EARTHJUSTICE

ALASKA CALIFORNIA FLORIDA MID-PACIFIC NORTHEAST NORTHERN ROCKIES
NORTHWEST ROCKY MOUNTAIN WASHINGTON, D.C. INTERNATIONAL

October 4, 2013

Via Federal Express & Electronic Mail

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Re: Proposed Regulations Designating Brodifacoum, Bromadiolone, Difenacoum, and Difethialone as Restricted Materials – DPR Regulation No. 13-0002

Dear Ms. Irokawa-Otani:

We are writing on behalf of Californians for Pesticide Reform, the Center for Biological Diversity, American Bird Conservancy, and the Pesticide Action Network, regarding the proposed regulations referenced above. The Department of Pesticide Regulation ("DPR") proposes to designate all pesticide products containing the active ingredients brodifacoum, bromadiolone, difenacoum, and difethialone as "restricted materials" under California law. DPR also proposes to prohibit most above-ground placement of these so-called "second-generation anticoagulant rodenticides" ("SGARs") further than 50 feet from structures and to broaden the definition of persons that can obtain certification from DPR to use SGARs to include livestock, poultry and fish producers.

We agree wholeheartedly with DPR's findings that "SGAR exposure to non-target wildlife is a statewide problem, regardless of setting" and that "use of SGARs presents a hazard related to persistent residues in target animals resulting in impacts to non-target wildlife." (Cal. Dept. of Pesticide Regulation, Notice of Proposed Regulatory Action, Designating Brodifacoum, Bromadiolone, Difenacoum, and Difethialone as Restricted Materials (Second Generation Anticoagulant Rodenticide Products), DPR Regulation No. 13-002, July 19, 2013, p. 3)("Notice of Proposed Regulations").

We applaud DPR's decision to take regulatory action to address impacts to non-target wildlife, and we believe that designating SGARs as California restricted materials is an important first step in the right direction. However, it is apparent that DPR's proposed regulations do not go far enough in preventing adverse impacts to non-target wildlife. Accordingly, we urge DPR to adopt the additional restrictions on use set forth below.

I. Factual Background

Rodenticides are designed to kill mammals, so their effects on humans and non-target animals are qualitatively the same as their effects on target pests, unlike other pesticides such as herbicides and certain insecticides, where adverse effects on mammals tend to be different in nature than their effects on target pests.

Rodenticides can be divided into three broad classes in terms of their effects: first-generation anticoagulants, second-generation anticoagulants, and non-anticoagulants.

The first- and second-generation anticoagulants interfere with blood clotting and death results from hemorrhage. For both first-generation and second-generation anticoagulants, primary manifestations of poisoning include nosebleeds, bleeding gums, hematuria, melena, and extensive ecchymoses (bruises). Victims may also have symptoms of anemia, including fatigue and dyspnea on exertion. If the poisoning is severe, the victim may progress to shock and death.

Second-generation anticoagulant rodenticides, which include brodifacoum, bromadiolone, difenacoum, and difethialone, are acutely toxic and have a high risk of severe accidental poisoning for children, pets, and other non-target wildlife. This is due to the fact that SGARs remain in the body long after consumption, with half-lives of up to 170 days, which allows target rodents to accumulate many times a lethal dose. As a result, predatory birds and mammals that feed on poisoned rodents or live rodents that have received a sub-lethal dose are especially vulnerable to secondary poisoning from SGARs.

II. Legal Background

Before a new pesticide may be offered for sale in California, it must first be registered by DPR. (Food & Agr. Code § 12811.) During the registration process, DPR gives "special attention" to a number of factors set forth in the agency's implementing regulations, including the "[p]otential for environmental damage" and"[t]oxicity to . . . wildlife." (Cal. Code Regs., tit. 3, § 6158.) "If any of these factors are anticipated to result in significant adverse impacts which cannot be avoided or adequately mitigated," the regulations provide that "registration will not be granted unless [DPR] makes a written finding that the anticipated benefits of registration clearly outweigh the risks." (*Ibid*.)

After registration, DPR must provide "for the continuous evaluation of all pesticides actually registered." (Food & Agr. Code § 12824.) To this end, DPR's regulations direct the agency to "investigate all reported episodes and information received by [DPR] that indicate a pesticide may have caused, or is likely to cause, a significant adverse impact, or that indicate there is an alternative that may significantly reduce an adverse environmental impact." (Cal. Code Regs., tit. 3, § 6220.) "If [DPR] finds from the investigation that a significant adverse impact has occurred or is likely to occur or that such an alternative is available," the regulations provide that "the pesticide involved shall be reevaluated." (*Ibid.*)

Once DPR places a pesticide into reevaluation, the registrant must submit to the agency "all data required for registration of a new pesticide by the U.S. EPA and by [DPR] which is

relevant to the focus of the reevaluation and has not previously been submitted to the department." (*Ibid.*, § 6222, subd. (a).) DPR may "allow a reasonable time for the development and submission of such data, not to exceed a period of two years." (*Ibid.*) But "[n]otwithstanding the lack of such data [DPR] shall act expeditiously to protect against risks to human health and the environment." (*Ibid*.) At the conclusion of reevaluation, DPR must "determine if the pesticide [under reevaluation] should be classified as a restricted material. . . and if additional restrictions on use are necessary, or if action [to suspend or cancel registration] should be taken." (*Ibid.*, § 6224.)

Classification of a substance as a "restricted material" is intended to limit the use of dangerous materials "to those situations in which it is reasonably certain that no injury will result, or no nonrestricted material or procedure is equally effective and practical." (Food & Agr. Code § 14006). "Restricted material," can only be used pursuant to: (a) a permit issued by the county agricultural commissioner; (b) under his direct supervision; or (c) where there is no commissioner, by permit issued by the county director. (Cal. Code Regs., tit. 3, § 6412.) "Restricted use" regulations can be designed to limit the time, place, manner and quantities in which a "restricted material" is used, and can also prohibit the use or possession of such materials altogether. (Food & Agr. Code § 14006).

DPR's pesticide regulatory program operates as a "certified regulatory program" for the purposes of the California Environmental Quality Act ("CEQA"). (Cal. Code Regs., tit. 14, § 15251, subd. (i)(1).) Thus, DPR must prepare and circulate a "public report" whenever it "proposes to amend, adopt, or repeal a standard or regulation of the pesticide regulatory program." (Cal. Code Regs., tit. 3, § 6110, subd. (a).) The public report "shall include a statement of any significant adverse environmental effect that can reasonably be expected to occur, directly or indirectly, from implementing the proposal, and a statement of any reasonable mitigation measures that are available to minimize significant adverse environmental impact." (*Ibid.*, § 6110, subd. (a)(3).) Consistent with CEQA, DPR "shall not adopt a . . . regulation which would cause a significant adverse environmental impact if there is a feasible alternative or feasible mitigation measure available which would substantially lessen any significant adverse impact which implementation of the proposal may reasonably be expected to have on the environment." (*Ibid.*, § 6116, subd. (a)(2).)

III. Substantive Comments Regarding Proposed Regulations

In light of mounting evidence that California wildlife, including threatened and endangered species, were being poisoned by SGARs, the California Department of Fish and Wildlife ("DFW") voiced its concerns to DPR. In 1999, DFW requested that DPR reevaluate its registration of brodifacoum; and in July 2011, DFW requested that DPR restrict the availability and use of all second-generation anticoagulants in order to mitigate the harm of exposure and poisonings in non-target organisms. (*See* Notice of Proposed Regulations, p. 2). In response to DFW's request, and following its own analysis of wildlife incident and mortality data, as well as rodenticide use and sales data, DPR issued the proposed regulations that are the subject of these comments. (*Ibid.).*

A. There Is Overwhelming Evidence that SGARs Are Killing Non-Target Wildlife.[1]

SGARs contribute to deaths of significant numbers of non-target wildlife because the physiological effects of anticoagulants are not limited to the target animal or the animal that originally ingests the anticoagulant. SGARs' greater acute toxicity increases the potential for primary poisoning amongst non-target species, meaning that the non-target species may be killed after only one feeding of rodenticide bait.[2] In addition, the longer tissue half-lives of SGARs and slow-acting nature enhance the potential for bioaccumulation in non-target predators in particular, and also increase the risk of secondary poisoning through ingestion of poisoned prey.[3]

1. SGAR Exposure Results in Lethal and Various Sub-Lethal Effects

Non-target wildlife deaths due to the exposure to SGARs are well documented in the scientific literature.[4] Studies have shown anticoagulant rodenticide toxicosis in 6% of raptors tested.[5] A study on bobcats and mountain lions discovered a highly significant correlation between anticoagulant rodenticides and death from notoedric mange.[6] In the study, 31/39 bobcats had detectable levels of brodifacoum.[7] One bobcat died directly due to brodifacoum toxicity, and 4/4 mountain lions had detectable levels of brodifacoum – with two of the lions dying from direct exposure to anticoagulant rodenticides.[8] Recent studies in California by DPR found that brodifacoum was likely involved in 13% of reported animal mortalities and bromadiolone was likely involved in approximately 3% of reported animal mortalities.[9] Nationwide wildlife mortality incident reports compiled by the U.S. Environmental Protection Agency ("EPA") have demonstrated SGAR poisoning and deaths to non-target wildlife for several decades.[10]

Even if exposed wildlife survive after anticoagulant rodenticide ingestion, the animal still may suffer possible disruptions in vital physiological processes. Damage to the heart muscle has

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[1] Based on our prior correspondence with DPR, we understand that copies of the scientific references cited in these comments are already included in the administrative record for the proposed SGAR restricted materials rulemaking, with the possible exception of the few documents that are attached hereto.

[2] Thomas et al. 2011, Second generation anticoagulant rodenticides in predatory birds: probabilistic characterization of toxic liver concentrations and implications for predatory bird populations in Canada. Environment International 37:914–920.

[3] *Id.*

[4] Eason et al 2002. Assessment of Risks of Brodifacoum to Non-target Birds and Mammals in New Zealand, Ecotoxicology, 11, 35-48 2002.

[5] Murray 2011. Anticoagulant rodenticide exposure and toxicosis in four species of birds of prey presented to a wildlife clinic in Massachusetts, 2006-2010. J Zoo Wildl. Med. 2011 Mar;42(1):88-97. (Attached to this letter).

[6] Riley S.P.D. et al. (2007) Anticoagulant Exposure and Notoedric Mange in Bobcats and Mountain Lions in Urban Southern California. J. Wildlife Management 71(6) 1874–1884.

[7] *Id.*

[8] *Id.*

[9] DPR 2012, Memorandum: Second Generation Anticoagulant Rodenticides (draft) from Deborah Daniels, DVM, Senior Environmental Scientist (September 19, 2012).

[10] EPA 2013, Compilation of Rodenticide Wildlife Mortality Incident Reports Between 1971-2012 (January 29, 2013)(Attached to this letter).

been documented in both birds and mammals following brodifacoum exposure.[11] Liver damage, disruptions of physiological processes leading to osteoporosis, or calcium remobilization and deposition in the circulatory system are all possible because of the impact of brodifacoum upon vitamin K biochemistry.[12] Unusual ranging behavior in bobcats was positively associated with increased levels of anticoagulant rodenticides. The presence of anticoagulants is also associated with other diseases and may act synergistically with natural environmental stressors to increase susceptibility to naturally occurring lethal diseases.[13] Multiple studies have shown that even sub-lethal doses can cause clotting, biochemical abnormalities (including glucose and liver function markers), and physiological abnormalities (including statistically significant decreased body weight, increased liver size, increased heart size, and increased kidney size), which could or did cause mortality in a laboratory setting.[14]

Other sub-lethal effects at dose levels orders of magnitude below lethal levels have been reported.[15] Sub-lethal doses of brodifacoum have caused abortions and reduced lambing rates in sheep.[16] Several studies also indicate that sub-lethal concentrations of SGARs may cause mortality to embryos.[17] The increased sensitivity of exposed wildlife following a re-exposure is expected given the cumulative mode of action demonstrated with all the anticoagulant rodenticides.

The majority of some raptor species like red tailed hawks and great horned owls in proximity to the human population now carry multiple rodenticide residues, primarily SGARs.[18] This extensive pre-exposure in wildlife populations can lead to a general increase in susceptibility to anticoagulation and hemorrhaging resulting from consumption of anticoagulant rodenticides. Current rodenticide assessments are carried out on individual compounds and fail to acknowledge that the SGARs (as well as some of the first-generation anticoagulants) act on the same receptors as they bio-accumulate in the animal making their impact additive.

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[11] Rahmy 1993, Myocardial alterations in animals intoxicated with an anticoagulant rodenticide. J. Egypt. Ger. Soc. Zool. 12C: 87-98.

[12] Knopper et al 2007, Bone Density and breaking strength in UK raptors exposed to second generation anticoagulant rodenticides. Bull Environ Contam Toxicol 78:249–251.

[13] Riley et al. 2007, Anticoagulant Exposure and Notoedric Mange in Bobcats and Mountain Lions in Urban Southern California, J. Wildlife Management 71(6) 1874–1884.

[14] DPR 2012, Memorandum: Second Generation Anticoagulant Rodenticides (draft) from Deborah Daniels, DVM,Senior Environmental Scientist (September 19, 2012).

[15] USEPA 1998, Reregistration Eligibility Decision (RED) Rodenticide Cluster, EPA738-R-98-007; USEPA 2004, Potential Risks of Nine Rodenticides to Birds and Nontarget Mammals: a Comparative Approach (July 2004).

[16] Godfrey 1985, Non-target and secondary poisoning hazards of "second generation" anticoagulants. Acta zoologica fennica 173: 209-212.

[17] Laas et al. 1985, Retention of brodifacoum in sheep tissues and excretion in faeces, New Zealand J. Agric. Res. 28:357-359 (Attached to this letter); Godfrey et al. 1989, Preliminary dosing trials of a new anticoagulant, brodifacoum, as a toxicant for the rabbit, *Oryctolagus cimiculus* (L.). New Zealand J. Exper.Agric. 8:1-5 (Attached to this letter); Munday et al 2003, Brodifacoum toxicosis in two neonatal puppies. Vet Pathol. 40:216.

[18] Thomas et al. 2011, Second-generation anticoagulant rodenticides in predatory birds: Probabilistic characterisation of toxic liver concentrations and implications for predatory bird populations in Canada. Environment International 37:914–920.

A particularly worrisome research finding has been the report of brodifacoum toxicosis in neo-natal dogs following a past sub-lethal exposure in the mother.[19] The risk of trans-placental transfer is of obvious concern given the high proportion of mammals found carrying residues, including endangered species such as the San Joaquin kit fox.

2. SGAR Exposure Is a Serious Threat to California Wildlife

Wildlife exposures to SGARs have long been of concern in California.[20] In 1999, the California Department of Fish and Wildlife ("DFW") was sufficiently concerned about one of the SGARs – brodifacoum that it requested DPR to reevaluate all rodenticides containing that active ingredient.[21] In July 2011, DFW requested that DPR restrict the availability and use of all second-generation anticoagulants in order to mitigate the harm of exposure and poisonings in non-target organisms.

Between 1994 and 2000 in California, SGARs were detected in 70% of mammals and 68% of birds examined; signs of intoxication were seen in 43% of exposed wildlife.[22] In 2000, the list of potentially affected mammals was already extensive including coyote, red and gray fox, raccoon, bobcat, mountain lion as well as the endangered San Joaquin kit fox. As for raptors, golden eagles and barn owls were showing the highest exposure levels.

Recent data from DPR indicates that there has been an increase in rodenticide exposure in California. Given the difficulties of tracking wildlife exposures, the numbers of animals exposed to and poisoned by rodenticides is likely much greater than the figures reported by DPR. Between 1995 and 2011, approximately 73% of animals tested had residues of at least one SGAR.[23] Difethialone residues were found in approximately 8% of the animals analyzed.[24] Bromadiolone residues were found in approximately 37% of the animals analyzed, and bromadiolone was likely involved in approximately 3% of animal mortalities.[25]

Brodifacoum was the most widespread and lethal SGAR. Brodifacoum residues were found in approximately 69% of the 492 animals evaluated by DPR, and brodifacoum was likely involved in 13% of animal mortalities.[26] The 2011 Scientific Advisory Panel convened by the United States Environmental Protection Agency also concluded that terrestrial food chains were widely contaminated with brodifacoum, the most studied SGAR to date. Birds of prey are

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[19] Munday et al. 2003, Brodifacoum toxicosis in two neonatal puppies. Veterinary Pathology 40:216.
[20] Alterio 1996, Secondary poisoning of stoats (*Mustela erminea*), feral ferrets (*Mustela furo*), and feral house cats (*Felis catus*) by the anticoagulant poison, brodifacoum, New Zealand Journal of Zoology, 1996, Vol. 23: 331-338.
[21] DPR 1999, Notice of proposed reevaluation of pesticide products, California Notice 99-7 (December 30, 1999).
[22] Hosea 2000, Exposure of non-target wildlife to anticoagulant rodenticides in California. In: Salmon, T.P. and A.C. Crabb, (eds.) Proceedings of the Nineteenth Vertebrate Pest Conference. University of California, Davis, CA. 236-244.
[23] DPR 2012, Memorandum: Second Generation Anticoagulant Rodenticides (draft) from Deborah Daniels, DVM, Senior Environmental Scientist (September 19, 2012); DPR 2013, Memorandum: Second Generation Anticoagulant Rodenticides from from Deborah Daniels, DVM, Senior Environmental Scientist to Ann Prichard, Chief Pesticide Registration Branch (June 27, 2013).
[24] *Id*.
[25] *Id*.
[26] *Id*.

especially subject to secondary poisoning from brodifacoum via ingestion of contaminated animals.[27]

California's large percentage of wildlife within close proximity of the wildlife-urban interface creates similarly negative correlations between populated centers and rodenticide poisonings. A spatial analysis of raptor incidents in San Diego, Fresno, Kern and Madera counties in California suggested a higher number of rodenticide detections in urban areas with higher population density.[28] Similarly, a study of bobcats and mountain lions in the Santa Monica area showed elevated exposure rates to SGARs near urbanized areas of southern California.[29] The prevalence of rodenticide poisoning and exposure is also indicated in wildlife mortality incident reports compiled by the EPA demonstrating poisoning and deaths to non-target wildlife over the past several decades.[30]

The pervasive nature of SGARs in the environment and food chain lead to lethal and sub-lethal harm to endangered species. Recent comprehensive data from EPA, DPR and scientific journals document poisonings and deaths of the San Joaquin kit fox, golden eagle, Pacific Fisher, and numerous migratory bird species.[31]

B. DPR's Proposed Regulations Are an Important Step in the Right Direction, But They Do Not Go Far Enough to Protect Non-Target Wildlife.

1. Designating SGARs as "Restricted Materials" Will Not Eliminate Exposure to Non-Target Wildlife.

DPR proposes to amend Section 6400 of Title 3 of the California Code of Regulations to add SGARs (*i.e.*, pesticide products containing the active ingredients brodifacoum, bromadiolone, difenacoum, and difethialone) to the list of California restricted materials.

According to DPR, designating SGARs as restricted materials will mean that they can only be possessed and used by, or under the direct supervision of, a "certified private applicator" or "certified commercial applicator." (Notice of Proposed Regulations, p. 3). DPR has reasoned that certified applicators will better be able to use the rodenticides in a manner which reduces

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27 Thomas 2011, Second generation anticoagulant rodenticides in predatory birds: probabilistic characterization of toxic liver concentrations and implications for predatory bird populations in Canada. Environment International 37:914–920.

28 Lima et al. 2010. Assessing some potential environmental impacts from agricultural anticoagulant uses. Proc. 24th Vertebr. Pest Conf. (R.M. Timm and K.A. Fagerstone, Eds.) University of California; Earthjustice 2012, Comments on Notice of Proposed Decision to Renew Pesticide Product Registrations for 2013, Director's Findings and Public Report, California Notice 2012-14 (December 7, 2012).

29 Riley 2007, Anticoagulant Exposure and Notoedric Mange in Bobcats and Mountain Lions in Urban Southern California. J. Wildlife Management 71(6) 1874–1884.

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

31 *Id.*; DPR 2012, Memorandum: Second Generation Anticoagulant Rodenticides (draft) from Deborah Daniels, DVM, Senior Environmental Scientist (September 19, 2012); Gabriel et al. (2012) Anticoagulant Rodenticides on our Public and Community Lands: Spatial Distribution of Exposure and Poisoning of a Rare Forest Carnivore. PLoS ONE 7(7): e40163. doi:10.1371/journal.pone.0040163.

exposures to non-target wildlife. According to DPR, certified applicators are more likely to perform "qualitative site assessments," to determine the proper control measures, and are more likely to use integrated pest management strategies. (*Id.*).

Additionally, to use restricted materials, certified applicators will need to obtain permits issued by California Agricultural Commissioners ("CACs") (with the exception of applicators licensed by the Structural Pest Control Board, who are exempted from this requirement). (Cal. Code Regs., tit. 3, §§ 6412, 6414.) DPR believes that this will promote more responsible use, since CACs will have some oversight over rodenticide use; for agricultural permits, CACs will have the ability to evaluate whether a particular rodenticide use is appropriate, given site conditions; and furthermore, the permit process contains reporting requirements that will allow DPR to collect additional information about rodenticide use. (Cal. Dept. of Pesticide Regulation, Initial Statement of Reasons and Public Report, Designating Brodifacoum, Bromadiolone, Difenacoum, and Difethialone as Restricted Materials (Second Generation Anticoagulant Rodenticide Products), July 19, 2013, pp. 9-10)("Initial Statement of Reasons").

DPR has reasoned that restricting consumer sales of SGARs will reduce wildlife poisonings. DPR's data show that brodifacoum is the second-generation rodenticide most commonly found in wildlife, and also that a significant portion of consumer-size products are formulated with brodifacoum. (Initial Statement of Reasons, pp. 8-9). DPR anticipates that restricting consumer use of SGARs would limit use by residents living in or near rural areas (i.e., on "ranchette" style properties), and would also limit use by marijuana growers, which would then decrease wildlife poisonings. (*Ibid).*

However, questions remain about whether limiting rodenticide use to certified applicators, and eliminating consumer use, will significantly reduce the risk of wildlife poisonings. The licensing process, while imposing additional formalities, is not unduly burdensome from a financial perspective – when analyzing the cost impacts on private persons or businesses, DPR "estimated that businesses that use SGARs such as agricultural operations or food-handling establishments may face minor additional costs associated with hiring a pest control business or having the owner/employee become a certified applicator," and that the additional annual costs could be $118 - $1,500. (Notice of Proposed Regulations, p. 5). Thus, many businesses and individuals could likely continue to use SGARs after obtaining the necessary certifications. Additionally, the operators of both legal and illegal marijuana growing operations could obtain certification, which would allow continued use of SGARs in rural areas with proximity to wildlife.

The proposed regulations also appear to leave open the possibility that individuals can continue to obtain SGARs by going through the permit procedures set forth in the regulations. (Cal. Code. Regs., tit. 3, §§6400-6444.) DPR contemplates that after the new regulations are implemented, only certified applicators will be able to purchase and use restricted materials. However, the regulations currently allow permit holders to also access restricted use materials. DPR needs to further clarify whether its proposed regulations will leave open the possibility that permit holders without the licensed applicator certification can access restricted use materials.

Finally, the proposed regulations still leave wildlife at risk. Approximately 40% of products containing SGAR active ingredients brodifacoum and bromadiolone used in California are applied by licensed applicators. (*See* Initial Statement of Reasons, pp. 8-9). Designating SGARs as restricted use materials will likely not reduce the amount of SGARs applied by licensed applicators. In fact, it will likely increase the amounts used by licensed applicators, as some consumers will choose to hire licensed applicators who will still be able to apply SGARs. Furthermore, the proposed regulations expanding the "private applicator" license will allow a larger pool of individuals to access SGARs – DPR's own statistics show that 62% of the bromadiolone sold in 2011 was used by certified applicators, and expanding the pool of applicators will continue to allow broad access to SGARs. (*Ibid.* p. 8). SGARs will still be consumed by non-target organisms and will continue to bio-accumulate in the food chain. DPR would still be liable for the death, injury, harm, harassment and disturbance of protected species because there would be no controls on the consumption of SGAR poisoned rodents by upper-level predators that would then succumb to rodenticide poisoning themselves. For this reason, more strict controls on the use of SGARs in California are necessary.

2. Allowing Livestock, Poultry and Fish Producers to be Certified as Private Applicators Could Lead to Increased Use of SGARs.

DPR also intends to amend the definition of "private applicator" in Section 6000, so that it allows the producers of livestock, poultry, and fish to qualify for the private applicator certificate. (Notice of Proposed Regulations, p. 3).

A "private applicator" is currently defined in the regulations as "an individual who uses or supervises the use of a pesticide for the purpose of producing an agricultural commodity on property owned, leased, or rented by him/her or his/her employer." (Cal. Code. Regs., tit. 3, §6000.)

The current definition of "agricultural commodity" in the regulations specifically excludes "livestock, poultry and fish".[32] The proposed amendment would incorporate the broader definition of "agricultural commodity" found in 40 C.F.R. 171.2(a)(5), which includes: "any plant, or part thereof, or animal, or animal product, produced by a person."[33] By incorporating the broader definition of "agricultural commodity" into the "private applicator" definition, DPR has expanded the regulations to allow producers of livestock, poultry and fish to qualify for the "certified private applicator" license. Thus, rather than engaging a pest control operation to conduct pest management, these businesses could have an employee obtain an applicator license.

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[32] Cal. Code. Regs., tit. 3, §6000 defines "Agricultural commodity," as "an unprocessed product of farms, ranches, nurseries and forests (except livestock, poultry and fish). Agricultural commodities include fruits and vegetables; grains, such as wheat, barley, oats, rye, triticale, rice, corn and sorghum; legumes, such as field beans and peas; animal feed and forage crops; rangeland and pasture; seed crops; fiber crops such as cotton; oil crops such as safflower, sunflower, corn and cottonseed; trees grown for lumber and wood products; nursery stock grown commercially; Christmas trees; ornamentals and cut flowers; and turn grown commercially for sod."

[33] 40 C.F.R. 171.2(a)(5) defines "agricultural commodity" as: "any plant, or part thereof, or animal, or animal product, produced by a person (including farmers, ranchers, vineyardists, plant propagators, Christmas tree growers, aquaculturists, floriculturists, orchardists, foresters, or other comparable persons) primarily for sale, consumption, propagation, or other use by man or animals."

Broadening the pool of individuals and entities that are licensed to use restricted materials will likely have adverse consequences for wildlife poisonings. The State of California is home to a large number of agricultural operations – there are some 81,500 farms and ranches in the state, and agriculture is a $43.5 billion industry in California.[34] Dairy and livestock operations account for $12.4 billion of the agriculture industry, and poultry production accounts for $2.5 billion of the industry.[35]

Expanding the definition of "private applicator" to include livestock and poultry operations could significantly increase the use of SGARs in areas where there non-target organisms or threatened and endangered species. One example of legally protected wildlife species that would be harmed by the expansion of the private applicator definition is the San Joaquin kit fox. A large portion of California's livestock and poultry operations occur in the San Joaquin valley.[36] These operations have a direct overlap with the range of the federally endangered San Joaquin kit fox.[37] In some areas of the San Joaquin Valley 87% of kit foxes in have been exposed to anticoagulant rodenticides from commensal rodents.[38] Expanding the use of private applicators to include increased SGAR use within the range of the San Joaquin kit fox poses significant risk for the species.

Allowing agricultural operations to apply for "private applicator" certification will greatly expand the pool of those authorized to use restricted materials, and will lead to an increase in pesticide use, and a corresponding increased risk of improper uses and wildlife poisoning.

3. The Proposed Additional Use Restrictions Are Inadequate to Protect Non-target Wildlife.

The proposed regulations would also add Section 6471, which would prohibit placement of products containing SGARs more than 50 feet from a man-made structure, unless "there is a feature associated with the site that is harboring or attracting the pests targeted on the label between the 50-foot limit and the placement limit specified on the label." (Notice of Proposed Regulations, p. 4).

DPR stated that in most instances baiting within 50 feet of the man-made structure would be adequate to protect the site, and that in the event baiting beyond the 50 feet limit was needed,

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[34] U.S. DEPARTMENT OF AGRICULTURE, CALIFORNIA AGRICULTURAL STATISTICS: 2011 CROP YEAR (October 31, 2012) at 1; *available at*, http://www.nass.usda.gov/Statistics_by_State/California/Publications/California_Ag_Statistics/Reports/2011cas-all.pdf; *see also*, Matt Andersen, *et. al.*, *California's cattle and beef industry at the crossroads*, CAL. AGRIC. (Sep. 2002).

[35] *Id.* at 66; CALIFORNIA POULTRY FEDERATION, http://cpif.org/poultry-statistics (last visited Oct. 4, 2013).

[36] CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE, CALIFORNIA AGRICULTURAL STATISTICS REVIEW: 2012-2013 at 89; available at http://www.cdfa.ca.gov/statistics/

[37] California State University Stanislaus, Endangered Species Recovery Program, San Joaquin kit fox range and occurrence map, http://esrp.csustan.edu/gis/maps/sjkfrange.png (last visited Oct. 4, 2013).

[38] McMillan 2008, Anticoagulant Rodenticide Exposure in an Urban Population of the Joaquin Kit Fox. Proc. 23rd Vertebr. Pest Conf.

"this proposed restriction will reinforce the idea that bait placements should be based on a careful evaluation of the site." (*Ibid*). The proposed regulations also permit placement up to the federally-mandated limit of 100 feet from a man-made structure, if there are site features which harbor or attract rodents outside of the 50 foot limit.

The proposed regulations do not adequately protect wildlife from secondary exposures through consumption of poisoned rodents. Commensal rodents will travel more than 100 feet away from their burrows to seek food – for example, while the house mouse (*Mus musculus*) will travel from 10 to 30 feet from its burrow in search of food[39], the Norway rat (*Rattus norvegicus*) normally travels 100 to 150 feet from its burrow, and will travel up to 300 feet away from its burrow in search of food and water[40]. Thus, there is little practical difference between a 50 foot and 100 foot placement limit in protecting wildlife from certain species of poisoned rodents. Furthermore, the proposed regulations give certified applicators broad discretion to decide when a placement radius of more than 50 feet is needed. The proposed regulations do not justify how the proposed placement limitation serves to protect wildlife, and do not provide sufficient assurance that certified applicators will take necessary measures to protect wildlife.

C. DPR Must Adopt Additional Restrictions to Protect Non-Target Wildlife from SGARs.

Designating SGARs as California restricted materials is an important first step in reducing impacts to non-target wildlife. However, DPR must go further to prevent significant adverse impacts to non-target wildlife.

Specifically, DPR should adopt additional use restrictions providing that SGARs may be used only as a last resort under the following conditions:

1) A federal, state, or local public health authority makes a finding that a public health emergency exists, there is demonstrated local resistance to first-generation anticoagulant rodenticides by the target species, and other, less-toxic measures have been implemented, including sanitation and trapping, and have been found insufficient to control the hazard; or,

2) Federal or state authorities determine that conditions exist that require the use of SGARs to control, eradicate, or prevent the invasion of non-native and invasive species that pose direct or indirect significant harm to imperiled species on islands, or threaten the ecosystem integrity of any island or designated mainland area, and other, less-toxic measures have been demonstrated to be ineffective and not feasible in the specific circumstances. For the purposes of this section "imperiled species" includes protected,

[39] CORNELL UNIVERSITY, ET. AL., INTERNET CENTER FOR WILDLIFE DAMAGE MANAGEMENT, http://icwdm.org/handbook/rodents/HouseMice.asp (last visited Sep. 30, 2013).
[40] CORNELL UNIVERSITY, ET. AL., INTERNET CENTER FOR WILDLIFE DAMAGE MANAGEMENT, http://icwdm.org/handbook/rodents/NorwayRats.asp (last visited Sep. 30, 2013); *see also*, Institute of Food and Agricultural Sciences (IFAS), University of Florida, W.H. Kern, Jr. *et. al.*, *Non-Chemical Rodent Control*, (Mar. 2011), http://edis.ifas.ufl.edu/mg218.

threatened or endangered species, or wildlife that are candidates for protection under federal or state endangered species laws.

3) The duration of SGAR use based on the determinations and findings in 1) and 2) above shall not exceed one year.

4) Applicators, including those businesses conducting residential, industrial, structural, and other non-agricultural applications, shall identify locations where these rodenticides are used by specific coordinates (including, zip code, county, section, township, range, base and meridian, or latitude, longitude Global Positioning System coordinates), to be submitted as part of standard pesticide use reports.

In addition to these restrictions, DPR should work with DFW to rapidly develop and implement an incident reporting system for non-target animal poisonings. Such a reporting system could be established within the existing framework for regulating pesticides, and would provide DPR with greater insight into the efficacy of its proposed regulations.

IV. Conclusion

For all the foregoing reasons, we urge DPR to adopt the additional restrictions on SGARs described in these comments in order to ensure protection of wildlife.

Sincerely,

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