CASE NO. A161787

IN THE COURT OF APPEAL
OF THE STATE OF CALIFORNIA
FIRST APPELLATE DISTRICT

RAPTORS ARE THE SOLUTION,

Petitioner,

v.

CALIFORNIA DEPARTMENT OF PESTICIDE REGULATION,

Respondent.

APPELLANT'S OPENING BRIEF

On Appeal from the Superior Court for the State of California,
County of Alameda, Case No. RG18908605, Hon. Brad Seligman

Deborah A. Sivas (CA Bar No. 135446)
Rachel C. Bowanko (CA PTLS 651677)
Daeyeong Kim, (CA PTLS 651089)
ENVIRONMENTAL LAW CLINIC
Mills Legal Clinic at Stanford Law School
559 Nathan Abbott Way
Stanford, California 94305-8610
Telephone: (650) 725.8571
Facsimile: (650) 723.4426
dsivas@stanford.edu

Michael W. Graf (CA Bar No. 136172)
LAW OFFICE
227 Behrens Street
El Cerrito, California 94530
Telephone/Facsimile: (510) 525-1208
mwgraf@aol.com

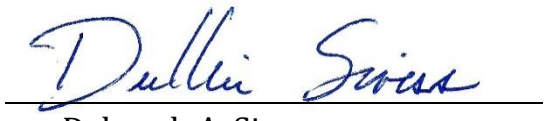
Attorneys for Appellants
RAPTORS ARE THE SOLUTION

CERTIFICATE OF INTERESTED ENTITIES OR PERSONS

There are no interested entities or persons that must be listed in this certificate under Rule 8.208, California Rules of Court.

Dated: June 28, 2021

ENVIRONMENTAL LAW CLINIC
Mills Legal Clinic at Stanford Law School

By: 

Deborah A. Sivas

Attorneys for Appellants

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> It is not my contention that chemical insecticides should never be used. I do contend that we have put poisonous and biologically potent chemicals indiscriminately into the hands of persons largely or wholly ignorant of their potentials for harm. I contend furthermore that we have allowed these chemicals to be used with little or no advance investigation of their effect on soil, water, wildlife, and man himself. Future generations are unlikely to condone our lack of prudent concerns for the integrity of the natural world that supports all life.
>
> Rachel Carson, *Silent Spring* (1962)

INTRODUCTION

In the six decades since Rachel Carson penned this warning, we have crafted an elaborate system for regulating pesticides and for disclosing their impacts to the public. Yet just last year, California acknowledged that we are still failing to fully heed the danger. The Legislature crafted, and the Governor signed, the California Ecosystems Protection Act of 2020 to better protect non-target wildlife from some of the chemical pesticides used to control rats, mice, gophers, and other rodents. The new law recognizes that "[w]ildlife, including birds of prey, mountain lions, bobcats, fishers, foxes, coyotes, and endangered species such as the northern spotted owl, pacific fisher, and San Joaquin kit fox, are an irreplaceable part of California's natural ecosystem" and vital to the physical, mental, and economic well-being of its residents. Cal. A.B. 1788, Leg. Sess. 2019-2020, Ch. 250, § 1 ("A.B. 1788 Findings").

More than two years earlier, Raptors Are The Solution ("Raptors") filed this case after the California Department of Pesticide Regulation ("Department") declined to reevaluate the dangers posed by seven rodent pesticides, commonly called rodenticides, to non-target wildlife. All seven of these rodenticides share a common mechanism of action – they are "anticoagulants" that cause the target species to bleed to death. But unfortunately, the harm does not stop there. Wildlife preying on rodents poisoned by anticoagulants can suffer secondary effects that may lead to debilitating disease and death. Such "sublethal" effects on individual predators may be challenging to detect, but recent science reveals that chronic exposure can threaten the viability of whole populations.

Several months after Raptors filed its suit, the Department reversed course and, in November 2018, agreed to reevaluate four of the seven anticoagulant rodenticides – the same four that subsequently became the subject of the 2020 California Ecosystems Protection Act. Of the remaining three compounds that the Department declined to reevaluate, one stands out as uniquely harmful and uniquely prevalent: Diphacinone. The U.S. Environmental Protection Agency ("EPA") has identified diphacinone as posing the greatest secondary risk to mammals preying on poisoned rodents, and it is by far the *most widely*

used of any anticoagulant. Indeed, its use is on the rise as other rodenticides become more restricted.

The most recent research indicates that diphacinone is even more alarming than we thought. Historically, researchers studying wildlife impacts from rodenticides have tested liver tissue from animal carcasses to look for traces of pesticides as a potential contributor to death. Because diphacinone is more quickly metabolized and excreted than some other anticoagulants, it is less likely than those compounds to be found in the liver of dead animals – although, in fact, it is frequently detected in liver samples alongside other rodenticides. Over the last several years, however, studies of a declining bobcat population in southern California have employed new methodologies, testing blood samples drawn from live animals. The results of these studies are eye-opening. They reveal that diphacinone is far and away the most prevalent anticoagulant circulating in the bloodstream of these predators, indicating repeated, chronic exposure to the compound. The scientists conducting these studies have concluded that such chronic secondary exposure is the likely cause of subtle immune system and genetic alterations they have detected, rendering these animals more vulnerable to deadly diseases and potentially deadly interactions with humans.

In light of the Department's November 2018 decision, Raptors amended its writ petition, deleting claims related to the four rodenticides placed in reevaluation, as well as claims concerning two other rodenticides that pose less risk to wildlife. The amended writ petition focused solely on diphacinone and, in particular, on the Department's failure to comply with the California Environmental Quality Act ("CEQA").

In deciding not to reevaluate diphacinone, the Department was required to satisfy the basic policy goals and substantive requirements of CEQA. *Pesticide Action Network N. Am. v. Dep't of Pesticide Regul.* ("*PANNA*"), 16 Cal. App. 5th 224, 243 (2017). To fulfill its CEQA obligations, an agency must meaningfully consider, discuss, and disclose relevant information in a way that enables the public to understand the impacts posed by the action. Here, CEQA compliance required a contextual evaluation of the existing and new science and other current information about diphacinone's use and prevalence. As discussed below, the Department did not come close to meeting its CEQA responsibilities. To the contrary, its cursory evaluation barely mentioned diphacinone, virtually ignored the most pertinent science and other information, and presented data in a manner that seemed designed to mislead, rather than enlighten, the public.

These informational deficiencies constitute a prejudicial abuse of discretion. Accordingly, the Court should reverse the decision below and order the trial court to enter a writ of mandate finding that the Department failed, as a matter of law, to comply with CEQA.

STATEMENT OF APPEALABILITY

Raptors filed is Petition for Writ of Mandate on June 13, 2018. Appellant's Appendix ("AA") 009. The trial court's final ruling and order denying Petitioner's Petition for Writ of Mandate were entered on November 17, 2020. AA422-426. The notice of entry of order was served on November 19, 2020. *See* AA419-420. Raptors timely filed its Notice of Appeal pursuant to Code of Civil Procedure section 904.1 on January 11, 2021. *See* AA432.

STATEMENT OF THE CASE

Legal Background

I. The Department Has a Legal Obligation to Protect the Environment from Harmful Pesticides.

The Department oversees the safe use of pesticides in California. In doing so, the agency must (1) safeguard "the environment from environmentally harmful pesticides by prohibiting, regulating, or ensuring proper stewardship of those pesticides" and (2) encourage the use of "biological and cultural pest control techniques . . . to achieve acceptable levels of control with the lease possible harm to nontarget

organisms and the environment." Cal. Food & Agric. Code ("FAC") § 11501. To implement these legislative objectives, the Department "shall endeavor to eliminate from use in the state any pesticide that endangers the . . . environment" by implementing "an orderly program for the *continuous evaluation* of all pesticides actually registered." FAC § 12824 (emphasis added).

Consistent with this legislative mandate, the Department is responsible for registering all pesticides prior to their use in California. FAC § 12811. When evaluating a pesticide for registration, the Department must consider, among other things, whether the pesticide might produce "serious uncontrollable adverse effects," whether there are less harmful alternatives, and whether the benefits of its use outweigh harms to the environment. FAC § 12825. All pesticide registrations expire at the end of each calendar year, FAC § 12817, and the process for annual renewal of registration requires that the Department apply the same rigorous criteria used for a pesticide's initial registration. FAC § 12824.

The Department has adopted binding regulations that govern this pesticide registration and renewal process. Pursuant to these regulations, the Department must "give special attention to the provisions" of FAC section 11501 and 12824, discussed above, as well

as FAC section 14102. Cal. Code Regs. ("C.C.R."), tit. 3, § 6158. Section 14102 of the Food and Agriculture Code provides that the Department "shall prohibit or regulate the use of environmentally harmful materials," taking into consideration the effect of such materials on the environment, and must take whatever steps are "necessary to protect the environment." FAC § 14102. The regulations elaborate on these statutory requirements. They direct the Department to give special attention to the "[p]otential for environmental damage," "[t]oxicity to aquatic biota or wildlife," and "the availability of feasible alternatives." 3 C.C.R. § 6158(c), (d), and (g). If significant adverse impacts cannot be avoided or mitigated, the Department should not grant registration unless it makes a written finding that the anticipated benefits "clearly outweigh the risks." *Id.* § 6158(h).

To fulfill the specific statutory directive for an orderly program of continuous evaluation of registered pesticides, the regulations require the Department to "investigate all reported episodes and information received by the Director 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." 3 C.C.R. § 6220. If that investigation reveals that a significant adverse impact from the pesticide has occurred or is

likely to occur, the Department must reevaluate the pesticide. *Id.* Reevaluation is mandatory when, for instance, there is evidence of contamination to the environment, a hazard to fish or wildlife, phytotoxicity, or other information "suggesting a significant adverse risk." *Id.* § 6221. After investigating, the Department must "respond in writing to the individual or organization [that reported such information,] indicating the reasons for [its] decision either to reevaluate or not reevaluate the pesticide registration based upon the information submitted." Id. § 6222(b).[1]

Additionally, at the time of each annual renewal of a pesticide's registration, the Department must "make a written finding that [it] has not received sufficient information necessitating reevaluation pursuant to Sections 6220 and 6221." 3 C.C.R. § 6215(c).

II. The Department Must Comply with CEQA in Carrying Out These Legal Obligations.

In carrying out its discretionary registration, renewal, and reevaluation responsibilities, the Department also must comply with CEQA. As California's bedrock environmental statute, CEQA is intended to "[e]nsure that the long-term protection of the environment

[1] If the Department decides to reevaluate a registered pesticide, a further review process ensues. Depending on the results of that process, the Department might impose restrictions on the product or cancel its registration. See 3 C.C.R. § 6224.

shall be the guiding criterion in public decisions." *No Oil, Inc. v. City of Los Angeles*, 13 Cal. 3d 68, 74 (1974) (quoting Cal. Pub. Res. Code § 21001(d)). It requires public agencies to "give prime consideration to preventing environmental damage when carrying out their duties." *Mountain Lion Found. v. Fish & Game Comm'n*, 16 Cal. 4th 105, 112-14 (1997). Courts thus interpret the statute to "afford the fullest possible protection to the environment." *Wildlife Alive v. Chickering*, 18 Cal. 3d 190, 206 (1976).

Generally, an agency satisfies its CEQA obligations by preparing an environmental impact report whenever there is a fair argument that a discretionary action may have a significant effect on the environment. See Cal. Pub. Res. Code ("PRC") §§ 21080(d), 21100, 21151; 14 C.C.R. § 15064(a)(1), (f)(1) (hereafter "CEQA Guidelines"); *Communities for a Better Env't v. S. Coast Air Qual. Mgmt. Dist.*, 48 Cal. 4th 310, 319 (2010). This environmental review is "the heart of CEQA," *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.* ("*Laurel Heights*"), 47 Cal. 3d 376, 392 (1989), and "the key to environmental protection under [the Act]." *No Oil, Inc.*, 13 Cal. 3d at 75. It provides "the primary means of achieving the Legislature's considered declaration that it is the policy of the state to 'take all action necessary to protect, rehabilitate,

and enhance the environmental quality of the state.'" *Id.* (citation omitted).

In this way, CEQA serves as an "'environmental alarm bell' whose purpose is to alert the public and its responsible officials to environmental changes before they have reached the point of ecological no return." *Laurel Heights*, 47 Cal. 3d at 392 (citations omitted). CEQA's public process is "intended to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action." *Id.* If the law is "scrupulously followed," the public will know the basis for the agency's action and "being duly informed, can respond accordingly to action with which it disagrees." *Id.* In short, CEQA is a statute of accountability that "protects not only the environment but also informed self-government." *Id.*

In lieu of preparing individual environmental impact reports for each discretionary action, some state agencies are authorized to use an alternative process, called a certified regulatory program, that serves as the "functional equivalent" of an environmental impact report. *Mountain Lion Found.*, 16 Cal.4th at 123 (citing CEQA § 21080.5). The Department's regulation of pesticides is such a certified regulatory program. *See* CEQA Guidelines § 15251(i) (covering the Department's

regulatory program insofar as it consists of "the registration, evaluation, and classification of pesticides"). This certified regulatory program, codified in regulations at 3 C.C.R. sections 6252-6255, applies to all pesticide registration, renewal, and reevaluation decisions. 3 C.C.R. § 6252. Consistent with CEQA, the Department must provide public notice for any proposed registration, renewal, or reevaluation decision, 3 C.C.R. § 6253, and must consider reasonably expected direct or indirect adverse environmental effects, as well as reasonable mitigation measures and alternatives to reduce such impacts. 3 C.C.R. § 6254. Where a significant adverse environmental point is raised during the evaluation process, the Department must provide a written evaluation of such point(s). *Id.*

In implementing this certified regulatory program, the Department must also comply with CEQA's basic policy goals and its substantive standards. *PANNA*, 16 Cal. App. 5th at 243 (holding that "consistent with statutory language, the Department's environmental review is not a 'blanket exemption' from CEQA, and it may not be relieved of CEQA's substantive requirements to thoroughly evaluate specific environmental effects before it approves an activity"). Thus, reports and decisions concerning registration, renewal, and reevaluation of pesticides produced under 3 C.C.R. sections 6252 to

6255 must satisfy CEQA's basic goals and informational disclosure requirements. *Id.*

As this Court noted in *PANNA*, CEQA's policy goals are embedded in its legislative findings and declarations. The statute is, first and foremost, concerned with the "maintenance of a quality environment for the people of this state now and in the future." PRC § 21000(a). The Legislature thus directed all agencies to regulate activities "so that major consideration is given to preventing environmental damage." *Id.* § 21000(g). More specifically, it is the policy of California to "take all action necessary to protect, rehabilitate, and enhance the environmental quality of the state," including actions necessary to "[p]revent the elimination of fish or wildlife species due to man's activities, insure that fish and wildlife populations do not drop below self-prepetuating [sic] levels, and preserve for future generations representations of all plant and animal communities and examples of the major periods of California history." PRC § 21001(a), (c).

One of CEQA's most salient substantive standards is the consideration of a project's cumulative effects, defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." 14 C.C.R. § 15355. These impacts may consist of "individually minor but

collectively significant projects." *Id.; see also Kings County Farm Bureau v. City of Hanford*, 221 Cal.App.3d 692, 720 (1990). Importantly, projects need not be simultaneously active – a cumulative impacts analysis necessarily charts the effects of past, current, and future projects. PRC § 21083(b)(2). And when an individual project contributes to cumulative impacts, "an evaluation *shall* require a finding" of significant effect. *PANNA*, 16 Cal. App. 5th at 248 (citing PRC § 21083(b)(2)).

As this Court explained in *PANNA*, a cumulative impacts analysis is required for "any environmental inquiry subject to CEQA's broad policy goals, whether or not also subject to CEQA's EIR requirements." 16 Cal.App.5th at 249 (quoting *Laupheimer v. State of California*, 200 Cal.App.3d 440, 462 (1988)). Thus, even an agency operating under a certified regulatory program, like the Department, must consider the cumulative effects of its actions. An inadequate investigation of cumulative impacts "understates information concerning the severity and significance of cumulative impacts" and risks long-term or irreversible environmental damage. *Id.* at 250. Crucially, the failure to disclose adequate information "impedes meaningful public discussion and skews the decisionmaker's perspective concerning the environmental consequences of the project, the necessity for mitigation

measures, and the appropriateness of project approval." *Id*. Thus, while technical perfection is not required, any pesticide evaluation must make a good faith effort towards comprehensive analysis. *Id.* (citing *Joy Rd. Area Forest & Watershed Assn. v. California Dep't of Forestry & Fire Prot.*, 142 Cal. App. 4th 656, 676 (2006)). The failure to do so means the agency has not proceeded in the manner required by law and thus constitutes an abuse of agency discretion. *Id.* at 251.

Factual Background

I. Rodenticides Pose Hazards to Non-Target Wildlife.

Since the earliest settlements, rats and mice have been unwelcome guests in human communities. Historically, wildlife such as mountain lions, bobcats, and birds of prey played "an important role in regulating and controlling the population of rodents." A.B. 1788 Findings. Such natural predators are remarkably effective in controlling rodents. *See* Administrative Record ("AR") 03320 (describing Ventura County study which demonstrated that hawks and owls are more effective than poisons for limiting rodent damage). But seeking to improve on nature, humans have developed a series of chemical poisons – called rodenticides – designed to directly kill these unwanted visitors.

The most popular rodenticides are anticoagulants, which work by blocking the production of vitamin K, a critical factor in blood clotting. AR01629; AR00018. Deprived of this essential vitamin, rodents that consume anticoagulant-laced bait will hemorrhage internally for several days, ultimately bleeding to death. *Id.* During the period between consumption and death, rodents typically continue to move about and eat, often consuming more poison before they die. *Id.* In this debilitated state, they become easy prey for raptors, big cats, and other natural predators. *Id.*

The problem at the center of this case arises because rodenticides are not species specific; they also harm bird and mammal predators that feed on poisoned rodents. *E.g.*, AR00017. If a non-target species consumes poisoned rodents in sufficient quantities, it may suffer the same bloody fate as its prey. But – and more typically – even where consumption of contaminated prey does not cause immediate death, predators can experience harmful secondary effects, such as severe skin diseases, altered immune responses, and calcification of the arteries. AR03471. For example, repeated exposure to anticoagulant rodenticides may increase vulnerability to mange, a skin disease caused by parasitic mites that can prove fatal in immune-compromised animals. AR03440. These indirect effects may

ultimately prove lethal as weakened animals succumb to disease, predation, or deadly encounters with humans. AR03471.

SAR 4419-4421 (four-month-old coyote pup with mange, found unconscious and emaciated; 0.70 ppm diphacinone detected in liver tissue post-mortem)[2]

[2] The parties stipulated to supplementation of the initial administrative record with a limited number of pesticide investigation reports submitted to the Department, hereinafter referred to as "SAR____." *See also* SAR 4415-4416 (coyote with high concentration of diphacinone found with mange, appeared emaciated, and could barely lift his head); SAR 4422-4423 (mountain lion found in "poor health, emaciated" with 0.44 ppm diphacinone); SAR 4424-4425 (mountain lion cub with four anticoagulant compounds in liver, including diphacinone, found "hanging around," and looking in "in 'bad shape' and 'mangy' and unsteady on its feet."); SAR 4428-4430 (mountain lion shot for "acting sickly" with four anticoagulants detected in liver, including diphacinone); SAR 4436-4438 (grey fox found in "poor nutritional condition, with a small hemorrhage around the liver, and red-tinged urine," with five anticoagulants detected, including diphacinone); SAR 4439-4440 (bobcat with high diphacinone contamination found in backyard of a residence emaciated and with severe mange).

Anticoagulant rodenticides have been around since the 1940s, but studies over the last three decades increasingly have raised alarms about their widespread impact on non-target wildlife. *See generally* AR03143. As far back as 1993, the U.S. Fish and Wildlife Service ("Service") recognized the harmful effects of rodenticides on at-risk wildlife when it issued a biological opinion on the "Effects of 16 Vertebrate Control Agents on Threatened and Endangered Species." That opinion evaluated whether primary or secondary exposure to 16 rodent control agents, including several anticoagulants, was likely to "jeopardize" then-listed mammal, bird, and reptile species.[3] *See* AR00126. Based on information available at the time, the Service concluded that eight of the studied rodenticides would, collectively, jeopardize 29 listed mammals and 11 listed birds. AR00127. Notably, the agency determined that the anticoagulant diphacinone – the rodenticide at the heart of this case – was the most dangerous of the lot, threatening jeopardy to 28 listed mammal species, including

[3] Under the Endangered Species Act, whenever a federal agency authorizes, funds, or carries out an action that may affect a listed species, the agency must consult with the U.S. Fish and Wildlife Service, which must then prepare a biological opinion to determine whether the action will jeopardize the continued existence of the species. 16 U.S.C. § 1536(a)(2).

panthers, wolves, bears, beavers, and rabbits. AR00127 at Table 50.[4]

Table 50. USFWS (1993) Jeopardy Determinations For Endangered and Threatened Species at Risk From Use of Each Rodenticide (Except Difethialone).

Rodenticide	no. species likely at jeopardy		
	mammals	birds	reptiles
Brodifacoum	10	2	0
Bromadiolone	7	0	0
Chlorophacinone	20	1	0
Diphacinone	28	1	0
Warfarin	10	0	0
Bromethalin	10	0	0
Zinc phosphide	16	9	0
Cholecalciferol	10	0	0
Total no. species	29	11	0

EPA shed additional light on this problem in its 2004 study, "Potential Risks of Nine Rodenticides to Birds and Nontarget Mammals: a Comparative Approach." *See* AR00012. That study looked at potential risks to non-target birds and mammals from six anticoagulants and three non-anticoagulant rodenticides. AR00013. As the study explained, anticoagulants "are typically grouped into 'first-generation' (warfarin, chlorophacinone, diphacinone) and 'second-generation' (brodifacoum, bromadiolone, difethialone) compounds," with second-generation anticoagulants generally being retained longer in an animal's body tissue. AR00118-119

[4] The full biological opinion is available at https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB96172671.xhtml.

Based on information available to EPA in 2004, the agency concluded that all six of the studied anticoagulants "pose a potential secondary risk to mammalian predators and scavengers, although [first-generation] warfarin apparently less so than the others." AR00101. Comparative analysis indicated that "diphacinone, chlorophacinone, and brodifacoum pose the *greatest potential secondary risk to mammals*." AR00102 (emphasis added; referencing "Table 42" which showed that diphacinone had the greatest mean mortality rate of all six anticoagulants, regardless of concentration). EPA also identified areas of uncertainty and called for further study, including investigation into the "bioaccumulation of repeated sublethal exposures to bait or poisoned rodents utilized as food by predators and scavengers." AR00015.

Of course, in the decades since the Service and EPA conducted these evaluations, many more potentially vulnerable wildlife species have been listed or recognized as highly imperiled, at least some due in part to rodenticide exposure. *See, e.g.,* 85 Fed. Reg. 29,532, 29,542-45 and 29,566 (May 15, 2020) (listing the southern Sierra Nevada fisher as "endangered" under federal Endangered Species Act and identifying anticoagulant rodenticides as a potentially significant increasing threat

to the species).[5] As the Fish and Wildlife Service explained in the fisher listing document, "[a]nticoagulant rodenticide exposure causes bleeding from the nose and gums, extensive bruises, anemia, fatigue, difficulty breathing, and also damage to small blood vessels, resulting in spontaneous and widespread hemorrhaging." *Id.* at 29,543.

Given their widespread use, it is hardly surprising that rodenticides, although marketed to kill small mammals like mice, rats, and gophers, are now nearly ubiquitous in the animal tissue of non-target wildlife. *See* AR03213; AR03469 (noting that in California, over 70 percent of birds and mammals tested positive for rodenticide exposure between 1995 and 2011); AB 1788 Findings (finding that "[s]cientific research and state studies have found rodenticides in over 75 percent of animals tested"). Nor is it surprising that state regulators have taken some small steps to address this problem. Most significantly, in 2014, the Department restricted the use of second-

[5] Most recently, anticoagulant rodenticides have been implicated in California's listing of the Southern California/Central Coast population of the mountain lion as a candidate species under the California Endangered Species Act. *See* 2020 Cal. Regulatory Notice Register No. 18-Z, at 691 (May 1, 2020) (Cal. Fish and Game Comm., *Notice of Finding, Mountain Lion (Puma concolor)* (Apr. 21, 2020)), available at https://oal.ca.gov/wp-content/uploads/sites/166/2020/05/2020-Notice-Register-Number-18-Z-May-1-2020.pdf; Cal. Dep't of Fish and Wildlife, *Report to the Fish and Game Commission* (Jan. 31, 2020), available at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=182184&inline.

generation anticoagulants to certified pesticide applicators, meaning that these compounds are no longer directly available to homeowners, uncertified applicators, and other do-it-yourselfers. AR003143.

But these initial steps have proved insufficient. As the California Legislature recognized in the California Ecosystems Protection Act of 2020, "all anticoagulant rodenticides have a harmful impact on nontarget animals" because their use leads to both "direct mortality and chronic long-term health impacts for natural predators, nontarget organisms, and endangered species." A.B. 1788 Findings. These unintended consequences not only threaten the state's wildlife and the ecosystem services and economic benefits they provide; they actually "can be counterproductive to rodent control by poisoning, harming, and killing natural predators that help regulate rodent populations throughout California." *Id.*

II. Diphacinone Stands Out as Particularly Prevalent in Wildlife.

The recent regulatory and legislative response to non-target wildlife impacts has focused on second-generation compounds, but first-generation anticoagulants work by the same mechanism and, like their newer cousins, can bioaccumulate in wildlife predators. AR00018-19. Of these, diphacinone stands out for being especially prevalent in animal tissue. For example, in 2013, and again in 2015,

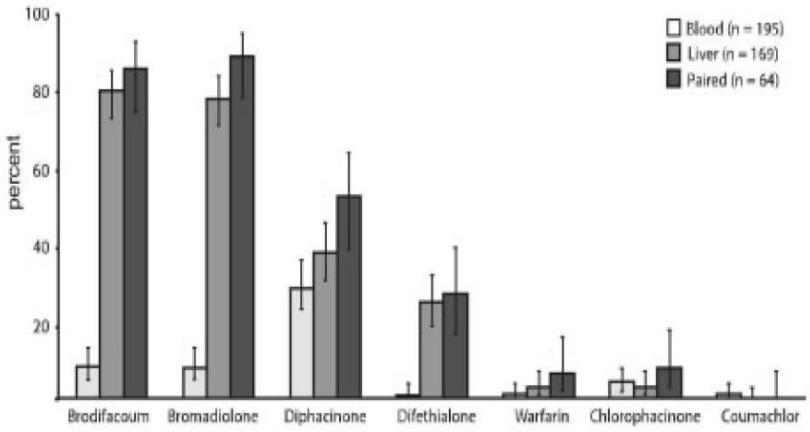
the Department contracted with WildCare, a non-profit wildlife rehabilitation organization, to assess rodenticide exposure rates in non-target species. AR03143. In tests of liver samples from mammal carcasses, diphacinone was frequently detected at levels similar to or higher than two of the four second-generation anticoagulants. *See* AR03150; *see also* SAR4408-4466 (sampling of lab studies showing significant levels of diphacinone contamination detected in livers of deceased wildlife species).

In its own analysis of wildlife necropsies ("loss reports") from the California Department of Fish and Wildlife for the period of 2014 to 2018, the Department likewise found that diphacinone was the most commonly detected first-generation rodenticide in liver samples, by a wide margin. AR03518. For example, in 2014, 50 percent of tested animals had detectable levels of diphacinone, whereas less than six percent of necropsied specimens had detectable levels of the other two first-generation compounds, chlorophacinone and warfarin. *Id.* Equally troubling, rates of wildlife exposure to diphacinone paralleled or surpassed the exposure rates for two of the four second-generation rodenticides that the Department placed in reevaluation. *Id.*

These findings are consistent with other recent studies. For instance, a 16-year study (from 1997 to 2012) of southern California

bobcats ("Urban Bobcat Study") tested 206 blood samples and 172 liver samples for exposure to anticoagulant rodenticides. AR03213-31. The study detected anticoagulant exposure in 89 percent of the liver samples and 39 percent of the blood samples. AR03213. In liver samples, "[t]he compounds most frequently detected were second-generation bromacliolone, brodifacoum, and difethialone, and first-generation diphacinone," with diphacinone being the third most commonly detected anticoagulent. AR03220. And in the blood samples, diphacinone was far and away the most commonly detected of any compound and "was detected more than three times as frequently as brodifaoum or bromadiolone." AR03221 and Figure 4. For the 64 "paired" samples – where blood and liver samples were simultaneously tested – 92 percent showed anticoagulant exposure, "most frequently to three or more compounds." *Id.* Given its much higher frequency of detection in blood samples, diphacinone was almost certainly one of the compounds detected in these paired samples.

Fig. 4 Detection prevalence of each anticoagulant compound in the liver, blood, and for a subset of individuals, paired blood and liver tissue results are provided



The Urban Bobcat Study was groundbreaking in its collection and testing of blood samples from live animals. *See* AR03232. The results indicate that diphacinone exposure in non-target wildlife may be underestimated and underappreciated by studies testing only liver samples from dead animals. AR03226. Because diphacinone is metabolized more quickly and is less persistent in the liver, reliance on post-mortem liver tissue studies alone "may lead to a bias towards detection of those compounds with the longest persistence in hepatic tissue and at lethal dosages, and an underestimation of the number of animals that are exposed to" anticoagulants. AR 3214. By measuring a high prevalence of diphacinone in the blood of living animals, the Urban Bobcat Study provided important new scientific information on the potential for chronic sublethal exposure to this pesticide – the only

one of the studied anticoagulants that showed an increased frequency of exposure over the study period. AR03226.[6]

Such underestimated chronic exposure is critical to understanding diphacinone's effects on non-target wildlife, especially mammal species. There are few reported cases of direct bobcat mortality from pesticide exposure, perhaps because cats can tolerate low-grade anticoagulant exposure. AR03228. But such tolerance may actually increase vulnerability to mange or vehicle collisions – the primary sources of mortality in the study area. *Id.*; *see also* Footnote 2, *supra*. Indeed, the Urban Bobcat Study found a "strong significant association" between mange – a disease that results from a weakened immune system – and total residues of anticoagulants. AR03225. "These correlative findings suggest that chronic, sublethal exposure to [anticoagulant rodenticides] may influence immune function in bobcats, increasing their susceptibility to mange infestation and decreasing anti-mite immune response." AR03214.

Subsequent bobcat studies substantiate concerns about the cumulative effects of chronic, sublethal exposure to diphacinone. The

[6] The researchers hypothesize that "increased diphacinone exposure may be the result of increased use of the compound in residential areas by homeowners and pest control companies that are not required to report amounts of [anticoagulant rodenticide] applied annually." AR03226.

2017 study "Urbanization and Anticoagulant Poisons Promote Immune Dysfunction in Bobcats" ("Urbanization Study") examined 98 blood samples from southern California bobcats and found 38 of these samples positive for exposure to anticoagulant rodenticides. AR03442. Of these, 32 samples – or nearly 85 percent – detected *only diphacinone*. *Id.* The study found a correlation between exposure and inflammatory response/immune suppression that can influence susceptibility to opportunistic infections like mange. AR03439. The researchers posited that "cumulatively, these health parameter changes may increase bobcat vulnerability to environmental stressors" such as mange. AR03445. Noting that "[t]oxicant exposure can indirectly have fatal impacts, even if it is not a source of direct mortality," the study authors concluded: "Our analyses suggest that sublethal toxicant exposure may indirectly cause mortality by severely weakening the immune system in a free-ranging carnivore." AR03446.

A third study of this same bobcat population, "Genome-wide expression reveals multiple systemic effects associated with detection of anticoagulant poisons in bobcats" ("Genome Study"), was designed to follow up on the anomalous emergence of mange as a "primary source" of bobcat mortality in southern California, resulting in a "genetic bottleneck" in this population. AR03471. Carcass testing

suggested that anticoagulant rodenticides were "the only consistent underlying complication in bobcats that succumbed to death from mange infection," but the underlying mechanism for this link was not known. *Id.* To address this uncertainty, the Genome Study sought to examine genetic responses to anticoagulant exposure in this wildlife population. AR03472.

Using the same bobcat blood samples with a high prevalence of diphacinone, this study found "downregulation of several genes involved in the allergic immune response," as well as "an increase in gene expression by B- and T-lymphocytes" in anticoagulant-positive bobcats. AR03480. These results suggest that "the basic immune machinery . . . necessary to protect against severe mange infestation is compromised by [anticoagulant rodenticides]." AR0382. The authors hypothesized that "the cumulative effects of these cellular responses to [anticoagulant rodenticide] exposure increases the susceptibility of individuals to opportunistic parasitism of the skin and inhibits wound healing, allowing for mange lesions to expand and leading to death." *Id.*

These three quite recent animal studies (2015, 2017, and 2018) "provide an unprecedented understanding of the sublethal effects of [anticoagulant rodenticide] exposure on a wild carnivore," AR03469, and collectively suggest that "it is likely that sublethal [anticoagulant

rodenticide] exposure in natural populations disrupts important biological pathways necessary for survival from injury and pathogens." AR03471. Because these studies are based on the same blood samples, in which diphacinone was the most prevalent anticoagulant detected, they indicate that diphacinone is likely a central driving factor in the documented harm.

These results are especially concerning given diphacione's increasing popularity and use. Even before California designated second-generation rodenticides as California Restricted Materials and limited their use to certified applicators in 2014, diphacinone was by far the most widely sold anticoagulant. *See* AR03147 (explaining that during the period from 2005 to 2015, "more pounds of diphacinone . . . were sold than any other" anticoagulant rodenticide). Since then, state diphacinone sales have roughly doubled. *See* AR03544, at Figure 10. And with the imposition of additional legislative limitations under A.B. 1788, there is no reason to believe that the use of diphacinone as the alternative anticoagulant of choice, especially by non-professionals, will abate any time soon.[7]

[7] In 2013, the Department found that all four second-generation rodenticides presented "unmitigated risks . . . to non-target wildlife" and subsequently designated them as California restricted materials, which limits who can sell and purchase these pesticides. AR03514. Following the Department's decision to reevaulate these four

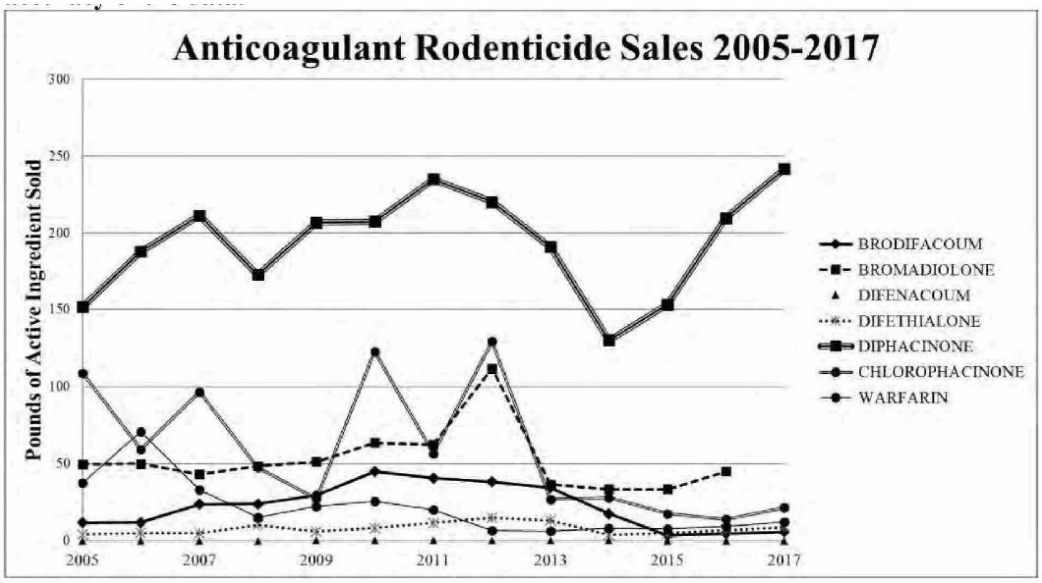


Figure 10 – A summary of AR sales data from 2005-2017.

Procedural Background

To date, California has registered seven anticoagulant rodenticides – four second-generation and three first-generation compounds, including diphacinone. In November 2017, the Department issued its standard annual notice proposing to renew each of these rodenticides for 2018 pursuant to FAC § 12817, stating that the pesticides "will not cause either a direct or a reasonably foreseeable indirect physical change in the environment that constitutes a significant adverse environmental effect." AR03166. In response to this notice, Raptors timely submitted comments and scientific studies demonstrating the significant adverse impacts of both

compounds in response to this lawsuit, the Legislature imposed additional limitations. *See* FAC § 12978.7.

first-generation and second-generation anticoagulants, particularly to non-target wildlife such as mountain lions, owls, and bobcats. AR03170. On December 31, 2017, the Department nevertheless renewed the pesticide registrations, without acknowledging Raptors' comments and scientific studies and without conducting any CEQA review.

In March 2018, Raptors inquired about reevaluation based on the studies it had submitted in December, AR03500, and the Department notified Raptors that it was "proceeding with the renewal of [the seven rodenticides] and will not be placing them into reevaluation at this time." AR03505. Once again, the Department failed to respond to Raptors' comments or scientific studies and failed to conduct any CEQA review. In April 2018, the Department published its "Final Decision Regarding Renewal of Registration of Pesticide Products for 2018," which reiterated its decision not to reevaluate the seven rodenticides. AA110-112. On May 16, 2018, the Department posted with the Secretary of Resources its determination to renew these rodenticides without revaluation, AA114, thereby triggering the 30-day of statute of limitations under the Department's CEQA certified regulatory program. *See* PRC § 21080.5(g)

In response, Raptors filed its Verified Petition for Writ of Mandate on June 13, 2018, asserting that the Department's Final Decision violated CEQA and the Department's own regulations. AA009-022. In November 2018, while this litigation was ongoing, the Department changed course. It notified Raptors' counsel that it would reevaluate the second-generation, but not the first-generation, anticoagulants, AR03549-03551, and provided the investigation report required by its regulations, 3 C.C.R. § 6254. AR03552-3586. Relying on the 2004 EPA study discussed above, the Department indicated that it would not reevaluate first-generation rodenticides because (1) "the rate of [first-generation rodenticides] exposure among non-target wildlife is generally decreasing and is lower than for [second-generation rodenticides]" and (2) "the chemical characteristics of [first-generation rodenticides] (toxicity, persistence, and bioaccumulation) are such that any exposure would be less significant than exposure to second-generation rodenticides." AR03549. The Department simultaneously published its Notice of Proposed Decision to reevaluate second-generation, but not first-generation, anticoagulant rodenticides. AR03587-89.

The Department subsequently filed a demurrer, arguing that Raptors' CEQA claim failed to state a cause of action and that the

regulatory claim was rendered moot by the new Notice of Proposed Decision. *See* AA047-064. In May 2019, the trial court granted the Department's demurrer with leave to amend, concluding that the Department's decision to renew the registration for first-generation anticoagulants was exempt from CEQA pursuant to *Californians for Alternatives to Toxics v. Calif. Dept. of Pesticide Regulation* ("*CATS*"), 136 Cal. App. 4th 1049, 1066 (2006) (holding that "the reevaluation process [of pesticides] can be orderly only if the Department has the flexibility to evaluate the evidence without an arbitrary, abbreviated time limit"). *See* AA141-148.

Raptors subsequently filed an amended Petition of Writ of Mandate that narrowed its claims to only diphacinone, the most dangerous of the first-generation anticoagulants. AA161-164. The amended Writ Petition alleged that (1) the Department's decision on April 18, 2018 to renew the registration of diphacinone without reevaluation violated CEQA and (2) the Department's subsequent decision on November 16, 2018 not to reevaluate diphacinone violated CEQA and the Department's regulations. AA167-170. In light of the trial court's prior determination that it could not review the Department's decision to renew rodenticide registrations without reevaluation on the basis of *CATS*, however, Raptors agreed to dismiss

its first cause of action but preserved its right to appeal that ruling. *See* AA198.

On June 25, 2019, the Department moved to strike all references to CEQA obligations in the second cause of action, arguing that the Department's certified regulatory program exempted its decision not to reevaluate diphacinone from CEQA. AA176-192. The trial court denied this motion, noting *PANNA*'s holding that certified registration programs nevertheless remain subject to "the broad policy, goals and substantive standards of CEQA not affected by the limited exemption set forth in section 21080.5, subdivision (c)." AA229-232. After a trial on the merits, the lower court denied Raptor's request for writ of mandate on the second cause of action. AA422-426. Here, Raptors appeals only the trial court's holding with respect to the second cause of action.[8]

STANDARD OF REVIEW ON APPEAL

On the question of whether the Department complied with CEQA when it decided in November 2018 not to reevaluate diphacinone, "the appellate court's 'task . . . is the same as that of the trial court: that is, to review the agency's actions to determine whether the agency complied

[8] Although Raptors has preserved its right to appeal the first cause of action, it has elected not to proceed on that claim.

with procedures required by law.'" *Gentry v. City of Murrieta*, 36 Cal.App.4th 1359, 1375 (1995) (quoting *Al Larson Boat Shop, Inc. v. Board of Harbor Commissioners*, 18 Cal.App.4th 729, 738 (1993)). The appellate court reviews both the agency action and the administrative record de novo and is not bound by the trial court's conclusions. *See PANNA*, 6 Cal. App. 5th at 237; *Los Angeles Unified Sch. Dist. v. City of Los Angeles*, 58 Cal. App. 4th 1019, 1023 (1997).

As discussed in the first argument below, the trial court made a critical threshold error in applying an incorrect standard of review to Raptors' CEQA claim. That claim raised procedural violations relating to the Department's failure to evaluate cumulative impacts and various other informational disclosure deficiencies, all of which constitute failures to proceed according to law under CEQA. Courts review such deficiencies de novo. *Sierra Club v. County of Fresno*, 6 Cal. 5th 502, 512 (2018). The trial court, however, erroneously applied a substantial evidence standard to these informational deficiencies, deferring to the Department rather than applying CEQA's procedural requirements. [9]

[9] The substantial evidence standard applies to a narrow subset of CEQA claims – those challenging the evidentiary support for an agency's factual findings. *Id*. But even if the Investigation Report's informational defects are reviewed through a substantial evidence lens, they do not survive judicial scrutiny. *See* Argument VII, *infra*.

On this appeal, the Court should apply the correct standard applicable to legal violations of CEQA.

SUMMARY OF ARGUMENT

This appeal raises a simple question: Did the Department violate CEQA in connection with its November 16, 2018 decision not to reevaluate diphacinone? As this Court explained in *PANNA* – and as the trial agreed in denying the Department's motion to strike Raptors' CEQA allegations – CEQA's broad policy goals and substantive requirements to thoroughly evaluate specific environmental effects apply to the Department's certified regulatory program, including the decision at issue here not to reevaluate a pesticide in response to the submission of new information. *See PANNA*, 16 Cal. App. 5th at 243.

In particular, the public reports and decision documents prepared in connection with registration, renewal, and reevaluation of a pesticide pursuant to the Department's implementing regulations, *see* 3 C.C.R. § 6254, must satisfy CEQA's goals and substantive requirements. *PANNA*, 16 Cal. App. 5th at 243. The documents at issue here are (1) the November 16, 2018 document entitled "An Investigation of Anticoagulant Data Submitted to the Department of Pesticide Regulation" ("Investigation Report"), *see* AR03514-48; (2) the accompanying letter of the same date from the Department to Michael

Graf ("Graf Letter"), *see* AR03549-51; and (3) the "Notice of Proposed Decision to Begin Reevaluation of Second-Generation Anticoagulant Rodenticides and Public Report" ("Decision Notice"), *see* AR03587-89.[10]

The Investigation Report sets forth the Department's basis for declining to reevaluate diphacinone in response to recent studies submitted by Raptors. It states:

> The data currently on file with DPR provide no basis for placing FGARs into reevaluation. First, the physicochemical properties of the FGARs are less toxic (Table 1), less persistent (Table 2), and less bioaccumulative (Table 3) than the SGARs, demonstrating that the inherent risk of the FGARs is lower. Second, the exposure rates among non-target animals are lower for FGARs than for SGARs (Figures 1, 3, 6, 7, and 8). For example, U.S. EPA (2004) observed that owls that were fed rats exposed to FGARs showed no mortalities and no observed sublethal effects. Finally, there is a general downward trend in FGAR exposure rates (Figure 3). As a result, DPR finds that current uses of FGARs are unlikely to have a significant adverse impact to non-target wildlife.

AR03545. Virtually every part of this explanation violated CEQA's basic information disclosure requirements.

First, the Department lumped all first-generation anticoagulants into one category and all second-generation anticoagulants into a second category and then based its decision on a comparison of the

[10] The Graf Letter and Decision Notice do not meaningfully include any additional analysis, but merely reflect the analysis contained in the Investigation Report.

relative risk posed by the two categories. AR03545. Such a comparative approach is insufficient to satisfy CEQA's substantive requirement to meaningfully evaluate diphacinone's cumulative impacts and has, for that reason, been roundly rejected by the courts.

Second, by grouping diphacinone into the generic category of first-generation anticoagulants and then dismissing that category as insignificant, the Department obscured the unique risks posed by diphacinone and thus failed to adequately inform the public of its potentially significant chronic effects on non-target wildlife. In particular, the science shows that diphacinone poses a high level of toxicity to mammals, that it is frequently found alongside other anticoagulants in wildlife liver samples, that its use is increasing in California, and that its prevalence in bobcat blood samples it is a leading cause of immune effects leading to debilitation and death in southern California bobcats. Despite these scientific facts, the Investigation Report chose to discuss the second-generation compound brodifacoum in comparison to the first-generation compound warfarin. AR03515. In EPA's 2004 comparative risk meta-analysis, brodifacoum was found to be the most environmentally harmful second-generation anticoagulant, while warfarin was deemed to be the least harmful of the first-generation anticoagulants. *See* AR00101-02. By cherry-

picking examples from aggregated categories, the Investigation Report obscured the effects of individual compounds – specifically, diphacinone – and deprived the public of critical information to which it is entitled under CEQA.

Third, the Department's reliance on an old owl study to support the conclusion that first-generation anticoagulants "showed no mortalities and no observed sublethal effects," AR03544, is factually inaccurate, extremely misleading, and utterly unresponsive to the recent, highly relevant mammal studies submitted by Raptors. As the Fish and Wildlife Service concluded decades ago, diphacinone's greatest threat is to mammals, not birds. AR00126-27 and Table 50. By focusing exclusively on bird mortality rather than the sublethal effects that can lead to death in bobcats, mountain lions, and other mammalian wildlife species, the Investigation Report failed to adequately disclose the adverse environmental effects of diphacinone.

Finally, the Department's conclusion that "there is a general downward trend in FGAR exposure rates (Figure 3)," AR03545, suffers from the same errors of commission and omission. Here again, aggregating all first-generation anticoagulants into a single line on a graph masked the fact that diphacinone is by far more prevalent in the livers of selected necropsied specimens than other first-generation

compounds. Even worse, the Department's statement about exposure rates entirely ignored recent data from systematic studies of diphacinone levels in blood samples taken from southern California bobcats, which showed that diphacinone is three times more prevalent than any other anticoagulant., including any of the second-generation compounds. The Department's conclusion also disregarded its own data showing that diphacinone use has continued to increase since the agency restricted application of second-generation anticoagulants to certified professionals, suggesting that homeowners and other non-professionals are turning with increased frequency to this compound as an alternative.

CEQA is primarily a procedural law designed to "adequately apprise all interested parties" of a project's true scope and to ensure the "intelligent weighing of the environmental consequences," without which "informed decisionmaking cannot occur." *Communities for a Better Env't v. City of Richmond*, 184 Cal. App. 4th 70, 82-83 (2010) (citing *RiverWatch v. Olivenhain Municipal Water Dist.*, 170 Cal.App.4th 1186, 1201 (2009) and several other cases). Failure to include relevant information or analysis "precludes informed decision-making and informed public participation, thereby thwarting [CEQA's] statutory goals." *Neighbors for Smart Rail v. Exposition Metro Line*

Construction Authority, 57 Cal. 4th 439, 463 ((2013). "[B]asic CEQA principles dictate there must be a reasonable effort" to put an agency's conclusions about project impacts into "a meaningful context," and the failure to do so constitutes a prejudicial abuse of discretion. *Sierra Club v. County of Fresno*, 6 Cal. 5th at 522. Here, the Department's inadequate – indeed, sometimes misleading – discussion of diphacinone's impacts on wildlife such as bobcats and mountain lions simply does not satisfy CEQA's informational disclosure requirements.

ARGUMENT

I. The Trial Court Committed Legal Error by Applying an Incorrect Standard of Judicial Review to Raptors' CEQA Claim.

As a threshold matter, the trial court erred by applying a "substantial evidence" standard when it reviewed Raptors' CEQA arguments rather than a de novo standard. In evaluating whether an agency complied with CEQA, the court reviews the agency's actions for prejudicial abuse of discretion. PRC § 21168.5. An agency prejudicially abuses its discretion where (1) it "has not proceeded in a manner required by law" or (2) its "determination or decision is not supported by substantial evidence." *Id.* "Judicial review of these two types of error differs significantly." *County of Fresno*, 6 Cal. 5th at 512. Courts determine de novo whether an agency has employed the correct

procedures, 'scrupulously enforc[ing] all legislatively mandated CEQA requirements,"' while they "accord greater deference to the agency's substantive factual conclusions." *Id.* (quoting *Citizens of Goleta Valley v. Board of Supervisors*, 52 Cal.3d 553, 564 (1990)); *see also Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho* Cordova 40 Cal. 4th 412, 435 (2007).

In *County of Fresno*, the Supreme Court confirmed and clarified its earlier ruling in *Laurel Heights* and numerous other decisions that noncompliance with the substantive or informational disclosure requirements of CEQA constitutes a prejudicial abuse of discretion subject to "independent review" and does *not* raise a question of substantial evidence. 6 Cal. 5th at 513-17. Only ultimate factual determinations and methodological decisions warrant any deference under a substantial evidence standard. *Id.* at 516. Even then, however, the agency must show the analytic route that it traveled from evidence to action – and the failure to disclose that route is a procedural CEQA violation subject to de novo review. *Id.* at 13 (quoting *Laurel Heights*); *see also Association of Irritated Residents v. County of Madera* 107 Cal.App.4th 1383, 1392 (2003) ("[T]he existence of substantial evidence supporting the agency's ultimate decision on a disputed issue is not relevant when one is assessing a violation of the information

disclosure provisions of CEQA."); *Santiago County Water Dist. v. County of Orange* (1981) 118 Cal.App.3d 818, 829 ("[T]he ultimate decision of whether to approve a project, be that decision right or wrong, is a nullity if based upon an EIR that does not provide the decision-makers, and the public, with the information about the project that is required by CEQA.").

Here, the trial court confused the de novo standard of independent review for evaluating CEQA compliance as a matter of law with the quite different substantial evidence standard of review for factual determinations, perhaps because the Department continued to argue at trial (incorrectly) that CEQA does not apply to the pesticide reevaulation process. After erroneously stating that Raptors argued for a "substantial evidence" standard while the Department argued for "the more deferential standard" of "arbitrary, capricious, or entirely lacking in evidentiary support," the trial court held that it need not decide this issue because Raptors' claim for relief "fails even under the less stringent 'substantial evidence' standard." AA423. The court then went on to apply substantial evidence review to all of Raptors' CEQA informational inadequacy arguments.

The trial court's approach led it to address the wrong legal question. Rather than evaluating whether the Investigation Report was

informationally defective, as Raptors argued, the court held that the Department's conclusion that second-generation anticoagulants are more toxic, persistent, and bioaccumulative than first-generation compounds was sufficiently supported by evidence in the record. AA424-26. But a comparison first-generation versus second-generation effects was *not* at issue on Raptors' CEQA claim. Rather, Raptors asserted that the Department did not proceed in the manner required by law when it (1) failed to conduct an adequate cumulative effects analysis regarding the effects of diphacinone contamination in combination with other anticoagulants; and (2) otherwise failed to satisfy CEQA's most basic informational disclosure requirements regarding diphacinone's impacts. Such informational deficiencies constitute procedural violations, subject to de novo – not substantial evidence – review. The trial court's application of an erroneous standard of review tainted its entire ruling and warrants reversal on that ground alone. *See County of Fresno*, 6 Cal. 5th at 515 ("Our Courts of Appeal have consistently recognized that adequacy of discussion claims are not typically amenable to substantial evidence review.")

II. The Department's Comparative Analysis of Anticoagulant Types Does Not Satisfy CEQA's Cumulative Impacts Requirement.

The Department's decision not to reevaluate diphacinone improperly relied on a comparative analysis between generic categories of anticoagulants. The Investigation Report did not evaluate individual anticoagulants, but instead categorized them as either first- or second-generation compounds and discussed these two generic categories in terms of acute toxicity, persistence in the liver, and fat solubility (an indicator of bioaccumulation), using second-generation brodifacoum and first-generation warfarin as the comparative examples. AR03515-16. Drawing on this assessment, the Department concluded that second-generation anticoagulants "are all more toxic, more persistent, and more bioaccumulative" when "[c]ompared to" first-generation anticoagulants. AR03545. Accordingly, the Department "decided not to reevaluate" first-generation anticoagulants because their "chemical characteristics . . . (toxicity, persistence, and bioaccumulation) are such that any exposure would be less significant than exposure to" second-generation anticoagulants." AR03549. In other words, the Department concluded that it need not reevaluate diphacinone – or any other first-generation anticoagulant – based on

its observation that second-generation anticoagulants generally are more acutely toxic and longer lasting in the liver.

Such a comparative analysis does not satisfy CEQA's basic requirements. The statute requires that agencies evaluate and disclose the direct, indirect, and cumulative effects of a "project" – here, the decision to renew the registration of diphacinone without reevaluation.[11] CEQA Guidelines § 15064. In evaluating the impacts of such decisions, the Department must consider not only the direct and indirect impacts on non-target wildlife from the pesticide at issue, but also that compound's incremental effect when considered cumulatively with the effects of all anticoagulants over time. *Id.* § 15355 (defining cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts"). Moreover, the mere identification of an impact is insufficient; the "discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence." *Id.* § 15130(b); *see also County of Fresno*, 6 Cal. 5th at 525 ("CEQA

[11] A "project" triggering CEQA is any activity that may cause a change in the environment and which, among other things, involves the issuance of a lease, permit, license, certification, or other entitlement for use by a public agency. PRC § 21065. Under the plain text of the statute, there is no question that the Department's registration, renewal, and reevaluation of a pesticide are activities triggering CEQA.

requires that the EIR have made a reasonable effort to discuss relevant specifics regarding the connection between two segments of information already contained in the EIR, the general health effects associated with a particular pollutant and the estimated amount of that pollutant the project will likely produce. This discussion will allow the public to make an informed decision, as CEQA requires.").

Here, rather than evaluate and disclose the potential cumulative effects of continued diphacinone use on non-target wildlife in response to new information from the Urban Bobcat Study, the Urbanization Study, and the Genome Study, the Investigation Report discussed the relative risks of first-generation anticoagulants as a category versus the risks of second-generation anticoagulants as a category. As the courts have repeatedly explained, the relevant issue for purposes of an adequate CEQA cumulative impacts analysis "is not the relative amount of impact resulting from a proposed project when compared to existing environmental problems caused by [other] projects, but rather *whether the additional impacts associated with the project* should be considered significant in light of the serious nature of the existing problem." *City of Long Beach v. Los Angeles Unified Sch. Dist.*, 176 Cal. App. 4th 889, 906 (2009); *see also Los Angeles Unified Sch. Dist. v. City of Los Angeles*, 58 Cal. App. 4th 1019, 1025-26 (1997) (same); *San Francisco Baykeeper,*

Inc. v. State Lands Comm'n, 242 Cal. App. 4th 202, 223 (2015) (explaining that "a project's cumulative environmental impacts cannot be deemed insignificant solely because its individual contribution to an existing environmental problem is relatively small").

Indeed, the courts first rejected this comparative approach – or "ratio" theory – decades ago, finding that it would allow agencies to "trivialize" the impacts of a particular activity and avoid meaningful review. *Kings County*, 221 Cal. App. 3d at 718. As the *Kings County* court explained, a comparative approach "avoids analyzing the severity of the problem and allows the approval of projects which, when taken in isolation, appear insignificant, but when viewed together, appear startling." *Id.* at 721.

The court's concern about trivialization of incremental cumulative effects in *Kings County* is precisely the error that the Department made in its Investigation Report assessment. Raptors submitted three highly relevant, recent studies suggesting that diphacinone (along with two second-generation anticoagulants) may be having significant adverse cumulative effects on non-target wildlife species and that these effects may be contributing to both mortality and a genetic bottleneck for a local bobcat population. Yet the Investigation Report used a comparative approach to effectively ignore

and dismiss diphacinone as part of the problem, even though diphacinone was by far the most commonly detected anticoagulant rodenticide in bobcat blood samples. *See* AR03221 and Figure 4 ("Diphacinone, the most commonly detected compound in blood, was detected more than three times as frequently as . . . brodifacoum or bromadiolone."); AR03232 (in the 39 percent of blood samples from live animals testing positive for anticoagulants, diphacinone was the most frequently detected and was found in 77 percent of those samples) AR03442 (diphacinone was the sole anticoagulant detected in 32 of the 38 positive blood samples tested in the Urbanization Study).

This categorical comparative approach also allowed the Department to effectively bury the implications of the Urbanization Study and the Genome Study with respect to diphacinone. Those studies showed secondary effects from chronic, low-grade (not immediately lethal) exposure to diphacinone-contaminated blood samples on the immune system of non-target wildlife. The authors of those studies posit that such chronic exposure is a cause of disease and death in the southern California bobcat population. *See e.g.,* AR 3446 ("Our analyses suggest that sublethal toxicant exposure may indirectly cause mortality by severely weakening the immune system in a free-ranging carnivore, and thus mitigation of the effects of mange will

require reduction of ARs at the urban–wildlands interface."); AR 3482 ("AR-positive bobcats exhibit a substantial reduction in the expression of genes involved in allergic immune response," suggesting that the basic immune machinery . . . necessary to protect against severe mange infestation is compromised"). Yet the Department's approach effectively assumed – without any scientific support – that anticoagulants other than diphacinone where driving these results.

That assumption is not only unfounded, but also runs counter to CEQA's requirements. Diphacinone was one of the anticoagulants consistently detected in bobcat blood and liver samples in these studies and has been consistently detected alongside some second-generation anticoagulants in post-mortem liver samples of other wildlife. *See, e.g.* Factual Background, *supra*, at fn.2 and Argument III, *infra*, at fn.11. Given these undisputed facts, the Department had a legal duty under CEQA to independently consider and evaluate the cumulative effects of diphacinone in combination with other detected anticoagulants. As *Kings County* makes clear, the fact that scientific studies cannot identify a compound's precise contribution to the overall cumulative effect is not a reason to ignore that compound, especially when, as the science here shows, it is highly prevalent in diseased animals. Yet the trial court condoned precisely that improper

approach, finding that the Department did not abuse its discretion because the 2017 Urbanization Study "does not conclude that *diphacinone alone* causes or exacerbates sublethal immune effects." AA425 (emphasis added).[12]

As this Court correctly recognized in *PANNA*, the Department must include a cumulative impacts analysis for its registration, renewal, and reevaluation of pesticides and the failure to do so constitutes a prejudicial abuse of discretion. 16 Cal. App. 5th at 248. Moreover, '"the cumulative impacts analysis must be substantively meaningful."' *Id.* at 250 (quoting *Joy Road Area Forest & Watershed Assn. v. California Dept. of Forestry & Fire Protection*, 142 Cal. App. 4th 656, 676 (2006)). "A cumulative impacts analysis which understates information concerning the severity and significance of cumulative impacts impedes meaningful public discussion and skews the decisionmaker's perspective concerning the environmental

[12] The trial court's reasoning here is a logical extension of another aspect of the Department's improper approach, which attempted to compare the relative contributions of each anticoagulant to the overall adverse cumulative effect in order to avoid addressing such cumulative contributions. *See, e.g., Bakersfield Citizens for Local Control v. City of Bakersfield*, 124 Cal. App. 4th 1184, 1219 (2004) ("The magnitude of the current air quality problems in the San Joaquin Valley cannot be used to trivialize the cumulative contributions of the shopping centers.")

consequences of the project, the necessity for mitigation measures, and the appropriateness of project approval." *Id.*

Here, as in *PANNA*, the Department failed to undertake even a minimal cumulative impacts analysis, despite ample scientific evidence that chronic exposure to diphacinone is likely to be a significant contributor to, and contributing cause of, wildlife disease and death. Here, as in *PANNA*, the Court should find that "[t]he Department did not proceed as required by law and abused its discretion when it [declined to reevaluate diphacinone] without considering the cumulative effects of its decision." *Id.* at 251.

III. The Discussion of First-Generation Anticoagulants as a Generic Category Ignored the Unique Risks Posed by Diphacinone.

At an even more basic level, the Investigation Report failed as a CEQA informational document by refusing to disclose or discuss the available scientific information concerning diphacinone in a manner that provides for the "intelligent weighing of the environmental consequences." *Communities for a Better Env't*, 184 Cal. App. 4th at 82. Studies over the last three decades suggest not only that diphacinone is more harmful to wildlife than other first-generation anticoagulants, but also that it is used in significantly greater amounts and is detectable at significantly higher rates in non-target wildlife than other first-

generation compounds. Yet the Investigation Report did not consider or discuss these facts; instead, it lumped diphacinone with other less harmful or less prevalent first-generation compounds and then summarily dismissed their significance as a group. That approach effectively masked the unique risks posed by diphacinone and misled the public.

For instance, the narrative discussion in the Investigation Report compared the LD_{50} (the amount of a substance that is lethal to 50 percent of the test sample) for the least toxic first-generation (warfarin) with the LD_{50} for the most toxic second-generation (brodifacoum). AR03514. What such a discussion successfully concealed is that the LD_{50} for diphacinone is an order of magnitude lower (*i.e.*, more toxic) than the LD_{50} for warfarin and is, in fact, lower than the LD_{50} for *all second-generation anticoagulants except brodifacoum*. *See* AR03516 at Table 1. The Department's comparative "evaluation" of warfarin and brodifacoum seems consciously intended to mislead, given that the Department already knew from EPA's 2004 meta-analysis that warfarin is the least harmful anticoagulant and brodifacoum is the most dangerous. *See* AR00101

The Investigation Report's discussion of exposure rates is similarly uninformative and misleading. For example, the Department

performed an "independent analysis" of anticoagulant exposure data from mountain lion loss reports provided by the California Department of Fish and Wildlife, conceding generally that "exposure rates found in these mountain lions is high." AR03521. Diphacinone was the *third most prevalent* anticoagulant detected in these mountain lion necropsies. AR03522 at Table 5. Indeed, diphacinone was detected in 59 percent of all animals tested and was significantly more prevalent than the second-generation compounds difenacoum (0 percent) and difethialone (25 percent) – both of which were placed into reevaluation – and nearly on par with second-generation compound bromodiolone (72 percent). *Id.* Despite these facts, the Department simply failed to analyze or address diphacinone in any way.

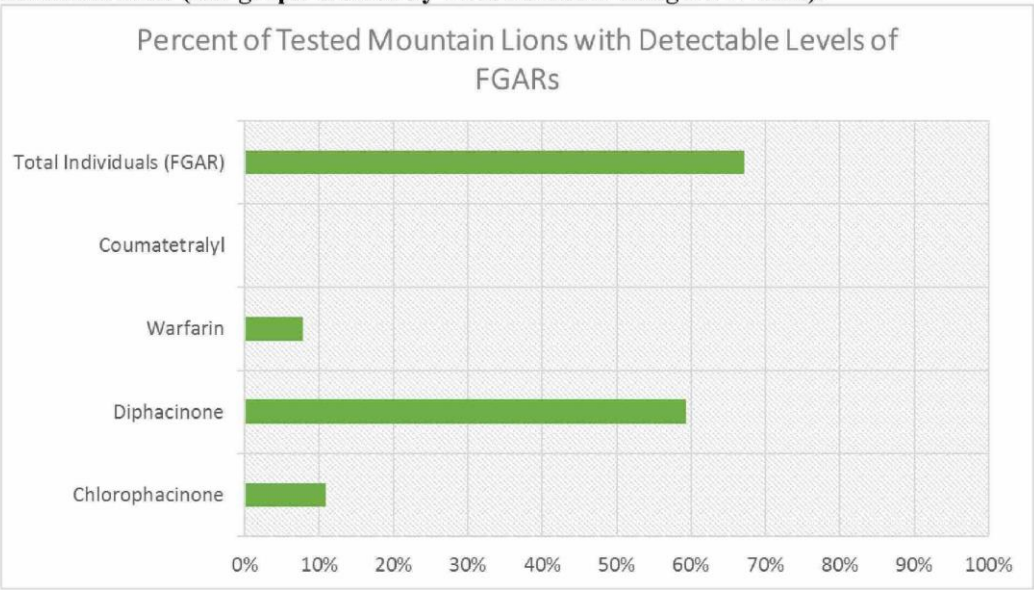
Table 5 – DPR's independent analysis of the DFW Mountain Lion Database (excluding four animals without a date of death).

Parameter	2015-2016
Total Number of Animals Reported	64
Percent of Reported Animals with Detectable Levels of ARs	92%
Maximum Number of ARs Detected	6
Minimum Number of ARs Detected	0
Mean Number of ARs Detected	2.7
Percent of Reported Animals Exposed to Detected FGARs	67%
Percent of Reported Animals Exposed to Chlorophacinone	11%
Percent of Reported Animals Exposed to Diphacinone	59%
Percent of Reported Animals Exposed to Warfarin	8%
Percent of Reported Animals Exposed to Coumatetralyl	0%
Percent of Reported Animals Exposed to Detected SGARs	92%
Percent of Reported Animals Exposed to Brodifacoum	91%
Percent of Reported Animals Exposed to Bromodiolone	72%
Percent of Reported Animals Exposed to Difenacoum	0%
Percent of Reported Animals Exposed to Difethialone	25%
Notes:	
This table includes all data provided to DPR by DFW from 2014 to 2018.	
AR: Anticoagulant Rodenticide	
FGAR: First Generation Anticoagulant Rodenticide	
SGAR: Second Generation Anticoagulant Rodenticide	

Instead, the Investigation Report focused singularly on brodifaoum, a second-generation anticoagulant whose use, the Department suggested, may be declining due to the 2014 restrictions and thus of less concern. AR03521. The same is not true for diphacinone, an unrestricted alternative compound whose use is increasing. By lumping diphacinone with other, much more rarely detected first-generation anticoagulants, the Department effectively masked diphacinone's role in wildlife exposure. AR03523 at Figure 7.[13]

[13] The mountain lion data showing diphacinone as a primary component of cumulative anticoagulant exposure in non-target wildlife is repeated in numerous lab studies showing that diphacinone is often among the highest – if not the highest – rodenticide detected in the liver tissue of deceased animals. *See e.g,,* SAR 4408-4411 (great horned owl with observed hemorrhaging found with only diphacinone detected); SAR 4412-4414 (death of great horned owl likely due to cumulative anticoagulant intoxication with greatest amount 0.31 ppm diphacinone); SAR 4415-4416 (coyote found with mange and emaciated has 1.3 ppm diphacinone, over 5 times the level of the two other second generation ARs detected); SAR 4419-4421 (coyote pup found unconscious and emaciated with mange has liver tissue with .70 ppm diphacinone); SAR 4422-4423 (mountain lion found in "poor health, emaciated" with 0.44 ppm diphacinone); SAR 4424-4425 (mountain lion cub with equal amounts of diphacinone and other second generation ARs); SAR 4426-4427 (mountain lion dies of "suspected rodenticide toxicity" with 230 ppb diphacinone the only measurable AR contaminant in liver); SAR 4428-4430 ('sickly' mountain lion shot with 320 ppb diphacinone in its liver tissue); SAR 4431-4435 ((juvenile black bear found dead with 280 ppb diphacinone as only AR in system); SAR 4436-4438 (grey fox found with five ARs in system, including 320 ppb diphacinone); SAR 4439-4440 (bobcat with severe mange died with 460 ppb diphacinone as only measurable contaminant); SAR 4441-4442 (bobcat dehydrated with mange has 130 ppb diphacinone as third highest in AR in its system); SAR 4451-

Figure 7 – First-generation anticoagulant rodenticide (FGAR) exposure rates among tested mountain lions (bar graph created by DPR scientists using DFW data).



Compounding these CEQA informational disclosure errors, the Investigation Report's more specific discussion of the Urban Bobcat Study likewise omitted any analysis of diphacinone. The Report dutifully recited the study's basic results – for instance, that diphacinone was detected in 40 percent of the liver samples and 30 percent of the blood samples tested and that diphacinone was among the most frequently detected compounds. AR03530. But consideration of these results was limited to a single paragraph that does not address diphacinone at all: The Investigation Report stated that the Urban Bobcat Study "does not provide any useful information as to the

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4453 ((coyote with "lungs diffusively reddened and foamy effusion in airways" has 120 ppb diphacinone in liver, more than twice the next greatest AR detected).

efficacy of DPR's regulations in terms of reducing SGAR exposure rates among non-target wildlife." AR03531. The Department dismissed the authors' suggestion for additional measures to address residential anticoagulant use with the flippant response that the Department has already done so through the 2014 restriction on second-generation anticoagulants. That response, of course, entirely ignored the presence of, and concerns about, first-generation diphacinone, which is *not* covered by the 2014 restrictions.

In short, the Investigation Report failed as a meaningful disclosure or discussion of the science indicating significant concerns about diphacinone's chronic secondary effects on non-target wildlife. That omission constitutes a failure to proceed according to CEQA and thus a prejudicial abuse of discretion.

IV. The Discussion of an Old Owl Study Rather than Current Bobcat Studies Misinformed the Interested Public and Undermined CEQA's Basic Information Disclosure Purposes.

In addition to clumping anticoagulants into two generic categories and conducting an inappropriate comparative analysis of those two categories that hid concerns about diphacinone, the Investigation Report committed another, separate CEQA error by ignoring the most relevant and current science. It stated: "U.S. EPA (2004) observed that owls that were fed rats exposed to FGARs

showed no mortalities and no observed sublethal effects." AR03545. In the Graf Letter, the Department elaborated that EPA's 2004 comparative risk assessment, "compared secondary toxicity risks of three FGARs and three SGARs to barn owls. Of significance, there were no mortalities and no observed sublethal effects in any of the owls that were fed rads exposed to FGARs . . . DPR's investigation did not identify significant adverse impacts which occurred or are likely to occur from the use of FGARs." AR03549. These statements are not only factually incorrect and misleading, they also badly miss the mark as a meaningful discussion of the recent science on potential secondary impacts *to big cats and other mammals*.

First, as to the factually incorrect part: The 1980 study on "Poisoning of Owls by Antiacoagulant Rodenticides" – referenced at page 44 of EPA's 2004 report among other bird studies (*see* AR0060 discussing "Mendenhall and Pank (1980)) – involved two different experiments, one using great-horned and saw-whet owls and the other using barn owls. *See* AA272. In the first experiment, where three great-horned owls and one saw-whet owl were fed diaphacinone-killed mice, "[a]ll 4 owls . . . displayed anticoagulant poisoning, and 3 died from massive hemorrhaging on days 7-14." *Id.* In the second experiment with barn owls, which did not show observable

hemorrhaging, the researchers concluded that the contrasting results could be attributable to interspecies differences in susceptibility or difference in prey species, although the different protocols used for the two experiments precluded their ability to draw conclusions. AA272-274. The Investigation Report's mischaracterization of these experiments to conclude that first-generation anticoagulants have no lethal or secondary impacts was thus false and violated CEQA's basic informational disclosure requirements.

Equally problematic is the Department's misleading use of these old studies to dismiss current science. The 1980 experiments did *not* assess the kind of sublethal effects identified in the recent bobcat studies; they studied acute lethality due to hemorrhaging in bird species. As discussed above, the Fish and Wildlife Service found that diphacinone poses an existential threat (jeopardizing survival) to many mammals, but *not* to birds. AR000126-27 and Table 50. Indeed, the Investigation Report itself acknowledged that the LD_{50} for birds exposed to diphacinone is 98.6 mg/kg, while the LD_{50} for mammals is 0.2 mg/kg. AR03516. Moreover, because cat species are known to be resistant to the hemorrhaging effects of anticoagulants, these species actually may be *more* vulnerable to "chronic sublethal exposure" because they can carry and tolerate sustained body burdens. AR03446.

Basing its decision not to reevaluate diphacinone on an inconclusive 40-year-old study of lethal effects on owls while ignoring the very recent studies strongly suggesting the existence of sublethal (but ultimately deadly) effects on bobcats and mountain lions does not meet CEQA's informational disclosure standards.

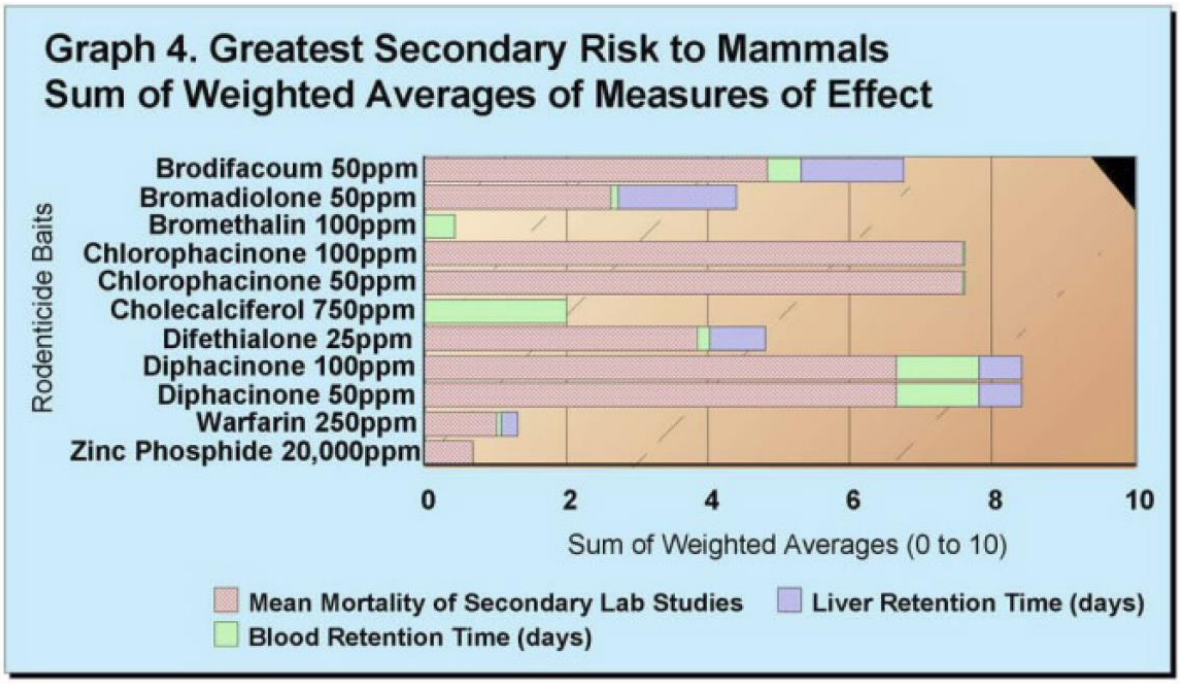
In any event, the Department's "takeaway" from the 2004 EPA comparative risk analysis could not be more wrong. With respect to *secondary effects on mammals*, EPA concluded:

> Of all the rodenticide baits considered, five are considered to pose the greatest potential secondary risk to mammals:
>
> Diphacinone 100 ppm
> Diphacinone 50 ppm
> Chlorophacinone 100 pm
> Chlorophacinone 50 pm
> Brodifacoum 50 ppm

AR00179. Indeed, EPA's summary charts and graphs speak for themselves and speak volumes about diphacinone (AR00180-81):

Table 5. Greatest Secondary Risk to Mammals.

Alternative Pesticide	Mean Mortality of Secondary Lab Studies Measures of Effect Value	Blood Retention Time (days)	Liver Retention Time (days)	Summary Values
Brodifacoum 50ppm	42.00	7.30	217.00	6.76
Bromadiolone 50ppm	23.00	1.40	248.00	4.40
Bromethalin 100ppm	0.00	5.60	No Data	0.44
Chlorophacinone 100ppm	55.00	0.40	No Data	7.62
Chlorophacinone 50ppm	55.00	0.40	No Data	7.62
Cholecalciferol 750ppm	0.00	25.50	No Data	2.00
Difethialone 25ppm	33.60	2.50	117.70	4.82
Diphacinone 100ppm	58.00	17.50	90.00	8.42
Diphacinone 50ppm	58.00	17.50	90.00	8.42
Warfarin 250ppm	9.00	0.82	35.00	1.32
Zinc Phosphide 20,000ppm	4.00	No Data	No Data	0.69



Given these irrefutable facts, the Department's Investigation Report and accompanying Graf Letter simply failed to provide an accurate, serious, or meaningful assessment of diphacinone's true secondary impacts on non-target wildlife species such as bobcats, mountain lions, fishers, and kit foxes – all of which currently face declining populations and potential extinction.

V. The Department's Statement Concerning "Downward Trends" Does Not Accurately Reflect Diphacinone Use or Prevalence.

The Investigation Report's final justification for not reevaluating diphacinone – that "there is a general downward trend in FGAR exposure rates (Figure 3)" – is likewise misleading. AR03545. The exposure data on which the Department relied for this conclusion came

from "randomly" collected liver sample data that the Department itself conceded suffered from "several limitations." *See* AR03517. One of these limitations was the fact that during the five years for which data was reported, from 2014 through 2018, the number of mammal species tested was 16, 28, 45, 14, and 6, respectively. AR03518. Given the small sample sizes and the sharp decline in tested samples over the last two years of the five-year sample period, a corresponding decline in the number of anticoagulant detections is hardly unexpected. But more important, whether the actual *rate* of exposure in mammals was also declining is not discernable from the Report's presentation of information. By aggregating diphacinone detection data for birds and mammals into a single denominator (*see* AR03518 at Table 4, as graphically represented at AR03520, Figure 4), the Investigation Report makes it impossible for a reader to decipher the exposure rates for mammals – the main species of concern for this compound. Because the number of tested mammal specimens declined while the number of tested bird specimens increased or stayed steady over the five years, any credible conclusion about actual decline in mammalian exposure rates necessarily depends on the number of positive mammal detections for any given year – a piece of information that is impossible to ascertain from the data presentation.

Moreover, whatever the value of the random Department of Fish and Wildlife data derived from the livers of dead animals, those data cannot address the concerns raised by the long-term and systematic bobcat studies, which show continuing *high prevalence* of diphacinone in blood samples taken from living, breathing animals that may consequently suffer from disease and premature death.[14] These studies – which, as noted above, measured diphacinone in blood at three times the level of any other anticoagulant (AR3221) – concluded that that "repeated exposure events may be an important predictor of potential sublethal effects such as increased susceptibility to mange." AR03228. The soaring sales of diphacinone over the last few years suggests that, at the very least, such chronic diphacinone exposure will continue to occur. By presenting a highly selective and skewed picture

[14] As explained above, diphacinone has a short half-life, *see* AR1685, AR3516, as compared with second generation anticoagulants which may persist in liver tissue for years, *even after only a single exposure*. *See e.g.*, AR3214, AR3515. Thus, post-mortem liver sample testing may not accurately reflect the chronic, low-level diphacinone exposure revealed through blood sampling. *See* AR 3232 ("[W]e do not detect first-generation compounds as frequently in liver samples because they have much shorter half-lives than the second-generation compounds . . . One of our significant findings . . . is that we learned we have been underestimating wildlife (or at least bobcat) exposure to first-generation anticoagulants by relying solely on liver samples to do the testing."); AR3226 (explaining that "because we most frequently detect diphacinone in blood despite its shorter plasma halflife than second-generation ARs . . . diphacinone may be the compound that bobcats encounter most frequently" in study area).

to the public, the Department undermined the letter and the spirit of CEQA.

VI. The Investigation Report's Discussion of the Urban Bobcat Study Does Not Comport with CEQA.

After selectively citing old, inapplicable studies and drawing broad generic conclusions that neglect more specific current data, the Investigation Report concluded with a final deceptive sentence about the leading scientific study: "Of particular note is [the Urban Bobcat Study], which found statistically significant associations between SGARs and mange, but not between FGARs and mange." AR03545. With this single sentence, the Department dismissed the significant diphacinone implications from the critical 16-year Urban Bobcat Study, suggesting that the study's authors looked for but did not find a specific association between diphacinone and mange. Like so much else in the Investigation Report, this statement is factually wrong and highly misleading.

To recap, the Urban Bobcat Study found a positive association between mange and bobcat liver samples, with the most commonly detected compounds in the liver samples being bromadiolone, brodifacoum, difethialone, *and diphacinone.* AR03220. Indeed, diphacinone was the third most commonly detected liver contaminant. AR03221 at Figure 4. Thus, diphacinone cumulatively contributed,

along with other (second-generation) anticoagulants, to the adverse effect of mange. Given the significant prevalence of diphacinone in the liver samples, the Department had no scientifically legitimate basis for ignoring this compound or, worse yet, for deciding diphacinone is not associated with mange.

Moreover, diphancione was found in blood samples at more than three times the rate of any second-generation anticoagulant. AR03221. As explained above, its prevalence in blood samples is consistent with the nature of first-generation anticoagulants, which are more readily metabolized and excreted – that is, less likely to be partitioned and stored in the liver like second-generation compounds. The study's finding that diphacinone was detected in roughly 30 percent of the blood samples (39 percent of the samples contained anticoagulants and, of those, 77 percent contained diphacinone) indicates repeated chronic exposure to the compound. The Investigation Report does not address the implications of this chronic exposure issue in any way.

In an email to the National Park Service, one of the Urban Bobcat Study's authors explained that the researchers only tested for an association between anticoagulants and liver samples *because* they did not have enough blood samples from mangy animals. AR03232. The lack of testing for an association between diphacinone and mange in

blood samples does not mean there is no association. As the researcher reiterated, diphacinone is likely found less frequently in liver samples due to its shorter half-life, but diphacinone is "probably the most frequent compound that bobcats are exposed to across our study areas." *Id.* In fact, one of the study's significant findings is that "we have been underestimating wildlife (or at least bobcat) exposure to first-generation anticoagulants by relying solely on liver samples to do testing." *Id.* Moreover, the author reiterated that "in terms of relationships between mange and anticoagulants, we did find evidence that multiple exposure events to anticoagulant may be the critical component in the development of severe mange . . . In fact, we find a strong association between bobcat exposure to 2 or more compounds, and mange—where bobcats that are expos[ed] to 2 or more compounds are more than 7 times more likely to die of mange than other sources of mortality." *Id.* Because diphacinone is clearly one of the anticoagulants contributing to this effect, the Investigation Report's glib dismissal of this compound is unfounded and legally inadequate.

CEQA requires that an effect be disclosed and discussed in "sufficient detail to enable those who did not participate in its preparation to understand and to consider meaningfully the issues the proposed project raises." *County of Fresno*, 6 Cal. 5th at 510. An

adequate discussion allows the public to trace the "analytic route the . . . agency traveled from evidence to action." *Laurel Heights*, 47 Cal. 3d at 439 (citation omitted). Thus, the analysis must go beyond "cursory" observations stating "obvious conclusion[s]" that merely identify issues, *id.* at 403, and instead must engage in meaningful discussion that will "enable [the public] to understand, evaluate, and respond" to the agency's findings. *Id.* at 439. "[W]hether a description of an environmental impact is insufficient because it lacks analysis or omits the magnitude of the impact is not a substantial evidence question," but rather a question of abuse of discretion. *County of Fresno*, 6 Cal. 5th at 514.

By collapsing the nuances of the Urban Bobcat Study into a generalized summary that ignored its key findings (as well as the subsequent Urbanization Study and Genome Study), the Investigation Report failed to provide a meaningful evaluation and certainly did not enable the general public's understanding of diphacinone's ongoing effects on non-target wildlife, especially those larger mammal species that are increasingly rare across the California landscape.

VII. Even Under Substantial Evidence Review, the Department's Conclusions Were Legally Deficient.

All of the foregoing informational deficiencies constitute prejudicial abuses of discretion under Public Resources Code section

21168.5 because the Department failed to proceed in the manner required by CEQA with respect to disclosing cumulative impacts, sublethal effects like mange, and the toxicity implications of diphacinone's chronic detection in mammalian blood samples. But even if this Court were to apply a more deferential substantial evidence standard – which it should not – Raptors still prevails on its CEQA claim. Substantial evidence under CEQA "means enough relevant information and reasonable inferences from this information" to support a conclusion – that is, "facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts." 14 C.C.R. § 15384. Speculation, unsubstantiated narrative, and evidence that is clearly erroneous or inaccurate does not constitute substantial evidence. *Id.*

Here, the Department failed at every turn to meet this standard. First, the Department entirely ignored cumulative effects, concluding that the "inherent risk" associated with diphacinone is "lower" than the risk posed by second-generation anticoagulants, but this conclusion is not borne out by the science. AR3545. To the contrary, diphacinone is frequently found alongside the second-generation compounds in liver samples and is by far the most prevalent anticoagulant detected in the blood samples of a declining California bobcat population plagued with

mange. The Department's assumption that diphacinone is not contributing to these adverse wildlife effects is pure speculation, unsupported by any actual scientific evidence.

Likewise, in concluding that "exposure rates" in non-target wildlife are "lower" for first-generation than second-generation anticoagulants, the Department cherry-picked partial results from a single, 40-year-old owl study mentioned in EPA's 2004 meta-assessment. *See* AR3545. It turns out that two of the three owl species tested in that old study were *killed by diphacinone*, and EPA itself concluded in its much larger meta-analysis that diphacinone posed the *greatest* secondary risk of all anticoagulants to non-target mammal species, consistent with the Fish and Wildlife Service's earlier findings diphacione's effects on listed mammal species. *See* AR00180-181 (Table 5 and Graph 4). Especially in light of the more recent and richer bobcat data, the partial results from an old bird study cannot logically provide substantial evidence to support a conclusion that diphacinone is not having an adverse impact on non-target mammal species.

Finally, the Department's conclusion that diphacinone does not present a problem because exposure rates are on a "downward trend" is not based on a scientifically sound assessment of use and prevalence, but on a small, random sampling of mountain lion liver data from five

years. AR3545. Scientifically rigorous bobcat studies show otherwise, as do general diphacinone sales data. There is no credible science demonstrating downward exposure trends, and every reason to believe that diphacinone exposure will continue or accelerate as applicators turn away from restricted second-generation compounds.

Based on these unsupported building blocks, the Department ultimately found that current uses of diphacinone "are unlikely to have a significant adverse impact to non-target wildlife." AR3545. Without any solid factual foundation, that finding cannot withstand judicial scrutiny, even under the substantial evidence test.

CONCLUSION

The record in this case makes it abundantly clear that the Department did not take its CEQA obligations seriously when it declined to reevaluate diphacinone. In fact, the Department steadfastly maintained in the court below that its action was not subject to CEQA at all, despite this Court's rejection of that position in *PANNA*. By failing to provide a meaningful discussion of diphacinone's potentially significant impacts on non-target wildlife, the Department kept the public (and the Legislature) in the dark – and potentially doomed a number of imperiled species. The Court can remedy this serious error by reversing the trial court's decision and directing the entry of a writ

of mandate setting aside the Department's November 16, 2018 decision not to reevaluate diphacinone.

Date: June 28, 2021

Respectfully submitted,

ENVIRONMENTAL LAW CLINIC
Mills Legal Clinic at Stanford Law School

By: 
Deborah A. Sivas

Michael W. Graf
LAW OFFICES

Attorneys for Appellants Raptors Are The Solution

CERTIFICATE OF WORD COUNT

Pursuant to Rule 8.204(c) of the California Rules of Court, I certify that the text of this brief consists of 13,400 words, not including tables, signature blocks, and required certificates, as counted by Microsoft Word, the computer word processing program used to generate the brief.

Dated: June 28, 2021

Deborah A. Sivas

PROOF OF SERVICE

STATE OF CALIFORNIA, COUNTY OF SANTA CLARA

At the time of service, I was over 18 years of age and not a party to this action. I am employed in the County of Santa Clara, State of California. My business address is Crown Quadrangle, 559 Nathan Abbott Way, Stanford, CA 94305-8610.

On June 28, 2021, I served true copies of the following document(s) described as **APPELLANT'S OPENING BRIEF** on the interested parties in this action as follows:

SEE ATTACHED SERVICE LIST

BY MAIL: I enclosed the document(s) in a sealed envelope or package addressed to the persons at the addresses listed in the Service List and placed the envelope for collection and mailing, following our ordinary business practices. I am readily familiar with the practice of Mills Legal Clinic at Stanford Law School for collecting and processing correspondence for mailing. On the same day that correspondence is placed for collection and mailing, it is deposited in the ordinary course of business with the United States Postal Service, in a sealed envelope with postage fully prepaid. I am a resident or employed in the county where the mailing occurred. The envelope was placed in the mail at Stanford, California.

BY ELECTRONIC SERVICE: I served the document(s) on the person listed in the Service List by submitting an electronic version of the document(s) to TrueFiling 3.0, through the user interface at https://tf3.truefiling.com/

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on June 28, 2021, at Stanford, California.

Ana Villanueva

Ana Villanueva

SERVICE LIST

Clerk of the Court
Alameda County Superior Court
1225 Fallon Street
Oakland, CA 94612

Via USPS Mail

Sara Dena Van Loh
Office of the State Attorney General
1515 Clay Street, 20th Floor
Oakland, CA 94612

Via TrueFiling

Marc N. Melnick
Office of the Attorney General
1515 Clay Street, Suite 2000
P.O. Box 70550
Oakland, CA 94612

Via TrueFiling