic or nesting habitats and use noise attenuation measures.

- Implement seasonal restrictions for lighting and noise. Prohibit high-noise activities (such as cannabis events) and artificial lighting near riparian areas during key biological periods, including:

    - Amphibian breeding (February–May)

    - Avian nesting (March–August)

    - Bat roosting/maternity (April–September)

- Require project-specific CEQA review for any project proposing nighttime operations or high-noise machinery within 150 feet of riparian corridors, BH zones, or known sensitive species occurrences.

These measures are particularly critical given the EIR's reliance on ministerial permits for many cannabis operations, where discretionary CEQA review would not otherwise trigger project-specific lighting mitigation. Without enforceable and quantifiable lighting controls, the County cannot ensure that cannabis operations will avoid or minimize impacts to wildlife that rely on natural light cycles for essential behaviors.

COMMENT 9: Monofilament Plastic Netting Prohibition

Issue: Monofilament plastic netting and mesh is commonly used as trellising on cannabis plants and in erosion and sediment control products. These plastic products can be harmful to wildlife because they can become entangled and/or trapped. This topic is not adequately considered or evaluated within the EIR.

Evidence of Impacts: Plastic netting used in these products has been found to entangle many different species of wildlife, including reptiles, amphibians, birds, and small mammals. CDFW has documented wildlife mortality related to monofilament plastic netting, including raptor and mammal species. Snake entrapment is of particular concern, as there have been numerous reports of snake injury and mortality due to entanglement in plastic netting used in temporary erosion and sediment control products (Rich et al 2020). Additionally, plastic materials persist in the environment for

years before breaking down into smaller fragments. When plastic fragments break down, these smaller fragments or microplastics often blow away or wash materials into waterways and habitat areas. Simply removing monofilament plastic netting after use does not adequately avoid or minimize these potential impacts.

Recommendations: The proposed Ordinance should prohibit use of monofilament plastic products and identify comparable materials that may be allowed that are less harmful to fish and wildlife. Allowable alternatives may include bio-degradable material, such as natural jute and coir (coconut husk fibers) in both erosion control measures and trellising materials.

COMMENT 10: Invasive Species Prevention and Management

***Issue*:** The proposed Ordinance acknowledges invasive species as a potential threat, but lacks enforceable standards and specific long-term monitoring or control measures related to invasive plant and animal species. Cannabis cultivation can create vectors for the introduction and spread of invasive species such as American bullfrog (*Lithobates catesbeianus)*, that can colonize water storage reservoirs and result in potentially significant impacts to native fish and wildlife, including special-status amphibians such as the California red-legged frog and California tiger salamander. Without additional measures, the proposed Ordinance has potential to result in potentially significant impacts to biological resources from spread of invasive species.

***Evidence of Impacts*:** Literature has shown that bullfrogs can outcompete and prey upon native amphibians and reptiles (Kupferberg, 1997; Kiesecker et al., 2001), and mosquitofish have documented impacts on amphibian larvae and native aquatic invertebrates (Goodsell & Kats, 1999). Disturbed areas from construction and site development are particularly vulnerable to colonization by invasive plant species (Brooks et al., 2004). Cannabis cultivation activities, including grading, importing soil, and vehicle access, can facilitate the spread of these invasive species. Without strict oversight, this could lead to lasting habitat degradation and reduced habitat suitability for native species.

***Recommendations*:** If a BRA determines presence or potential habitat for invasive species, the County should exclude the project from the ministerial permitting process. The County should also develop and implement an Invasive Species Prevention and Management Plan (ISPMP) as a requirement for all cannabis projects that have potential presence of invasive species. This plan should include:

- Mandatory pre-project invasive species surveys and risk assessments conducted by a qualified biologist;
- Required decontamination protocols for vehicles, tools, and footwear prior to entering sensitive sites;

- Prohibitions or strict guidelines on the use of landscaping plants known to be invasive (e.g., *Vinca minor*, *Hedera helix, Cortaderia selloana Phalaris arundinacea*, *Eucalyptus* spp.);
- Ongoing monitoring (e.g., annually for 5 years post-project) of high-risk sites adjacent to riparian corridors, vernal pools or other sensitive habitat;
- Response protocols for invasive species detected post-project;
- Reporting of invasive species sightings to Cal-IPC and CNDDB.

CDFW recommends the County coordinate with the California Invasive Plant Council (Cal-IPC) and integrate species from their "Inventory of Invasive Plants" and “Watchlist” into project-specific guidance.

COMMENT 11: Water Pollution

***Issue*:** Cannabis cultivation can result in the delivery of pollutants into nearby streams and waterways.

***Evidence of Impacts*:** Cultivation can result in delivery of sediment, nutrients, petroleum products, and pesticides into streams and other waters, degrading the water quality and increasing turbidity (Reid and Dunne 1984, Bauer et al. 2015, Carah et al. 2015). Sediment that washes into streams can smother gravel beds where salmonids spawn and impair growth and survival of juvenile salmonids (Suttle et al. 2004). Sediment in streams can also make the water cloudy which decreases the ability of organisms to photosynthesize (Mallery 2010).

***Recommendations to minimize significant impacts*:** Use best management practices to ensure minimal run-off and sediment delivery into waters near cultivation sites. Ensure all Regional Water Quality Control Board requirements are met.

COMMENT 12: Program EIR Subsequent Project Review

The EIR is a Program EIR but does not include a checklist for subsequent Project review. While Program EIRs have a necessarily broad scope, CDFW recommends providing as much information related to anticipated future activities as possible. CDFW recognizes that, pursuant to CEQA Guidelines section 15152, subdivision (c), if a Lead Agency is using the tiering process in connection with an EIR or large-scale planning approval, the development of detailed, site-specific information may not be feasible and can be deferred, in many instances, until such time as the Lead Agency prepares a future environmental document. This future environmental document would cover a Project of a more limited geographical scale and is appropriate if the deferred information does not prevent adequate identification of significant effects of the planning

approval at hand. The CEQA Guidelines section 15168, subdivision (c)(4) states, "Where the later activities involve site specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were within the scope of the program EIR." Based on CEQA Guidelines section 15183.3 and associated Appendix N Checklist, and consistent with other program EIRs (e.g., California Vegetation Treatment Program Environmental Impact Report and associated checklist at https://bof.fire.ca.gov/projects-and-programs/calvtp-homepage-and-storymap/#:~:text=The%20CalVTP%20Program%20Environmental%20Impact,with%20the%20CalVTP%20Program%20EIR and template-psa-checklist-508-compliant.dotx), CDFW recommends creating a procedure or checklist for evaluating subsequent Project impacts on biological resources to determine if they are within the scope of the Program EIR or if an additional environmental document is warranted. This checklist should be included as an attachment to the EIR. Future analysis should include all special-status species and sensitive habitat including but not limited to species considered rare, threatened, or endangered species pursuant to CEQA Guidelines, section 15380.

When used appropriately, the checklist should be accompanied by enough relevant information and reasonable inferences to support a "within the scope" of the EIR conclusion. For subsequent Project activities that may affect sensitive biological resources, a site-specific analysis should be prepared by a qualified biologist to provide the necessary supporting information. In addition, the checklist should cite the specific portions of the EIR, including page and section references, containing the analysis of the subsequent Project activities' significant effects and indicate whether it incorporates all applicable mitigation measures from the EIR.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to CNDDB. The CNNDB field survey form can be found at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data#44524420-pdf-field-survey-form. The completed form can be mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov. The types of information reported to CNDDB can be found at the following link: https://wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination

by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying Project approval to be operative, vested, and final. (Cal. Code Regs., tit. 14, § 753.5; Fish and Game Code, § 711.4; Pub. Resources Code, § 21089).

CONCLUSION

CDFW supports efforts to regulate cannabis cultivation and to address the numerous and substantial environmental impacts. We believe that greater regulatory oversight and enforcement by local Lead Agencies can help minimize the environmental impacts of cannabis cultivation. CDFW appreciates the opportunity to comment on the EIR to assist the County in identifying and mitigating Project impacts on biological resources. If you have any questions, please contact Emily Galli, Environmental Scientist, at Emily.Galli@wildlife.ca.gov; or Wes Stokes, Senior Environmental Scientist (Supervisory), at Wesley.Stokes@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Erin Chappell
B77E9A6211EF486...

Erin Chappell
Regional Manager
Bay Delta Region

cc: **California Department of Fish and Wildlife**

Craig J. Weightman, Craig.Weightman@wildlife.ca.gov
Wes Stokes, Wesley.Stokes@wildlife.ca.gov
Corinne Gray, Corinne.Gray@wildlife.ca.gov
Tim Dodson, Timothy.Dodson@wildlife.ca.gov
Melanie Day, Melanie.Day@wildlife.ca.gov
Jennifer Nguyen, Jennifer.Nguyen@wildlife.ca.gov
Ryan Mathis, Ryan.Mathis@wildlife.ca.gov
James Rosauer, James.Rosauer@wildlife.ca.gov

State Water Resources Control Board

Taro Murano, Taro.Murano@Waterboards.ca.gov
Stormer Feiler, Stormer.Feiler@waterboards.ca.gov
Jonathan Pham, Jonathan.Pham@Waterboards.ca.gov
Zackary Zwalen, Zachary.Zwahlen@Waterboards.ca.gov
Samuel Warner, Samuel.Warner@Waterboards.ca.gov

North Coast Regional Water Quality Control Board

David Kuszmar, David.Kuszmar@waterboards.ca.gov
Kason Grady, Kason.grady@waterboards.ca.gov

California Department of Forestry and Fire Protection

Kim Sone, Kim.Sone@fire.ca.gov

California Department of Food and Agriculture

Michael Vella, Michael.Vella@cdfa.ca.gov
Lindsay Rains, Lindsay.Rains@cdfa.ca.gov

NOAA Fisheries

Rick Rogers, Rick.Rogers@noaa.gov

Office of Land Use & Climate Innovation

StateClearinghouse@opr.ca.gov

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