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Via Electronic Submission: calcannabis.peir@cdfa.ca.gov

California Department of Food and Agriculture
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CalCannabis Cultivation Licensing
Draft Program EIR Comments
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Subject: Comments on Draft Program EIR

Dear Ms. Morris:

These comments are submitted on behalf of The Center for Biological Diversity, the Environmental Protection Information Center (EPIC),¹ Sequoia ForestKeeper,² and Preserve Wild Santee³ in response to the California Department of Food and Agriculture's CalCannabis Cultivation Licensing Draft Program Environmental Impact Report ("PEIR"). The Center is a non-profit environmental organization with offices in Oakland, CA and elsewhere in the United States dedicated to the protection of diverse native species and their habitats through science, policy, education, and law. The Center has over 1.3 million members and online activists throughout the United States, including over 100,000 members in California.

The commenting organizations support the successful implementation of the Medical Cannabis Regulation and Safety Act ("MCRSA") and Proposition 64 (the Adult Use of Marijuana Act ["AUMA"]). Recognizing that other states will look to California to pave the way in marijuana legalization, this task, properly undertaken, is as complex as it is important. The goal is substantial—to bring a major industry out of the shadows into the scope of modern environmental practice, to address past damage, and to ensure that poor practices are not incorporated into the large and growing legal cannabis industry.

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We are concerned, however, that the PEIR's analysis may impede achieving this goal, and offer the following comments to address this analysis and to improve the program.

These comments incorporate by reference the four volumes of appendix materials submitted on this date by Chelsea Linsley, Esq. of Greenfire Law, PC.

Sincerely,

A handwritten signature in blue ink that reads "John Buse". The signature is written in a cursive style with a large, looping initial "J".

John Buse
Senior Counsel
Center for Biological Diversity



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1. Introduction

The impacts of cannabis cultivation in California, both historical and ongoing, are substantial. As recognized by voters in the language contained in Proposition 64, adequate regulation of the cannabis industry is essential to the protection of California's natural resources. The voters of California, through the AUMA and the MCRSA, were clear in their intention to address the significant environmental impacts resulting from the unregulated cultivation of marijuana:

- “Currently in California, nonmedical marijuana use is unregulated, untaxed, and occurs without any consumer or environmental protections. The Control, Regulate and Tax Adult Use of Marijuana Act will . . . establish laws to regulate marijuana cultivation, distribution, sale and use, and will protect Californians and the environment from potential dangers.”⁴
- “The Adult Use of Marijuana Act will create strict environmental regulations to ensure that the marijuana is grown efficiently and legally, to regulate the use of pesticides, to prevent wasting water, and to minimize water usage. The Adult Use of Marijuana Act will crack down on the illegal use of water and punish bad actors, while providing funds to restore lands that have been damaged by illegal marijuana grows. If a business does not demonstrate they are in full compliance with the applicable water usage and environmental laws, they will have their license revoked.”⁵
- The voters stated that legalizing commercial growth and retail of marijuana is supposed to “[g]enerate hundreds of millions of dollars in new state revenue annually for” among other things, “restoring and repairing the environment.”⁶
- “The environmental impacts associated with marijuana cultivation have increased, and unlawful water diversions for marijuana irrigation have a detrimental effect on fish and wildlife and their habitat, which are held in trust by the state for the benefit of the people of the state.”⁷

Thus, among the primary purposes of voters in adopting AUMA, as well as of MMRSA, were to mitigate future environmental impacts of the cannabis industry and rectify past environmental harms caused by the industry during many years of illegal activity.

⁴ Prop. 64, § 2(A).

⁵ Prop. 64, § 2(F).

⁶ Prop. 64, § 3(t).

⁷ Fish & Game C., § 12029 (MMRSA).

More generally, under the California Environmental Quality Act (“CEQA”), where a proposed project may have significant effects upon the environment, including the adoption of a regulation, an Environmental Impact Report (EIR) must be prepared. An EIR must identify and describe any feasible measures that can be implemented to reduce or avoid each potentially significant environmental effect of the project.⁸ CDFA has prepared a Draft Program Environmental Impact Report (“PEIR”) for this purpose.

Unfortunately, the PEIR fails to achieve CEQA’s purpose, and the purposes of the voters of California, by minimizing the role and impacts of cannabis cultivation regulation and failing to mitigate for the environmental harm likely to result from that action.

2. The selected baseline fails to result in mitigation of past harms.

When a project is the revision of an existing land use policy CEQA Guidelines direct that the “no project” alternative will be the “continuation of the policy into the future.”⁹ The EIR must include a description of the physical environmental conditions as they exist at the time environmental analysis is commenced. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.¹⁰ However, an agency may deviate from this “existing conditions” baseline if a different baseline “promote[s] public participation and more informed decisionmaking by providing a more accurate picture of a proposed project’s likely impacts.”¹¹

2.1. A more conservative baseline is consistent with direction of ballot initiative.

Through Proposition 64, California’s voters acknowledged that existing grows were illegally initiated and that this caused environmental harm. The PEIR acknowledges that “sites have commonly occurred on steep slopes (greater than 30 percent) within about 1,600 feet of water bodies and more than 1,600 feet from a developed road”¹² and that “unlicensed cultivation activities have resulted in significant adverse effects on biological resources throughout the state.”¹³ In adopting a program for cannabis cultivators, the North Coast Regional Water Quality Control Board described the recent growth of cannabis cultivation throughout the North Coast Region as “exponential” and its impacts as “significant” and detrimental to water resources.¹⁴ The agency should exercise its discretion to adopt a baseline prior to this “green rush,” to more

⁸ Cal. Pub. Res. Code, § 21100(b)(3); 14 Cal. Code Regs, § 15126.4(a)(1).

⁹ Cal. Code Regs., Tit. 14, Div. 6, Ch. 3 (“Guidelines”) § 15126.6(e)(3)(A).

¹⁰ Guidelines, § 15125(a).

¹¹ *POET, LLC v. State Air Res. Bd.*, 12 Cal.App.5th 52, 80, 218 (Ct. App. 2017), review filed (July 10, 2017).

¹² PEIR 3-2.

¹³ PEIR 6-25.

¹⁴ Fact Sheet, North Coast Regional Water Quality Control Board, Cannabis Cultivation Waste Discharge Regulatory Program.

adequately and accurately address the environmental impacts of marijuana cultivation that concerned voters.

2.2. A more appropriate baseline will set minimal environmental quality standards for local ordinances.

When an applicant seeks a local land use permit, outside of the land use ordinance context, if a project applicant or a prior owner has illegally altered a site, that illegally altered condition will likely be considered the baseline.¹⁵ So, in the future, when individual land use decisions are made regarding marijuana impacts, counties will consider the baseline for each individual garden or grow to be the pre-existing illegal condition, and many poorly-located sites may become permanent fixtures on California’s environment. While counties may address this issue by adopting local land use ordinances, they equally well may not.¹⁶ If the PEIR here does not address landscape-level effects, then these effects may never be addressed. Counties are likely to follow the example of CalCannabis, and if these regulations consider existing conditions to be the baseline so will they. Thus, a multi-billion-dollar industry, of known significant environmental impact, will avoid any obligation to mitigate the harms recognized by voters—harms which prompted the ballot initiative in the first place.

3. Assumption of static industry is not supported by substantial evidence.

The PEIR does not adequately consider the impact of legalization of cultivation of cannabis on the industry, and therefore reaches a legally indefensible position that there is substantial evidence supporting its conclusion that the potential statewide environmental effects of the Proposed Program are “less than significant,”¹⁷ and mitigation is not necessary.¹⁸

¹⁵ *Riverwatch v. County of San Diego* (1999) 76 Cal.App.4th 1428, 1451; *Eureka Citizens for Responsible Government v. City of Eureka* (2007) 147 Cal.App.4th 357, 370 (“preparation of an EIR is not generally the appropriate forum for determining the nature and consequences of prior conduct of a project applicant, and environmental impacts should be examined in light of the environment as it exists when a project is approved.”) *Communities for a Better Env’t v. South Coast Air Quality Mgmt. Dist.* (2010).

¹⁶ See, e.g., Humboldt County’s Ordinance No. 2559, which grandfathered cultivation sites in timber management zones, provided the registrant was in good standing by the end of 2016.

¹⁷ As described in PEIR, 4.0-8.

¹⁸ Under CEQA, “substantial evidence” is “enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached. Whether a fair argument can be made ... is to be determined by examining the whole record before the lead agency. Argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly erroneous or inaccurate ... does not constitute substantial evidence.” CEQA Guidelines, § 15384, subd. (a); *Save Panoche Valley v. San Benito Cty.*, 217 Cal.App.4th 503, 514 (2013); see also *Mount Shasta Bioregional Ecology Ctr. v. Cty. of Siskiyou*, 210 Cal.App.4th 184, 208, (2012).

The PEIR concludes that substantially all environmental impacts of the program will be less than significant requiring no mitigation.¹⁹ It does this by assuming an unrealistic scenario in which, in response to a regulatory path to legal status under California law, commercial cultivators will shift only their legal status without increasing in number or changing their methods or locations of production at all (except to comply fully with all environmental laws). To establish this wholly unlikely stagnate scenario, the PEIR relies exclusively on the *Standardized Regulatory Impact Analysis* (“SRIA”) prepared for the Medical Cannabis Cultivation Program (“MCCP”) (ERA Economics 2017), paraphrasing it to say:

“[P]roduction would remain essentially unchanged with implementation of the Proposed Program, in regard to the total amount of cannabis cultivated in the state, although there would be an increase in licensed cultivation of approximately 600,000 pounds, with a corresponding decrease in unpermitted / illegal cultivation for in-state consumption [amounting to essentially zero growth]. The SRIA also predicts a small increase in indoor cultivation, which is more energy-intensive than outdoor and mixed-light cultivation, which would correspondingly decrease.”²⁰

But this is an inaccurate summation of the findings of the SRIA, and it certainly does not track conventional wisdom or the response of the market to prior California movement along the legalization trajectory or to other states’ liberalization of cannabis law. In addition, the PEIR fails to address changes in distribution of cultivation across the landscape and barely touches upon the significantly greater energy use associated with indoor cultivation. Both of these impacts are generally accepted to follow on the heels of legalization and are already taking place in California.

This assumption that the sole effect of the new regulations will be to bring existing cultivators into compliance with the law, without changing in any way their operation or geographic distribution results in the improbable conclusions that, for example:

- “the Proposed Program is not anticipated to change the overall extent of cannabis cultivation in the state and, therefore would not create a substantial number of new jobs that could induce population growth.” (PEIR 4.0-9)
- “the Proposed Program would not include any actions (or cause population growth) that would affect the availability or use of recreation sites.” (PEIR 4.0-10)
- “The requirements of the Proposed Program would also reduce the wasteful, inefficient, and unnecessary consumption of energy, and reduce energy demand and the need for additional energy resources.” (PIER 4.6-17)

A reasonable inference cannot be made that the overall extent and distribution of marijuana cultivation in California will remain the same after legalization. The cannabis market has

¹⁹ See, e.g., Table ES-2. However, in the case of green house gas (“GHG”) emissions, the PEIR concludes that impacts of regulation will be beneficial.

²⁰ PEIR, 4.6-16.

responded to past legalization with increased supply and the PEIR does not explain why this same effect will not be observed here. In fact, all evidence points to the contrary.

3.1. The regulations will increase the size of the industry.

The North Coast Regional Water Quality Control Board has described legalization as a driving force in observed increases in cultivation:

The North Coast Region is inundated with cannabis cultivation in headwaters and main river systems, with active, developed sites in steep and rugged terrain. With the increase in use and cultivation of cannabis since the voters' passage of the Compassionate Use Act (Prop 215) and the legislature's passage of AB 420, the unregulated activity of cannabis cultivation has grown increasingly year by year, with land area under cultivation increasing exponentially over the past decade. The increased cultivation throughout the North Coast Region has resulted in significant waste discharges and a loss of instream flows associated with improper development of rural landscapes on privately-owned parcels, and the diversion of springs and streams, to the cumulative detriment of beneficial uses of water.²¹

Similarly, court rulings interpreted by the public as insulating cultivation from prosecution have resulted in increased supply:

The Legislature tried to [limit marijuana cultivation] with Senate Bill 420, which took effect in 2004. It allowed Proposition 215 patients to cultivate no more than six mature or 12 immature plants. But the law was challenged in the state Supreme Court, which ruled in 2010 that the limit on plant numbers was invalid. Many growers took this as endorsement to cultivate all the marijuana they wanted. This may have triggered the explosion of medicinal grow sites across the state that is now prompting environmental concern.²²

In 2010, when Governor Arnold Schwarzenegger loosened the penalties for marijuana possession by reclassifying possession of an ounce or less of marijuana from a misdemeanor to a maximum \$100 infraction, researchers indicate that to meet demand, the acreage dedicated to marijuana grows in the "Emerald Triangle"²³ doubled between 2009 and 2014.²⁴

²¹ California Regional Water Quality Control Board, North Coast Region, Order No. 2015-0023 [emphasis added].

²² Weiser, Matt, *Medical Marijuana Growers Ravage California Forest Habitat*, The Sacramento Bee (Oct. 21, 2012) [emphasis added], available at http://www.huffingtonpost.com/2012/10/25/medical-marijuana-growers_n_1995969.html.

²³ Referring to Mendocino, Humboldt, and Trinity counties, currently the largest cannabis producing regions in the United States.

²⁴ Harkinson, Josh, *The Landscape Scarring, Energy-Sucking, Wildlife Killing Reality of Pot Farming*, Mother Jones (March/April 2014), available at <http://www.motherjones.com/environment/2014/03/marijuana-weed-pot-farming-environmental-impacts/>.

Additionally, after Trinity County passed an ordinance in 2012 allowing for some cultivation, well-drilling applications increased (even as applications for other county permits stayed flat, as people declined to draw attention to their grows). In 2014, the County received an all-time high of 260 requests to permit well drilling. This surge was attributed to a market response to legalization.²⁵

The SRIA itself contemplates both an increase in post-legalization demand and an increase in supply as new cultivators enter the market:

[L]egalization of adult use is likely to result in an increase in aggregate cannabis demand. This is in response to bringing new consumers to the market, increased cannabis tourism, and related effects. It is likely this is a small shift. Adult use legalization also causes significant substitution by cannabis consumers between market segments. It is likely that some current illegal within-California market segment consumers and medical consumers will shift to the adult use market. This is likely to be a sizeable shift, however due to consumer tax savings (e.g. exemption from the AUMA sales tax) it is likely that some medical cannabis consumers will remain in the medical market segment. Finally, there will be a simultaneous increase in supply as new cultivators enter the adult use market and in response to a decrease in the risk premium (effectively, a decrease in production cost). The net effect considered in this analysis is that the price falls across all market segments, quantity consumed in the medical cannabis market shrinks, and total quantity consumed across all within-California market segments increases.²⁶

The SRIA observations are consistent with trends observed in Colorado, where total marijuana demand after legalization was found to be much larger than originally estimated.²⁷

Moreover, the SRIA observations are consistent with the expectations of market researchers. Market Research by Arcview Group, cited by Forbes,²⁸ Business Insider,²⁹ and the New York

²⁵ 2014-2015 Grand Jury report, Trinity Co., p. 12.

²⁶ *Standardized Regulatory Impact Analysis* (“SRIA”) (ERA Economics 2017), 39. (Emphasis added).

²⁷ *Market Size and Demand for Marijuana in Colorado*, 3, Prepared for Colorado Dep’t of Revenue (Marijuana Policy Group 2016) (Actual total marijuana demand ranged from 31% to 111% higher than estimated in previously commissioned studies).

²⁸ Borchardt, Debra, *Marijuana Sales Totaled 6.7 Billion in 2016*, Forbes (Jan. 3, 2017); Borchardt, Debra, *Marijuana Industry Projected to Create More Jobs Than Manufacturing by 2020*, Forbes (Feb. 22, 2017), available at <https://www.forbes.com/sites/debraborchardt/2017/02/22/marijuana-industry-projected-to-create-more-jobs-than-manufacturing-by-2020/#5c5f2efa3fa9I>.

²⁹ Robinson, Melia, *The Legal Marijuana Industry Could Explode by 2020*, Business Insider (Sept. 23, 2016) available at <http://www.businessinsider.com/legal-marijuana-market-revenue-2016-9>; Robinson, Melia, *The Legal Weed Market is Growing As Fast as Broadband Internet in the 2000s*, Business Insider (Jan. 3, 2017) available at <http://www.businessinsider.com/arcview-north-america-marijuana-industry-revenue-2016-2017-1>.

Times³⁰ as leading research on the cannabis market—and whose website tagline reads: “The cannabis market will never be smaller than today”—forecasts growth acceleration beginning in 2018, as adult use sales ramp up in Canada, California, and Massachusetts, along with medical sales in Florida.³¹ This growth is expected to grow the \$6.7 billion national cannabis market of 2016 at a robust 27% compound annual growth rate to \$22.6 billion in 2021.³² That 20-plus percent annual growth rate is projected to continue for many years past 2021 as more states and countries legalize cannabis.³³ Consequently, unprecedented interest in cannabis markets from Wall Street was seen in 2016.³⁴ Some experts estimate that marijuana legalization could double the California market by 2020.³⁵

It is unreasonable to assume that such an extreme projected increase in demand will be met only by already existing cultivation.

3.2. Regulation will redistribute cultivation across the landscape.

The SRIA sets out the four market segments that comprise the aggregate cannabis market in California: medical, adult use, within-California illegal, and export; and the three supply types—indoor, outdoor, and mixed light, describing cultivation method.³⁶ Regulatory changes that drive shifts between market segments and supply types can have substantial environmental impacts (e.g., water and energy use), and these shifts are not adequately addressed in the PEIR.

The new regulations prioritize grows in operation and good standing with local jurisdictions as of January 1, 2016, but do not restrict their scope to these operations.³⁷ Marijuana businesses not established by January 1, 2016, nor in operation today, but that commence operation on or before January 1, 2018, may continue their operations until they procure a state license, provided that, in their judgement, they are in compliance with the law.³⁸ Finally, businesses not yet even considered may commence after procuring a state and local license.

³⁰ Ian Lovett, *In California, Marijuana is Smelling More Like Big Business*, New York Times (April 11, 2016), available at <https://www.nytimes.com/2016/04/12/us/in-california-marijuana-is-smelling-more-like-big-business.html>

³¹ Arcview Market Research, (2017) *The State of Legal Marijuana Markets 5th Edition – Executive Summary*, 5.

³² *Id.*

³³ *Id.* at 6.

³⁴ *Id.* at 22.

³⁵ Ian Lovett, *In California, Marijuana is Smelling More Like Big Business*, New York Times (April 11, 2016), available at <https://www.nytimes.com/2016/04/12/us/in-california-marijuana-is-smelling-more-like-big-business.html>

³⁶ SRIA, 39.

³⁷ Business & Professions Code, § 19321(b).

³⁸ Business & Professions Code, § 19321, subds. (b)

3.3. Regulation will cause the scale of cultivation to increase.

The new regulations impose requirements, including environmental compliance requirements, on growers that are likely to shift the market towards larger growers:

“If you’re a small pot grower and you don’t have the money and resources to turn into a bigger player... then unfortunately you’re not going to be around,” [Daniel Yi, communications director, Medmen Private Equity] said. “Nobody wants to see people lose their businesses and lose their jobs, but there’s the flip side—you either have this gray market forever and ever, or you institutionalize that and become mainstream. A lot of these folks might be able to find jobs in the evolving industry, but the business model is not going to survive unless they adapt.”³⁹

The opening of the marijuana industry [in California] to corporate dollars has caused a mad scramble with out-of-state investors, cannabis retailers, and financially struggling municipalities all racing to grab a piece of what is effectively a new industry in California: legalized, large-scale marijuana farming... Amid the frenzy, though, anxiety is growing in some corners of the state that corporate money will squeeze out [the small-time growers].⁴⁰

A similar shift was observed in Colorado:

As the Colorado market matures, it is becoming more consolidated. Larger, more competitive companies are growing, while smaller, less competitive companies struggle and eventually exit the market. This is a natural dynamic within any competitive market. Private industry owners purport that consolidation is not being caused purely by price competition, but instead by high compliance costs.⁴¹

3.4. Regulation will encourage relocation of businesses from hostile to hospitable jurisdictions.

While some counties are embracing and encouraging cultivation, others are banning it altogether. Currently, approximately twenty-two counties have bans on cannabis cultivation.⁴² An additional

³⁹ Rosalie Murphy, *With California Legalization, Marijuana Industry Approaches ‘The End of the Beginning’*, Desert Sun (Nov. 18, 2016).

⁴⁰ Ian Lovett, *In California, Marijuana is Smelling More Like Big Business*, New York Times (Apr. 11, 2016).

⁴¹ Marijuana Policy Group, *The Economic Impact of Marijuana Legalization in Colorado*, 21 (Oct. 2016)

⁴² Modoc, Tehama, Plumas, Glenn, Colusa, Yuba, Placer, Alpine, Calaveras, San Joaquin, Contra Costa, Alameda, Stanislaus, Tuolumne, Fresno, Kings, Kern, San Bernardino, Santa Barbara, Ventura, Los Angeles, Riverside. *See* Cannabusiness Law, California Cannabis Law by County, <http://cannabusinesslaw.com/california-cannabis-laws-by-county/>.

nine have either banned or significantly restricted outdoor grows.⁴³ Others that permit outdoor cultivation lack the geographic area for outdoor cultivation on a significant scale (e.g. San Francisco).

For example, Nevada and Placer Counties, located in regions where conditions for outdoor cultivation are favorable, imposed a ban on outdoor cultivation in response to a noticeable increase in cultivation in the area.⁴⁴ On the other side, after Trinity County passed an ordinance allowing for some cultivation, it saw increases in grows attributed to those fleeing less hospitable localities.⁴⁵

The Federal government also influences where legal marijuana cultivation is likely to shift.

“Because marijuana is still outlawed by the federal government, which owns 48 percent of California’s land mass and controls the large majority of its irrigation supplies, federal agencies are keeping pot growers at arm’s length. Notably, the Bureau of Reclamation, which built and operates the Central Valley Project, won’t supply cannabis growers, even though they’re permitted by the state.”⁴⁶

Of notable concern is significant evidence of new large-scale cannabis cultivation expanding into California’s driest climates:

“The [marijuana] industry started coming out and buying up all the land,” said [Desert Hot Springs, CA] Mayor Scott Matas.... As a result, Desert Hot Springs has been besieged with applicants for cultivation permits, industrial land has been snapped up at record prices, and massive warehouse-style buildings are being erected to create climate-controlled indoor marijuana farms. Seven marijuana dispensaries are already open in Desert Hot Springs, and two more are going through the permit process. The city has 43 permit applications from growers that it has either already approved or is reviewing. Two growers are up and running, with three more under construction.⁴⁷

⁴³ Siskiyou (restricted), Shasta (ban), Lake (restricted), Nevada (ban), Napa (ban), Madera (ban), Monterey (ban), Tulare (ban). See Cannabusiness Law, California Cannabis Law by County, <http://cannabusinesslaw.com/california-cannabis-laws-by-county/>.

⁴⁴ See Peter Hecht, *Despite Protests, Supervisors Restrict Marijuana in Nevada County*, The Sacramento Bee (July 26, 2016); Gus Thomson, *Placer Supes: ‘No Outdoor Medpot Grows in Our County’*, Auburn Journal (June 22, 2016).

⁴⁵ 2014-2015 Grand Jury report, Trinity Co.p. 12

⁴⁶ <https://www.newsdeeply.com/water/community/2017/02/06/why-californias-cannabis-industry-will-lead-water-innovation>. This may also extend beyond water to power, where sourced from federal hydro projects.

⁴⁷ Matt Weiser, *California Desert Towns Become Haven for New Crop: Marijuana*, Water Deeply (Apr. 3, 2017).

One production plant, Cannadescent, has already opened in Desert Hot Springs, and is slated to produce—indoors—2,500 pounds of marijuana monthly for the medical market.⁴⁸

Increase in desert cultivation will have significantly different impacts than outdoor cultivation in climate-friendly regions such as the Emerald Triangle or Nevada and Placer counties, where outdoor cultivation is banned. Such regional shifts are likely to have significant statewide impacts, especially in terms of energy consumption and GHG emissions. These impacts have been poorly addressed in the PEIR.

The SRIA has even noted regional shifts in growing, stating: “It is noteworthy that recent trends indicate a shift in production—particularly larger commercial operations—towards regions in the Central Valley. Production has also been expanding in most of the traditional production regions (Emerald Triangle) for some time.”⁴⁹

3.5. Regulation will encourage more indoor cultivation.

There is overwhelming evidence that California’s marijuana cultivation will shift indoors. As indicated above, many counties have either banned or restricted outdoor cultivation, including in areas where outdoor cannabis cultivation is already widespread. This makes not only regional shifts likely, but also a large shift from outdoor to indoor cultivation. This will have tremendous impacts on California’s energy consumption.

The Cannabis industry trade journal, High Times, has written:

[D]espite overwhelming evidence that giant indoor grow houses are massive power sucks, elected officials are driving the state’s marijuana production indoors just as commercial-scale cultivation is about to begin. At the same time when California is on notice to meet ambitious green-energy goals, across the state, counties and cities are discouraging solar-powered cannabis [by placing bans on outdoor cultivation].⁵⁰

Cannabis is an energy intensive crop when grown indoors. Other states have experienced an increase in electricity demand after legalizing recreational cannabis. For example, half of load growth in Colorado is now attributable to new cannabis cultivation.⁵¹

⁴⁸ Corinne S. Kennedy, *First Marijuana Cultivation Facility in Southern California Opens in Desert Hot Springs*, The Desert Sun (Sept. 29, 2017).

⁴⁹ SRIA, 26

⁵⁰ Chris Roberts, *With Massive Power Problems, California Pushing Marijuana Production Indoors*, High Times (March 2, 2017).

⁵¹ Agenda, California Public Utilities Commission, *Energy Impacts of Cannabis Cultivation Workshop* (Feb. 28, 2017), available at <http://www.cpuc.ca.gov/General.aspx?id=6442452715>. See also Dominic Fracassa, *California Explores Energy Impacts of Cannabis Cultivation*, SF Gate (Feb. 28, 2017), available at <http://www.sfgate.com/business/article/California-explores-energy-impacts-of-cannabis-10967050.php>.

In 2012, as much as three percent of all California’s energy production, or 9% of all electricity use, went towards indoor marijuana cultivation.⁵² And that was “before legalization and before prisons and tire plants were being converted into massive cannabis cultivation facilities. Now, the figure could be even larger.”⁵³

Due to the extreme energy intensity of indoor cannabis cultivation, the push toward indoor cultivation as a result of land use ordinances cannot be ignored in the PEIR.

4. The PEIR fails to adequately consider impacts on wildlife.

The Center is especially concerned that the PEIR fails to adequately address the significant impacts to wildlife due to rodenticide, pesticide, and herbicide use, as well as from light and noise generated by cultivation operations. Additionally, the PEIR woefully underestimates the foreseeable increase in energy consumption that is likely to follow legalization.

4.1. The Rodenticides analysis is insufficient and misleading.

The PEIR does not sufficiently address effects on wildlife of rodenticide use in cannabis cultivation. Rodenticide use results in a range of impacts to non-target organisms. The PEIR must fully analyze the impacts from the range of potentially available rodenticides, including first generation anticoagulant rodenticides, second generation anticoagulant rodenticides, and non-anticoagulant rodenticides. Unfortunately, the PEIR fails to fully analyze the range of impacts from rodenticide use by incorrectly claiming that rodenticides are not available for cannabis production. It also fails to account for increased usage and changed use patterns when the products become legalized.

4.1.1. Rodenticides are acutely toxic to wildlife and humans.

Rodenticides are designed to kill small mammal pests such as rats, mice, gophers, ground squirrels, and prairie dogs. However, rodenticides’ lethal effects on target pests cause qualitatively the same results on non-target mammals and birds, pets, and humans, including children. Rodenticide poisons target and non-target animals through direct ingestion of bait or through consumption of other poisoned animals. Human poisoning occurs through direct ingestion of bait.

There are three general categories of rodenticides: non-anticoagulants, first generation anticoagulant rodenticides (“FGARs”), and second generation anticoagulant rodenticides (“SGARs”).

Non-anticoagulant rodenticides currently used in the United States include bromethalin, cholecalciferol, zinc phosphide, and strychnine. Each of these works in a different way. Bromethalin, registered with the EPA since 1984, causes the cells of the central nervous system

⁵² Evan Mills, *The Carbon Footprint of Indoor Cannabis Production*, 46 Energy Policy 58, 59 (2012), available at <http://evanmills.lbl.gov/pubs/pdf/cannabis-carbon-footprint.pdf>.

⁵³ Id.

to swell, putting pressure on the brain, and causing paralysis and death.⁵⁴ Bromethalin is considered a single-dose rodenticide. Cholecalciferol, also known as Vitamin D₃, works when rodents eat several doses of the poison, which leads to an overabundance of calcium in the blood and overwhelms the body's ability to regulate the central nervous system, muscles, gastrointestinal tract, cardiovascular system, and the kidneys.⁵⁵ Zinc phosphide turns into toxic phosphine gas in the presence of water and acid in the stomach and causes the body's cells to die.⁵⁶ Strychnine, the oldest of these commonly used rodenticides, affects the cells in the spinal cord, causing severe muscle spasms that lead to breathing paralysis and death.⁵⁷ Currently, strychnine can only be used below ground, and products with more than 0.5% strychnine can only be sold to certified professional applicators.⁵⁸

Anticoagulant rodenticides, FGARs and SGARs, work by stopping the liver from recycling vitamin K to make blood clotting enzymes. This causes uncontrolled bleeding throughout the body. Because of the metabolic processes involved in the impacts to vitamin K recycling and the decrease in blood clotting factors there is a lag time between ingestion and death.⁵⁹ The chemicals are likely to be additive in their effect,⁶⁰ and can be treated with vitamin K.⁶¹

FGARs—chlorophacinone, diphacinone, and warfarin—were developed and marketed beginning in 1950. FGARs generally require that an animal eat multiple doses of the bait over several days, and were the first anticoagulant rodenticides used widely in the US.⁶² FGARs require consecutive days of intake to accumulate a lethal dose, and if the animal survives or doesn't like the taste or effects, it may develop bait shyness.⁶³ If an animal that consumes an anticoagulant

⁵⁴ Roder 2010, J.D. Roder. *Veterinary Toxicology* at 84, 106-108, 123, Butterworth Heinemann: Boston (2001).

⁵⁵ Rumbleha 2006, W. K. Rumbleha, *Cholecalciferol* at 629-642, *Small Animal Toxicology*, 2nd ed.; Peterson, M. E.; Talcott, P. A., Eds.; Elsevier Saunders: St. Louis, MO (2006).

⁵⁶ Albrechtsen 2004, J.C. Albrechtsen, *Zinc phosphide* at 456-459, *Clinical Veterinary Toxicology*; Plumlee, K. H., Ed.; Mosby, Inc.: St. Louis, MO (2004).

⁵⁷ Talcott 2006, P.A. Talcott, *Strychnine* at 1076-1082, *Small Animal Toxicology*, 2nd ed.; Peterson, M. E.; Talcott, P. A., Eds.; Elsevier Saunders: St. Louis, MO (2006).

⁵⁸ EPA 1996, U.S. Environmental Protection Agency, Office of Prevention, Pesticides, and Toxic Substances, Office of Pesticide Programs, *R.E.D Facts Strychnine*, U.S. Government Printing Office (1996).

⁵⁹ DPR 2013, California Department of Pesticide Regulation, *Memorandum: Second Generation Anticoagulant Rodenticide Assessment (White Paper)* (June 27, 2013).

⁶⁰ Gabriel 2012, Mourad W. Gabriel et al., *Anticoagulant Rodenticides on our Public and Community Lands: Spatial Distribution of Exposure and Poisoning of a Rare Forest Carnivore* (July 13, 2012); Riley 2007, Seth P.D. Riley et al., *Anticoagulant Exposure and Notoedric Mange in Bobcats and Mountain Lions in Urban Southern California*, 71 *J. Wildlife Mgmt.* 1874 (2007).

⁶¹ Merck 2011, Merck Sharp & Dohme Corp., *Rodenticide Poisoning: Introduction*, The Merck Veterinary Manual (2011) available at

<http://www.merckvetmanual.com/mvm/index.jsp?cfile=htm/bc/213000.htm>

⁶² EPA RED 1998, U.S. Environmental Protection Agency, Office of Prevention, Pesticides, and Toxic Substances, Office of Pesticide Programs, *Reregistration Eligibility Decision (RED) Rodenticide cluster*, U.S. Government Printing Office (1998) available at

<http://www.epa.gov/oppsrrd1/reregistration/REDS/2100red.pdf>

⁶³ DPR 2013.

rodenticide is eaten by a predator, the predator can become affected by the rodenticide.⁶⁴ However, the ability of FGARs to bioaccumulate in target and non-target animals is considered low relative to SGARs.⁶⁵ The half-life (the amount of time it takes a substance to reduce its concentration by half) of most first generation anticoagulants in both target and non-target wildlife is generally hours to days, compared to the half-lives of second generation anticoagulants which are generally weeks to months.⁶⁶

SGARs, including brodifacoum, bromadiolone, difethialone, and difenacoum, are single-dose anticoagulants than can deliver a lethal level of toxin in one feeding, with death resulting five to seven days later.⁶⁷ Because it takes several days for the rodent to die, animals often eat multiple doses, allowing for super-lethal concentrations of the rodenticide to accumulate in their bodies. SGARs become established in the animal's liver, with liver half-lives of four months to a year.⁶⁸ If an animal that consumes an SGAR is eaten by a predator, the predator can become affected by the rodenticide.⁶⁹ Because of their long half-lives, SGARs bioaccumulate in non-target wildlife.⁷⁰

⁶⁴ Townsend 1984, Townsend, M. G., P. J. Bunyan, E. M. Odam, P. I. Stanley, and H. P. Wardall, *Assessment of the Secondary Poisoning Hazard of Warfarin to Least Weasels*, Journal of Wildlife Management, Vol. 48 (1984).

⁶⁵ Eason & Ogilvie 2009, Eason, C.T., and S. Ogilvie, *A Re-Evaluation of Potential Rodenticides for Aerial Control of Rodents*, Research & Development Series 312, New Zealand Department of Conservation, Wellington (2009).

⁶⁶ DPR 2013.

⁶⁷ EPA 2008, U.S. Environmental Protection Agency, *Risk Mitigation Decision for Ten Rodenticides* (May 28, 2008) available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2006-0955-0764>

⁶⁸ DPR 2013.

⁶⁹ DPR 2013.

⁷⁰ Annex I-Norway 2007, Annex I-Norway, Directive 98/8/EC Concerning the Placing Biocidal Products on the Market, Assessment report: Difethialone-Product Type 14 (2007).

Table 1. Half-life (in days) of a single dose of rodenticides in the blood and liver of rats^{1,2}.

Class of Rodenticide	Rodenticide	Dose (mg ai/kg)	Half-life (in days) in Blood	Half-life (in days) in Liver
Second Generation Anticoagulant Rodenticides	Brodifacoum	0.02 to 0.35	6.5 to 91.7 ⁷	113.5 ³ to 350
	Bromadiolone	0.2 to 3.0	1.0 to 2.4	170 to 318
	Difenacoum ⁴	1.2	NA	118
	Difethialone	0.5	2.3	126
First Generation Anticoagulant Rodenticides	Chlorophacinone	4 to 5	0.4	Less than 2
	Diphacinone	0.32	NA	Between 2 and 3 ^{1,3}
	Warfarin	NA ⁹ , 1 ³	0.7 to 1.2 ¹	7 ¹ to 26.2 ³
Non-anticoagulant Rodenticides ²	Bromethalin ⁵	NA ⁹	5.5	NA
	Cholecalciferol ⁶	NA ⁹	1	~19 ⁸

1 Data summarized from Erickson and Urban, 2004, except where noted.

2. Data is not available for zinc phosphide, so it is not included on the chart.

3. Fisher et al, 2003.

4. U.S. EPA, 2007.

5. Spaulding and Spannring, 1988.

6. Marrow, 2001.

7. Vandenbroucke et al, 2008.

8. Body half-life (instead of liver half-life).

9. NA is defined as Not Available.

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The PEIR provides a cursory analysis of rodenticides and fails to account for the differing use, exposure pathways, and regulatory restrictions for the different categories of rodenticides and their active ingredients. The PEIR fails to mention or analyze the non-anticoagulant rodenticides bromethalin, cholecalciferol, zinc phosphide, and strychnine. While the PEIR mentions two of the FGARs, chlorophacinone, and diphacinone, it does not mention another FGAR warfarin, or conduct an analysis on the specific impacts of FGARs. PEIR at 4.4-28, 4.7-7. The PEIR also fails to address each of the SGARs, including brodifacoum, bromadiolone, difethialone, and difenacoum. Each of these rodenticides create unique and distinct impacts, which were not adequately analyzed or mitigated in the PEIR.

4.1.2. SGARs present a risk to the public & to non-target organisms.

These comments focus on the impacts of SGARS because their acute toxicity results in the highest risk of severe unintended poisoning for children, pets, and wildlife. After evaluating many lines of evidence, EPA concluded that SGARs “have greater potential to adversely affect non-target wildlife, especially birds, than the first-generation anticoagulants.”⁷² However, the PEIR must also adequately analyze other rodenticides that are also posing impacts through poisonings of non-target organisms.

⁷¹ DPR 2013.

⁷² EPA 2008, at 8.

4.1.2.1. Exposure to Wildlife

Single-dose anticoagulants like SGARs pose a greater risk of secondary poisoning and indirect mortality to animals, particularly wildlife, that eat poisoned rodents. A rodent that consumes an SGAR will not immediately succumb to a lethal hemorrhage and may return to feed on SGAR bait over a several day period. If a rodent continues to eat the SGAR after it consumes a toxic dose during the first day, it can build a more-than-lethal dose in its body before the clotting factors run out and the rodent dies. Predators that then eat poisoned rodents may ingest a toxic dose far beyond that amount needed to kill the rodent and be lethally poisoned from just one feeding on an SGAR-poisoned rodent.

EPA found that there is widespread wildlife exposure to anticoagulant rodenticides wherever rodenticides are being used.⁷³ EPA has found that many taxa of non-target animals have been exposed to rodenticides, including strict carnivores such as mountain lions, bobcats, hawks, and owls; omnivores such as coyotes, foxes, skunks, and raccoons; and granivores and herbivores such as squirrels and deer. EPA's ecological incident report documents anticoagulant residues in twenty-seven avian species and seventeen mammalian species.⁷⁴

A 2010 analytical study investigated anticoagulant rodenticide ("AR") poisoning in four predatory avian species: red-tailed hawks (*Buteo jamaicensis*), barred owls (*Strix varia*), eastern screech owls (*Megascops asio*), and great horned owls (*Bubo virginianus*).⁷⁵ Eighty-six percent of the birds tested had died due to hemorrhaging in the liver, a common mechanism of death from AR poisoning.⁷⁶ Of the 161 birds tested, ninety-nine percent had detectable levels of the SGAR brodifacoum in their systems due to bioaccumulation from secondary consumption.⁷⁷

In 1998, the EPA recognized that SGARs—especially brodifacoum and difenacoum—presented the highest risks to non-target birds and mammals.⁷⁸ Predatory birds and mammals that feed on dead, exposed or poisoned rodents are especially vulnerable to secondary poisoning from SGARs. In an assessment of primary poisoning risks to birds, EPA found that a bird weighing 1,000 grams would need less than one day of feeding on brodifacoum bait (SGAR) to reach a lethal dose, but it would need more than a year of feeding on diphacinone (FGAR) to reach the same dosage level.⁷⁹ For secondary poisoning, EPA found that a 1,000-gram bird would need to consume 2 brodifacoum-poisoned mice to reach a lethal dose, whereas it would need to consume

⁷³ EPA 2008, at 8.

⁷⁴ EPA 2008, at 8.

⁷⁵ Murray 2011, Maureen Murray, *Anticoagulant Rodenticide Exposure and Toxicosis in Four Species of Birds of Prey Presented to a Wildlife Clinic in Massachusetts, 2006-2010*, 42 J. Zoo Wildlife Med. 88 (2011).

⁷⁶ Murray 2011.

⁷⁷ Murray 2011.

⁷⁸ EPA RED 1998.

⁷⁹ EPA 2011. U.S. Environmental Protection Agency, Notice of Intent to Cancel and Notice of Denial of Registrations for Certain Rodenticide Bait Products, Nov. 2 2011, at 27 (chart detailing the relative risks of rodenticides to birds).

1,200 diphacinone-poisoned mice to reach a lethal dose.⁸⁰ Later, the agency stated that, “[m]ore than 300 documented wildlife incidents attest to exposure of birds and nontarget mammals, including endangered species, to some rodenticides, especially brodifacoum (244 incidents).”⁸¹ Although wildlife deaths from poisoning go largely unreported, between 1971 and 2011, the EPA found that brodifacoum was by far the greatest contributor to wildlife mortality—causing 267 incidents out of a total of 311.⁸² In contrast, the FGARs bromethalin and warfarin were implicated in only 1 and 8 incidents, respectively.⁸³

Wildlife mortality reports and necropsies have indicated the persistent problem of mortality to non-target organisms from anticoagulant rodenticides. Studies by the California Department of Pesticide Regulation (“CDPR”) found that brodifacoum was likely involved in 13% of reported animal mortalities and bromadiolone was likely involved in approximately 3% of reported animal mortalities.⁸⁴ Nationwide wildlife mortality incident reports compiled by the EPA demonstrate poisoning and deaths to non-target wildlife for several decades.⁸⁵

The pervasive nature of SGARs in the environment and food chain lead to lethal and sub-lethal harm to numerous endangered species. Recent comprehensive data from EPA and DPR document poisonings and deaths of many ESA listed species.⁸⁶ The EPA has determined that the use of rodenticides containing brodifacoum,⁸⁷ bromadiolone,⁸⁸ difethialone,⁸⁹ and difenacoum⁹⁰ are likely to adversely affect several ESA listed species in California, including the Alameda whipsnake (*Masticophis lateralis euryxanthus*), salt marsh harvest mouse (*Reithrodontomys raviventris*), San Joaquin kit fox (*Vulpes macrotis mutica*), giant kangaroo rat (*Dipodomys ingens*), Stephen’s kangaroo rat (*Dipodomys stephensi*), Tipton kangaroo rat (*Dipodomys*

⁸⁰ EPA Draft NOI 2011, at 27.

⁸¹ EPA 2004, U.S. Environmental Protection Agency, *Potential Risks of Nine Rodenticides to Birds and Nontarget Mammals: a Comparative Approach* at iii (July 2004).

⁸² EPA Draft NOI 2011, at 48.

⁸³ EPA Draft NOI 2011, at 48.

⁸⁴ DPR 2013.

⁸⁵ EPA 2013, *Compilation of Rodenticide Wildlife Mortality Incident Reports Between 1971-2012* (January 29, 2013).

⁸⁶ EPA 2013, *Compilation of Rodenticide Wildlife Mortality Incident Reports Between 1971-2012* (January 29, 2013); DPR 2012, Memorandum: Second Generation Anticoagulant Rodenticides (draft) from Deborah Daniels, DVM, Senior Environmental Scientist (September 19, 2012).

⁸⁷ EPA 2012, Letter from S. Bradbury (EPA) to G. Frazier (FWS) regarding Endangered Species Act consultation for brodifacoum (March 30, 2012).

⁸⁸ EPA 2011, Letter from A. Pease (EPA) to G. Frazier (FWS) regarding Endangered Species Act consultation for bromadiolone (September 30, 2011).

⁸⁹ EPA 2011, Letter from A. Pease (EPA) to G. Frazier (FWS) regarding Endangered Species Act consultation for difethialone (September 30, 2011).

⁹⁰ EPA 2012, Letter from S. Bradbury (EPA) to G. Frazier (FWS) regarding Endangered Species Act consultation for difenacoum (March 30, 2012).

nitratooides nitratooides), Fresno kangaroo rat (*Dipodomys nitratooides exilis*), and Point Arena mountain beaver (*Aplodontia rufa nigra*).⁹¹

EPA has further determined that brodifacoum, difethialone, and bromadiolone are likely to jeopardize the continued existence of at least four ESA listed species--the Morro Bay kangaroo rat (*Dipodomys heermanni morroensis*), Salt marsh harvest mouse (*Reithrodontomys raviventris*), Fresno kangaroo rat (*Dipodomys nitratooides exilis*), and San Clemente loggerhead shrike (*Lanius ludovicianus mearnsi*).⁹² The EPA and wildlife experts have also noted incidents of SGAR exposure, poisoning, and death of the federally listed northern spotted owl (*Strix occidentalis caurina*), including incidents in California.⁹³

SGARs also have a much greater ability to bioaccumulate in non-target animals. With half-lives of up to 350 days, SGARs remain in the body much longer than FGARs.⁹⁴ During multiple feedings of target rodents, SGARs bioaccumulate in the rodent's body—specifically, in the animal's liver and lungs. Predators that eat poisoned rodents may ingest a toxic dose in small amounts over a long period of time because of the cumulative body burden of SGARs. Even if a rodent is exposed to a SGAR indoors, “the movement of rodents to areas outside buildings between the time of [SGAR] ingestion and death [and] preferential selection of anticoagulant-incapacitated prey by predators”⁹⁵ ensures that the SGAR is distributed into the ecosystem well-beyond the source of the poison, no matter how contained its application.

Even if exposed wildlife survive after anticoagulant rodenticide intoxication, the animal may still suffer disruptions in vital physiological processes that can eventually lead to death. Exposure to anticoagulants may act synergistically with natural environmental stressors to increase susceptibility to naturally occurring diseases, such as mange in bobcats and mountain lions.⁹⁶ Birds and mammals have exhibited heart damage following exposure to brodifacoum.⁹⁷ SGARs impact vitamin K biochemistry, which can result in liver damage, disruptions of physiological

⁹¹ EPA 2004, Potential Risks of Nine Rodenticides to Birds and Nontarget Mammals: a Comparative Approach, Attachment E (July 2004).

⁹² EPA 2004, Potential Risks of Nine Rodenticides to Birds and Nontarget Mammals: a Comparative Approach, Attachment E (July 2004).

⁹³ EPA 2008, Risk Mitigation Decision for Ten Rodenticides (May 28, 2008); WildCare 2013, Northern Spotted Owls test positive for rodenticide poisonings (webpage printed June 25, 2013); AP 2013, Pot Gardens' Use of Poison Looked at in Owl Deaths by Jeff Barnard (May 28, 2013); Willits News 2013, Poison from pot grows looked at in owl deaths by Catherine Wong/The Times-Standard (printed June 11, 2013); Wildlife Society News 2013, Silent Forests? Rodenticides on Illegal Marijuana Crops Harm Wildlife (April 11, 2013); New York Times 2013, Marijuana Crops in California Threaten Forests and Wildlife (June 20, 2013).

⁹⁴ DPR 2013, at 4.

⁹⁵ USFWS 2005, U.S. Department of the Interior, Fish & Wildlife Service, *Comments on EPA's Comparative Approach* at 3 (2005).

⁹⁶ Riley 2007, Riley et al, *The Journal of Wildlife Management*, 71(6), *Anticoagulant Exposure and Notoedric Mange in Bobcats and Mountain Lions in Urban Southern California*,

⁹⁷ Rahmy 1993, Tarek R. Rahmy, *Myocardial Alterations in Animals Intoxicated With an Anticoagulant Rodenticide*, 12C J. Egypt. Ger. Soc. Zool. 87 (1993).

processes leading to osteoporosis, or calcium remobilization and deposition in the circulatory system.⁹⁸ Sub-lethal doses of the SGAR brodifacoum have also caused abortions and reduced lamming rates in sheep,⁹⁹ as well as mortality to embryos.¹⁰⁰ Multiple studies have shown that even sub-lethal doses can cause clotting abnormalities, biochemical abnormalities (including glucose and liver function markers), and physiological abnormalities (including statistically significant decreased body weight, increased liver size, increased heart size, and increased kidney size), which could or did cause mortality in the laboratory setting.¹⁰¹

4.1.2.2. Exposure to the Public & Children

SGARs pose unreasonably high risks to children. Even a small amount of SGARs ingested by a child can lead to health risks. According to EPA's safety level calculations, the estimated child exposure from taking just one 5-gram bite of rodenticide bait greatly exceeds possible safe levels.¹⁰² Exposures to rodenticides have been pervasive across the United States. Between 1999 and 2009, the American Association of Poison Control Centers received reports of an average of 17,000 human exposures to rodenticide each year, with 85% of these exposures occurring to children less than 6 years of age.¹⁰³ Those exposures led to poisonings and necessitated medical treatments. Between 1999 and 2003, an average of 3,617 cases per year were treated in a health care facility, and an average of 17 cases per year were treated in an Intensive Care Unit.¹⁰⁴ EPA's statements in its 2013 D-Con Cancellation Notice suggest that benefits of rodenticides must be greater if the rodenticide presents risks to children.¹⁰⁵

4.1.2.3. Exposure to Pets

SGARS pose a very high risk of accidental ingestion by pets and domestic animals because they are applied in and around homes, farms, and other areas with domestic animals. Between 1999 and 2009, data indicates that rodenticides caused about 160 severe (death or major health effect) domestic animal incidents each year, which the EPA believes is a significant underestimate.¹⁰⁶

⁹⁸ Knopper 2007, L. D. Knopper et al., *Bone Density and Breaking Strength in UK Raptors Exposed to Second Generation Anticoagulant Rodenticides*, 78 Bull. Environ. Contamination Toxicology 249 (2007).

⁹⁹ Godfrey 1985, M. E. R. Godfrey, *Non-Target and Secondary Poisoning Hazards of "Second Generation" Anticoagulants*, 173 Acta Zoologica Fennica, 209 (1985).

¹⁰⁰ Laas 1985, F. J. Laas et al., *Retention of Brodifacoum in Sheep Tissues and Excretion in Faeces*, 28 N.Z. J. Agric. Res. 357 (1985); Godfrey 1989, M. E. R. Godfrey et al., *Preliminary Dosing Trials of a New Anticoagulant, Brodifacoum, as a Toxicant for the Rabbit, Oryctolagus Cuniculus*, 8 N.Z. J. Exper. Agric. 1 (1989); Munday 2003, J. S. Munday et al., *Brodifacoum Toxicosis in Two Neonatal Puppies*, 40 Vet Pathol. 216 (2003).

¹⁰¹ DPR 2013.

¹⁰² EPA Draft NOI 2011, U.S. Environmental Protection Agency, *Draft Notice of Intent to Cancel and Notice of Denial of Registrations for Certain Rodenticide Bait Products* at 16 (November 2, 2011).

¹⁰³ EPA Draft NOI 2011, at 18.

¹⁰⁴ EPA 2008, at 7.

¹⁰⁵ EPA NOI 2013, U.S. Environmental Protection Agency, *Notice of Intent to Cancel Registrations of, and Notice of Denial of Applications for, Certain Rodenticide Bait Products* at 8125 (February 5, 2013) available at www.gpo.gov/fdsys/pkg/FR-2013-02-05/pdf/2013-02500.pdf

¹⁰⁶ EPA Draft NOI 2011, at 23.

For example, in 2012 a California farmer's golden retriever was found dead with confirmed brodifacoum poisoning after a pest control company applied the SGAR around the orchard to control rats.¹⁰⁷

4.1.3. California's Classification of SGARs as Restricted Materials.

In July 2011, CDPR received a request from the California Department of Fish and Wildlife ("CDFW") that all SGARs in California be designated as restricted materials because of the significant impacts to nontarget wildlife. In response, CDPR produced a comprehensive peer reviewed report regarding wildlife rodenticide exposure after researching wildlife incident and mortality data between 1995 and 2011, and analyzed it together with land use data, and rodenticide use and sales data between 2006 and 2010.¹⁰⁸ The report noted that exposure to wildlife was widespread with over 35 different species testing positive for rodenticide exposure.¹⁰⁹ 73% of wildlife tested had ingested at least one SGAR and 75% had been exposed to one or more rodenticides.¹¹⁰

In 2014, based on the findings that baits containing SGARs present a hazard to non-target wildlife, CDPR issued regulations to make the pesticide active ingredients brodifacoum, bromadiolone, difenacoum, and difethialone restricted materials.¹¹¹ This designation prohibited use by the general public because restricted materials can only be possessed or used under the supervision of a certified private applicator or a certified commercial applicator.¹¹² CDPR also expanded the uses by private applicators in order to allow uses by agricultural operators, such as producers of livestock, poultry, or fish.¹¹³ Finally, the restricted materials designation limited the use of SGARs beyond a 50 foot radius from structures.¹¹⁴

4.1.4. The PEIR Fails to Adequately Analyze and Mitigate Rodenticide Impacts

The program would allow indoor cultivation sites to use rodenticides. Nonetheless, the PEIR concludes that "[i]mpacts on non-target wildlife from use of rodenticides at indoor cultivation sites are not expected to be substantial, as wildlife would have limited access to poisoned rodent

¹⁰⁷ EPA Mortality Incidents 2013, U.S. Environmental Protection Agency, *Compilation of Rodenticide Wildlife Mortality Incidents Reported Between 1972-2012* (January 29, 2013).

¹⁰⁸ DPR 2013, at 4.

¹⁰⁹ CPR 2013, at 10-11.

¹¹⁰ DPR 2013, at 10-11.

¹¹¹ 3 Cal. Code Regs § 6400; *See generally* DPR SGARs 2014, California Department of Pesticide Regulation, *Designating Brodifacoum, Bromadiolone, Difenacoum, and Difethialone (Second Generation Anticoagulant Rodenticide Products) as Restricted Materials*, Final Text of Regulation (March 18, 2014) available at <http://www.cdpr.ca.gov/docs/legbills/rulepkgs/13-002/13-002.htm>

¹¹² Cal. Food & Agr. Code § 14015.

¹¹³ 3 Cal. Code Regs § 6000; DPR Statement 2014, California Department of Pesticide Regulation, *Initial Statement of Reasons and Public Report* (2013) available at www.cdpr.ca.gov/docs/legbills/rulepkgs/13-002/statement.pdf

¹¹⁴ 3 Cal. Code Regs. § 6471.

carcasses in these indoor environments.”¹¹⁵ This conclusion relies on the false assumption that poisoned rodents will not move between indoor and outdoor environments once poisoned. In fact, rodents typically survive for several days after exposure to rodenticides and are able to move freely between indoor and outdoor environments, where they may be preyed upon by wildlife and household pets.¹¹⁶

The program in no way prohibits the use of rodenticides in outside in relation to cultivation in accordance with other rodent control uses in agricultural and structural uses. A range of rodenticides are licensed for general use by non-licensed applicators in agriculture and using in and around structures.¹¹⁷ The PEIR fails to account for how those uses and products could be used in cannabis cultivation under the program.

The PEIR indicates that the proposed program will require that cannabis cultivation operations comply with CDPR guidance. The PEIR implies that the use of second-generation anticoagulant rodenticides is prohibited by the CDPR for cannabis cultivation, and thus cannabis cultivation operations would be prohibited from using them for cultivation activities.¹¹⁸ This is a misstatement of the requirements of CDPR guidance and seems to misleadingly suggest that only repellants and no pesticides would be permitted for use under the Proposed Program:

In accordance with CDPR guidance, under the Proposed Program cannabis cultivation operations are only allowed to use the following repellants in and around cannabis cultivation sites to protect their crops from rodent herbivory: capsicum oleoresin (consistent with the label), putrescent whole egg solids, and garlic. Because these are repellants and not rodenticides, they have no potential for secondary poisoning of non-target species.¹¹⁹

However, CDPR guidance, which the PEIR indicates will govern the cannabis cultivation licensing program, does not prohibit rodenticide use.¹²⁰ Nor does it prohibit outright the use of use of second-generation anticoagulant rodenticides when it is used in accordance with restricted use requirements. CDPR has restricted the purchase, possession, and use of second-generation anticoagulant rodenticides to certified pesticide applicators and those under CDPR’s direct

¹¹⁵ PEIR, 4.4-27

¹¹⁶ See Center for Biological Diversity, Rodenticides, http://www.biologicaldiversity.org/campaigns/pesticides_reduction/rodenticides/index.html.

¹¹⁷ See enclosed pesticide product information from the California Department of Pesticide Regulation for the active ingredients brodifacoum, bromadiolone, bromethalin, cholorophacinone, cholecalciferol, difenacoum, difethialone, dephacinone, diphacinone sodium salt, warfarin, and zinc phosphide.

¹¹⁸ PEIR, 4.4-28

¹¹⁹ PEIR, 4.4-28.

¹²⁰ See enclosed pesticide product information from the California Department of Pesticide Regulation for the active ingredients brodifacoum, bromadiolone, bromethalin, cholorophacinone, cholecalciferol, difenacoum, difethialone, dephacinone, diphacinone sodium salt, warfarin, and zinc phosphide.

supervision.¹²¹ Unless CDPR restricts the use of rodenticides by regulation or label requirements they can be used for agricultural or structural uses as noted by CDPR.¹²² Approximately 40% of active ingredients of SGARs used in California are applied by licensed applicators.¹²³ Regulation of SGARs as restricted use materials still permits continued use by licensed applicators, and would still allow a large percentage of use of those products. Use by licensed applicators would also still allow SGARs and other types of rodenticides to be consumed by non-target organisms and allow bio-accumulation in the food chain.

Other categories of rodenticides—including first-generation anticoagulants, acute toxicants, and certain burrow fumigants—are still available to general consumers, including cannabis cultivators.¹²⁴ The PEIR must analyze the impacts of all the products that are approved for uses that could be applied during cannabis cultivation or on properties used for cannabis cultivation, particularly given that these have historically been used by cultivators.

Apparently based upon its misunderstanding of the requirements of the CDPR, its unsupported conclusion that the new regulations will not encourage growth of the cannabis market, and the unrealistic assumption that licensed growers will wholly comply with the law, the PEIR improperly concludes that, “compared to the baseline condition, the Proposed Program would reduce the potential for adverse effects from rodenticide use by requiring that cannabis cultivation operations comply with CDPR guidance and other applicable requirements” and that the impact is therefore “less than significant.” Without clear restrictions on use in marijuana production, farm or agricultural areas, or structural use, legal operators would use those products in the future, which contravenes the assumptions in the PEIR.

The PEIR only vaguely considers exposures from second-generation anticoagulant rodenticides, improperly concluding that its use would be prohibited under the Proposed Program. Further, the PEIR does not account for harms caused by other toxic rodenticides, or the listed repellants, which are permissible under the CDPR Guidelines, and it does not consider the cumulative impacts of rodenticide use after legalization given the projected increase in rate and scale of cultivation operations.¹²⁵ Finally, the SRIA, upon which the PEIR relies, estimates that only a percentage of currently illegal cultivation operations will shift into the legal market; the PEIR’s analysis fails to consider the cumulative impacts of continued illicit use of second-generation

¹²¹ Cal. Dept. Pesticide Regulation, Pest Management & Licensing Program, Frequently Asked Questions About Rodents and Rodenticides (June 2015), http://www.cdpr.ca.gov/docs/dept/factshts/faq_rodents_rodenticides.pdf.

¹²² See enclosed pesticide product information from the California Department of Pesticide Regulation for the active ingredients brodifacoum, bromadiolone, bromethalin, chlorophacinone, cholecalciferol, difenacoum, difethialone, dephacinone, diphacinone sodium salt, warfarin, and zinc phosphide.

¹²³ CDPR 2013, Second Generation Anticoagulant Registration, Sales & Use Information (February 14, 2013).

¹²⁴ Cal. Dept. Pesticide Regulation, Pest Management & Licensing Program, Frequently Asked Questions About Rodents and Rodenticides (June 2015), http://www.cdpr.ca.gov/docs/dept/factshts/faq_rodents_rodenticides.pdf.

¹²⁵ See *supra*, section 3.

anticoagulant rodenticides by the large number of remaining illegal operations, especially in areas inhabited by listed species such as the Pacific fisher and northern spotted owl. Finally, it assumes that cultivators will adhere to the law in nearly all instances—an illogical assumption given the remote location of many cultivation operations and the history of use of these products by cultivators.

This analysis is essential to ensuring the survival of these species in California.

4.2. The herbicides and pesticides analysis is insufficient.

The PEIR improperly defers the development of guidelines and standards for the use of pesticides in cannabis cultivation operations to the future.¹²⁶ While we recognize that no environmental analysis can be done for guidelines/standards that are not available, it suggests that either the PEIR is premature because the guidelines and standards are not available or the environmental review for impacts associated with herbicides and pesticides is being piecemealed.

The recommendations from the *Human Health and Ecological Screening Risk Evaluation*¹²⁷ that have been incorporated into the PEIR are common sense safeguards, but the PEIR fails to provide assurances that these requirements will be monitored and enforced. Without enforcement, the impacts to wildlife could be significant and life-threatening.

These short-comings in the PEIR need to be remedied to provide decision-makers with an adequate analysis of the potential impacts from herbicides and pesticides use in cannabis operations.

4.3. The light analysis is insufficient.

The PEIR Impact BIO-3 recognizes that “All types of cultivation operations may result in increased nighttime light compared to baseline conditions.”¹²⁸ The analysis however fails to identify the full range of terrestrial wildlife that would be affected by increased night lighting, which includes migratory birds, amphibians, and insects,¹²⁹ and on native plant communities when growing yards are sited adjacent to them. We agree with the determination in the PEIR that “These impacts would be potentially significant” for the biological resources considered.¹³⁰ We also support minimization measures as proposed: “measures that would require security lighting at grow operations to be selectively placed and shielded to minimize the effects of the lighting (Section 8313[b]), and would require mixed-light operations to eliminate any nighttime light trespass (Section 8314),”¹³¹ but the PEIR provides no evidence that these minimization measures

¹²⁶ PEIR, 4.4-26

¹²⁷ Ibid.

¹²⁸ PEIR 4.4-22.

¹²⁹ Longcore and Rich 2004.

¹³⁰ PEIR 4.4-22.

¹³¹ Ibid.

are actually feasible (how would nighttime light trespass actually be eliminated?) and would actually mitigate the impacts to non-significance for *all* potentially impacted species and plant communities. For example, some frogs and toads are attracted to downlighting because their prey (insects) are attracted to the artificial light, making them more vulnerable to predation.

The PEIR needs to more comprehensively address the potential impacts to species at a more specific level than “terrestrial wildlife,” and discuss mitigation accordingly.

4.4. The noise analysis is insufficient.

The impacts on wildlife from anthropogenic noise is an urgent conservation priority. The PEIR downplays the impacts from this insidious side effect of cultivation stating “the noise generated by cannabis cultivation activities would be consistent with other land uses in the vicinity; for instance, chainsaws and mowers are commonly used in rural environments. As such, many wildlife species are anticipated to be habituated to the noise generated by cultivation.”¹³²

Many cannabis cultivation operations currently take place in remote locations where these noises are not otherwise present. Further, this assessment does not take into consideration geographic shifts into areas where cannabis cultivation is not already widespread—particularly into California’s desert regions. Nor does the analysis consider the fact that cannabis cultivation operations are poised to significantly increase in scale, resulting in a corresponding increase in noise and vibrations, after legalization.¹³³ Finally, even where such noise is already present and wildlife is “habituated” to it, no proof is offered that it is harmless.

While we support minimization measures proposed, for example, prohibiting the use of generators except in the event of a power outage or emergency (Section 8313[d]), the PEIR provides no evidence that such a measure is enforceable and will eliminate existing harms.

As with night-lighting (described above), the noise issue is complex and often species specific. Response to the same noise stimulus varies both within species and between species. Generally, intermittent and unpredictable noise is often perceived as a threat while chronic and frequent noise interferes with animals’ abilities to detect important sounds.¹³⁴ Anthropogenic noise causes a wide range in behavioral changes from changes in temporal patterns to changes in spatial distribution of animals or their movements. It often decreases foraging efficiency while increasing anti-predator behaviors. Noise also changes mate attraction and territorial defense.¹³⁵

Despite the complexity, the PEIR is not excused from a more thorough analysis of foreseeable potential impacts to wildlife from the noise generated by cannabis cultivation. It is already apparent where wildlife are being affected by noise generated from current cultivation

¹³² PEIR 4.4-23.

¹³³ See *supra* Section 3.

¹³⁴ Francis and Barber 2013.

¹³⁵ *Ibid.*

operations. It is also becoming apparent where geographic shifts and large-scale cannabis cultivation operations are likely to take place.

The behavior altering impacts of noise on already affected and potentially affected wildlife need to be evaluated in the PEIR, and minimization and mitigation measures incorporated to reduce and mitigate impacts.

4.5. The Energy Use analysis is insufficient.

Section 8315 of the proposed regulations requires that indoor cultivation must source electrical power from any combination of the following:

- (a) On-grid power with 42 percent renewable source.
- (b) Onsite zero net energy renewable source providing 42 percent of power.
- (c) Purchase of carbon offsets for any portion of power above 58 percent not from renewable sources.
- (d) Demonstration that the equipment to be used would be 42 percent more energy efficient than standard equipment, using 2014 as the baseline year for such standard equipment.

The PEIR concludes that “implementation of these measures would reduce the current baseline energy demand and associated GHG emissions for cannabis cultivation in the state.”¹³⁶ This assumption is not supported by substantial evidence. As discussed above, Section 3, the ability to obtain a state license to cultivate commercial cannabis will almost certainly drive substantial changes in the industry, including:

- The size of the industry as a whole is likely to grow.
- More cannabis is likely to be grown indoors.
- More cannabis is likely to be grown by larger growers.

Other evidence undermines the conclusion that energy use will not increase. In Desert Hot Springs, the marijuana industry has been erecting massive warehouse-style buildings to create climate-controlled indoor marijuana farms.¹³⁷ This is consistent with observations of the industry in other states, which have experienced an increase in electricity demand after legalizing recreational cannabis. For example, half of load growth in Colorado is now attributable to new cannabis cultivation.¹³⁸ In several California localities, for reasons of practicality or by

¹³⁶ PEIR 4.6-17.

¹³⁷ Water Deeply, California Desert Towns article.

¹³⁸ Agenda, California Public Utilities Commission, Energy Impacts of Cannabis Cultivation Workshop (Feb. 28, 2017), available at <http://www.cpuc.ca.gov/General.aspx?id=6442452715>.

requirement of local ordinance, growth in the industry will be substantially or exclusively indoors.¹³⁹

The PEIR states that Section 8315's requirement was developed based on SB 32's goal of reducing statewide GHG emissions to 40 percent below 1990 levels by December 31, 2030.¹⁴⁰ Specifically, the 42-percent target was developed by comparing statewide GHG emissions from 2014 (the most recent year for which the California Air Resources Board (CARB) has conducted an inventory) to 60 percent of 1990 GHG emissions.¹⁴¹ The PEIR concludes that the net effect of the program on energy consumption would be positive.¹⁴²

This conclusion is not unsupported for several reasons. First, it depends on the similarly unwarranted assumption of static growth in indoor cultivation, discussed above. Even if the indoor cultivation growth assumption is only slightly off, this could be enough to shift the program's impact from positive to significant and adverse. Second, Section 8315 is premised on the assumption that in order to meet the 2030 goal, statewide emissions must be reduced 42% below 2014 levels. The PEIR then assumes that individual cultivation projects will be consistent with this goal if energy is provided by at least 42% renewable electricity (from the grid or on site), offset credits, or efficiency improvements. Yet the PEIR provides no substantial evidence that any of the options set forth in Section 8315, if implemented at the level of an individual cultivation site, will result in reductions consistent with those required at the statewide level from all economic sectors. The California Supreme Court has held this type of comparison between broad statewide goals and individual project reductions unlawful in the absence of specific, substantial evidence to support the comparison.¹⁴³ No such evidence appears in the PEIR. If, as

¹³⁹ High Times reports:

[D]espite overwhelming evidence that giant indoor grow houses are massive power sucks, elected officials are driving the state's marijuana production indoors just as commercial-scale cultivation is about to begin. At the same time when California is on notice to meet ambitious green-energy goals, across the state, counties and cities are discouraging solar-powered cannabis.

As much as one percent of the country's entire power load is being used by indoor cannabis farms. ... As much as three percent of all [California]'s energy production went towards indoor marijuana cultivation – and that was in 2012, before legalization and before prisons and tire plants were being converted into massive cannabis cultivation facilities. Now, the figure could be even larger.

Chris Roberts, *With Massive Power Problems, California Pushing Marijuana Production Indoors*, High Times (March 2, 2017).

¹⁴⁰ PEIR 2-11, fn. 2.

¹⁴¹ Ibid.

¹⁴² PEIR 4.6-17.

¹⁴³ *Center for Biological Diversity v. California Dept. of Fish and Wildlife*, 62 Cal.4th 204, 225-27 (2015).

appears likely, the program will result in growth in indoor cannabis cultivation, such new cultivation will need to do *better* than a 42 percent reduction in comparison to a 2014 baseline.¹⁴⁴

Third, Section 8315 provides that indoor cultivation operations may purchase carbon offsets “for any portion of power above 58 percent not from renewable sources.” Neither the proposed regulation nor the PEIR, however, provide any analysis sufficient to support this option. Emissions from energy usage vary considerably depending on the generation used to supply the grid at any given time or location. The PEIR does not even attempt to quantify energy-related emissions at all, much less provide any basis for an individual cultivator to determine the quantity of offset credits needed to displace the emissions from the portion of energy “above 58 percent not from renewable sources.” Moreover, neither the regulation nor the PEIR establish any standards at all for offsets, much less standards necessary to ensure that offsets will provide actual, enforceable mitigation pursuant to CEQA’s requirements. For example, nothing in the PEIR requires that carbon offsets embody only greenhouse gas reductions that are not otherwise required or would not otherwise have occurred (i.e., that offsets represent reductions that are “additional” to what would have happened anyway).¹⁴⁵ Absent an enforceable additionality requirement, there is no evidence that “carbon offsets” purchased under Section 8315 will represent real emissions reductions sufficient to mitigate cultivation-related GHG emissions.. The PEIR also fails to demonstrate that offset credits are available through a functioning, enforceable, and effective implementation program or programs.¹⁴⁶ Unless and until these omissions are addressed, the offset option should be removed from Section 8315.

5. The PEIR impacts analysis is too narrowly focused and insufficient.

These regulations set the floor for environmental standards for commercial cannabis cultivation across the state of California, and so are appropriately addressed in a comprehensive program EIR. However, the PEIR falls short of the requirements of the law.

5.1. The project is too narrowly defined.

The EIR for a program or policy intended for use as a first-tier EIR should comply with CEQA’s standards for an adequate environmental analysis in an EIR for a planning-level action, which is to say that it should “focus on the secondary effects that can be expected to follow from the adoption [of the policy].”¹⁴⁷ In defining the scope of the analysis, the project should be defined to include “the whole of an action, which has a potential for resulting in a physical change in the

¹⁴⁴ Id., 62 Cal.4th at p. 226.

¹⁴⁵ Guidelines § 15126.4 (c)(3); California Natural Resources Agency, Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97 at 48, 87-90 (December 2009); *cf.* Health & Saf. Code § 38562(d)(2) (establishing standards for offsets under California’s GHG cap and trade program).

¹⁴⁶ See *California Clean Energy Committee v. City of Woodland* 225 Cal.App.4th 173, 198 (2014).

¹⁴⁷ Cal. Code Regs. tit. 14, § 15146. We agree with the CDFA that a program EIR is appropriate in this circumstance because the CalCannabis Licensing program will set the floor for environmental protection related to cannabis cultivation across the state.

environment, directly or ultimately,” and “may be subject to several discretionary approvals by governmental agencies.”¹⁴⁸ The entire project being proposed for approval, and not some smaller aspect of the project as a whole, must be described in the EIR.¹⁴⁹ “‘Project’ is given a broad interpretation in order to maximize protection of the environment [citation].”¹⁵⁰ This PEIR fails to do that.

A project description must include all relevant parts of a project, including reasonably foreseeable future expansion or other activities that are a part of the project.¹⁵¹ In *San Francisco Ecology Ctr. V. City & County of San Francisco*,¹⁵² the Court stated that agencies are encouraged under CEQA guidelines to make reasonable forecasts about future conditions.

A landscape/whole-market-level evaluation of the state-wide impact of the local ordinances adopted pursuant to AUMA and MMRSA should have been included in the analysis, but were dismissed as too speculative and reserved for local consideration. Local land use decisions do not have independent utility because legal cultivation requires presentation of both a local permit and a state license, and the decision of how to structure the state regulations will impact the geographic distribution and character of the industry. The alternatives analysis is also insufficient.

5.2. PEIR improperly fails to analyze all physical changes to the environment.

The PEIR repeatedly fails to identify and analyze significant effects. The determination “whether a project may have a significant effect plays a critical role in the CEQA process.”¹⁵³ “The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data.”¹⁵⁴ “In evaluating the significance of the environmental effect of a project, the lead agency shall consider direct physical changes in the environment which may be

¹⁴⁸ *San Joaquin Raptor*, supra, 27 Cal. App. 4th at 730; Guidelines § 15378.

¹⁴⁹ See, e.g., *Habitat & Watershed Caretakers v. City of Santa Cruz* (2013) 213 Cal.App.4th 1277, 1297.

¹⁵⁰ *San Joaquin Raptor*, 27 Cal. App. 4th at 730.

¹⁵¹ *Laurel Heights Improvement Ass’n v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 396. In *Laurel Heights*, the University of California planned to transfer medical laboratories to an office building in a residential neighborhood. *Id.* at 389. Initially, the laboratories were to occupy 100,000 square feet of a 354,000-square-foot building. *Id.* at 398. The University claimed that it had not formally decided to occupy the entire building, but the court noted that statements by the chancellor in the final EIR, public releases in newsletters, public meeting minutes, and private correspondence all indicated the University’s intent to occupy the entire building when another agency’s lease expired in several years.¹⁵¹ *Id.* at 397. Accordingly, there was “credible and substantial evidence” that the University’s occupancy of the entire building was a reasonably foreseeable consequence of the decision to move into the building. *Id.* at 398.

¹⁵² (1975) 48 Cal.App.3d 584, 595.

¹⁵³ Guidelines, § 15064(b)

¹⁵⁴ *Id.*, § 15064(b)

caused by the project and reasonably foreseeable indirect physical changes in the environment which may be caused by the project.”¹⁵⁵

5.2.1. Unlawful behavior is reasonably foreseeable.

The PEIR “impact analysis excludes operations that would be unlawful under both the baseline and the Proposed Program.”¹⁵⁶ To the extent those operations are influenced by or cumulative with the regulated activity, they cannot be excluded from the analysis. For instance, if illegal cultivation continues apace in the Emerald Triangle, then they may use up the water supply or tax the energy grid in a way that makes the incremental impact of new legal operations significant.

The PEIR also “assumes that licensed cultivators would generally operate in accordance with applicable state and local regulations and other legal requirements. . . the analysis assumes that noncompliance would not be sufficiently widespread, systematic, or otherwise of a nature that would meaningfully change the impact conclusions related to the Proposed Program.”¹⁵⁷ This failure to consider reasonably foreseeable illegal behavior is unreasonable given that the industry has come of age completely illegally. It is reasonable to assume that some growers will not be deterred from behavior harmful to the environment by the mere classification of that activity as illegal. By making this assumption, the PEIR falls short in its analysis of impacts, failing to note likely significant effects, and failing to propose mitigation that could address likely continued illegal behavior.

5.2.2. State-level impacts of local land use rules are not unforeseeable.

Most of the local land use regulations regarding marijuana cultivation currently in place, are in place because of the deadline and incentives which were set out in the MCRSA incentive structure.¹⁵⁸ Thus, many counties and cities have already indicated what their land use programs will look like under the regulatory scheme, making the immediate state-level impacts reasonably foreseeable.

¹⁵⁵ Id., § 15064(d)

¹⁵⁶ PEIR 4.0-4. The PEIR sets an existing conditions baseline:

Many of the cultivation activities that would be regulated under the Proposed Program are already ongoing. The impact analysis presented in this PIER considers these ongoing activities to be a part of the baseline environmental conditions. This baseline includes existing cultivation operations that are not operating in accordance with existing State law or local requirements, including those that may become licensed under the Proposed Program.

PEIR 4.0-2

¹⁵⁷ PEIR 4.0-4

¹⁵⁸ See supra notes 42 and 43.

The Proposed Program is a state regulatory program. As the state-level regulator, it is the agency's responsibility to consider the actual and potential environmental impacts presented by the mosaic of cannabis cultivation across the state. Individual cities and counties are not positioned to assess the state-wide impacts of their local and site-specific regulatory policies. Accordingly, state law provides that the state regulation will establish the floor for the environmental compliance obligations for growers, since any license, permit, or other entitlement issued by a city or county to allow marijuana cultivation must contain permit requirements that are, at a minimum, equally as stringent as state requirements.¹⁵⁹

5.2.3. Changes to the industry are likely.

The PEIR fails to consider, among other things, the foreseeable and already occurring shifts in the landscape, scale, and methods of cannabis cultivation and the associated environmental impacts.¹⁶⁰

5.2.4. The PEIR failed to analyze cumulative impacts of past actions.

CEQA requires the impact analysis to consider the degree to which past actions have led to an existing significant environmental impact. Impacts necessary to understand the severity and significance of the cumulative impacts must be reflected adequately.¹⁶¹ Where such impact exists, additional incremental impacts that add to that deteriorating scenario must be considered as potentially cumulative significant impacts.¹⁶² In other words, cumulative significance can be found even if the proposed project adds only a small incremental effect to a serious existing problem.¹⁶³ The agency can select and disclose the scope of its cumulative impacts analysis either by listing past, present, and probable future projects, or by summarizing projections from a planning document that implicitly takes this same range of projects into account.¹⁶⁴ No matter the presentation selected, however, the agency must analyze the impacts of those projects and the

¹⁵⁹ Health & Safety Code § 11362.777, subs. (c)(2)–(3).

¹⁶⁰ See above, section 3.

¹⁶¹ *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 723.

¹⁶² See e.g., *Los Angeles Unified School Dist. v. City of Los Angeles* (1997) 58 Cal.App.4th 1019, 1026 (additional increase in noise level of another 2.8 to 3.3 dBA was significant given that the existing noise level of 72 dBA already exceeded recommended maximum of 70 dBA.); *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 718 (relevant question is “whether any additional amount of precursor emissions should be considered significant in light of the serious nature of the ozone problems in this air basin.”) See also *EPIC*, 44 Cal.4th at 525 (requirement to assess “incremental effects” of a project “signifies an obligation to consider the present project in the context of a realistic historical account of relevant prior activities that have had significant...impacts.”)

¹⁶³ See, e.g., *LAUSD v City of Los Angeles* (1997) 58 Cal.App.4th 1019 and *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692 for helpful language and specific application of this principle.

¹⁶⁴ Guidelines § 15130(b)(1).

project's incremental contribution to make a finding whether those impacts are cumulatively significant.¹⁶⁵

The PEIR should have analyzed the prior activities, which have already impacted California's natural resources,¹⁶⁶ coupled with changes to the industry (also foreseeable, as discussed in above, Section 3).¹⁶⁷ Here, with minimal exception, the discussion of cumulative impacts was isolated in its own section, which consisted primarily of a list, and then summarily dismissed with only perfunctory analysis. This resulted in a failure to consider all of the impacts of the Green Rush as well as the likely impacts of an expanding and changing industry.

6. The Range of Alternatives is too narrow.

The PEIR considers only four potential alternatives to the Proposed Program: the no program alternative, the no natural light alternative, the no high-intensity grow light alternative, and the restricted size alternative. This is insufficient. The discussion of mitigation and alternatives is "the core of an EIR."¹⁶⁸ The lead agency must select a reasonable range of alternatives for evaluation in the EIR when determining its scope.¹⁶⁹ The scope of alternatives reviewed must be considered in light of the nature of the project, the project's impacts, relevant agency policies, and other material facts.¹⁷⁰

When an EIR is considering a complex regulatory scheme, the complex nature of the project, scale of potential impacts, number of moving parts should present a broad, nuanced range of alternatives. Mere blanket alternatives which consider the non-implementation of all or part of the project, as the four alternatives presented in the PEIR are not sufficient.

Here, each of the alternatives to the preferred alternative included in the PEIR would require the legislature to amend MCRSA and AUMA to allow its implementation, making each an unreasonable alternative.¹⁷¹ The PEIR does not contemplate more refined or complex alternatives, for example different enforcement programs or mechanisms, or limitations on grows county-by-county based upon extent of cultivation at the selected baseline.

¹⁶⁵ Guidelines § 15130(b)(4) and (5).

¹⁶⁶ *EPIC*, 44 Cal.4th at 525

¹⁶⁷ *Environmental Protection Information Center v. California Dept. of Forestry & Fire Protection* (2008) 44 Cal.4th 459, 524.

¹⁶⁸ *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 564.

¹⁶⁹ Guidelines, §15126.6(a); *Citizens of Goleta Valley*, 52 Cal. 3d at 566.

¹⁷⁰ *Mira mar Mobile Community v City of Oceanside* (2004) 117 Cal. App. 4th 477; *City of Rancho Palos Verdes v City Council* (1976) 59 CA3d 869.

¹⁷¹ PEIR ES-13; *Residents Ad Hoc Stadium Comm. V. Board of Trustees* (1979) 89 Cal. App. 3d 274, 286 (An alternative may be unreasonable if it requires significant changes in governmental policy or legislation).

7. The PEIR improperly concludes that mitigation is unnecessary.

7.1. Finding of no significant impact must be based upon reasonable assumptions

The PEIR relies heavily (and often unreasonably optimistically) upon other agencies' regulatory programs ability to address environmental harm and therefore concludes unreasonably that legalizing a multi-billion dollar intensive agricultural industry will have only beneficial effects on California's environment. The upshot is that, by making this illogical assumption, all obligation to mitigate by CDFA is avoided. But, the PEIR is intended to meet CEQA requirements for the Cultivation Licensing Program, and therefore consider reasonably foreseeable cannabis cultivation activities associated with that program.¹⁷² According to the PEIR itself, a discussion of mitigation measures is required when a potential impact is significant or potentially significant. A potential impact is considered significant if proper analysis concludes that the Proposed Program would or could result in substantial adverse effect on the environment.¹⁷³ The PEIR concedes on multiple occasions that the potential environmental impacts are significant,¹⁷⁴ but then relies upon other agencies' regulatory programs to make a determination that the impacts are less than significant. CDFA cannot avoid this discussion where it has concurrent jurisdiction to regulate.

7.2. Lead agency may not foist obligations on responsible agencies where concurrent jurisdiction exists.

A failure to adequately describe anticipated project operations can result in a flawed impact analysis.¹⁷⁵ The PEIR repeatedly disclaims the responsibility to mitigate on the basis that local agencies will execute sufficient enforcement on a site-specific basis to avoid potential impacts. For example, the analysis of "Impact BIO-2: Cause substantial adverse effects on special-status plant species," reads as follows:

"In addition, cultivators would be required to comply with Sections 8313(e) and (f) of the proposed regulations, which would require compliance with pesticide laws and regulations (including those related to herbicides) as enforced by CDPR ... This should minimize the potential for herbicides to result in non-target effects on special-status plant species. Finally, as part of the application process, individual cultivation sites will be evaluated to determine whether significant impacts could occur at a particular location that have not been addressed through these regulatory requirements. To the extent that significant impacts are possible that have not been considered in this PEIR, a site-specific CEQA document would

¹⁷² PEIR, ES-8.

¹⁷³ PEIR, 4.0-8.

¹⁷⁴ See e.g., PEIR 4.4-19 ("Pesticides, fertilizers, other harmful chemicals, and garbage located in and around cannabis cultivation sites have the potential to enter waterways through runoff, killing fish and polluting water supplies").

¹⁷⁵ *San Joaquin Raptor Rescue ctr. v County of Merced* (2007) 149, CA4th 645 (project description for mining project failed to describe increase in levels of production that would occur under new permit)

be required, for instance as part of the approval process undertaken by the local agency and/or other responsible agencies, or if no other lead agency exists, CDFA.”¹⁷⁶

By defining the project and CDFA’s jurisdiction too narrowly, the PEIR fails to consider reasonably foreseeable cannabis cultivation activities associated with the Proposed Program, particularly those that become apparently significant only at the aggregated state level.¹⁷⁷ According to the PEIR, a discussion of mitigation measures is required when a potential impact is *significant* or *potentially significant*. A potential impact is considered *significant* if proper analysis concludes that the Proposed Program *would or could* result in substantial adverse effect on the environment.¹⁷⁸ CDFA cannot avoid this discussion where it has concurrent jurisdiction to regulate.

The Proposed Program is a state regulatory program. As the state-level regulator, it is the agency’s responsibility to consider the actual and potential environmental impacts presented by the mosaic of cannabis cultivation across the state. Individual cities and counties are not positioned to assess the state-wide impacts of their local and site-specific regulatory policies. Accordingly, state law provides that the state regulation will establish the floor for the environmental compliance obligations for growers, since any license, permit, or other entitlement issued by a city or county to allow marijuana cultivation must contain permit requirements that are, at a minimum, equally as stringent as state requirements.¹⁷⁹ If appropriate mitigation is not proposed now, it may never be—in violation of the law and confounding the voters’ stated intent upon adoption of AUMA.

As discussed above, Section 3, certain shifts in the distribution of cannabis cultivation are readily foreseeable. Many counties have already imposed a ban on cannabis cultivation, while others are driving cultivation indoors.¹⁸⁰ Meanwhile, the industry is seeing a growing interest in large-scale cannabis cultivation, including in California’s high desert regions.¹⁸¹ The potential impacts of these shifts on the State of California are “significant or potentially significant,” and their mitigation is not appropriately placed at the local level.

Because it has concurrent jurisdiction to deal with identified feasible mitigation measures with regard to cannabis cultivation, CDFA should not so readily have dispensed implementation authority and evaluation responsibility of responsible agencies and local governments.¹⁸²

¹⁷⁶ PEIR, 4.4-21 – 4.4-22.

¹⁷⁷ PEIR, ES-8.

¹⁷⁸ PEIR, 4.0-8.

¹⁷⁹ Health & Safety Code § 11362.777, subs. (c)(2)–(3).

¹⁸⁰ See *supra*, section 3.

¹⁸¹ See Matt Weiser, *California Desert Towns Become Haven for New Crop: Marijuana*, Water Deeply (Apr. 3, 2017).

¹⁸² *City of Marina v. Board of Trustees of the California State University* (2006) 39 Cal. 4th 341, 366; Guidelines, § 15091(c).

[D]isclaiming the responsibility to mitigate environmental effects is permissible only when the other agency said to have responsibility has exclusive responsibility,” which is certainly not the case here.¹⁸³ If an agency could so easily dispense with CEQA’s obligations, it would be impossible to “avoid... the problem of agencies deferring to each other, with the result that no agency deals with the problem.”¹⁸⁴

8. Public Trust

These regulations do not protect the public trust. The people of California have entrusted CDFA with bringing this industry into compliance with modern environmental law and to address past environmental harms it has caused. By setting a baseline that fails to take into account this direction or impacts, and by ignoring the obvious environmental, economic, and geographic distribution impacts the legal pathway presented by these regulations will incent, it fails to meet its public trust obligations imposed by the California Constitution.

9. Conclusion

The time has arrived for the proper analysis and mitigation of cannabis cultivation and we welcome the decision to prepare an EIR addressing the impacts of taking this significant step, as directed by California voters. However, an honest and full assessment of the impacts of this industry on the environment and the steps that may be taken to mitigate those impacts are very much needed. This draft EIR fails to achieve the purpose of CEQA and the to meet the directive of AUMA to, through these regulations, address past harms. If realistic assumptions are employed, based upon actual industry trajectories and likely responses to a legal option, then impacts are unavoidable and must be mitigated. Furthermore, the regulations themselves may need to be modified, upon review of adequate alternatives.

¹⁸³ Id.; see also *City of San Diego v. Bd. of Trustees of Cal. State Univ.* (2015) 61 Cal.4th 945, 957.

¹⁸⁴ 39 Cal.4th at 366.