



**EARTHJUSTICE**

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ALASKA CALIFORNIA FLORIDA MID-PACIFIC NORTHEAST NORTHERN ROCKIES  
NORTHWEST ROCKY MOUNTAIN WASHINGTON, DC INTERNATIONAL

September 28, 2009

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**RE: Comments on Draft Light Brown Apple Moth Eradication Program  
Programmatic Environmental Impact Report**

Dear Mr. Rains:

We write on behalf of Bayview Hunters Point Community Advocates, Our Children's Earth, Mothers of Marin Against the Spray, Mothers Advocating Against the Spray, Stop the Spray East Bay, Play Not Spray, Californians for Pesticide Reform (itself a coalition of 185 groups), Pesticide Action Network North America, Pesticide Watch Education Fund, Center for Environmental Health, and the city of Albany to comment on the Draft Light Brown Apple Moth Eradication Program Programmatic Environmental Impact Report ("DEIR"). These citizen groups and city believe that there is no justifiable need to eradicate the light brown apple moth ("apple moth"), that eradication is likely impossible at this stage anyway, and that, as a result, the California Department of Food and Agriculture's ("CDFA") eradication program may result in unnecessary, significant public health and environmental impacts, not to mention resource expenditures not tenable in these economic times. We submit these comments to alert your agency to major deficiencies in the DEIR that, if not remedied, will almost certainly render the final EIR inadequate under the California Environmental Quality Act ("CEQA").

**SUMMARY OF ISSUES**

The DEIR does not respond to the majority of scoping topics Earthjustice identified in a letter dated August 20, 2008 as crucial that the DEIR address. Other individuals and groups reiterated these comments during scoping meetings for the eradication program that were held during 2008. The topics that were ignored in the DEIR and must be addressed in a supplementary, newly circulated DEIR include:

- 1) The EIR must provide a credible analysis of the assumptions on which the eradication program is based, including an objective and scientifically credible review of the reasons for attempting eradication, the conclusions drawn by CDFa about apple moth behavior and status in the state, and the evidence that eradication is both possible and feasible. This is a huge and controversial threshold issue that CDFa continues to fail to address;

- 2) The EIR must disclose the precise locations planned for aerial spray treatments. To date, CDFA has not responded to our three requests, dated June 25, 2008, July 16, 2008, and August 20, 2008, for disclosure of the specific locations where it plans to spray to eradicate the apple moth. In particular, are any of the “agricultural” areas inhabited, or are any of the areas adjacent to populated areas?;
- 3) The EIR must disclose the complete chemical formulas of the pesticides to be used in the program, both the active and “inert” chemical ingredients, their concentrations, and all information related to the toxicity of all such chemical ingredients;
- 4) The EIR must provide a complete analysis of the health and environmental impacts of chronic exposure to the chemical pesticides, including a credible analysis of the impacts on sensitive populations; although the DEIR in principle looks at chronic health effects, it states there are no data on which to base a valid chronic impacts analysis for most of the chemicals;
- 5) The EIR must evaluate an alternative that uses least-toxic integrated pest management practices designed to control the spread of the apple moth rather than eradicate it;
- 6) The EIR must evaluate an alternative that would involve the state actively seeking federal reclassification of the apple moth to a non-actionable pest so that the species does not trigger quarantine.

Many of our comments below elaborate on the DEIR’s failure to analyze adequately these fundamental questions concerning the eradication program. In addition, the DEIR drastically overstates the environmental effects and economic costs of implementing the “No Program” Alternative, fails to analyze fully the combined health and environmental impacts of the eradication program’s various treatment techniques, relies on incomplete and insufficient studies, and fails to account for pesticide drift.

CDFA must abandon the eradication program. If CDFA will not do so, because the DEIR is premised on the unsupported assumption that eradicating the apple moth is both necessary and feasible, and because the DEIR omits other critical information concerning the potential public health and environmental effects of the eradication program, CDFA must withdraw and circulate a revised DEIR so that the public may have a meaningful opportunity to comment on it.

### **CALIFORNIA ENVIRONMENTAL QUALITY ACT**

In 1970, the California Legislature enacted CEQA as a means to ensure that public agencies take environmental considerations into account in their decision making processes. Pub. Resources Code, §§ 21000, 21001. The Legislature was concerned both with protecting environmental resources and with safe-guarding public health and safety. *See* Pub. Resources Code, §§ 21000, 21001 (broad purposes of CEQA include “ensur[ing]” the “long-term protection

of the environment” and “identify[ing] critical thresholds for the health and safety of the people of California”).

To achieve these objectives, CEQA requires that government agencies prepare an environmental impact report (referred to as an “EIR”) if they have “substantial evidence” that a project “may have a significant effect on the environment.” Pub. Resources Code, § 21080(d). An EIR is an “informational document” that must inform public agency decision makers and the public generally of the proposed project and its significant environmental effects, including direct, indirect, and cumulative effects, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. *See* CEQA Guidelines, § 15121.

In addition, CEQA requires more than merely that agencies consider environmental effects of their actions. CEQA also contains a substantive mandate that agencies refrain from approving projects that may cause “significant” environmental effects if there are “feasible alternatives or feasible mitigation measures” that can “avoid or substantially lessen” those effects. *See Mountain Lion Foundation v. Fish & Game Comm’n* (1997) 16 Cal. 4<sup>th</sup> 106, 134; *see also* Pub. Resources Code, § 21002.

The core purpose of an EIR is “to inform the public and its responsible officials of the environmental consequences of their decisions *before* they are made.” *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 564 (emphasis in original). Accordingly, CDFG must prepare an EIR for the eradication program “as early as feasible in the planning process to enable environmental considerations to influence project program and design . . .” CEQA Guidelines, § 15004(b).

As directed by the California Supreme Court, CEQA procedures should be “scrupulously followed,” so that “the public will know the basis on which its responsible officials either approve or reject environmentally significant action” and be able to “respond accordingly to action with which it disagrees.” *Laurel Heights Improvement Association v. Regents of the University of California* (1988) 47 Cal. 3d 376, 392. Public participation in the CEQA process is also fundamental, as CEQA was founded on the belief that “citizens can make important contributions to environmental protection and . . . notions of democratic decision-making.” *Concerned Citizens of Costa Mesa, Inc. v. 32nd District Agricultural Association* (1986) 42 Cal. 3d 929, 936.

### **AB 2763**

Assembly Bill 2763 (codified at Food & Agric. Code, §§ 5260-5266), requires that CDFG maintain a list of “invasive” species, develop and maintain a written plan outlining the “most appropriate options for detection, exclusion, eradication, control, or management of the higher priority invasive pests,” and, as part of that plan, disclose and assess certain information if aerial application of pesticides would be required. Food & Agric. Code, §§ 5261, 5262 (emphasis added).

In particular, if CDFA determines that aerial application of pesticides is an appropriate tool for eradicating, controlling, or managing an invasive species, CDFA must disclose the pesticides that would likely be the most appropriate; the concentrations of the pesticides; how often pesticide use would be necessary; a list of each active ingredient and inert material “to the extent that the disclosure of the inert material is permitted by state and federal law;” and a summary of “up-to-date scientific information on the impacts of the pesticide and its inert materials” on healthy children and adults, children and adults with compromised health, domestic animals, fish and wildlife, and public health and the environment. *Id.* § 5262(b).

## DISCUSSION

### I. The DEIR Contains an Inconsistent, Inaccurate, and Incomplete Description of the Program Alternative.

CEQA requires that an EIR present an accurate and complete description of the project. “An accurate, stable and finite project description is the sine qua non of an informative and legally sufficient EIR.” *County of Inyo v. City of Los Angeles* (3d Dist. 1977) 71 Cal. App. 3d 185, 193. The project description must include, *inter alia*: (1) the “precise location and boundaries of the proposed project,” (2) a “clear written statement” of the project’s objectives, including the underlying purpose of the project, as well as (3) a general description of the project’s technical, economic, and environmental characteristics. CEQA Guidelines, § 15124.

As further explained by the Court of Appeals:

A curtailed or distorted project description may stultify the objectives of the reporting process. Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal’s benefits against its environmental cost, consider mitigation measures, assess the advantage of terminating the proposal (i.e., the “no project” alternative) and weigh other alternatives in the balance.

*Id.* at 192-193; *id.* at 197 (EIR violates CEQA if it contains “incessant shifts among different project descriptions” because this vitiates the usefulness of the process “as a vehicle for intelligent public participation”).

The DEIR violates CEQA’s requirement that DEIRs provide a consistent, complete, and accurate description of the Program Alternative. The Program Alternative covers too broad and geographically varied an area for the DEIR to provide a meaningful analysis of environmental and public health effects. With regard to the uncertainties associated with the ecological risk analysis, the DEIR notes that “[t]he area to be treated is significantly large and it was not possible, without an extensive research project, to consider specific habitats and microclimates wherein highly localized ecological receptors might live and be exposed (or avoid exposure).” DEIR F5-26.

The DEIR, moreover, fails to inform the public which treatments will occur and where. The DEIR identifies the Program Area broadly to include “all portions of the state in which climatic conditions are suitable” for apple moths. DEIR 2-1; *id.* (Program Area includes all counties in California except for Alpine, Inyo, and Mono counties). Yet, the DEIR does not describe which treatments might be employed in any specific areas, singly or in combination, when or how those treatments would be applied, or what the criteria are for choosing the treatments in more than general terms.

Concerning the most controversial component of the eradication program – aerial spray (Alternative MD-3) – the DEIR’s description of where and when treatments will occur is too vague and internally inconsistent for the public to meaningfully comment on the proposal. The DEIR variously refers to the areas where spraying will occur as “essentially uninhabited,” as “forests and chaparral,” and as “agricultural and undeveloped areas.” DEIR 2-2, 2-11. Previously, CDFG has stated publicly that aerial spray treatments would be used in “forested” and “agricultural” areas. However, “forests and chaparral” could include many open-space areas adjacent to urban areas such as the East Bay hills and Mt. Tamalpais. Likewise, agricultural areas often are inhabited by people who work on farms and ranches. CDFG must define precisely the areas that may be sprayed aerially and the actual populations and recreational users potentially affected at those locations. The DEIR’s level of generality prevents informed analysis of the actual risks of the eradication program.

Alternative MD-2 consists of ground treatments of pheromone pesticides in residential yards and on public property, and Alternatives Btk and S consist of hydraulic spray of insecticides *Bacillus thuringiensis kurstaki* (“Btk”) and Spinosad on both private and public property. DEIR 2-10. CDFG must be clear regarding whether and how ground treatments of chemical pesticides might be applied to private property. Our clients have serious concerns about this issue in the wake of reports about CDFG’s ground treatment program for the gypsy moth in the Ojai area in spring 2009, which involved spray of Btk on private property. Residents of that area reported that applicators arrived with little or no notice, accompanied by law enforcement, and forced their way onto private property over the objections of property owners, some of whom were ill and specifically asked that their property not be sprayed. *See Officials Force Gypsy Moth Spraying at Ojai Valley News Blog*, OJAI VALLEY NEWS, March 31, 2009. CDFG must disclose whether tactics of this type will be used in the apple moth eradication program.

In addition, the DEIR does not disclose the complete chemical formulations of the pesticides that will be used for the various treatment alternatives, including the so-called “inert” ingredients. Inert ingredients generally make up the majority of a pesticide formula and, in many cases, may be toxic (including, for example, the only inert chemicals analyzed in the DEIR, which are components of the permethrin product proposed for use in Alternative MMA). This information is vital to CDFG’s credible assessment of the effects of the eradication program, as well as to the public’s understanding of the human health and environmental effects of using pesticides on the massive scale projected by the DEIR.

AB 2763 requires that, where aerial spray is anticipated, CDFA's plan for addressing an invasive pest must include for each pesticide that would likely be used: "A list of each active ingredient and inert material, to the extent that the disclosure of the inert material is permitted by state and federal law." Food & Agric. Code, § 5262(b)(4). The DEIR does not identify any state or federal law that prohibits the disclosure of inert ingredients contained in the pesticides. Instead, the DEIR asserts that the identity and concentrations of the inert ingredients in each formulation are usually "proprietary" and are not *required* to be disclosed by the Federal Insecticide, Fungicide, and Rodenticide Act. DEIR 8-8. In fact, the federal Freedom of Information Act requires disclosure of the identity of inert ingredients in response to a citizen's request unless the manufacturer makes a legitimate claim (as determined by the United States Environmental Protection Agency) that the identity of the inert ingredients is confidential business information. See *Northwest Coalition for Alternatives to Pesticides v. Browner*, 941 F. Supp. 197, 206 (D.D.C. 1996) (requiring disclosure of identity of inert chemical ingredients because EPA failed to establish that their identities were confidential business information).

We reiterate that, although agencies may develop programmatic EIRs from which to "tier" subsequent, site-specific environmental analyses, agencies must comply with CEQA "as early as feasible in the planning process to enable environmental considerations to influence project program and design . . ." CEQA Guidelines § 15004(b). If CDFA does not provide the public the above information as part of the programmatic EIR, it must develop site-specific EIRs each time that it approves projects implementing the eradication program. At an absolute minimum, CDFA must provide this information to the public, along with a meaningful opportunity to comment, *before* it takes any steps to implement the eradication program.

## **II. The DEIR Relies On Unsupported and Unanalyzed Assumptions To Conclude There Is a Need To Eradicate the Species and that Eradication Is Possible.**

As explained by the Court of Appeals, "[a]n EIR may not define a purpose for the project and then remove from consideration those matters necessary to the assessment of whether the purpose can be achieved." *County of Inyo v. City of Los Angeles* (3d Dist. 1981) 124 Cal. App. 3d 1, 7-9 (where Los Angeles defined a project broadly to include increasing groundwater pumping and export and making water available for various uses on its lands, including agriculture, the EIR violated CEQA because it failed to include sufficient analysis to determine if the project could actually help provide water for agriculture). In addition, CEQA Guidelines require that, in evaluating the effects of a proposed action, an EIR must "summarize the main points of disagreement among the experts." CEQA Guidelines, § 15151.

The eradication program, and the DEIR itself, are premised on two fundamental assumptions: first, eradicating the apple moth in California is necessary because the species is damaging agricultural crops and other native plants, and second, CDFA's eradication program will, in fact, achieve the agency's stated goal of eradicating the species. As explained below, the DEIR fails to analyze or support these two fundamental assumptions, much less provide substantial evidence that they are true. To the contrary, there is *no* evidence that apple moths cause any damage to agricultural crops and native plants in California, and existing evidence suggests that eradicating apple moths is not possible.

In fact, two petitions to the U.S. Department of Agriculture (“USDA”) seek to reclassify the apple moth from an actionable “quarantine-significant” pest to a non-actionable pest.<sup>1</sup> Reclassifying the apple moth would eliminate the need to impose quarantines or to eradicate the species. The petitions argued that the moth is not an economically important pest and can be controlled by other means, including integrated pest management. The National Research Council of the National Research Council of the National Academy of Sciences (“NRC”) reviewed the U.S. Department of Agriculture’s (“USDA”) draft response (that would deny the petitions), and concluded that:

The biological data presented . . . to support the invasive nature of [the apple moth], its history in California, and its potential geographic distribution in the United States are problematic and in some cases not based on sound, rigorous science. In particular, the prediction of the potential geographic distribution of [apple moths] in the United States . . . and all economic analyses based on it, are questionable and in need of reassessment with a more rigorous approach.

Review of the U.S. Department of Agriculture’s Animal Plant Health Inspection Service Response to Petitions to Reclassify the Light Brown Apple Moth as a Non-Actionable Pest, 6 (Aug. 31, 2009) (“NRC Review”).

Below is an exhaustive list of each of the assumptions in the DEIR that lack evidentiary support and analysis, and for which the DEIR fails to address contradictory evidence from experts in the United States and New Zealand (as documented in subsequent subsections).

**1) Unsubstantiated Assumption: Apple Moths Are New to the State.**

The DEIR asserts, without support, that the apple moth is “a new pest to North America[] that affects a broad range of plants.” DEIR 1-2. The DEIR fails to present credible evidence supporting this assertion, nor does it disclose and acknowledge the considerable disagreement among scientists as to its accuracy. In the past, CDFA has claimed that certain trapping data collected in 2005 supports its conclusion that the apple moth was not present in California prior to 2007. However, according to Dr. James Carey, an entomologist at U.C. Davis with a specialty in invasive species biology, these data do not support CDFA’s claim because very limited trapping was done during 2005. Declaration of James R. Carey (“Carey Decl.”) ¶¶ 1, 9 (Exhibit A). For example, no traps were placed in areas that have since been determined to have substantial apple moth populations, including San Francisco, Marin, and Monterey counties. *Id.* ¶ 9(c).

The NRC Review also notes the inadequacy of the existing trapping data to determine that LBAM is a new arrival:

“ [T]he survey and trapping regimen used in California before 2007 was probably inadequate to determine the presence or absence of LBAM ... sufficient

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<sup>1</sup> One of the petitions also requests that CDFA reclassify the species from a “Class A” to a “Class C” pest.

information is not available to allow a rigorous assessment of the true age of the LBAM invasion in California.”

NRC Review at 5.

In addition, experts (including Dr. Carey) have testified that the geographical range over which the apple moth has been found in California thus far indicates that it has existed in California for anywhere between one and five decades. Carey Decl. ¶ 9. In May 2008, CDFA Secretary Kawamura noted publicly that apple moths had likely existed in California for 6 to 7 years. See Declaration of Monica McKey ¶ 2 (transcribing CDFA statements made during May 9, 2008 radio broadcast of 960Green.com’s “The Green Show”) (Exhibit B). The moth, moreover, is already well-established in Hawaii, and has been detected at United States ports over 100 times since 1971.<sup>2</sup> Indeed, when retired U.C. Berkeley scientist Jerry Powell discovered the apple moth in his backyard in June 2007, a USDA entomologist candidly noted that: “[b]y the time Jerry collected this thing in his backyard, clearly it had been established in the Bay Area for a long time.”<sup>3</sup>

In light of the testimony of these experts, an EIR must analyze all of the factual evidence pertaining to how long the apple moth has existed in California, correlate that evidence with the lack of damage that has been documented from the apple moth, and address head-on the need for, and feasibility of, eradicating the species in view of the length of time the species has existed in California and the lack of damage it has caused.

## **2) Unsubstantiated Assumption: Apple Moths Will Be Destructive Here.**

In 2009, nearly two years after the apple moth was first “discovered” by a U.C. Berkeley scientist, the DEIR candidly admits that “no direct crop damage have been experienced to date in areas subject to existing infestation,” and that “no published studies of crop damages result from [the apple moth] in California or in the U.S. are known.” DEIR 3-20. Nevertheless, the DEIR asserts that: “Based on the continued presence of [the apple moth] in the primary Program Area and proliferation to other parts of the state, it is anticipated that [the apple moth] would ultimately cause direct damage to host crops.” *Id.* For support, the DEIR relies on crop damage estimates it obtained from a USDA study, which based its estimates on damage that apple moths reportedly caused grapes, oranges, apples, and pears in Australia. *Id.*<sup>4</sup>

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<sup>2</sup> United States Department of Agriculture, *Importation of Sweet Cherry, Prunus avium, from Australia into the 50 States of the United States, Including the District of Columbia, Draft* (Aug. 29, 2007).

<sup>3</sup> Matthew B. Stannard, *Little Moth Big Problem*, S. F. CHRON, June 3, 2007.

<sup>4</sup> In addition, reports of damage attributed to apple moth larvae in three blackberry and raspberry fields in Watsonville in 2009 have not been verified; the amount of damage have not been confirmed, nor have the one or more species of leaf roller moth larvae present in the field been positively identified as apple moths. In its annual report on the apple moth program to the California legislature, CDFA itself notes the need to “[d]evelop an effective DNA fingerprint and identification technology for LBAM.” CDFA, 2008 Report to the Legislature: The Light Brown Apple Moth Program, 12, available at [http://www.cdfa.ca.gov/phpps/pdep/lbam/lbam\\_main.html](http://www.cdfa.ca.gov/phpps/pdep/lbam/lbam_main.html).

However, it is speculative at best to assume that apple moths would have a similar effect on crops in the United States, particularly because the records of past damage from apple moths date from locations and time periods in which broad-spectrum organophosphate pesticides were heavily used that are detrimental to beneficial insects that prey on and parasitize apple moths. For example, since the use of organophosphate pesticides ceased in New Zealand in approximately 2000, and beneficial insect populations there subsequently rebounded, apple moths are not considered pests of significance in New Zealand. *See* Harder, D., et al., *Integrated Pest Management Practices for the Light Brown Apple Moth in New Zealand: Implications for California* (2008) (“Harder 2008”); *see also* Declaration of Daniel K. Harder (“Harder Decl.”) ¶ 9 (Exhibit J) (explaining that apple moth populations in New Zealand have been “greatly reduced” since the use of organophosphates was eliminated there). Moreover, despite the damage they can reportedly cause Australian crops, apple moths in some areas of Australia are easily managed without the need to use chemical treatments. *See, e.g.*, Mo, Jianhua, *Light Brown Apple Moth in Citrus, NSW Department of Primary Industries* (June 2006) (“LBAM populations in citrus orchards are normally kept at low levels by a combination of biological and environmental factors.”).<sup>5</sup>

In addition to asserting, without evidence, that the apple moth will damage agricultural crops and ornamental plants in California, the DEIR baselessly asserts that the apple moth will damage native forests. *See* DEIR 1-6 (“The Program is needed to protect the state’s native plants, forest species, agronomically important crops, and ornamental plants from damage by this invasive pest species”). Appendix A of the DEIR includes a list of apple moth host plants and identifies several forest trees, such as cedar, cypress, redwood, fir, and pine (which, as conifers, are unlikely to be preferred habitat for larvae that roll leaves to create a protective shelter). However, experts in New Zealand, where the apple moth has been established for more than 100 years, state that the apple moth does not cause any significant damage to forests or crops there. *See* Harder 2008; Butcher, Mike, Letter to U.S. Representative Jackie Speier (2008). Moreover, the apple moth also has existed in Hawaii for a century at least; yet, the Hawaii Department of Agriculture notes that “LBAM has not been a significant pest in Hawaii.” *See* News Release, Hawaii Department of Agriculture, USDA Places Quarantine on Hawaii Plant Exports (May 2, 2007).

Furthermore, the NRC Review states that the USDA’s claim that the potential for damage to forests is supported by “substantial evidence” is, in fact, not supported. NRC Review at 9-10. The NRC found that USDA’s “cited references consider the damage to forests by LBAM to be minimal or do not specifically address it . . . . the available literature does not provide compelling evidence that LBAM is an important pest of silviculture.” *Id.*

If CDFA insists on perpetuating the speculative assumption that apple moths will widely damage native plans, forests, and crops in California, it must prepare an EIR that provides verifiable, quantified evidence of damage caused by the apple moth *in California*, including

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<sup>5</sup> However, because organophosphates continue to be recommended for agricultural pest control in some areas of Australia, apple moth data from those areas may be more mixed. Thus, the time period and location from which reports of apple moth damage originate are important to take into account when evaluating the relevance of those reports to California agricultural practices today.

definitive identification of apple moth larvae at the site of damage as well as data regarding numbers and identification of any other leaf-roller larvae present at the site where the damage is located. Documentation of damage also must explain the criteria for attributing damage to the apple moth. For example, if one larva is identified in a field, is all observed damage in that field attributed to the apple moth? If larvae of several leaf-roller species are present, how is it determined which might be responsible for damage? CDFA must provide applicable, up-to-date, credible evidence for the claim that the apple moth causes significant harm to forest species and describe under what circumstances the species has been observed inhabiting conifers and what degree of damage has been documented.

**3) Unsubstantiated Assumption: Apple Moths Are Spreading.**

The DEIR repeatedly asserts the eradication program is necessary because the apple moth is necessary to prevent the infestation from “spread[ing]” further in California. *See, e.g.*, DEIR 1-2 (asserting that the apple moth infestation “had spread from 9 counties to 12 by mid-2008”); *see also* DEIR 2-1 (“the LBAM infestation has spread and may continue to spread until full-scale eradication and treatment activities are implemented”). CDFA must present supporting evidence for this assumption. As discussed above, the attached declaration of Dr. Carey establishes the inadequacy of CDFA’s trapping data for this species and that there is no basis upon which to conclude that the species only recently arrived in California and is currently spreading. Carey Decl. ¶ 9(f) (stating that the apple moth “invasion of California is essentially complete and thus LBAM can be considered a resident species”). According to Dr. Carey, the apple moth captures over the last year in counties in which this pest was previously undetected “is a consequence of heightened trapping effort rather than spread.” *Id.* ¶ 9(f). Further, considerably more trapping data must be gathered, and baseline trapping numbers must be established, if CDFA is to credibly conclude that the apple moth is spreading. If areas where the apple moth is now being found have not previously or recently been monitored, it is not reasonable to conclude that species trapped there since 2007 are evidence of “spread,” as there is no way to know how long it was established in the area prior to being trapped.

**4) Unsubstantiated Assumption: Apple Moth Populations Are Currently Small and Local or Regional.**

The DEIR also justifies the eradication program on the claim that current apple moth infestations are “local or regional.” DEIR 1-2. However, the DEIR fails to support this assertion with evidence. Trapping data do not support this statement: According to the DEIR, the apple moth has been found in at least 13 counties in an area that covers approximately 2,163,200 acres (or 3,380 square miles). DEIR S-2. Moreover, the DEIR discloses that the area proposed for “immediate” eradication activities covers approximately 2,000 square miles (DEIR 2-1), and the Notice of Availability for the DEIR states that the eradication area is 3,200 square miles. CDFA must define “local and regional” in a credible manner and document studies or other valid evidence that an insect population of this size and range would be considered a plausible candidate for a successful eradication program.

**5) Unsubstantiated Assumption: Apple Moths Can and Should Be Eradicated.**

The DEIR repeatedly assumes, also without support, that the proposed treatment methods will successfully eradicate the apple moth. *See, e.g.*, DEIR 3-26 (“it is assumed that in the long run, the proposed eradication methods would be successful in eradicating LBAM from currently infested areas . . . and would prevent spread of LBAM throughout the state”). Not only is this assumption not analyzed or supported in the DEIR, but it is refuted by leading invasive species experts. In fact, Dr. Carey, who notably was a member of CDFA’s Medfly Scientific Advisory Panel from 1987 to 1994, explains:

[T]here has never been a successful program of eradication based on the use of a pheromone to disrupt mating behavior . . . [Several] factors – the extent and duration of spread [of the species], the difficulty of detection, the inadequacy of the eradication tool and the widespread public opposition to this program make it virtually impossible to eradicate LBAM in California. *Therefore, an eradication program with that goal cannot succeed.*

Carey Decl. ¶¶ 12, 16 (emphasis added); *see also id.* ¶ 8 (concluding that “LBAM is so widespread that eradication is not feasible regardless of the eradication tool used”). These findings are consistent with the work of Dr. Harder, a botanist who has studied New Zealand control practices for the apple moth and concluded that eradicating the apple moth in California is not feasible, nor is it necessary to effectively control the apple moth and potential damage to agricultural crops. IPM Report at 1; *see also* Harder Decl. ¶ 19 (concluding there is “no chance” that the apple moth can be successfully eradicated in California); Jeff Rosendale, Trapping Data for Light Brown Apple Moth (LBAM) and similar localized tortricids in Santa Cruz County Spring-Summer 2008 (Exhibit I) (data for trapping efforts at several locations during 2008 show that, where recorded, apple moths were consistently outnumbered by other tortricid moth species).<sup>6</sup>

The NRC Review reached similar conclusions: “Myers et al. (2000) clearly articulate the criteria that are prerequisites for success; two of the most important are early detection to implement eradication before an invasive species becomes too widespread and establishment and maintenance of public support to provide the lead agency with a clear mandate for action. It is debatable whether [USDA] has met either of those criteria with respect to the LBAM invasion, and [USDA] may be well advised to reconsider the available alternatives.” NRC Review at 11; *see also* Myers, J.H., D. Simberloff, A.M. Kuris, and J.R. Carey. 2000. Eradication revisited: Dealing with exotic species. *Trends in Ecology and Evolution* 15 (8): 316–320 (Exhibit C).

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<sup>6</sup> Dr. Daniel Harder, a botanist and Executive Director of the U.C. Santa Cruz Arboretum, concludes that each of the DEIR’s proposed alternatives “has not been used successfully in eradicating a moth species.” Harder Decl. ¶ 21. In particular, Dr. Harder explains that the alternative of using Sterile Insect Technology is inappropriate because the apple moth “is one of the worst candidates for use of the SIT for eradication because of its small size, fragility, continuous breeding, multiple matings, rearing difficulties, ability to prosper in protected environments (e.g., screened porches),” distribution and host range. *Id.* ¶ 23.

An EIR must present evidence, including credible, independently reviewed analyses that the proposed treatments will successfully eradicate the apple moth. This analysis must account for the range over which the moth has been detected in California and the possibility that it is established beyond the area in which trapping has been conducted to date, as well as the fact that all the treatments proposed in the DEIR are control tools and have not been used previously as eradication tools.

An EIR must address the full range of up-to-date scientific literature and experience with the apple moth. This should include any studies that indicate that eradication is possible and that eradication has been achieved in a situation where an insect is established over such a broad range of varying terrain. CDFG must take into account the following important issues: the apple moth is virtually indistinguishable from other California native leaf-roller moths both in behavior and destructiveness, knowledge of the DNA of leaf-rollers is insufficient to conclusively identify which leaf-roller may be present at a given site, no other leaf-rollers are subject to quarantine in the U.S., the apple moth is not the subject of eradication programs anywhere else in the world where it is indigenous or naturalized, and has done little or no damage to California crops, forests, or other native plants. Further, an EIR must address, as noted above, the weight of evidence that the apple moth has been in California for decades, is well established over a broad range, and that quarantines and treatments undertaken to date have had little or no effect on apple moth populations.

An EIR also must explain how complete eradication of the species can be achieved when the current and potential future eradication areas contain sensitive and protected areas that cannot be treated, including schools and parks. *See* DEIR 8-43 (describing mitigation measure requiring that “CDFG will avoid parks and schools when treating for LBAM”). Furthermore, an EIR must explain how the degree of natural predation and parasitization of apple moths that is already occurring in California will be quantified (see Mills 2008 for an initial listing of native California apple moth predators; Dr. Mills has since expanded this list in public presentations), how the proposed treatments will affect natural control of apple moths that is already taking place, and whether the aerial treatments in Monterey and Santa Cruz that occurred in 2007 were successful. We note that, following those aerial treatments, the number of apple moths trapped in those areas increased.<sup>7</sup>

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<sup>7</sup> In 2007, prior to spraying in Monterey, USDA Situation Reports (Sept. 1 and 11) listed a count of 7 apple moths there; following spraying on Sept. 9-12, the Sept. 12 USDA Situation Report showed a significant increase to 27 apple moths, after which counts returned to the range where they had been prior to spraying until mid October when the number jumped again to 44 and then dropped to 27 a week later on Oct. 19. Spraying took place again Oct. 24-27. In the Oct. 24 situation report just before spraying began, no apple moths were reported in Monterey. On Nov. 1, just after the spraying ended, the count was 56. On Nov. 15, the count was 33. Prior to spraying in Santa Cruz, the USDA Situation Report (Nov. 1) showed a population of 182 apple moths. After spraying on Nov. 8-9, the next USDA Situation Report (Nov. 15) showed a dramatic increase to 397 apple moths, after which populations dropped to 44 on Nov. 30 and then rebounded to pre-spray levels with a count of 175 on Dec. 14. *See* U.S. Department of Agriculture Animal and Plant Health Inspection Service, Light Brown Apple Moth 2009 Weekly Situation Reports, available at [http://www.aphis.usda.gov/plant\\_health/plant\\_pest\\_info/lba\\_moth/updates.shtml](http://www.aphis.usda.gov/plant_health/plant_pest_info/lba_moth/updates.shtml). Based on this brief review of data, it appears that spraying was followed by a temporary increase in apple moth populations and then a return to population numbers similar to those documented prior to spraying. Other factors could also influence population, such as seasonality.

Finally, for eradication alternatives, an EIR must establish the metrics by which program success or failure will be measured and the timeline and criteria for deciding that eradication is not feasible if the program does not succeed.

Because the DEIR is based on the flawed and unsubstantiated assumptions outlined above, we submit that all of the analysis and conclusions that flow from those assumptions are similarly flawed and unsubstantiated. An EIR must establish a scientifically supported and valid rationale for the eradication program.

### **III. The DEIR Does Not Analyze A Reasonable Range of Alternatives.**

An EIR “must consider a reasonable range of potentially feasible alternatives that will foster informed decisionmaking and public participation.” CEQA Guidelines § 15126.6(a). The purpose of an alternatives analysis is for agencies to identify ways to mitigate or avoid the significant effects that a project may have on the environment. Pub. Resources Code § 21002.1. Accordingly, an EIR’s discussion of alternatives “shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.” CEQA Guidelines § 15126.6(b).

#### **A. The DEIR Does Not Analyze Alternatives to the Eradication Program.**

The DEIR purports to analyze seven program “alternatives” in addition to the No Program Alternative. In reality, *all* of the Program Alternatives are component parts of CDF’s eradication program. The DEIR candidly admits that: “The Program anticipates using all of the chemical and nonchemical alternatives (and options) in combination as part of an integrated pest management Program.” DEIR 2-2. Defining the individual treatment methods as “alternatives” misrepresents the nature of the eradication program. More fundamentally, because the DEIR does not consider any approach that differs from its eradication program, the DEIR fails to analyze true alternatives, in violation of CEQA. *See Laurel Heights*, 47 Cal. 3d at 404 (EIRs must provide “meaningful analysis of alternatives”).

To comply with CEQA, an EIR could take an approach such as the following:

- Consider one alternative made up of the complete combination of treatments proposed (*i.e.*, the eradication program in its totality as conceived);
- Consider one alternative consisting of non-toxic or least-toxic integrated pest management (“IPM”) controls only, such as those practiced successfully in New Zealand. In this alternative, the first step would be to monitor to determine whether or not there is even a problem with apple moth that merits further action;
- Consider one alternative consisting of monitoring only, to determine the actual extent of apple moths in the state, the degree to which it is controlled by native predators,

and the true risk posed by apple moths as compared to other moths in the family of leaf-roller moths;

- Consider one alternative consisting of state efforts to seek federal reclassification of the apple moth which would eliminate the need for quarantines and therefore for the eradication program;
- Consider a true “No Program” alternative entailing no action, rather than the unrealistically defined No Program alternative used in the DEIR, which assumes significant, increased pesticide use by private landowners.

A DEIR that defines a range of alternatives in this manner could satisfy CEQA’s requirement that an EIR analyze reasonable alternatives that are capable of avoiding or substantially lessening any significant effects of the project. CEQA Guidelines § 15126.6(b).

**B. The DEIR Does Not Analyze Reasonable Alternatives Proposed by the Public.**

The DEIR does not identify, let alone assess, the comparative environmental effects of several program alternatives that are “capable of avoiding or substantially lessening any significant effects of the” eradication program. CEQA Guidelines § 15126.6(b). In fact, the DEIR discloses that CDFA did not analyze any alternatives that were not designed to achieve its stated objective of full eradication of the species. *See* DEIR 16-1 (rejecting alternatives that do not “meet the objective of eradication”). For example, the DEIR does not analyze the environmental effects of the alternative control options proposed by our clients and others, including the alternative of using a combination of IPM techniques or the alternative of using classic biological control techniques alone to control apple moth infestations. DEIR 16-1 to 16-2. In addition, the DEIR does not analyze an alternative that would entirely avoid the health and environmental impacts of the program: seeking federal reclassification of the apple moth such that the species would no longer trigger federal quarantines.

It is unreasonable for the DEIR to dismiss alternatives that are designated to control apple moth populations, rather than eradicate the species. As explained above, CEQA requires consideration of alternatives even if they may “impede” attainment of CDFA’s objective to eradicate. CEQA Guidelines § 15126.6(b). The DEIR’s analysis of only those alternatives that CDFA characterizes as “eradication” methods is particularly illogical because all of the program alternatives discussed in the DEIR, in fact, are invasive species control techniques, not eradication techniques. We note that, as Dr. Carey explains in the attached declaration, there has never been a successful eradication program for an insect of this type established over an area of this size based on the use of a pheromone pesticide. *See* Carey Decl. ¶¶ 12, 16.

Even if CEQA permitted CDFA to eliminate alternatives on this basis, eradication is not a feasible or even a necessary program objective. As explained above and in our August 20, 2008 scoping letter, leading experts on invasive species believe that eradicating the apple moth is likely impossible, because the species likely has existed in California for decades and has

become too established to be completely eradicated. *See, e.g.*, Carey Decl. ¶ 8 (“LBAM is so widespread that eradication is not feasible regardless of the eradication tool used”).

Moreover, crops can be managed to minimize potential damage caused by apple moths without the use of harmful pesticides and other ecologically damaging treatments. The USDA’s list of crops exempt from the current apple moth quarantine acknowledges as much; it asserts that the exemptions are “based on the pest mitigations provided through industry standards of production, harvesting, and packaging practices for each of the exempted commodities.” U.S. Department of Agriculture, Light Brown Apple Host List Exempted from Federal Quarantine Order, August 2007. The USDA’s crop exemption list identifies specific practices for each crop that “eliminate the risk of harboring LBAM,” including: “Integrated Pest Management (IPM) practices implemented by producers, including the use of routine chemical applications that are designed to suppress Lepidoptera pests, also target LBAM,” and for a number of crops the fact that no leaves are harvested. *Id.* These exemptions suggest that current agricultural practices are sufficient to control apple moth infestations.

In fact, little or no control may be needed for the apple moth in California because the species has a large number of natural predators and parasites in California. *See* Mills, N., LBAM in California: Exotic and Indigenous Parasitoids (2008) (Exhibit D). Experts in New Zealand have explained to CDFA that natural predation and parasitization are the main controls on apple moth populations in that country. *See* Walker, J., Light Brown Apple Moth: Management in New Zealand, July 21-23, 2008 (Exhibit E); *see also* Harder Decl. ¶ 9 (explaining that apple moths in New Zealand are “controlled almost exclusively by its natural predators, both in agricultural settings and in the wild”).

Moreover, the DEIR fails to explain adequately why the DEIR need not consider IPM practices used by organic growers – who may not use routine chemical applications – as a distinct program alternative. The DEIR asserts that classic biological control methods “are not always successful at lowering the numbers of the target pests below an economically damaging level.” DEIR S-6. However, according to testimony presented by the California Certified Organic Farmers (CCOF) to the California Legislature concerning the adequacy of the DEIR:

CCOF is concerned that many of the “Alternatives Eliminated From Further Consideration” (S-5) are those used routinely in an organic system for all kinds of pest control, and used effectively. CCOF and many other organizations work diligently on all policy levels to encourage farmers to use management practices that are environmentally sound, including IPM, biological control and similar approaches. It troubles CCOF that CDFA had determined these methods are not useful against LBAM, when organic farmers know that they are effective at controlling all manner of pests. CDFA and many other organizations are involved in the second year of an Ag Vision process that seems to include some environmentally friendly farming practices. Yet CDFA’s own day-to-day operational staff continue to do a poor job of working with ALL stakeholders, and keep promoting farming practices that depend on an eradication concept that does not seem realistic or achievable.

California Certified Organic Farmers (“CCOF”), Testimony to Senate Committee on Food and Agriculture, Aug. 25, 2009. We agree with CCOF that biologic control and similar methods of controlling apple moth infestations can be effective, and must be analyzed as program alternatives in the DEIR.

**IV. The DEIR Does Not Analyze Adequately the Health and Environmental Impacts of the Program Alternatives.**

**A. The DEIR Does Not Disclose and Analyze the Full Chemical Formulations of Pesticides That Will Be Used in the Program Alternatives.**

The DEIR’s analysis of the environmental and health impacts of the Program Alternatives is not adequate because the DEIR does not analyze the complete formulas of all chemicals to be used in the program, including so-called “inert” ingredients. DEIR 8-8. Specifically, the DEIR does not disclose and analyze the full formulas of the pesticides that may be used for mating disruption, including twist ties, ground and aerial spray.

Indeed, as explained above, AB 2763 requires that, where aerial spray is anticipated, CDFA’s plan for addressing an invasive pest must include for each pesticide that would likely be used: “A list of each active ingredient and inert material, to the extent that the disclosure of the inert material is permitted by state and federal law.” Food & Agric. Code, § 5262. The DEIR does not assert that any state or federal laws prohibit the disclosure of the inert ingredients of chemicals CDFA plans to aerially spray. Accordingly, it must disclose the active and inert ingredients of the pesticides that will be applied aerially.

Furthermore, even in those cases where the DEIR discloses inert ingredients, its analysis of the health impacts of exposure to the pesticide formulations is frequently insufficient. For example, the Human Health Risk Assessment discloses that permethrin, a chemical used in the Male Moth Attractant alternative, contains inert ingredients ethylbenzene and trimethylbenzene, and discloses that ethylbenzene is carcinogenic and can cause tumors and pathological liver changes, and also affects the pituitary and thyroid glands. DEIR Appendix D3-17 to D3-19, D3-85. However, the DEIR fails to disclose that ethylbenzene is an eye irritant, and trimethylbenzene has been linked to genetic damage, according to the National Institute of Occupational Safety and Health (NIOSH) database. *See* National Institute of Occupational Safety and Health (NIOSH)/RTECS, Benzene, ethyl - RTECS #: DA0700000 (Exhibit F); Benzene, 1,2,4 – trimethyl-RTECS#: DC332500 (Exhibit G). The absence of complete information concerning the serious health effects associated with exposure to these two inert ingredients raises substantial questions about the thoroughness of the DEIR’s analysis of potential health impacts.

**B. The DEIR Fails to Disclose and Analyze Health Impacts of Aerial Spray.**

The DEIR concludes that aerial application of pheromone pesticides over as-of-now undefined areas throughout California would not have any significant impacts on human health,

including sensitive groups and short-term, subchronic, and/or long-term human health impacts, and would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of a hazardous material. DEIR 8-37 to 8-39.

Surprisingly, CDFA has not resolved the hundreds of illness reports that coincided with CDFA's spraying of Checkmate, a pesticide that contains the same "active" ingredients as those contained in the two chemicals that may be sprayed, in Santa Cruz and Monterey in 2007. Reported illnesses included asthma attacks, shortness of breath, eye irritation, and skin rashes.<sup>8</sup> Although the pheromone pesticides considered in the DEIR for aerial spray have different chemical formulations, their active ingredients are identical to those in Checkmate, suggesting that health effects could occur again if people are exposed.

CDFA attempts to dismiss the potential health impacts in part by relying on "six pack" acute toxicity tests that were conducted in 2008. But, as the DEIR concedes, chronic health exposure data are lacking for the pheromone active ingredient in the mating disruption pesticide formulations the DEIR discloses may be aerially applied (including both Bio-Flake and SPLAT). The DEIR dismisses the need to test for chronic impacts, relying on a U.S. EPA evaluation of the pheromones that purportedly concludes that chronic testing is not necessary because there is a "low potential for long-term exposure." What the DEIR neglects to mention is that this conclusion is based on the assumption that the pheromones are used in small amounts in agriculture.<sup>9</sup> However, chronic impacts could be significant because the eradication program involves routinely applying the chemical pesticides every 30 to 90 days for a period of 3 to 5 years until eradication is successful, with the expectation that these treatments would continue to actively affect the target insect during the treatment intervals, and thereby continue to expose nearby populations to the ingredients in the chemicals used.<sup>10</sup>

Another area of concern is the degree to which the active ingredient in the pheromone pesticides may be a dermal irritant and "sensitizer." The "six pack" toxicity tests completed in 2008 establish that exposure to the "active" pheromone chemical resulted in dermal sensitization, which could explain both dermal and respiratory symptoms reported after aerial spraying in Monterey and Santa Cruz in 2007. The California Office of Environmental Health Hazard Assessment (OEHHA) similarly concluded that pheromone pesticides "have the potential to cause allergic type reactions from skin contact" and that "the possibility that dermal sensitization

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<sup>8</sup> See, e.g., Jane Kay, *Health Problems Reported After Aerial Spraying*, S.F. CHRON., April 7, 2008.

<sup>9</sup> OEHHA, *Consensus Statement on Human Health Aspects of the Aerial Application of Microencapsulated Pheromones to Combat the Light Brown Apple Moth*, 3 (Oct. 31, 2007) (noting that EPA's conclusion that there is a low probability of exposure "refers primarily to the pheromone active ingredients generally used in emitter devices or aerial application over agricultural areas rather than aerial application over populated areas (such as in the present situation)").

<sup>10</sup> The Office of Environmental Health Hazard Assessment's ("OEHHA") report evaluating health complaints that occurred after CDFA sprayed in Monterey and Santa Cruz in 2007 does not support CDFA's dismissal of potential health effects. That OEHHA study dismissed 90% of the complaints and, after evaluating only 10% of the complaints, concluded only that: "It is not possible to determine whether or not there is a link between any of the reported symptoms and the aerial spraying."

could occur from contact with LBAM pheromone-containing products cannot be excluded,” although the precise likelihood could not be quantified. DEIR D1-3, 8-13 to 8-14. Because of these findings, and the fact that human exposure during a 3- to 5-year eradication program will be prolonged, comprehensive follow-up toxicity testing should include complete sub-acute, and chronic animal testing, and those results must be analyzed in an EIR.

The DEIR describes the Bio-Flake product as consisting of 1/8” x 1/8” square flakes that contain the pheromone pesticide, as well as “inert polymers” or “plastic,” which is expected to release synthetic moth pheromone in the environment over an approximately 90-day period. DEIR 8-14, F3-36 to F3-37. Yet, the DEIR does not analyze the possibility that children and even animals maybe harmed if they accidentally eat the small flakes because they do not know that they are potentially dangerous. The acute toxicity tests also did not evaluate the risks of oral ingestion or inhalation of Bio-Flake. DEIR 8-14.<sup>11</sup> One of the reasons given was that researchers were unable to grind the flakes into a powder so they could be ingested. *Id.* However, the flakes are of a small size and do not need to be powdered to be ingested; in fact, they may be attractive to children and wildlife precisely because of their size and shape. Moreover, Bio-Flake is known to contain plastics that, according to the DEIR, “are very stable” and can remain in the environment “for many years,” although the precise nature of the plastic used in Bio-Flake is unknown and is not analyzed in the DEIR. DEIR F3-37.<sup>12</sup>

Furthermore, the DEIR discloses that CDFA lacks important information concerning the environmental fate and persistence of chemicals included in the Bio-Flake product. *See* DEIR D3-64. Fate and persistence studies are particularly important because the degree to which plastic is “inert” is very debatable, and the nature of this particular plastic is unknown. Plastics manufacturers have proprietary formulas that include a variety of additives often including heavy metals, such as mercury and lead, and a number of chemicals are used in the production process, for example to facilitate the release of plastic shapes from their molds. Bisphenol-A is commonly used in the production of some types of plastics, including polycarbonates, epoxy resins, and composites; some studies also find Bisphenol-A in polyvinyl chloride. Bisphenol-A is an endocrine disrupter and causes genetic abnormalities. In fact, a 2007 review of the literature concluded that it is likely that bisphenol-A is carcinogenic, although more research is needed. *See* Keri, R., et al., An Evaluation of Evidence for the Carcinogenic Activity in Bisphenol A. *Reprod Toxicol.* 2007; 24(2); 240-252 (Exhibit H).

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<sup>11</sup> For twist ties (Alternative MD-1), the DEIR similarly acknowledges that “not a lot of information exists for this product,” DEIR F3-61, and all toxicity tests of the twist ties were acute “because no adverse human effects were expected.” DEIR F3-61.

<sup>12</sup> An EIR must also quantify the volume of plastic that CDFA anticipates will be released into the environment and its short- and long-term impacts on soil, wild life (including ingestion), and water bodies. Although the DEIR states that direct application to water bodies is not intended, the San Lorenzo River was reportedly contaminated when CDFA sprayed pheromone pesticides in 2007, as was a sensitive water body outside the spray zone, and other water bodies were contaminated by runoff when it rained after spraying. *See* Department of Pesticide Regulation, Pilot Errors and Exclusion Sites, 2008, available at <http://www.youtube.com/watch?v=XqYi47y0dVc>.

In short, CDFA must reveal the specific chemical formulations of Bio-Flake and SPLAT, and exposure to these substances, both from accidental ingestion and as it persists in the environment, must be assessed for both short- and long-term health impacts. Without adequate testing for acute *and* chronic health effects from exposure to the specific combination of the pheromone and “inert” ingredients, CDFA lacks any basis for claiming that the chemicals are safe.<sup>13</sup>

**C. The DEIR Does Not Analyze Adequately the Risks the Eradication Program Would Pose to Sensitive Populations.**

Our scoping comments expressed concern that aerially spraying pesticides could have unique impacts on sensitive populations, including children, the elderly, and those with chronic health conditions. In addition, AB 2763 requires that, where aerial spray is anticipated, CDFA must include a summary of “up-to-date scientific information on the impacts of the pesticide and its inert materials” on healthy children and adults, children and adults with compromised health, domestic animals, fish and wildlife, and public health and the environment. Food & Agric. Code, § 5262(b)(5). Other sensitive populations that must be taken into account are pregnant women, because of the potential risk to fetuses, and the homeless.

The human health risk assessment states that it “assessed the potential for adverse health effects using conservative exposure assumptions designed to be protective of all populations, including the most sensitive.” DEIR 8-1. In fact, the risk assessment addresses only two hypothetical categories of sensitive populations address in our prior comments: “child resident” and “child recreational park user.” Although addressing children specifically is indeed important, the vulnerabilities and exposure risks of children are different than those of these other categories of human populations.

In brief, children’s susceptibility to pesticide effects is due primarily to their immature immune systems and their rapidly growing cells as well as to their greater contact with soil and the ground and the tendency of young children to put objects and their hands in their mouths without first washing them. Transmission of chemicals across the placental barrier and susceptibility to fetal birth defects is a different type of risk, the susceptibility of the chronically ill has to do with diminished immune response and target organ vulnerability. The elderly are at risk in part because their detoxification abilities are much less robust than those of younger people. Chemically sensitive individuals are at much greater risk from exposure because of their sensitized immune response, and homeless individuals face a different exposure risk than all other populations because their ability to seek shelter from and avoid direct contact with

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<sup>13</sup> In addition, ground-based applications of Bio-Flake involves mixing the Bio-Flake product with a sticky “matrix” material and applying it with a gun to trees, posts and large bushes. DEIR 2-10. The DEIR does not adequately address the long-term results of this application. How is it anticipated that the product would not eventually degrade and wear off? What would be the risks of direct contact by landowners trimming bushes or trees to which these applications had been made? The risk assessment assumes only exposure by inhalation to adult gardeners. DEIR 8-34. However, dermal contact from actually handling plant matter that has been treated with the product apparently is not considered.

chemical treatments is more limited. To comply with CEQA, CDFA must prepare an EIR that analyzes potential effects to these sensitive populations in addition to children.

**D. The DEIR Arbitrarily Concludes That Mitigation Measures Will Reduce Impacts of the Male Moth Attractant Alternative to Less Than Significant.**

The Male Moth Attractant Alternative (MMA Alternative) involves ground treatment of areas with apple moth-specific pheromones (specifically, a chemical referred to as SPLAT) and permethrin to attract and kill male moths. DEIR 2-11. The DEIR discloses that permethrin and its inert ingredients, including ethylbenzene, are carcinogenic and that, under this alternative, nursery workers, adult residents, and child residents have potential cancer risks somewhat in excess of  $1 \times 10^{-6}$ . DEIR 8-39. However, the DEIR concludes that potential impacts are less than significant because it adopts a mitigation measure that requires that the pesticide is applied 8 feet above the ground and, thus, above the “breathing zone” of the average person. *Id.*

In addition, the DEIR concludes that exposure caused by the Male Moth Attractant Alternative from transport, use, and disposal of permethrin could “[c]reate a significant hazard to the public or the environment.” DEIR 8-44. The DEIR, however, concludes that the impact is less than significant because a mitigation measure requires that the MMA Alternative pesticides are applied in strict accordance with label requirements, that appropriate worker training is conducted prior to use of pesticides, and that appropriate personal protective equipment is used. *Id.*

The DEIR’s conclusions that mitigation measures will reduce impacts of the Male Moth Attractant Alternative to less than significant are not supported. The conclusions are based on manufacturer claims about the product’s durability, specifically, that “[o]nce cured SPLAT will not wash off vegetation while providing rain and UV protection for the Pheromone and can remain effective for up to 6 months.” DEIR F3-51. As a result, the DEIR assumes without support that humans will not be exposed to volatilization of the chemical and that there will be no long-term risk from the persistence and eventual degradation of the sticky SPLAT patches. In addition, the DEIR assumes without support that there will be no accidents or human errors in applying the pesticide chemicals.

Because the DEIR’s conclusions that impacts of the Male Moth Attractant Alternative will be reduced to less than significant is based on these unsupported assumptions concerning the efficacy of the mitigation measures, those conclusions are arbitrary and capricious and must be reevaluated in a revised DEIR.

**E. The DEIR Does Not Adequately Analyze Biological Impacts.**

The DEIR documents that several of the chemicals proposed for use in the eradication program are toxic to various species of wildlife. The following is a sampling:

1. Btk, a chemical pesticide that is approved as “organic,” is toxic to monarchs and other butterflies as well as to classes of insects (hymenoptera parasitoids) that include species

- that parasitize apple moths in New Zealand (ichneumonidae). DEIR F3-68 to F3-69.
2. Permethrin, a chemical pesticide, is toxic to honeybees, and can be life-threatening to cats. DEIR F3-21 to F3-22.
  3. “According to both chronic 7-day and acute 96-h tests, [the Male Moth Attractant alternative] is very highly toxic to aquatic organisms.” DEIR F3-63.
  4. Spinosad, a chemical pesticide that is approved as “organic,” has “the potential to harm beneficial insects, including honey bees and other pollinators” as well as “some predators and parasitoids of arthropod pests.” For example, the DEIR discloses that “[d]ocumentation of the spinosad’s harmful effects on several beneficial species has raised concern over its compatibility with biological pest management.” DEIR F3-77.
  5. Direct application of spinosad to “surface water or intertidal areas below the mean high water mark has been shown to be detrimental to aquatic life.” DEIR F3-77.

The DEIR dismisses these effects as less than significant on the grounds that, in the case of aquatic life, direct application of pesticides to water is not planned and “CDFA has determined that they will not use spinosad within 25 feet of water bodies.” DEIR 9-17. For other species, because “extended treatment is not envisioned” in the program, “the duration of the action can be considered to be short term.” DEIR F5-23. However, 3 to 5 years of regular treatments in which the pesticide chemicals remain active between applications is not short-term exposure. An EIR must realistically evaluate the direct, indirect, and cumulative impacts of the program on bee, butterfly, and ichneumonid species and the potential adverse effects to the species of ichneumonidae that are likely to parasitize apple moths in California.

In addition, the DEIR does not evaluate the risk that ground applications might miss their intended targets or be applied outside target zones. For all treatments, the risk of mistaken application locations is clear: exposure would occur in areas where it is not intended. For the SPLAT treatment, it is unclear precisely how the chemical would be applied. The DEIR describes its application as follows: “For SPLAT, two delivery mechanisms may be used: the first is the use of a ‘caulk gun’ to deliver a one teaspoon-sized dollop; the second is the use of a backpack-based “nozzle” to deliver a measured amount of pheromone to the target.” DEIR 2-10. From this description, it appears that the application might be a two-part process, with the sticky substance shot onto the target location first, and then the pheromone sprayed onto the sticky patch afterward. If that is indeed the process, there is clearly a risk that the pheromone sprayed from a nozzle could miss the sticky patch and/or strike other receptors in the area.

**F. The DEIR Does Not Analyze Adequately the Potential for Drift To Exacerbate Health and Environmental Effects of the Eradication Program.**

An accurate and complete analysis of the risks of drift associated with the Program Alternatives is critical to an adequate EIR. The DEIR itself admits that “[a]lthough application over water bodies is not intended, *spray drift was not uncommon.*” DEIR 11-19 (emphasis

added). The DEIR assumed that the primary delivery mechanism of treatment chemicals into water would be through drift, and that “surface areas of water bodies would be exposed at the same deposition rate as deposition onto soils and vegetation from acute (24-hour maximum) concentrations.” DEIR F4-9.

Nevertheless, the DEIR’s analysis of drift is deficient in two respects. First, for purposes of analyzing the impacts of the No Program Alternative, the DEIR assumes drift from application of permethrin by growers and homeowners that is required under the quarantine regulations, *see, e.g.*, DEIR 11-19, but for purposes of analyzing the Program Alternatives, the DEIR does not include an assessment of drift associated with these chemicals. Thus, the DEIR only analyzes the potential for pesticide drift with respect to chemicals used in aerial spray and hydraulic spray of Btk and spinosad (although inadequately, as discussed next), and does not include an assessment of the risk of drift associated with the use of chemicals required under the quarantine regulations. However, the quarantine regulations will apply both under the No Program and Program Alternatives; thus, the environmental effects of drift associated with chemicals required to be applied under the regulations would be the same under all alternatives.

Moreover, even for those chemicals for which the DEIR purports to analyze the drift issue, the DEIR fails to conduct a complete drift analysis. In the analysis of air quality impacts, the DEIR admits that the “distance that drift particles or gases could travel was not assessed.” *See* DEIR 6-18 (“the distance to the maximum concentrations or deposition rates was estimated, but concentrations or depositions beyond a few hundred meters were not assessed”). With respect to aerial spray, the DEIR concluded that drift from aerial application of SPLAT would be approximately 30 percent of the applied material, but failed to quantify the distance that drift could occur beyond the arbitrarily selected 800-meter area analyzed by CDFA’s model. DEIR 6-21 to 6-22, Appendix C C4-10. The DEIR also dismissed the potential for drift of the Bio-Flake product because its model concluded that none of the product would drift beyond the same, arbitrary 800-meter area analyzed by the model, but failed to describe what amount of the product drifted within this area. DEIR 6-22, Appendix C C4-10.

An adequate EIR must include a complete analysis of the risk of drift, quantifying drift distances and incorporating into the Program Alternatives an analysis of pesticides used as required by the quarantine.

#### **G. The DEIR Does Not Analyze The Combined and Cumulative Impacts of the Program Alternatives.**

CEQA requires that EIRs analyze the direct, indirect, and “cumulative” impacts of a proposed action. CEQA Guidelines, §§ 15355, 15358. Cumulative impacts are defined as “two or more individual effects which, when considered together, are considerable or . . . compound or increase other environmental impacts.” CEQA Guidelines, § 15355. Stated another way, “a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with *other projects* causing related impacts.” CEQA Guidelines, § 15130(a)(1).

As explained above, the DEIR analyzes each proposed treatment method individually, even though the Program Alternative “anticipates using *all* of the chemical and nonchemical alternatives (and options) in combination as part of an integrated pest management Program.” DEIR 2-2 (emphasis added). Thus, the DEIR fails to evaluate adequately the combined impacts of the program’s multiple chemical methods or the possible interactions from exposure to multiple treatments/chemicals simultaneously. In addition to violating CEQA in the manner described above, the DEIR’s failure to analyze the combined effects of the various treatment options violates CEQA’s requirement to consider the cumulative effects of a proposed action.

Little is known about the impact of exposure to multiple chemicals although a number of studies have noted that exposure to multiple pesticides increases the risk of adverse health consequences. *See, e.g.,* Rull, R., et al., Neural Tube Defects and Maternal Residential Proximity to Agricultural Pesticide Applications, *American Journal of Epidemiology* 163: 743-753; De Roos, A., et al., Integrative Assessment of Multiple Pesticides as Risk Factors for Non-Hodgkins Lymphoma Among Men, *Occupational and Environmental Medicine* 60:11. Thus, a strategy of combining chemical treatments, such as that proposed here, is experimental with regard to human health impacts. Yet, the DEIR does not adequately analyze the risks of this experimental aspect of the program and its unknown health and environmental risks.

In addition, in its assessment of the Program Alternatives, the DEIR does not take into account the chemical treatments that would continue to be used by nurseries and growers as required under existing quarantine regulations, even though the DEIR specifies that “[s]tringent enforcement of state and federal quarantine regulations” would continue during the eradication program. DEIR 2-2. This omission alone undermines the validity of the DEIR’s conclusions.

For example, one of the chemicals approved for use by nurseries to eradicate apple moths is chlorpyrifos. The DEIR analyzes the health risks of exposure to this chemical under the “No Program” alternative but does not account for the risks from its continuing use in the Program Alternatives. The risks and negative health and environmental impacts of chlorpyrifos and, in particular, the health impacts to nursery workers, must be incorporated into the DEIR’s analysis of the environmental and public health impacts of the Program Alternatives because the quarantine treatments would continue during the program. CDFA must also analyze the direct, indirect, and cumulative impacts of the other chemicals approved for nurseries and growers to use under the quarantine in the assessment of the Program Alternatives. As explained above, the DEIR’s assumption that the Program Alternatives will eradicate the moth is baseless and unsupported; as a result, the DEIR may not assume that nurseries will not continue to use chlorpyrifos under the Program Alternatives.

In addition, as the DEIR notes in its discussion of the No Program alternative, many California waterways are listed under the federal Clean Water Act as impaired because of contamination by chlorpyrifos. DEIR 11-19. Yet, the DEIR fails to identify and analyze the cumulative impact on water quality of CDFA’s continuing approval of chlorpyrifos as an apple moth treatment in nurseries, as would be the case under the Program Alternatives. Accordingly, the DEIR’s cumulative effects analysis violates CEQA.

**V. The DEIR Overestimates the Environmental Impacts of the “No Program” Alternative.**

The “No Program” alternative, *i.e.*, not adopting an eradication program, assumes significant, increased pesticide use by private landowners and growers. Specifically, the DEIR assumes that private homeowners would use significant amounts of permethrin and that agricultural growers would use chlorpyrifos, a highly toxic organophosphate pesticide. DEIR 2-7, 11-19. These assumptions are predicated on two internal, unreviewed, and unpublished CDFA memoranda. As outlined below, the supporting memoranda are flawed and there is no basis for the DEIR’s assumption that pesticide use by private individuals and growers would increase to the degree claimed in the DEIR.

In fact, there is no reason to assume that homeowners and private landowners would use any pesticide treatments to eradicate apple moths, much less permethrin, given that the DEIR does not identify any physical damage caused by the moth in California, nor does it identify evidence that homeowners use permethrin for other leaf-roller moths. Given the lack of damage, costs of pesticides, and the premium paid for organic crops as well as the success of New Zealand growers in meeting U.S. quarantines by using IPM, it is not credible to assume that homeowners and growers will massively increase their use of known toxic pesticides, such as permethrin and chlorpyrifos. CDFA’s memoranda fail to acknowledge that the majority (if not all) of the pesticide use currently aimed at apple moths is mandated by CDFA’s own quarantine regulations, which CDFA can and should withdraw because there is no evidence that apple moths are damaging to California’s agriculture.

In addition, the DEIR’s assumption that, under the “No Program” Alternative, chlorpyrifos would be utilized by individual growers, landowners, nurseries, and others is especially problematic because, as noted in the DEIR, no homeowner products containing chlorpyrifos have been registered by the U.S. EPA since 2000. DEIR D3-3. Chlorpyrifos can only be applied by licensed applicators, so to the extent that the DEIR’s analysis of the No Program Alternative assumes chlorpyrifos use by individual property owners who are not licensed pesticide applicators, it grossly overstates the risk of chlorpyrifos use. Furthermore, as noted above, omitting use of chlorpyrifos in compliance with quarantine requirements from the Program Alternatives greatly misrepresents the health and environmental impacts of the Program Alternatives. The No Program alternative should be a true “No Action” alternative, and the use of pesticides required by the eradication program (including CDFA’s quarantine regulations) must be analyzed under the Program Alternatives.

The DEIR’s unrealistic definition of the No Program Alternative, when combined with the other omissions in the DEIR noted above, allows CDFA to conclude, unreasonably, that the health and environmental impacts of implementing the No Program Alternative would be greater than those resulting from the eradication program. However, as the eradication program would involve 3 to 5 years of routine chemical treatments, in potentially large portions of California, this conclusion is unreasonable on its face.

## CONCLUSIONS

The many individuals who are represented by Bayview Hunters Point Community Advocates, Our Children's Earth, Mothers of Marin Against the Spray, Mothers Advocating Against the Spray, Stop the Spray East Bay, Play Not Spray, Californians for Pesticide Reform (itself a coalition of 185 groups), Pesticide Action Network North America, Pesticide Watch Education Fund, Center for Environmental Health, and Albany have a strong interest in ensuring that CDFA fully evaluate the environmental consequences of CDFA's eradication program, as well as any less invasive alternative methods of eradicating and/or controlling the moth. As explained by the Court of Appeals:

. . . compliance with the EIR provisions of CEQA serves a more important function than providing the public with a detailed analysis of a project, its likely effect on the environment and alternatives which may be available. It also demonstrates to an apprehensive citizenry that the responsible public agency has considered the ecological implications of its action and correspondingly makes elected and appointed officials accountable for their environmental values.

*Citizens for Non-Toxic Pest Control v. Dep't of Food & Agric.* (1986) 187 Cal. App.3d 1575, 1588.

In its present form, the DEIR serves none of CEQA's purposes: It does not provide the public a "detailed" analysis of the eradication program, it does not disclose all of the likely effects of the program on the environment and public health, and it does not assure the public that CDFA has considered the ecological implications of the eradication program and its alternatives. For these reasons, we urge CDFA to abandon the eradication program; if CDFA will not abandon the program, it must circulate a revised DEIR that complies with CEQA.

In particular, we urge CDFA to remove the veil of secrecy surrounding the aerial spray component of the eradication program, once and for all. The public deserves a clear explanation of *where* CDFA plans to spray pesticides, *what* CDFA plans to spray, including the identity and toxicity of all of the pesticide chemicals, and *why* such a controversial action with the potential to affect every region of the state is necessary to achieve CDFA's goal of eradicating the apple moth, assuming such a goal even is reasonable and feasible in the first place. Under no circumstances may CDFA move forward with plans to spray pesticides until this information has been publicly vetted and analyzed pursuant to the requirements of CEQA.

If CDFA plans to spray any pesticides without fulfilling its CEQA obligations, we reiterate our request that CDFA provide us with at least 30 days advance notice of any such spraying, together with a copy of any Notice of Exemption on which CDFA intends to rely, so that our clients may seek appropriate legal remedies.

Sincerely,

A handwritten signature in black ink that reads "Erin M. Tobin". The signature is written in a cursive style with a large, looped initial "E".

Erin M. Tobin  
Deborah S. Reames  
*Counsel for Bayview Hunters Point Community  
Advocates, Our Children's Earth, et al.*

Documents submitted herewith:

Exhibits A-J