

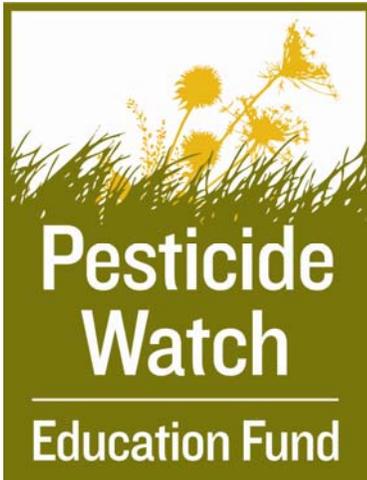


Pesticide Protection Zones: Keeping Kids Safe at School

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Executive Summary

More than 150 million pounds of agricultural pesticides are used every year in California. As chemicals that are designed to kill or damage living things, pesticides pose a variety of health hazards. Almost 20 percent of the agricultural pesticides used in California are known to cause cancer, almost 10 percent are known to damage our nervous systems, and more than 10 percent are known to cause reproductive harm.

The movement of pesticides through the air away from where they are applied is called **pesticide drift**, and with 90 percent of pesticides used in the state prone to moving away from where they are applied, it is a virtually inevitable consequence of pesticide use. In rural agricultural areas of California, pesticides are routinely applied near schools. In Tulare County, for example, 49 percent of schools are within one-quarter ($\frac{1}{4}$) mile of agricultural fields. The proximity of schools to pesticide use that puts children at risk of exposure to airborne pesticides is an endemic problem throughout California's agricultural areas. In addition to drift from fields, widespread state and county pesticide spraying targeted at invasive species (e.g. light brown apple moth) can result in drift onto schools and other sensitive sites.

Children are particularly vulnerable to the adverse health effects of pesticide exposure because of their size, their rapidly growing bodies, and the special ways they interact with their environment (such as playing on the ground and putting their hands in their mouths), meaning that their exposure to pesticides is relatively much greater than for adults. Children require special protection from pesticides because of the increased risk to their developing bodies posed by pesticide exposure.

In nearly one-quarter of California's top agricultural producing counties, crops are better protected than schoolchildren

For this reason, several California counties have set up limited "protection zones" around schools that restrict the uses of some pesticides. However, the current protection zones are inadequate for two reasons: 1) existing school protection zones usually apply only to specific pesticides under special circumstances and do not include the majority of the most hazardous pesticides, such as carcinogens, neurotoxins, and hormone disruptors; and 2) existing school protection zones are not consistent across the state.

This report analyzes current requirements for protection zones around schools in California's 25 largest agricultural-production counties. It shows that many counties do not have any school protection zones, and in places where they do exist, they are often far smaller than those established to protect agricultural activities – crops and pollinating bees – from pesticide drift.

As a result, in many California counties, crops are better protected from hazardous pesticides than children.

Recommendations

In order to protect children's health from the dangers of pesticide drift, decision-makers should take the following steps:

- 1. Require protection zones around schools where pesticides cannot be applied.** These protection zones should be *comprehensive* (applying to all pesticides at all times), *consistent* across all counties in the state, and *health-protective*.
- 2. Transition to sustainable agriculture and pest management practices.** Federal, state and local governments need to provide farmers with incentives to transition to organic and sustainable pest management practices
- 3. Phase-out the most dangerous pesticides,** including those that cause cancer, reproductive harm, or damage the nervous system.

1. Introduction: Pesticide Drift Is Inevitable

Agricultural pesticides applied to crops and agricultural fields unfortunately often move from their intended targets and expose people in their homes, schools, parks and offices. Pets, wildlife, native plants, and other crops are also exposed to these chemicals designed to kill living organisms.

This unwanted movement of pesticides through the air away from the intended target is called “pesticide drift.” The California Department of Pesticide Regulation admits that “some off-site movement occurs with every [pesticide] application” and “drift into surrounding air is expected with all pesticide applications.”

"Drift into surrounding air is expected with all pesticide applications."

- California Department of Pesticide Regulation

Although it is illegal to expose people to drifting pesticides, government agencies admit that drift is inevitable. And when pesticides drift, exposure becomes inevitable.

Children need protection from pesticide drift and exposure at school where they spend many hours per week for much of the year. Ensuring space between pesticide applications and schools by creating areas in which pesticides may not be used is a strategy that government agencies and researchers have recognized to be effective.

Agricultural Pesticides are Applied Dangerously Close to Schools

Many schools in California’s rural agricultural areas are surrounded by fields where pesticides are used heavily. In Tulare County, which has the third highest pesticide use of all California counties in 2008, 49 percent of schools are within ¼ mile of agricultural fields.

In 2008, Humboldt State University researchers worked with community residents in Monterey and Tulare Counties to analyze agricultural pesticide use near communities. They documented intensive pesticide use next to schools.

One example is the town of Cutler-Orosi in Tulare County. *Figure 1* shows that the town's schools (represented by the blue circles) are all located within ¼ mile of agricultural pesticide use.

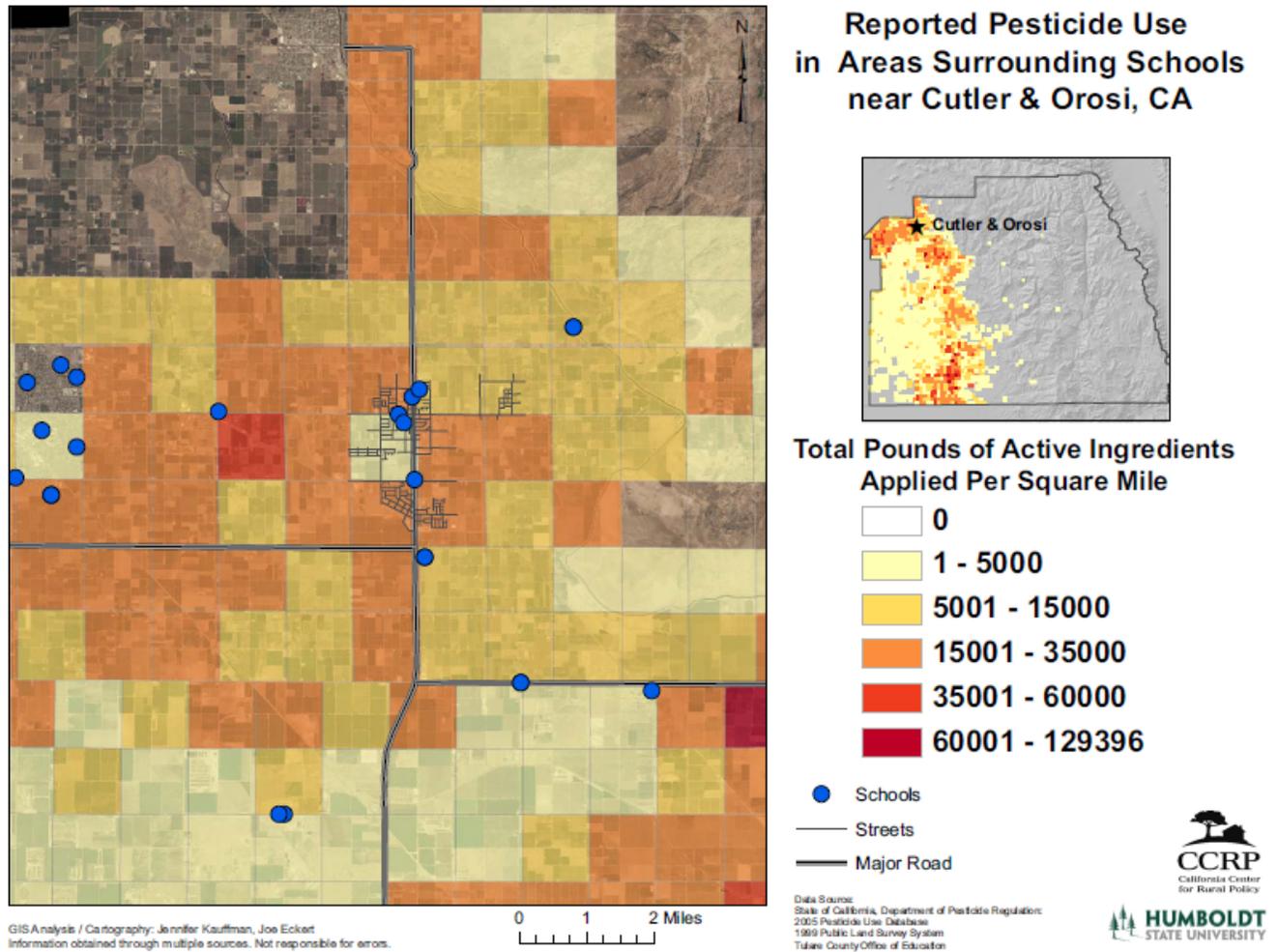


Figure 1: Location of Schools in Cutler-Orosi, Tulare County, and Surrounding Pesticide Use

2. Children Are at Greater Risk from Pesticide Exposure

Children need and deserve special protections from hazards, including pesticides. Scientists and doctors have documented that children are not just “little adults” when it comes to the way that their health can be impacted from pesticides. Because children breathe more, pound for pound, than adults, children’s exposure to toxic chemicals in the air is greater.

The U.S. Environmental Protection Agency writes that “children's internal organs are still developing and maturing and their enzymatic, metabolic, and immune systems may provide less natural protection than those of an adult. There are ‘critical periods’ in human development when exposure to a toxin can permanently alter the way an individual's biological system operates.”

Pesticides pose a greater health risk for children than adults because their bodies and brains are still developing. Exposure to pesticides during periods of development may have permanent, irreversible effects.

A study on exposure from pesticide conducted by scientists at the University of Washington tested pesticide levels in air, on children's hands, toys, playground equipment, and in children's bodies (as measured by breakdown products in the children's urine) before and after a pesticide application to a nearby potato field. The study showed that after the application, concentrations of the pesticide increased in outside air, on children's hands, on outdoor toys and playground equipment, and in the children's bodies. The children were exposed to the pesticide even though, since it was a hot summer day, they had spent the majority of their time indoors in air-conditioned houses.

Pesticides persist in the environment and can continue to expose children for a significant period of time after they are applied. According to toxicologists from the University of California at Davis, Cornell University, Oregon State University, University of Idaho, and Michigan State University, “Most pesticides used today last from a few days to a few months.”

In 2005 the National Institute for Occupational Safety and Health (NIOSH) sponsored a national study that documented almost 2,000 illness incidents caused by pesticide exposure at school during from 1998 to 2002. In California, NIOSH identified more than 250 incidents, more than 50 of which were caused by drift from neighboring agricultural pesticide applications. Since many pesticide illnesses are not reported, this number is only the tip of the iceberg.

“Establish and enforce ...[pesticide] buffer zones around schools.”

- Recommendation from the National Institute for Occupational Safety and Health

The authors of this study made a series of recommendations to reduce pesticide exposures at schools. One of the recommendations is to “establish and enforce nonspray buffer zones around schools.”

3. School Pesticide Protection Zones in California

State and County Agencies Don't Exercise Authority to Protect Schoolchildren from Pesticides

In California, County Agricultural Commissioners have the authority to protect schoolchildren from pesticide exposure, but in most counties commissioners have not established consistent, comprehensive protection zones around schools.

In 2002, the California Legislature recognized the need for school protection zones by passing AB 947 (Jackson), a law giving County Agricultural Commissioners the authority to limit or ban the use of any pesticide within ¼ mile of schools. This bill was passed, after a serious pesticide drift emergency around the Mound Elementary School in Ventura County, so that County Agricultural Commissioners could protect children in school.

However, because of the resistance of powerful local agricultural interests, no County Agricultural Commissioner tried to use the authority granted under this law until December 2009 in Kern County. In that case, a proposal to stop use of all pesticides within ¼ mile of schools was rebuffed by the California Department of Pesticide Regulation, resulting in much more limited and less health-protective rules in that county.

Despite the clear intent of AB947 to protect schoolchildren from pesticide drift, the law has not resulted in consistent, comprehensive local protection zones.

In Nearly One-quarter of California's Top Agricultural Producing Counties, Crops are Better Protected than Schoolchildren

The authors of this report analyzed existing school pesticide protection zones for the 25 California counties with the highest-value agricultural production (i.e., counties with more than \$350 million in agricultural production).

Findings include:

- **Seventeen of the 25 counties have no or only time-limited protection zones around schools.** Eleven of the 25 counties have no protection zones around schools. In six of the counties that do protect schools, protections apply only when school is in session.
- **In six of the 25 counties, crops have larger protections zones than school children.**

- **While fourteen counties require some pesticide protection zones around schools, all** but one of these zones are limited to specific pesticides or specific application methods (see table beginning on the next page). Some protection zones are as small as 100 feet..
- **Eleven of the 25 counties have protection zones for crops and/or bees.** These vary in size but can be as much as 4.5 miles.

Overall, we found that the rules regarding pesticide protection zones at the county level can be difficult to obtain. In Monterey, Imperial and Glenn Counties, the County Agricultural Commissioner offices never responded to repeated phone call and email records requests. In addition, sometimes multiple calls and emails to County Agricultural Commissioner offices produced different answers depending on which staff person answered.

It is clear that the patchwork of different rules regarding pesticide use near schools makes it difficult for parents and other residents to understand how well children are protected. Inconsistencies can also create difficulty in planning for farmers, pesticide applicators, and enforcement agencies.

At the same time, the existence of these protective buffers shows that the concept has been successfully applied in many counties. California's children who live in rural agricultural areas deserve even better protection than crops from pesticide drift.

Table 1: Comparison of Pesticide Protection Zones in Top 25 Largest Agricultural Production Counties

County	Schools		Crops / Bees	
	Size of Protection Zone	Pesticides Regulated	Size of Protection Zone	Pesticides Regulated
Fresno	1/8 mile	All pesticides while school is in session	None	
Tulare	¼ mile	All aerial applications of restricted use pesticides while school is in session	Bees: 1 mile	Bees: 3 insecticides when bees are pollinating
Kern	¼ mile	All restricted use pesticides when children are present	Bees: 1 mile	Bees: 3 insecticides when bees are pollinating, including almond orchards
Monterey*				
Merced	100 feet	1 fumigant	Crops: ½ mile upwind; 1 mile downwind Bees: 2 miles	Crops: 5 herbicides between October and March Bees: 1 insecticide when flowers are blooming
Stanislaus	1/8-1/2 mile	All restricted use pesticides when children are present 2 defoliant, 1 herbicide/defoliant have special requirements	Crops: ½ mile	Crops: 2 defoliant, 1 herbicide/defoliant when crops are in a susceptible stage, including fruit and nut crops
San Joaquin	None		None	
Kings	1/8 – ½ mile	All restricted use pesticides; 2 defoliant, 1 herbicide/defoliant have special requirements	Crops: 1/8 -2 miles	Crops: All dust applications with residues 5 herbicides near susceptible crops
Imperial*				
Ventura	None		Crops: 100-300 feet	Crops: 1 fumigant
San Diego	None		None	
Madera	None		None	

County	Schools		Crops / Bees	
	Size of Protection Zone	Pesticides Regulated	Size of Protection Zone	Pesticides Regulated
Riverside	250 feet-1/2 mile	certain defoliant and herbicides; 1 fumigant when school is in session or events scheduled	Crops: 100 feet-1/2 mile	Crops: Restricted herbicides and defoliant, special requirements for 1 defoliant and for lemons and lettuce.
Santa Barbara	200 feet – 1 mile	All restricted use pesticides; special requirements for one fumigant	None	
Colusa	Variable – up to 2 miles	Aerial applications	Variable – up to 4.5 miles	Crops: aerial applications plus special requirements for certain pesticides and certain crops, including walnuts, peaches, and cereal crops
San Luis Obispo	500 feet (ground) 1/2 mile (air)	All restricted use	Crops: 1/2 mile	Crops: certain herbicides; special requirements for vineyards
Sonoma	250 feet	1 fumigant	None	
Butte	None		None	
Glenn*				
San Bernardino	None		None	
Yolo	1/8-1/2 mile	All restricted materials; special conditions for 1 herbicide/defoliant, 2 defoliant	Crops: 100 feet - 1/2 mile	Crops: 4 herbicides; special requirements for grapes and pistachios
Sutter	1/4 mile	All restricted use when school is in session	Crops: 1/4-4 miles	Crops: aerial applications of 1 herbicide
Santa Cruz	None		None	
Napa	100 feet	1 fumigant	None	
Sacramento	None		None	

* County Agricultural Commissioner offices failed to provide requested information

4. Strong Regulations are Needed to Protect Children from Airborne Pesticide Drift

Adopting the following recommendations will help protect schoolchildren from the dangers of pesticide drift:

1. Require school protection zones

California needs strong protection zone laws that give equal protection to all schoolchildren from all pesticide applications. These laws should be:

- ✓ **Comprehensive:** Protection zones should prevent use of all pesticides near schools at all times.
- ✓ **Consistent:** All children deserve equal protection, no matter what county they live in. Standardizing school pesticide protection zones rules across the state would make it clear to all parents, teachers and students how children are being protected. It would also provide a level-playing field for all growers across the state.
- ✓ **Health-protective:** Schoolchildren deserve at least as strong protections from pesticides as crops. Protection zones need to be large enough to protect children from being exposed to pesticide drift.

2. Transition to sustainable agriculture and pest management practices

Organic agriculture has grown exponentially during the past few decades and provides farmers with ample yields and good incomes without the use of dangerous pesticides. Organic farmers provide California families with healthy, nutritious food, and organic farmers are good neighbors to our homes and schools. Our federal, state and local governments need to provide farmers with incentives to transition to organic and sustainable pest management practices.

3. Phase-out the most dangerous pesticides

Eliminating the use of the worst pesticides — such as those with clearly documented ability to cause cancer, reproductive harm, or damage the nervous system — would be an important step toward not only making children safer from toxic exposure at school but at home and through the food they eat.

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Appendix

Table 2: Detailed Pesticide Protection Zones for Schools, Crops and Bees in the Top 25 Largest Agricultural Production Counties

County	School Protection Zones	Crop Protection Zones
1. Fresno	<p>Fresno County Department of Agriculture Pesticide Permit Conditions for Applications of Pesticides Adjacent to School Grounds</p> <ol style="list-style-type: none"> 1. No pesticide application(s) to occur within 1/8 mile, while school is in session or while grounds are occupied. 2. No pesticide, with a worker re-entry interval greater than 48-hours shall be applied within 1/8 mile of a school during regular and summer school sessions. 	None
2. Tulare	<p>Tulare County Permit Conditions 2010</p> <ol style="list-style-type: none"> 1. Restricted Use Pesticides Aerial Applications and Schools: No aerial applications of Restricted Use Pesticides shall be applied within ¼ mile of a school in session. 	<p>Tulare County Permit Conditions 2010</p> <ol style="list-style-type: none"> 1. Restricted Use Pesticides Aerial Applications and Schools: 2. Applications of Pennacap-M, Sevin and Furadan shall not be made within 1 mile of pollinating bees, except when there are no blooming plants (including weeds and cover crops) in the treatment area.
3. Kern	<p>Kern County General Permit Conditions</p> <p>II. School Buffer Zones and Restrictions</p> <ol style="list-style-type: none"> a. No applications of Restricted Materials are to be made within ¼ mile of a school in session or during school sponsored activities when children are present. b. No restricted material may be applied at a school site while school is in session or during school sponsored activities when children are present. 	<p>Kern County General Permit Conditions</p> <p>V. Almond – Bee Protection Policy: Because of the necessity for bees to pollinate almonds and the need to treat crops nearby, the following procedures will be in effect: Applications of Methyl Parathion (Pencap-M, Carbaryl Sevin and Carbofuran (Furadan) shall not be made within one mile of almond orchards that are being pollinated by bees, except when there are no blooming plants (including weed bloom) in the treatment area.</p>
4. Monterey	<p><i>Author's Note: unable to attain after several weeks of repeated phone calls and emails</i></p>	
5. Merced	<p>Permit Conditions for Using Pesticides Containing 1,3-Dichloropropene – Revised 9/02</p> <p>III. C. Buffer Zones</p> <ol style="list-style-type: none"> 1. The buffer zone shall be a minimum of 100 feet measured from the perimeter of the application block to the perimeter of sites with any occupied residences, occupied onsite employee housing, schools, convalescent homes, hospitals, or other similar sites identified by the Agricultural Commissioner. 	<p>Merced County Agricultural Commissioner's Office Policy and Permit Conditions for Bee Protection.</p> <p>B. 3. Use of Encapsulated Methyl Parathion (Pennacap-M) to blooming plants.</p> <ol style="list-style-type: none"> a. Notices of intent shall not be approved for Pennacap-M when bee hives are within two miles of the area to be treated except when there is no bloom in, or adjacent to, the treatment area. <p>Merced County Agricultural Commissioner's Office Permit Conditions for Phenoxy Herbicides and Other Volatile Herbicides</p> <p>2,4-D, 4,4-DB, MCPA, Dicamba, Bronate, and Other Phenoxy Herbicides</p> <ol style="list-style-type: none"> 2. The following apply to applications of the herbicides listed in the area bordered by Hwy 99 to the west of Hwy 140 to the north during the period between October 16 and March 15. <ol style="list-style-type: none"> a. No aerial applications when sensitive crops such as vegetable and truck crops, nurseries grapes, sugar beets and open greenhouse plantings, etc. are within ½ mile up-wind or one mile downwind.

County	School Protection Zones	Crop Protection Zones
6. Stanislaus	<p>B: General Permit Conditions The following permit conditions apply to all Stanislaus County Restricted Materials Permits except those specifically conditioned otherwise</p> <p>2. No application of Restricted Use pesticides for agricultural use shall be made within ¼ mile of a school in session or during school sponsored activities when children are present.</p> <p>G: Cotton Harvest Aids S,S,S – Tributyl phosphorotrithioate (DEF, Folex) or Paraquat (Starfire) when used as cotton harvest aids, singly or in combination, shall be used only in accordance with the following restrictions: 2. Paraquat applications shall not be made within 1/8 mile of any school or area zoned as residential where people are actually residing or other inhabited area designated by the Commissioner. 3. DEF or Folex applications shall not be made within ½ mile of any area zoned residential where people are actually residing or other inhabited residential area as designated by the Commissioner or any school in session or due to be in session in 24 hours. DEF or Folex applications shall not in any case be used within 1/8 mile of any school.</p> <p>K. Metam Sodium/Metam Potassium Section 1: The conditions in Section 1 apply to applications in all blocks. H. Applications are prohibited if a school in session is within ¼ mile of the application. Applications with schools within ¼ mile shall be completed 24 hours prior to the start of school.</p>	<p>D: Bee Policy Application of Pesticides Highly or Moderately Toxic to Bees And Materials Known to Be Harmful to Bees A. Applications of pesticides highly or moderately toxic to bees, or materials known to be harmful to bees, shall not be made on blossoming plants except under the following conditions: 1. Persons performing pest control notifies beekeepers, after inquiring of the Commissioner for those beekeepers who have previously requested notification of such operation, within one mile of such property.</p> <p>G: Cotton Harvest Aids S,S,S – Tributyl phosphorotrithioate (DEF, Folex) or Paraquat (Starfire) when used as cotton harvest aids, singly or in combination, shall be used only in accordance with the following restrictions: 4. DEF, Folex, and paraquat shall not be applied within ½ mile of any commercial or other vegetable crop in growth stages susceptible to damage unless favorable weather conditions exist and approval is given by the Commissioner. Additionally, an adequate buffer zone shall be used when applying these materials adjacent to other susceptible crops such as sugar beets and fruit and nut crops.</p>
7. San Joaquin	None	None
8. Kings	<p>General Conditions Aerial Applications No aerial applications of restricted materials are to be made within ¼ mile of the following: 3. A school in session or due to be in session</p> <p>Cotton Defoliation DEF, Folex and paraquat when used as cotton harvest aids, singly or in combination, shall be used only in accordance with the following restrictions: 1. Applications of DEF, Folex and paraquat (Gramoxone) shall not in any case be made within 1/8 mil of any school. 2. Ground applications of paraquat (Gramoxone) shall not be made within 1/8 mile of any school, or any area zoned as residential where people are actually residing, or other inhabited areas designated by the Commissioner. Aerial applications of paraquat (Gramoxone) shall not be made within ¼ mile of any area listed above. 3. Applications of DEF or Folex shall not be made within ½ mile of any area zoned as residential where people are actually residing, or other inhabited areas as designated by the commissioner. Applications of DEF or Folex shall not be made within ½ mile of any school in session or due to be in session in 24 hours.</p>	<p>General Conditions Dust applications Dust applications by air shall not be applied within 1/2 mile of crops where there is a residue problem and not within 1/4 mile for ground rig</p> <p>Phenoxy Herbicides 2,4-D; 2,4-DB; MCPA, Weedar, Dicamba (Banvel) 4) No air applications shall be made within 1/4th mile of a susceptible crop, nor within 1/8th mile by ground application on property belonging to any person other than the owner of the property to be treated. Susceptible crops include, but are not limited to, Sugarbeets, tomatoes, grapevines, or deciduous treefruit with evidence of budbreak, and newly planted alfalfa. 6) No applications shall be made within 2 miles of any commercial grape vineyard after bud break. Exception: Dicamba.</p>

County	School Protection Zones	Crop Protection Zones
9. Imperial	<i>Author's Note: unable to attain after several weeks of repeated phone calls and emails</i>	
10. Ventura	<p>SCHOOLS</p> <p>a. If California Restricted Materials are to be applied within 1/4 mile of a school, the permittee must first contact the school and find out what activity, if any is taking place on the proposed date and include this information in the NOI. This is not necessary for Aluminum Phosphide applied underground for controlling vertebrate pests.</p> <p>b. When farming adjacent to a school, follow recommendations contained in the Publication, "Farming Near Schools, A Community-based Approach to Protecting Children" published by the Ag Futures Alliance and available at www.agfuturesalliance.org.</p>	For all other 1, 3-D application methods, a 300-foot buffer must be maintained between the treated field and any occupied structure. If the field is to be planted in a perennial crop such as fruit trees and not fumigated again for at least three years, the buffer zone shall be 100 ft.
11. San Diego	<p>A site-specific permit is required prior to use on areas designated as an agricultural use (i.e. parks, cemeteries, golf course, right-of-ways, etc) and sensitive non-agricultural use (i.e. schools, day care centers, hospitals, and other similar sites).</p> <p>AIR SPRAY - Do not apply pesticides within _____ feet of sensitive sites i.e. Schools, dwellings, hospitals, recreational areas, livestock enclosures, and other similar areas.</p>	None
12. Madera	None	None
13. Riverside	<p>PVTS – 07 Riverside County Conditions For the Use of Pesticides in the Palo Verde Valley District</p> <p>4. DEF, Folex or Paraquat when used as cotton harvest aids, singly or in combination, shall be used only in accordance with the following conditions:</p> <p>a. Paraquat applications shall not be made within 1/8 mile of any school or any designated residential area.</p> <p>b. DEF or Folex applications shall not be made within 1/2 mile of any school or any designated residential area.</p> <p>5. During school hours & any school activities, no applications shall be made with one mile of any school</p> <p><i>Author's Note: ("with" is not a typo on our part)</i></p> <p>2,4-D/Phenoxy Restricted Material Permit Conditions</p> <p>3. Buffers exist around all sensitive areas. Minimum buffer zones for sensitive areas such as: schools in session 1/4 mile (ground and air). Unoccupied schools 250 ft by ground and 500 ft by air.</p> <p>Permit Conditions for Metam Sodium/Metam Potassium All Application Methods</p> <p>Applications Adjacent to Schools: With the exception of drip irrigation, all Metam Sodium/Metam Potassium applications within one half mile (1/2) of a school in session or a planned event are prohibited. This also includes the post-application monitoring period.</p>	<p>PVTS – 07 Riverside County Conditions For the Use of Pesticides in the Palo Verde Valley District</p> <p>1. No aerial application of a restricted herbicide/defoliant shall be made if susceptible crop is within 1/4 mile of the application</p> <p>6. Application of Thidiazuron (Dropp, Ginstar) is prohibited by air within 1/2 mile of lettuce. Do not apply Thidiazuron by ground equipment within 100 feet of lettuce. Do not apply Thidiazuron drift towards lettuce at any distance.</p> <p>2,4-D/Phenoxy Restricted Material Permit Conditions</p> <p>3. Buffers exist around all sensitive areas. Minimum buffer zones for sensitive areas such as: greenhouses, fruit orchards, citrus groves, and vegetable fields 250 ft by ground and 500 ft by air</p> <p>Hydrogen Cyanamide Permit Conditions Reason for Conditions: Lemons are Highly Susceptible to Damage from Dormex Exposure</p> <p>B. Sensitive Sites</p> <p>2. A site specific "buffer zone" of 1/16 mile (330 feet), is established between the actual application and the nearest "applicable" lemon trees. No application of Dormex shall take place within 1/16 mile buffer zone.</p>

County	School Protection Zones	Crop Protection Zones
14. Santa Barbara	<p>General permit conditions Do not apply restricted use pesticides by ground within 500 feet by air within 750 feet of a school property line while school is in session. Do not apply restricted pesticides by air, within 200 feet of a school property line at any time. School session shall be those times when students are not attending scheduled classes. "By ground" includes application through an irrigation system.</p> <p>Chloropicrin, Telone EC, Pic_Chlor 60 EC, and Inline The buffer zone around an occupied structure shall be 100' except for schools which shall have a 500' buffer zone measured from the property line</p> <p>Metam sodium Buffer zones to occupied structures are listed under the application method. Buffer zones to schools are measured from the edge of the fumigated block to the school property line and shall be 500 feet, except for sprinkler applications which shall have a 1 mile buffer zone.</p>	
15. Colusa	<p>Refer to Colusa County Clincher Air Zone 2010 Map → Aerial buffer zone regulation of approximately 1 mile from the center of the city of Maxwell → Aerial buffer zone regulation of approximately 2 miles for the city of Princeton → Aerial buffer zone regulation of approximately 5 miles for the Sacramento River</p> <p>Refer to 2010 Regiment Buffer Zone Princeton Area Colusa County Map → Aerial buffer zone regulation of approximately 2.5 miles for the city of Princeton</p> <p><i>Author's Note: The above distances reflect measurements calculated on a satellite map compared to maps provided by the County Agricultural Commissioner's Office.</i></p>	<p>2010 Restricted Material Permit Conditions (6) no applications to orchard or non-crop areas shall be made within ½ mile of cotton, grape or pistachio plantings.</p> <p>Colusa County 2010 Regiment Permit Conditions Aerial Application: (2) Applications shall not be made within one-half (1/2) mile of any walnut orchards; except under written waiver approval by the Agricultural Commissioner and grower involved. Applications shall have wind away one-half (1/2) to one (1) mile from walnut orchards. (3) Applications must take place with a minimum wind speed of at least 2 mph and not more than 8 mph as measured at a height of four feet above the ground. If sensitive crops or plants are more than 1 mile and are downwind, extreme caution must be used under all conditions.</p> <p>Colusa County Department of Agriculture 2010 Clincher CA Permit Conditions Ground Application: The following distance restrictions are required between sensitive crops and rice fields to be treated with Clincher CA: → within 660 feet of peaches and nectarines- no application → At least 660 feet away from, and up to, 1320 feet of peaches and nectarines- apply with wind away. → More than 1320 feet away from peaches and nectarines-no wind directional restrictions → within 50 feet of non-target cereal and grass crops such as corn, sugar cane, sudangrass, sorghum, grass grown for seed, and sod farms- no application</p> <p>Maps identified in the schools column also apply.</p>

County	School Protection Zones	Crop Protection Zones
16. San Luis Obispo	<p>Restricted Materials Permit Conditions Numbers 1-7 #3A. Restricted material applications adjacent to schools and licensed day care facilities. No restricted material shall be applied within ½ mile by air, or 500 feet by ground, of a school while children are present This prohibition is for applications using equipment to spray or dust the restricted material.</p>	<p>Phenoxy and Certain Other Herbicide Applications Following Vineyard Regions:</p> <p>3. After vineyard budbreak:</p> <p>A. No ground applications within one-half mile of a vineyard (except hand-pump granular)</p> <p>C. Amines allowed by power sprayers with a handwand if more than one-half mile from vineyards, with air flow away from nearest vineyard. <i>Author's Note: very specific language</i></p> <p>Phenoxy and Certain Other Herbicide Applications Near Susceptible Crops Other than Grapes</p> <p>1. Application by ground.</p> <p>A. Use of amine formulations within ½ mile of susceptible crops will be approved on a case-by-case basis, and may be allowed under the following conditions: <i>Author's Note: Very specific language</i></p>
17. Sonoma	<p>Aluminum phosphide: no applications within 250 of occupied structures, and only on school holidays or when school not in session</p>	
18. Butte	None	None
19. Glenn	<p><i>Author's Note: unable to attain after several weeks of repeated phone calls and emails</i></p>	
20. San Bernardino	<p>The School Protection Act Restrictions on Timing</p> <p>No pesticide bearing the word "DANGER-POISON" shall not be applied within one hour of the opening of a school or within two hours of closing.</p>	

County	School Protection Zones	Crop Protection Zones
21. Yolo	<p>Yolo County Condition #1 Conditions covering the Use of Restricted Materials in the Proximity of Environmentally Sensitive Areas</p> <p>2. Schools – Applications adjacent to schools are restricted as follows: (a) Ground applications – No application shall be made within a quarter mile (1/4) of any school while that school is in session without the express permission of the Commissioner. (b) Aerial applications – No application shall be made within a quarter mile (1/4) of any school at any time, regardless if the school is in session or not, without the express permission of the Commissioner.</p> <p>Yolo County Condition #7 DEF, Folex and paraquat when used as cotton harvest aids shall only be used in accordance with the following restrictions: 1. B) Paraquat applications shall not be made within one-eighth mile of any school or area zoned residential where people actually residing or other inhabited residential areas designated by the commissioner. C) DEF or Folex applications shall not be made within one-half mile of any area zoned as residential where people actually residing or other inhabited residential area designated by the commissioner or any school in session or due to be in session within 24 hours. D) DEF or Folex applications shall not in any case be made within one-eighth of a mile of any school.</p>	<p>Yolo Condition #5 Aerial Applications 3. The following buffer distances shall be maintained between application and the noted sensitive areas: b. Minimum distance between the application and truck farms, certified organic crops, and commercial vegetable crops of which above-ground vegetation is desirable is ½ mile by either fixed wing aircraft or helicopter</p> <p>Yolo County Condition #5 Conditions Covering the Use of Phenoxy Herbicides and Dicamba (2,4-D, 2,4-DB, MCPA, Banvel, Etc) This condition is in addition to the regulations set forth in Section 6460 and 646 of the California Code of Regulations. 2. No application, ground or air, shall be made within (2) two miles of any commercial cotton, grape or pistachio planting March 1 through October 15 except as allowed in item 11. 9. During the period beginning October 16 and through February 28 the following minimum distances shall be maintained to commercial grape plantings: Air.....500feet Ground....100 feet 10. Th following minimum distances shall be maintained year round to susceptible crops not mentioned in CCR Section 6464 (e.g. tomatoes, beans, sugarbeets, alfalfa, etc.) Air.....500 feet Ground...100 feet</p> <p>Yolo County Condition #8A Conditions Covering Dormant and Delayed Dormant Applications of Insecticides in Orchards 1. Dormant or delayed dormant applications of insecticides which are toxic to honeybees shall not be made after January 31 until almond orchards within one mile (1) of application site are at least 10 percent in bloom. Exceptions must be authorized by the Agricultural Commissioner.</p>
22. Sutter	<p>Permit Conditions for Pesticide Use Within ¼ Mile of Schools 2. Make all pesticide applications closer than ¼ mile (1320 feet) only when school or daycare grounds are not in session 3. Make all applications closer than ¼ mile (1320 feet) to schools, daycare centers, or dwellings with air movement away from school or daycare center.</p>	<p>Sutter County Propanil (#1) Conditions for Ground Application Beyond Half Mile of Prunes 1. Ground application only within 4 miles of Prunes.</p> <p><i>Author's Note: We attempted to clarify with agricultural commissioner. Their office said it means ½ to 4 mile buffer and can't winds can't exceed 10 miles/hour</i></p>
23. Santa Cruz	None	None
24. Napa	<p>Napa County 1,3 – Dichloropropene (Telone) Permit Conditions The buffer zone shall be a minimum of 100 feet measured from the perimeter of the application block to any occupied residences, occupied onsite employee housing, schools, convalescent homes, hospitals, or other similar sites identified by the CAC.</p>	
25. Sacramento	None	None