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UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE ADMINISTRATOR

In the Matter of: Reckitt Benckiser LLC, et al.,	FIFRA Docket No. 661

MOTION TO INTERVENE by
AMERICAN BIRD CONSERVANCY, CENTER FOR BIOLOGICAL DIVERSITY
DEFENDERS OF WILDLIFE, and SIERRA CLUB

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INTRODUCTION

Pursuant to 40 C.F.R. §§ 164.31 and 164.60, the American Bird Conservancy, Center for Biological Diversity, Defenders of Wildlife, and Sierra Club (collectively, "Wildlife Groups") move to intervene in these proceedings challenging a decision by the U.S. Environmental Protection Agency ("EPA") to cancel and deny registration of certain rodenticides manufactured by Reckitt Benckiser LLC ("Reckitt"). As set forth below, the Wildlife Groups are all too familiar with the unintended yet devastating impact that the poisons at issue are having on our native foxes, bobcats, raptors, and other "non-target" animals. They have worked for years to secure reasonable and prudent restrictions on rodenticides to prevent further harm to wildlife, and their advocacy was instrumental in prompting EPA to impose the safeguards now under scrutiny by this Tribunal. The Wildlife Groups respectfully request that they be granted leave to intervene in these proceedings to defend EPA's cancellation decision from an unwarranted and unfounded industry attack.

BACKGROUND

Regulatory History

The present cancellation proceedings stem from EPA's longstanding efforts to bring rodenticides into compliance with the Federal Insecticide, Fungicide, and Rodenticide Act ("FIFRA"). The facts pertinent to the Wildlife Groups' motion to intervene are as follows. FIFRA generally prohibits the sale of any pesticide that is not registered by EPA. 7 U.S.C. § 136a(a). Prior to registration, EPA must ensure that the pesticide "will perform its intended function without unreasonable adverse effects on the environment." 7 U.S.C. § 136a(c)(5). Rodenticides are pesticides, so they must be registered in accordance with FIFRA. 7 U.S.C. § 136(t) and (u).

In 1988, Congress amended FIFRA to require EPA to "reregister" all pesticides that had been registered prior to November 1, 1984. 7 U.S.C. § 136a-1. Reregistration involves several phases of data gathering and review, at the end of which EPA must reconsider whether the pesticide meets the requirements for registration under FIFRA – *i.e.*, whether it can be used without causing unreasonable adverse effects on the environment. 7 U.S.C. § 136a-1(g)(2)(C).

Consistent with the statutory process described above, EPA issued a risk mitigation decision ("RMD") in 2008 that set forth the agency's "final decision on the reregistration eligibility" of the

rodenticide products at issue herein and set the stage for these proceedings. RMD at 1. The RMD identifies three categories of rodenticides: "first-generation anticoagulants," which interfere with blood-clotting and cause the animal to bleed to death; "second-generation anticoagulants," which have the same mode of action but are generally more potent; and "non-anticoagulants," which have alternative modes of action. RMD at 2. The RMD concludes that each of these three categories of rodenticides "poses significant risks to non-target wildlife when applied as grain-based bait products." RMD at 7. It explains that "[t]he risks to wildlife are from primary exposure (direct consumption of rodenticide bait) for all compounds and secondary exposure (consumption of prey by predators or scavengers with rodenticide stored in body tissues) from the anticoagulants." RMD at 7. The RMD finds that "[s]econdary exposure to the second-generation anticoagulants is particularly problematic, due to these compounds' high toxicity and long persistence in body tissues." RMD at 7. According to the RMD:

> Incident reports have identified many taxa of non-target animals exposed to rodenticides. . . . In approximately 50% of those incidents, necropsy reports indicate that it is highly probably that a second-generation anticoagulant was the cause of death. . . . *EPA believes that widespread exposures to second-generation anticoagulants are occurring wherever those rodenticides are being used.*

RMD at 8 (emphasis added).

In an effort to mitigate the risks to wildlife, the RMD establishes four specific measures intended to "minimiz[e] the availability of second-generation anticoagulants on the consumer market, and hence the overall amount of use . . ."[1] RMD at 12. In the absence of these mitigation measures, the RMD concludes that the rodenticides at issue "would present unreasonable risks inconsistent with FIFRA." RMD at 25. Accordingly, the RMD provides that "should a registrant fail to implement any of the risk mitigation measures identified in [the RMD], the [EPA] may take regulatory action." RMD at 25.

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[1] As set forth in detail in the RMD, the mitigation measures established by EPA include: (1) "minimum package size requirements" designed to make second-generation anticoagulants less attractive to non-professional consumers; (2) "use site restrictions" intended to limit use of second-generation anticoagulants in residential settings; (3) "sale and distribution restrictions" designed to limit non-professional access to second-generation anticoagulants; and (4) a requirement that all outdoor, above-ground placements of second-generation anticoagulants be placed in bait stations designed to prevent direct access to bait by non-target animals.

The Instant Proceedings

Most rodenticide manufacturers adopted voluntarily the mitigation measures set forth in EPA's 2008 RMD. Three manufacturers – Reckitt, Liphatech, and Spectrum Group – declined to do so. EPA therefore issued a draft notice on November 2, 2011 of its intent to cancel registration of the non-conforming rodenticide products and to deny registration of several new rodenticide products developed by the three companies that were also inconsistent with the RMD. Following EPA's draft notice of intent, Liphatech and Spectrum Group finally accepted voluntary cancellation of their non-conforming rodenticides products. Their acquiescence left British-based Reckitt as the lone manufacturer still refusing to comply with EPA's 2008 RMD.

On February 5, 2013, EPA published final notice of its intent to cancel or deny registration of 14 Reckitt rodenticide products that do not comply with the 2008 RMD, all of which are marketed under the brand-name "d-CON." *See* 78 Fed. Reg. 8123 (Feb. 5, 2013). Most of the products identified in the notice run afoul of the 2008 RMD, because they are packaged and marketed for consumer use without protective bait stations and contain a second-generation anticoagulant. As such, they pose a significant and unreasonable risk to non-target wildlife. *Id.* at 8125.

On March 6, 2013, Reckitt filed objections to EPA's notice of intent to cancel and requested a hearing pursuant to sections 6(b) and 3(c)(6) of FIFRA, 7 U.S.C. §§ 136d(b) and 136a(c)(6), thus launching the instant proceedings.[2] Among other things, Reckitt disputes the factual and legal basis for EPA's conclusion that the d-CON products at issue pose an unreasonable risk to non-target wildlife. EPA published notice of Reckitt's objections on April 17, 2013. 78 Fed. Reg. 22876. EPA has yet to publish notice of a hearing on the matter, together with a statement of the issues, in accordance with 40 C.F.R. § 164.8. A prehearing conference has not been scheduled. *Id.*, §164.50.

By e-mail dated April 23, 2013, counsel for the Wildlife Groups' notified counsel for EPA and the entities that have requested a hearing that the Wildlife Groups intended to move to intervene in these proceedings. *See* Decl. of Gregory C. Loarie at ¶ 2, submitted herewith. Counsel for EPA

[2] Shortly after Reckitt filed its objections, three other entities filed their own requests for a hearing on the notice of intent to cancel: the Louisville Apartment Association; the Greater Cincinnati Northern Kentucky Apartment Association and Do it Best Corp. These groups are aligned with Reckitt and object to cancellation.

advised that EPA did not object to the Wildlife Groups' intervention. *Id.* at ¶ 3. Counsel for Reckitt advised that Reckitt would not take a position on the Wildlife Groups' intervention until it reviewed the Wildlife Groups' moving papers. *Id.* at ¶ 4. A representative of the Greater Cincinnati Northern Kentucky Apartment Association advised that his organization did not take a position on intervention; the other two hearing-requesters did not respond. *Id.* at ¶¶ 5-6.

The Wildlife Groups

The organizations seeking to intervene in these proceedings are non-profit, public-interest groups dedicated to environmental conservation and the protection of America's natural heritage. As detailed below, each organization has worked for years to reduce exposure of wildlife to rodenticides. The organizations have been involved at every key juncture in the reregistration process for rodenticides described above, through the submission of substantive comments, attendance at stakeholder meetings, and through other means. They worked tirelessly to achieve the safety measures set forth in EPA's 2008 RMD, and they have a compelling interest in the outcome of these proceedings challenging the basis for those safety measures.

American Bird Conservancy ("ABC") is a not-for-profit organization, whose mission is to conserve native birds and their habitats throughout the Americas. *See* Decl. of Cynthia Palmer in Supp. of Mot. to Int. ("Palmer Decl.") at ¶ 3, submitted herewith. ABC works to safeguard the rarest bird species, restore bird habitats, and reduce threats to key species. *Id.* The organization has been actively involved in the campaign to restrict the use of rodenticides, contributing to scholarly publications on rodenticide risks, developing a monitoring system for avian pesticide exposures, and working to raise awareness regarding rodenticides risks. *Id.* at ¶¶ 4-5. ABC has also been an active participant in EPA proceedings related to the regulation of rodenticides and has submitted a number of comment letters in response to EPA's risk mitigation measures. *Id.* at ¶ 5 and Exh. 1-6 thereto. ABC also participated in a joint meeting with EPA to discuss wildlife exposures to rodenticides and mitigation measures to reduce rodenticide risks. *Id.* Implementation of risk mitigation measures for rodenticide use are important to members of ABC, as they are committed to the conservation of bird species and appreciate viewing bird species in their native habitats. *Id.* at ¶ 8.

Center for Biological Diversity (the "Center") is a not-for-profit organization, whose mission is to protect the diverse native species and habitats of North America through science, policy, education, and environmental law. *See* Decl. of Jonathan Evans in Supp. of Mot. to Int. ("Evans Decl.") at ¶ 3, submitted herewith. The Center has a long-standing campaign to eliminate the threats to imperiled species posed by pesticides, and as part of that campaign it has worked to improve the evaluation and monitoring of pesticides and their effects on such species. The Center has developed reports and publications regarding the harms of pesticides on endangered species and engaged the public and other non-profit organizations to lend support to the campaign. Evans Decl. at ¶ 4. The regulation of rodenticides has been one of the key areas of the Center's pesticides campaign, and the Center submitted comments in the proceedings leading up to EPA's notice of intent to cancel. *Id.* at ¶ 5 and Exh. 1 thereto. The Center supports EPA's decision to cancel the Reckitt products at issue, and seeks to defend EPA's decision. *Id.* at ¶¶ 7-8. Allowing the Reckitt products to remain on the market would lead to the deaths of endangered and other key wildlife species, and would harm the Center's members, who are committed to wildlife conservation and enjoy viewing wildlife in their native habitats. *Id.* at ¶ 9.

Defenders of Wildlife ("Defenders") is a not-for-profit organization dedicated to conserving and restoring native species and the habitat upon which they depend. *See* Decl. of Jason Rylander in Supp. of Mot. to Int. ("Rylander Decl.") at ¶ 3, submitted herewith. Defenders is committed to protecting imperiled wildlife from the threats posed by harmful pesticides, and it has worked to reform the pesticide approval process, has petitioned for restrictions on and cancellation of harmful pesticides, and has been a participant in litigation relating to pesticide regulation. *Id.* at ¶ 4. Defenders is actively involved in the campaign to restrict the use of rodenticides, and as part of that campaign it has submitted comments to EPA supporting additional restrictions for rodenticide use. *Id.* at ¶¶ 4-6 and Exh. 1-5 thereto. Defenders also participated in a meeting with EPA to discuss wildlife exposures to rodenticides and mitigation measures to reduce rodenticide risks. *Id.* Allowing the Reckitt products at issue to remain on the market would result in the deaths of endangered and imperiled species. *Id.* at ¶ 10. Allowing these products to remain on the market could also lead to

larger ecosystem imbalances, as key species are removed from the food web. *Id.* These effects would harm Defenders and its members. *Id.*

Sierra Club is a not-for-profit organization, whose mission is to protect the wild places of the earth, to promote the responsible use of the earth's ecosystems and resources, and to protect and restore the quality of the natural and human environment. *See* Decl. of Andrew Christie in Supp. of Mot. to Int. ("Christie Decl.") at ¶ 3, submitted herewith. The Sierra Club has worked for years to protect wildlife from the effects of rodenticides and other industrial chemicals in ecosystems. *Id.* at ¶ 4. Sierra Club has been actively involved in campaigning to restrict rodenticides, and as part of this campaign it has submitted comments supporting EPA's mitigation measures. *Id.* at ¶¶ 4-5 and Exh. 1 thereto. Sierra Club and its members would be harmed by the continued use of the rodenticides at issue, as their ability to enjoy viewing wild animals in their native habitats and to protect and promote healthy ecosystems would be adversely affected. *Id.* at ¶ 9.

STANDARD FOR INTERVENTION

Part 164, Subpart B, of Title 40 Code of Federal Regulations governs proceedings "concerning refusals to register [and] cancellations of registration." 40 C.F.R. §164.3. The regulations provide that "[a]ny person may file a motion for leave to intervene in a hearing conducted under this subpart." 40 C.F.R. § 164.31(a). A motion to intervene must set forth: (1) "the grounds for the proposed intervention"; (2) "the position and interest of the movant in the proceeding"; and (3) whether the movant intends to file certain responsive documents. *Id. See also In the Matter of Albauch, Inc.*, No. FIFRA-98-H-02, 1998 WL 422222 (E.P.A. June 29, 1998) (noting that 40 C.F.R. §164.31 sets forth the standards for intervention in pesticide cancellation proceedings).

If motion to intervene is timely filed, "[l]eave to intervene will be freely granted but only insofar as such leave raises matters which are pertinent to and do not unreasonably broaden the issues already presented." 40 C.F.R. § 164.31(c). Once leave to intervene in cancellation proceedings is granted, "the movant shall thereby become a party with the full status of the original parties to the proceedings." *Id.*

ARGUMENT

I. The Wildlife Groups Have Compelling Grounds for Intervention.

The Wildlife Groups have compelling grounds for intervention in these cancellation proceedings: (1) they have a long history of involvement with rodenticides issues, including active participation in prior EPA actions that have precipitated these cancellation proceedings; (2) their involvement has provided them with a great degree of expertise on rodenticides issues, particularly the adverse effects of rodenticides on wildlife; and (3) Reckitt seeks to overturn safeguards that the Wildlife Groups invested significant time and resources to secure.

As noted above, the Wildlife Groups have longstanding campaigns dedicated to reducing the impact of rodenticides on non-target wildlife. *See* Evans Decl. at ¶¶ 4-5; Palmer Decl. at ¶¶ 4-5; Christie Decl. at ¶¶ 4-5; Rylander Decl. at ¶¶ 4-6. As part of their campaigns, they have been consistent participants in the administrative process that culminated in both the 2008 RMD and the notice of intent to cancel now at issue. The Wildlife Groups have met with EPA to advocate for robust mitigation measures for rodenticides and submitted formal comments to EPA at multiple junctures. *Id.*

As a result of their long involvement with rodenticides, the Wildlife Groups have developed a deep body of knowledge on the effects of rodenticides on wildlife. For example, they have developed monitoring systems to track the effects of rodenticides on wildlife. *See* Evans Decl. at ¶ 5; Palmer Decl. at ¶ 4. They have also authored articles and reports regarding the wildlife risks associated with rodenticide use. *See id.;* Rylander Decl. at ¶ 5. Participation in these proceedings would allow the Wildlife Groups to contribute their extensive knowledge of the adverse effects of rodenticides on non-target wildlife to these proceedings.

Reckitt and its allies dispute the factual and legal basis for both EPA's cancellation decision and the mitigation measures set forth in the 2008 RMD. The Wildlife Groups support EPA's 2008 RMD and the mitigation measures set forth therein to reduce exposure to non-target wildlife. *See* Evans Decl. at ¶ 5; Palmer Decl. at ¶¶ 5, 7; Christie Decl. at ¶¶ 5, 7; Rylander Decl. at ¶¶ 6, 8. By intervening in these proceedings, the Wildlife Groups seek to defend important mitigation measures that were a direct result of their sustained advocacy and hard work.

The Wildlife Groups' grounds for intervention in these proceedings are akin to grounds that this Tribunal found sufficient for intervention in another recent proceeding, *In re Request to Reduce Pre-Harvest Interval for EBDC Fungicides on Potatoes*, EPA-HQ-OPP-2007-0181, 2007 WL 3311648 (September 18, 2007). That matter involved a hearing on the modification of a cancellation order imposing time limitations on when a pesticide used on potatoes could be applied. This Tribunal granted an environmental group leave to participate based on evidence that the group was "dedicated to protection of public health and the environment" and that its members would be "significantly and adversely affected" by any modification to the cancellation order. *Id.* at *2, n5. A trade group was also granted leave to intervene, based on evidence that its members would "be substantially affected by the outcome of this proceeding" and that it intended to support the position of one of the parties to the proceeding. *Id.* at *2-3.

Like the members of the environmental organization and trade group in *In re Request to Reduce Pre-Harvest*, the Wildlife Groups' members will be substantially affected by the outcome of these proceedings, as their interest in wildlife conservation will be injured by the continued use of rodenticides at issue. *See* Evans Decl. at ¶ 9; Palmer Decl. at ¶ 8; Christie Decl. at ¶ 9; Rylander Decl. at ¶ 10. Like the trade group the potato proceedings, the Wildlife Groups seek to support EPA's decision. *See* Evans Decl. at ¶ 5; Palmer Decl. at ¶¶ 5, 7; Christie Decl. at ¶¶ 5,7; Rylander Decl. at ¶¶ 6, 8.

In sum, the Wildlife Groups have clear and compelling grounds for intervention.

II. The Wildlife Groups' Position Is That Cancellation Is Warranted, and Their Interest Is in Defending EPA's Cancellation Decision.

The Wildlife Groups' position is that the mitigation measures set forth in the 2008 RMD are reasonable and appropriate. *See* Evans Decl. at ¶ 5, 7-8; Palmer Decl. at ¶¶ 5, 7; Christie Decl. at ¶¶ 5,7; Rylander Decl. at ¶¶ 6, 8. While the Wildlife Groups believe that additional restrictions on rodenticides – above and beyond those set forth in the 2008 RMD – are also necessary, they fully support EPA's decision to cancel rodenticide products that do not comply with the minimum restrictions of the 2008 RMD. *Id.* The Wildlife Groups deny the allegations set forth in Reckitt Benckiser's March 6, 2013 statement of objections.

As detailed above, the Wildlife Groups are organizations dedicated to the conservation and restoration of native ecosystems and the animals that inhabit them. *See* Evans Decl. at ¶ 3; Palmer Decl. at ¶ 3, Rylander Decl. at ¶¶ 3-4; Christie Decl. at ¶ 3. Their goal is to prevent further poisoning of the animals by rodenticides, and they seek cancellation of all rodenticides that pose unreasonable risk to non-target wildlife. Accordingly, their interest is in defending EPA's decision to cancel the rodenticides at issue in these proceedings.

III. The Wildlife Groups Propose to File a Response to EPA's Statement of Issues as Specified by the Rules Governing these Proceedings.

A motion to intervene in FIFRA cancellation proceedings must "set forth . . . the documents proposed to be filed pursuant to either § 164.22 or § 164.24." 40 C.F.R. § 164.31(b).

Section 164.22 provides for the filing of "*objections* to an order of [EPA] of . . . refusal to register, or . . . intent to cancel registration . . ." 40 C.F.R. § 164.22, emphasis added. Here, the Wildlife Groups do not object to – but rather support – EPA's intent to cancel registration of the rodenticides at issue. Accordingly, the Wildlife Groups do not propose to file objections under section 164.22.

Section 164.24, in turn, provides that "any person wishing to participate in any proceeding commenced pursuant to a notice of [EPA] of intention to hold a hearing shall file . . . a written response to [EPA's] statement of issues." 40 C.F.R. § 164.24. To date, EPA has not yet published "notice[] of intention . . . to hold a hearing, together with a statement of issues" in accordance with 40 C.F.R. § 164.8. At such time as EPA publishes notice of its intent to hold a hearing, the Wildlife Groups propose to file a written response to EPA's statement of issues "within the time set by [EPA] in the notice." *Id.*, § 164.24.

IV. The Wildlife Groups' Motion to Intervene Is Timely.

The regulations that govern pesticide cancellation proceedings provide that "[a] motion for leave to intervene in a hearing must ordinarily be filed prior to the commencement of the first prehearing conference." 40 C.F.R. § 164.31(b).

Here, the prehearing conference has yet to be scheduled, and EPA has yet to publish notice of its intention to hold a hearing. The Wildlife Groups have filed their motion less than two months

after Reckitt filed its notice of objections and request for a hearing. The Wildlife Groups' motion is timely. *See, e.g., In re Request to Reduce Pre-Harvest Interval*, 2007 WL 3311648 (motion filed to intervene in proceedings under Section 6 of FIFRA is timely where notice of hearing was published on July 11, 2007 and motion to intervene was filed on August 30, 2007).

V. The Wildlife Groups Seek to Raise Matters that Are Pertinent to and Will Not Broaden the Issues Already Presented.

If a motion to intervene is timely filed, "[l]eave to intervene will be freely granted but only insofar as such leave raises matters which are pertinent to and do not unreasonably broaden the issues already presented." 40 C.F.R. § 164.31(c). *See also In the Matter of Rohm and Haas Company*, FIFRA Docket No. 613, 1987 WL 419161, *7 fn15 (E.P.A. Many 29, 1987) (recognizing that leave to intervene in pesticide cancellation proceedings is "freely granted"). Here, the Wildlife Groups seek to respond directly to the issues already presented and do not intend to broaden those issues. The Wildlife Groups should therefore be granted leave to intervene.

If they are granted leave to intervene, the Wildlife Groups intend to counter the arguments made by Reckitt and demonstrate that: (1) EPA complied with the necessary procedural requirements for cancellation of pesticide registrations and denial of registration applications under FIFRA; (2) EPA complied, to the extent necessary, with Executive Orders 12866 and 13563; (3) the products at issue pose unreasonable risks to wildlife; and (4) there are alternatives available which would allow for affordable and effective rodent control. Reckitt has also made a number of claims, which are unsupported by scientific studies and literature, regarding the lack of risks posed by its rodenticides to wildlife. Thus, in addition to the issues outlined above, the Wildlife Groups intend to rebut these unsubstantiated claims made by Reckitt.

In short, all of the matters which the Wildlife Groups seek to raise are pertinent to these proceedings, since they are directly responsive to the arguments made by Reckitt in its statement of objections. For the same reasons, the issues raised by the Wildlife Groups do not broaden the scope of the pending cancellation proceedings.

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CONCLUSION

The Wildlife Groups have worked long and hard to secure the cancellation of rodenticides that do not comply with the basic restrictions established by EPA in the 2008 RMD. They ask for leave to intervene in these proceedings to support EPA and continue their advocacy for much-needed regulation of dangerous rodenticides.

Respectfully submitted,

Dated: April 26, 2013

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CERTIFICATE OF SERVICE

I hereby certify that on April 26, 2013, the following documents:

- **MOTION TO INTERVENE by AMERICAN BIRD CONSERVANCY, CENTER FOR BIOLOGICAL DIVERSITY DEFENDERS OF WILDLIFE, and SIERRA CLUB** (dated April 26, 2013);
- **DECLARATION OF CYNTHIA PALMER OF THE AMERICAN BIRD CONSERVANCY IN SUPPORT OF MOTION TO INTERVENE** (dated April 23, 2013);
- **DECLARATION OF JONATHAN EVANS OF THE CENTER FOR BIOLOGICAL DIVERSITY IN SUPPORT OF MOTION TO INTERVENE** (dated April 18, 2013);
- **DECLARATION OF JASON C. RYLANDER OF DEFENDERS OF WILDLIFE IN SUPPORT OF MOTION TO INTERVENE** (dated April 17, 2013);
- **DECLARATION OF GREGORY C. LOARIE IN SUPPORT OF MOTION TO INTERVENE** (dated April 26, 2013); **and**
- **DECLARATION OF ANDREW CHRISTIE OF SIERRA CLUB – SANTA LUCIA CHAPTER IN SUPPORT OF MOTION TO INTERVENE** (dated April 22, 2013)

were served at the addresses listed below in the manner indicated.

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Dated: April 26, 2013

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UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE ADMINISTRATOR

In the Matter of: Reckitt Benckiser LLC, et al.,	FIFRA Docket. No.661 DECLARATION OF CYNTHIA PALMER OF THE AMERICAN BIRD CONSERVANCY IN SUPPORT OF MOTION TO INTERVENE

I, Cynthia Palmer, hereby declare as follows:

1. I submit this declaration in support of the motion to intervene filed by the American Bird Conservancy *et. al.*, in these proceedings. I have personal knowledge of the matters stated herein and, if called as a witness, could and would competently testify thereto.

2. I am the Pesticides Program Manager for the American Bird Conservancy and also a member of the organization. In my role as Pesticides Program Manager, I am closely involved with the organization's work to protect birds from rodenticides and other pesticides.

3. Founded in 1994, the American Bird Conservancy is a national, non-profit membership organization with 8000 members. The mission of the American Bird Conservancy is to

conserve native birds and their habitats throughout the Americas, by safeguarding endangered bird species, conserving bird habitats, and working in the legal, policy and regulatory spheres to ensure the elimination of threats to birds.

4. The American Bird Conservancy has maintained a long-standing campaign to eliminate the threats posed to bird species by pesticide poisonings. The organization has worked to cancel and/or restrict the registrations of the pesticides which pose the greatest risks to birds, to improve the evaluation and monitoring of pesticides and their effects on birds, to develop scientific research showing the adverse effects of pesticides on birds, and to engage the public and other non-profit organizations in protecting birds and other wildlife.

5. The cancellation and regulation of rodenticides has been one of the key areas in the American Bird Conservancy's pesticides campaign. Rodenticides are responsible for the fatal poisoning of raptors, such as peregrine falcons, eagles, owls and hawks, which eat rats and mice poisoned by rodenticides, as well as species such as blackbirds, turkeys and pheasants, which eat the rodenticide bait itself. In keeping with its organizational mission, the American Bird Conservancy has been an active participant in the proceedings leading up to EPA's Notice of Intent to Cancel, and has submitted a number of comments to EPA's 2008 Risk Mitigation Decision. *See,* American Bird Conservancy Comment Letters dated 01/21/2005, 12/08/2005, 01/20/2006, 05/18/2007, 04/01/2008, 05/16/2011, true and correct copies of which are attached hereto as **Exhibits 1-6**. The American Bird Conservancy also participated in an April 1, 2008 meeting with EPA, to discuss methods for reducing wildlife exposures and human health exposures. *See,* 04/01/2008 Comment Letter summarizing meeting, a true and correct copy of which is attached hereto as **Exhibit 5**.

6. I have reviewed Reckitt-Benckiser, Inc.'s Request for Hearing and Statement of Objections to EPA's Notice of Intent to Cancel, filed on March 6, 2013. I am aware that Reckitt-Benckiser disputes EPA's determination that the rodenticides that are the subject of EPA's Notice of Intent to Cancel pose unreasonable risks to human health and wildlife. I am also aware that Reckitt-Benckiser contends that the EPA has failed to appropriately consider the public health risks that would arise if its products' registrations were cancelled, and that Reckitt-Benckiser argues that the products subject to the Notice of Intent to Cancel do not pose unreasonable risks to non-target

wildlife species.

7. EPA's Notice of Intent to Cancel is based on sound scientific evidence, and American Bird Conservancy agrees with EPA that the registrations of the Reckitt-Benckiser products that are the subject of the Notice of Intent to Cancel should be cancelled and/or denied. While additional safeguards are necessary to ensure that birds and other wildlife are protected from poisoning by rodenticides, the American Bird Conservancy supports the mitigation measures required by EPA.

8. The American Bird Conservancy is interested in intervening in these proceedings to ensure that its interests in avian conservation, described above, are adequately represented and to provide additional scientific support for EPA's position that the rodenticides that are the subject of this petition create unreasonable risks to wildlife. Additionally, the American Bird Conservancy seeks to offer specific rebuttals to the arguments made by Reckitt-Benckiser that its products do not pose unreasonable risks to non-target organisms, such as birds. Allowing the products that are the subject of the Notice of Intent to Cancel to remain on the market would lead to unreasonable risks, such as the deaths of endangered bird species and other species of birds due to fatal rodenticide poisonings. Allowing these products to remain on the market could also lead to larger ecosystem imbalances, as populations of raptors and other key bird species are removed from the food web. These effects would harm the American Bird Conservancy and its members, who are committed to the conservation of bird species and who appreciate viewing bird species in their native habitats.

I declare under penalty of perjury that the foregoing is true and correct and within my personal knowledge and belief.

DATED: April 23, 2013.

Cynthia Palmer

CYNTHIA PALMER

EXHIBIT 1

21 January 2005

Kelly White
Special Review and Reregistration Division (7508C)
Office of Pesticide Programs
Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460-0001

Attn: Docket ID Number OPP-2004-0033

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Submitted by email to opp-docket@epa.gov and white.kelly@epa.gov

Dear EPA Office of Pesticide Programs:

Thank you for the opportunity to comment on the revised comparative ecological risk assessment for the nine rodenticides, entitled "Potential Risks of Nine Rodenticides to Birds and Nontarget Mammals: a Comparative Approach" and dated July 2004 currently being considered for re-registration (OPP-2004-0033). We, the undersigned organizations and individuals, welcome this opportunity to comment on this document and provide our input on what we consider to be a critically important issue – the continued widespread uses of these rodenticides in the environment.

As background, this rodenticide "cluster" Reregistration Eligibility Decision (RED), first released on 11 September 1998, includes nine compounds, including six anti-coagulant rodenticides (brodifacoum, bromadiolone, difenacoum, diphacinone, chlorophacinone, warfarin), one neurotoxic rodenticide (bromethalin), and two non-anti-coagulant rodenticides (zinc phosphide, cholecalciferol). It is clearly stated in this document that the U.S. Environmental Protection Agency (EPA) "is concerned about accidental poisonings of children by rodenticide products" and is also worried about incident data showing "potential problems involving non-target and secondary exposures to wildlife from the rodenticides". We agree wholeheartedly with those concerns.

All nine rodenticides are used against commensal rodents, but only 4 (warfarin, diphacinone, chlorophacinone, zinc phosphide) are used against field rodents. Overall, the EPA ranks the potential overall risk to birds and non-target mammals as HIGH for brodifacoum (1), zinc phosphide (2), difethialone (3), diphacinone (4). Each of the 9 rodenticides are available to the public "over-the-counter" as grain-based food baits for control of commensal rats and mice

(predominantly the Norway rat (*Rattus norvegicus*), roof or black rat (*R. rattus*), and house mouse (*Mus musculus*) in and around buildings, transport vehicles (mainly ships), and inside sewers. Four of these rodenticides – warfarin, diphacinone, chlorophacinone, and zinc phosphide – also are available for control of various rodents and other small mammal pests in the field and other outdoor settings. For example, zinc phosphide is a broad spectrum rodenticide that has a variety of agricultural uses including the control of jackrabbits and prairie dogs on rangeland. These four rodenticides were initially registered prior to passage of the 1972 FIFRA amendments, which means that they lack the 1972 and 1978 FIFRA updates regarding data requirements. Therefore, the continued uses of these four rodenticides in particular are in serious need of additional data to support them.

Our comments on this document will outline problems found with the comparative rodenticide risk assessment itself, include discussions of risk to wildlife species (including species listed under the Endangered Species Act), domestic animals, and humans, problems found with the current general use registration of these rodenticides (business as usual), and conclude by outlining a number of recommendations regarding the outcome of this re-registration process.

As far as the contents of the document itself, our comments do not include a critique of each point, rather we have focused on the larger issues as we see them. In our comments on the previous version of the rodenticide risk assessment dated 31 March 2003, we provided more content-related comments. Because many of the concerns we raised in these comments were not addressed, we include them here by reference.

The 30 November 2000 version of the rodenticide risk assessment was peer reviewed by Drs. Elwood Hill, Raymond O'Connor and Charles Eason (Document ID OPP-2002-0049-0004). These three scientists are exceptionally qualified for this particular peer-review, and we defer to their critiques in matters relating to the toxicity, chemistry, and environmental hazards posed by the nine compounds investigated. These comments are also hereby incorporated by reference.

Inherent Problems with the Rodenticide Registration Notice Process

Initially, we have two major concerns regarding how the EPA has handled this rodenticide "cluster" re-registration process, as follows:

(1) In 1991, the EPA concluded that most of these rodenticides were eligible for re-registration. Since that time, a mountain of evidence of widespread contamination and mortality/morbidity incidents resulting from these rodenticides have been documented wherever they are used and regardless of labeling requirements. It is painfully obvious to us that the EPA has disregarded this evidence and has failed to address the seriousness of the issue, and is continuing to pursue a course of action based on its 1991 decision. The data used to reach this conclusion should, in fact, be updated and revisited.

(2) The EPA's chosen strategy of lumping all nine rodenticides together into a "comparative" risk assessment leaves the Agency without the ability to deal with one or more of the most egregiously hazardous rodenticides. By ranking the rodenticides by hazard for several different categories, it allows EPA an "out", where rodenticides can be ranked by some artificial method and compared and discussed instead of scrutinizing the hazards of each chemical individually. Consequently, under the present strategy, close scrutiny of the most hazardous rodenticides is bypassed and the true hazards of individual rodenticides can be obfuscated or otherwise overlooked. Although the comparative method is a useful screening tool, it only provides a rough estimate of relative risk. Therefore, we believe that this comparative method was not the proper way to conduct the risk assessment because the results will be of limited use for predicting the true environmental risks posed to animals and humans by the continued use of these rodenticides.

Problems with the Comparative Rodenticide Risk Assessment

We are pleased to see that the EPA comparative risk assessment clearly points out the Agency's own concerns regarding the substantial risks to birds and non-target mammals. These concerns include the following:

(1) The high acute toxicity of these rodenticide baits, particularly the second generation anti-coagulants, is of major concern – they were designed to kill small mammals in rapid fashion; many are lethal following one exposure, some baits (commensal and field) contain ingredients that attract non-target animals, and predators and scavengers are then attracted to the dead or dying rodents or non-target organisms.

(2) Risk estimates (based on available exposure and effects data) exceed the EPAs levels of concern (LOCs).

(3) There is substantial mortality of birds and non-target mammals exposed to rodenticide baits or poisoned prey in controlled or uncontrolled settings as evidenced by controlled lab studies, field incident records, and lab and field observations.

(4) Retention times of residues in body tissues of primary consumers are of great concern because it is so high.

(5) Numerous reported incidents indicate that exposure is occurring in numerous non-target species, including avian and mammalian predators and scavengers.

We couldn't agree more that the EPA should be concerned about these issues. In addition to these, we have the following concerns:

(1) It is apparent to us that the RRTF (Rodenticide Registrants Task Force) has blocked, delayed, and essentially forced the EPA to re-write the rodenticide risk assessment. The RRTF

has had numerous exclusive meetings with EPA since the initial 1998 risk assessment and the current risk assessment seems to reflect their undue influence over the entire process. And there has been little to no opportunity for any other stakeholder to provide input or even attend any of these meetings with EPA. In addition, the EPA would not allow any other stakeholder to view drafts of this the rodenticide risk assessment as it progressed, yet willingly shared them with industry.

(2) There are incredibly few data for toxicological tests that compare the toxicity and efficacy of these nine products side by side for a variety of species. This is particularly true for field studies, and we note that most of the available studies showed that the test compound did not work well or involved the use of compounds which are not included in this RED and/or are no longer registered. This is a true weakness of the risk assessment. Without this direct comparison available, the EPA is piecing together indirect comparisons that may or may not be valid.

(3) The risk assessment fails to consider sublethal effects. The continued reliance by EPA on dead bodies is incredibly short-sighted and demonstrates that the Agency is content with remaining in the dark ages of wildlife toxicology; in addition to liver pathology, there is some evidence to suggest that reproduction may be impacted by sublethal exposure to rodenticides – disruption of Ca mobilization and remobilization processes and eggshell production in birds and reptiles, ataxia, anorexia, dyspnea, and behavioral changes (lethargy, exercise intolerance), among others (Mineau pers. comm.; Plumlee 2004).

(4) There is no consideration of the possible impact of prior exposure (tissue residues of one or more rodenticides) on subsequent exposure; there is some data to support the idea that non-target mammals already exposed to rodenticides have a greater susceptibility to subsequent exposure to rodenticides (Mosterd and Thijssen 1991); from the available data, it is apparent that the second generation anti-coagulants are highly persistent in the liver and other tissues due to their high target binding capacity, so animals carrying around residue burdens of second generation anti-coagulants may have increased susceptibility, a potentially critical factor that is overlooked by EPA.

(5) Current rodenticide risk models do not reflect real-world use and exposure. For example, prey populations are chosen with rodent body burdens that have very few individuals with high residue levels, and a vast majority with very low residue levels. Also, these models use a number for % of rodents that will be exposed (i.e., 1%) that is substantially lower than many field conditions. Further, resistance issues are not addressed in these models. There is a huge amount of uncertainty associated with these nine compounds, and all of the probabilistic risk assessment in the world will not be able to shed enough new light on the subject to make the substantial effort worthwhile.

(6) The EPA relies much too heavily on acute toxicity data for their comparative risk assessment; this is a problem because there are many reasons to be wary of acute toxicity studies of rodenticides; mortality is not a good endpoint because it is highly variable, is tied to animal

husbandry practices, the acute toxicity tests are too short a duration to account for all test mortality, and for birds, the test birds are being provided the antidote (through their feed – soy and alfalfa often are high in vitamin K_1) at the same time they are being dosed, which really confounds matters.

(7) A significant source of uncertainty in the risk assessment is the fact that most of the laboratory studies have tested acute effects in species such as the northern bobwhite, mallard, laughing gull, ring-necked pheasant and domestic chicken. Secondary effects were tested primarily in barn owls, red-tailed hawks, Eurasian buzzard and laughing gulls. The incident data presented applies largely to great horned owls, screech owls, golden eagles, and red-tailed hawks. However, as indicated by a well-documented brodifacoum poisoning incident at the National Zoo, birds of much smaller body size, such as finches, thrushes and warblers, are also susceptible to secondary (and most likely primary as well) exposure to rodenticides. However, very little research has been presented to address either toxicity or exposure to small birds. As indicated in the critique by Dr. Woody Hill, "neither the 175-200 g quail nor the 1-1.2 kg duck is a proper representative (physiologically or toxicologically) of a 50 g bird even if the 50 g bird is a juvenile bobwhite or mallard. These sources of variation (error?) should be addressed in the narrative." Furthermore, the small size of these birds might well preclude them from being recovered and included in incident data. Many small birds may also face significant exposure. The ubiquity of birds such as robins, chickadees, finches and cardinals near urban and rural houses means that they could come into contact directly with baits placed outdoors, or secondarily by feeding on insects that have fed upon bait. We believe that the exclusion of data on small birds from consideration in either the laboratory studies or the incident data has significant potential to underestimate the overall risk to birds of these rodenticides.

(8) Exposure as a component of risk - the 2002 rodenticide risk assessment document states that "Risk is a function of exposure and hazard (toxicity)." The assessment bases exposure estimates on the "amount of active ingredient available per kilogram of grain-bait formation," stating that more specific information about where and how much of each product is used is not available for the rodenticide compounds tested. The 2000 document, however, contains a significant amount of information and recommendations regarding use that have been deleted in the 2002 document.

(9) Secondary risk to birds can be reduced by limiting the availability of the more highly toxic, persistent second-generation anticoagulents (e.g., brodifacoum, bromadiolone, difethialone) to certified applicators only. Zinc phosphide, chlorophacinone and diphacinone products for field use in orchards, range land and elsewhere must be applied by certified applicators, but products of all 9 rodenticides registered for rat and mouse control in and around buildings are available to anyone "over the counter." We believe that persons not trained or experienced in rodent control may be significantly more likely to intentionally or inadvertently misuse rodenticides.

(10) Primary risk to birds can be reduced by making bait inaccessible to birds; for example, by applying bait in adequately designed bait stations. Current rodenticide labels require that bait for commensal rats and mice be placed in bait stations or areas inaccessible to non-target mammals,

which should reduce primary exposure to birds. However, misuse may occur due to intentional or unintentional failure to comply with directions and restrictions. Further, this does nothing to address the continued problems of secondary poisoning.

(11) None of the scientists reviewing the 2000 document criticized that draft's comments and recommendations concerning reducing risk by altering use practices to minimize exposure. Yet this language has been entirely deleted in the 2002 document, and ingredient concentration in the product is used as a proxy for exposure. This is not justified in light of the reviewers' comments, and the lack of attention to use as a factor in exposure also hampers the conclusions of the 2002 document. We request that the Agency please explain the deletion of the need to alter use practices to minimize exposure.

(12) A weakness pointed out by the peer-reviewers and addressed in the 2002 document is that missing data and other uncertainties about toxicity limit the predictive capabilities of the assessment. According to the 2002 document, data that would contribute to a better assessment of risk includes: chronic, secondary, sublethal and reproductive hazards, retention times in liver and blood, usage information, and differences between modes of action of the various types. We concur with this assessment; however, the need for such hazard data to improve decision-making should not outweigh the need to include considerations of exposure, particularly with respect to use. We are particularly concerned that the assessment fails to account for 1) the inability to enforce label guidelines on use, potentially leading to improper outdoor uses that increase exposure risk; and 2) the possibility that if one or more popular but high-risk compounds is restricted, the market for other compounds of equal hazard might expand, thus increasing potential exposure and therefore risk.

(13) The 2000 risk assessment document was much more straightforward in concluding that the risks of several posed by several of the rodenticides warrant measures to limit exposure:

Based on a "weight-of-the-evidence" approach and data evaluation by means of a decision table, the Agency concludes that there are major differences in the potential risks of these compounds.

The three rodenticides posing the highest primary risk to birds are brodifacoum, difethialone and zinc phosphide. Because brodifacoum and difethialone also exhibit high potential secondary risk to birds, reducing exposure to these compounds is essential.

Based on data evaluation by means of a decision table, brodifacoum and difethialone were identified as the two rodenticides posing the greatest overall risk to birds and nontarget mammals. Reducing exposure of wildlife to these two compounds is of utmost importance.

The 2002 document concludes that *brodifacoum poses the greatest potential overall risk to birds and nontarget mammals, followed by zinc phosphide, difethalione and diphacinone*, but offers no recommendations regarding exposure. This may be a function of having defined exposure so narrowly, but it detracts from the usefulness of the risk assessment.

Rodenticide Risks to Wildlife

Risks to Endangered Species

San Joaquin kit fox (*Vulpes macrotis mutica*) – the San Joaquin kit fox is listed as federally endangered, and there is a clear record of mortality of the San Joaquin kit fox in California from anti-coagulant rodenticides. At present, the Ecological Incident Information System (EIIS) database contains records for 32 San Joaquin kit foxes, including 27 for brodifacoum (1999 - 2003), 2 each from bromadiolone (1999 and 2000) and chlorophacinone (1990 and 1999), and one for diphacinone (1987). The incidents and their trends resulting from brodifacoum poisoning are troubling. These incidents have increased in number from 4 each in 1999, 2000, and 2001 to 14 in 2002. There is one confirmed kit fox poisoning record from 2003, and it contained the highest level of brodifacoum ever seen in kit foxes (11 ppm in the liver). At present, there are approximately 40 foxes showing rodenticide poisoning (many already listed in the EIIS database) and a freezer full of dead foxes waiting for residue analysis that will likely show additional rodenticide poisoning. We should point out here that this residue analysis is contingent on generating funds to conduct it which are not available at present and therefore this data unfortunately may not be available for some time. In addition to high liver residues of brodifacoum as well as other rodenticides in the tissues of these animals, necropsies are revealing large amounts of free blood in abdominal cavities, meaning that the likely cause of death was rodenticide poisoning. It is uncommon for brodifacoum to be the sole rodenticide present – there are usually multiple rodenticide residues found upon analysis, including other second generation anti-coagulants such as bromadiolone. We note here that at least 5 kit foxes have recently been found with residues of coumatetralyl, an anticoagulant rodenticide not even registered in the United States! Finally, it is ironic to note here that the finding that San Joaquin kit foxes were susceptible to rodenticides was published 30 years ago by Schitoskey (1975), who reported that the San Joaquin kit fox was susceptible to both primary and secondary poisoning from rodenticides (sodium monofluoroacetate, strychnine, zinc phosphide) contained in poisoned kangaroo rats.

One further note on San Joaquin kit fox - we note that the USFWS Biological Opinion (1993) stated that the San Joaquin kit fox was a species for which brodifacoum "is not likely to jeopardize" their continued existence. Their reasonable and prudent alternatives/measures for the species was that incidental take can be minimized by requiring that outdoor applications be made in tamper-resistant bait boxes placed in areas not accessible to wildlife. We point out here that this assessment is egregiously erroneous in the sense that tamper-resistant bait boxes will have absolutely no effect on the probability of kit foxes dying from secondary poisoning. So, this needs to be taken into account if and when the EPA ever decides to take a closer look at this Biological Opinion.

Other highlighted cases

Bald eagle (*Haliaeetus leucocephalus*) – bald eagles are federally listed as Threatened in the contiguous lower 48 states, and there are two records of bald eagles killed by brodifacoum and one record of a bald eagle killed by warfarin in the EIIS database.

Spotted owl (*Strix occidentalis*) – spotted owls are federally listed as Endangered, and there is at least one case of a spotted owl being killed by brodifacoum in the EIIS database.

San Joaquin antelope ground squirrel (*Ammospermophilus nelsoni*) – the San Joaquin antelope ground squirrel was an ESA Category I Candidate Species in 1995, but subsequently relegated to a Species of Concern in 1996. It is listed as Threatened in the state of California. This species, endemic to the San Joaquin Valley, has also suffered poisoning from rodenticides – an unknown number of mortalities.

In 1993, the USFWS published a Biological Opinion "Effects of 16 Vertebrate Control Agents on Threatened and Endangered Species" dealing with the 1991 ESA Section 7 consultation with EPA. This Biological Opinion included jeopardy determinations for mammals, birds, and reptiles potentially exposed via primary or secondary exposure to 8 of the 9 rodenticides (the other one, difethiolone, was not registered for use until 1995). Unfortunately, the EPA chose to totally ignore this Biological Opinion, and as a result, numerous birds, non-target mammals, and other wildlife species, including endangered and threatened species, have had to pay the price ever since. The fact that the taxpayers spend millions of dollars annually on the San Joaquin kit fox recovery as well as the recovery of many other T&E species seems to be lost on the EPA as they continue to allow the San Joaquin kit fox and other T&E species such as the bald eagle and spotted owl to perish from rodenticide poisoning each year.

Risk to raptors

Rodenticides pose a substantial risk to both diurnal and nocturnal raptors, particularly from secondary poisoning. In addition to the extensive wildlife incident record, there are many published studies dealing with the impact of rodenticides on raptor species. Applications of brodifacoum in apple orchards resulted in the deaths of radio-marked screech-owls (*Otus asio*) (Hegdal and Colvin 1988). Mendenhall and Pank (1980) documented secondary poisoning of owls by anticoagulant rodenticides (36 barn owls - bromadiolone, brodifacoum, diphacinone were lethal, difenacoum was sublethal; 3 great-horned owls (*Bubo virginianus*) and 1 northern saw-whet owl (*Aegolius acadicus*) fed diphacinone-killed mice – 3 of them died 7-14 days following exposure). Mendenhall and Pank (1980) make a good point that susceptibility to rodenticides can be exacerbated by stress, changes in diet, increased activity, and minor injuries (even if injury preceeds exposure by many days).

Newton et al. (1990) examined the prevalence of rodenticides found in barn owls from the UK.

They found that exposure of barn owls to second generation anti-coagulants was likely frequent and widespread. Berny et al. (1997) reported that bromadiolone was detected in livers of 15/16 dead Eurasian buzzards (*Buteo buteo*), 5/5 black kites (*Milvus migrans*), and 1/1 harrier examined. Saucy et al. (2001) also reported deaths of numerous raptors (Eurasian buzzards, black kites) and carrion crows following a mechanical application of bromadiolone bait (150 ppm) to underground burrows for water vole control in Switzerland. Townsend et al. (1981) assessed the secondary poisoning hazard of warfarin to tawny owls.

Sheffield (1997) conducted a thorough review of pesticide impacts on owls, and found that many of the papers in the published literature (9 of 24) dealt with rodenticide impacts on owls, mainly brodifacoum. In New York, 77% and 50% of asymptotic great-horned owls and red-tailed hawks, respectively, tested positive for all rodenticides combined (Stone et al. 2003). Finally, Mineau (unpublished data) assessed a random sample of red-tailed hawks and great-horned owls found dead from 1995-2001 in Ontario and Manitoba for rodenticides (using LCMS/MS) – found that 57% of the red-tailed hawks (n=30) and 87% of great-horned owls (n=84) had rodenticide residues, and that more owls had two or more rodenticides more commonly than either 0 or 1; red-tailed hawks had 40% brodifacoum and 50% bromodiolone, great-horned owls had 75% brodifacoum and 67% bromadiolone, but other rodenticides found included warfarin, diphacinone, chlorphacinone, and difethiolone.

Risk to other bird species

Rodenticides have been also been shown to pose substantial hazards to other birds species. Ramey and Sterner (1995) found that death due to zinc phosphide poisoning occurred in 18/26 (69%) of pheasants (*Phasianus colchicus*) exposed in 0.2 ha enclosures planted in alfalfa; sublethal effects were seen in some pheasants (ataxia, lethargy, hypoactivity – took 7 days for them to move normally again and 14 days to fully recover); 94% of the mortalities occurred within 24 hrs of bait application; none of the 26 Calif quail used in the study ended up dying from zinc phosphide exposure.

Smaller birds such as passerines are likely highly vulnerable to the hazards posed by rodenticides, particularly if the rodenticide bait is broadcast in an area where birds may feed. However, there is little data (either scientific studies of incident reports) on the impacts of rodenticides on smaller birds. The lack of incident reports for smaller birds may be explained by their small size and speed at which their carcasses disappear in the field.

Risk to non-target mammalian species

Non-target mammalian species are common victims of both primary and secondary poisoning from rodenticides. There are a high number of mortality incidences due to rodenticides not only for wild mammals but also for domestic mammals (dogs, cats, farm animals, etc. – see below).

Mammalian carnivores seem to be the most common victim of rodenticide poisoning, with mustelids and canids the most prevalent species involved.

There are a few controlled, captive studies of note with regard to impacts on carnivores. Evans and Ward (1967) found that nutria (*Myocastor coypus*) killed with anti-coagulant rodenticides were responsible for secondary poisoning of mink (*Mustela vison*) and dogs (*Canis familiaris*). Hill and Carpenter (1982) found that Siberian ferrets consuming rodents killed by zinc phosphide learned to avoid eating the GI tracts of the rodents, thereby minimizing the toxicity; zinc phosphide has an emetic action, so after one incident, the ferrets learned to avoid; however, the ferrets suffered sublethal effects, including significant decreases (18-48%) in Hb, increases of 35-91% in serum iron, and elevated levels of serum globulin, cholesterol, and triglycerides; Hb/Fe, urea nitrogen/creatinine, and albumin/globulin ratios also were altered by the secondary poisoning; also, 19 of the 20 ferrets lost body mass.

As far as impacts of rodenticides on mammalian carnivores in the field, Saucy et al. (2001) reported the mortality of 38 wild mammals, mainly red foxes and weasels, and 18 cats and dogs, following mechanical application of bromadiolone bait (150 ppm) in underground burrows for control of water voles in Switzerland. In New Zealand, Alterio (1996) found that secondary poisoning of stoats (*Mustela erminea*), feral ferrets (*Mustela furo*), and feral house cats (*Felis catus*) occurred following exposure to brodifacoum. Similarly, Alterio and Moller (2000) reported secondary poisoning of stoats (*Mustela erminea*) in a South Island podocarp forest in New Zealand. Townsend et al. (1984) found that least weasels (*Mustela nivalis*) in the United Kingdom (UK) suffered secondary poisoning following exposure to warfarin. McDonald et al. (1998) reported that residues of one or more anti-coagulant rodenticides were found in the livers of stoats (*Mustela erminea*) and weasels (*M. nivalis*); residues were found in 9 of 40 stoats (23%) and 3 out of 10 weasels (30%); most common rodenticides involved included the second generation anti-coagulants brodifacoum and bromadiolone; concluded that weasels were victims of secondary poisoning on these estates through consumption of non-target species (rodenticides used widely away from buildings). Shore et al. (1996) found that polecats (*Mustela putorius*) in the UK were frequent victims of secondary poisoning by second generation anti-coagulant rodenticides by hunting around farm buildings and feeding on rodents mainly in winter. Residues were found in 7 of 24 livers (29%) and in 2 of 5 stomachs (40%). Difenacoum was detected most frequently, but bromadiolone and brodifacoum were also detected. Most polecat carcasses were found along roadsides. The results indicated that exposure of polecats to second generation anti-coagulant rodenticides may be common and widespread. Schitoskey (1975) reported that the San Joaquin kit fox was susceptible to both primary and secondary poisoning from rodenticides (sodium monofluoroacetate, strychnine, zinc phosphide) contained in poisoned kangaroo rats (*Dipodomys* sp.). Littrell (1988) reported deaths of a raccoon and a mountain lion in northern CA resulting from diphacinone poisoning. Finally, Savarie et al. (1979) orally dosed 10 wild coyotes with diphacinone (doses ranged from 0.31 – 5 mg a.i./mg) and attached radiocollars to the coyotes which were then released back into the wild. Seven of 10 (70%) coyotes died within 7 – 16 days, with an average time to death of 9.6 days.

Incident Data

The EPA's EIIS database reveals at least 358 wildlife mortality incidents in which one or more of the rodenticides was detected in birds or non-target mammals. This includes 255 incidents for brodifacoum alone, including 58 owls, 72 diurnal raptors, 18 corvids, 4 other birds, 48 wild canids, 5 wild felids, 10 other carnivores, 5 white-tailed deer, 33 rodents/lagomorphs, and 2 opossums. Other incident totals include bromadiolone (40), zinc phosphide (25), diphacinone (20), chlorophacinone (13), warfarin (4) and difethiolone (1), with none for bromethelin or cholecalciferol.

The scope of the problem of wildlife mortalities due to rodenticides is readily apparent in the few states that actively monitor. These include primarily New York and California, whose records constitute over 90% of the rodenticide incidents in the EIIS database. In New York, Stone et al. (2003) reported on 80 incidents involving raptors exposed to anti-coagulant rodenticides, mainly brodifacoum (84%). Stone et al. (1999) previously reported on 55 incidents involving wildlife species exposed to anti-coagulant rodenticides in New York. Brodifacoum was implicated in 80% of the incidents. Secondary poisoning of raptors, mainly great-horned owls and red-tailed hawks, comprised 50% of all cases. Gray squirrels, raccoons, and white-tailed deer were the most frequently poisoned non-target mammals.

Of course, this is just the tip of the proverbial iceberg, as carcasses in the field last but a very short amount of time (usually a matter of just hours or days) and there are very few individuals or local, state, or federal agencies actually looking for carcasses. Two states (New York and California) make up well over 90% of the records cited above, as the majority of states do not have monitoring efforts. However, even when there are monitoring efforts, in many instances, carcasses may not be detected. Further, death may be attributed to natural causes, as rodenticide-poisoned animals do not appear to be anything but natural. And many incidents that could be added to the database may simply go unreported for any number of reasons. Therefore, the large number of incidents that actually found their way into the EPA EIIS database provides substantial evidence of a much larger problem as a direct result of the present system of rodenticide use.

Concerns regarding brodifacoum

Brodifacoum is a highly toxic second generation anti-coagulant rodenticide that accounts for 30% of all rodenticide active ingredients in the United States. Therefore, its continued use is of major concern to animals and humans everywhere. Brodifacoum is such a highly hazardous chemical to animals and humans that we believe that its continued uses should be severely restricted (i.e., only persons that are certified or otherwise trained should be using it). However, we support the continued use of brodifacoum for conservation purposes such as protecting island species impacted by rodents and other non-native species. Introduced commensal rats

(*Rattus* spp.) are a major contributor to the extinction and endangerment of island plants and animals. Although it is a powerful conservation tool, it is highly toxic to all other animals and its continued use for this purpose should be tightly controlled. Further, on some islands, its use may not be feasible without prohibitively expensive mitigation. Also, it should be noted that other rodenticides may be useful alternatives to brodifacoum for this purpose.

There are a couple of good examples of conservation uses of rodenticides on islands. Donlan et al. (2003) experimentally tested brodifacoum and two less toxic rodenticides, diphacinone and cholecalciferol, in eradicating *Rattus rattus* from three small islands in the northern Gulf of California, Mexico. All three rodenticides were successful in eradicating rats, suggesting that the less toxic diphacinone and cholecalciferol may be useful alternatives to brodifacoum for some island eradication programs. However, they point out that the choice of rodenticide must be balanced between efficacy and the risks to non-target species. Applied field research is needed on less toxic rodenticides, as well as improving palatability of baits. This may prove invaluable in preventing extinctions and in restoring larger and more diverse island ecosystems (Donlan et al. (2003). On Langara Island, at the northwestern tip of British Columbia's Queen Charlotte archipelago, Howald et al. (1999) examined the use of brodifacoum for conservation purposes. Langara Island was once nesting grounds for an estimated 500,000 seabirds. However, infestations of Norway rats (*Rattus norvegicus*) and their predation of eggs and breeding adults have caused extirpation or serious declines of all seabird species. By 1993, the breeding population of ancient murrelets (*Synthliboramphus antiquus*) had declined to 10% of its historical size. The island is also home to breeding bald eagles (*Haliaeetus leucocephalus*), peregrine falcons (*Falco peregrinus*), and other wildlife. In 1994 and 1995 they initiated a two-year study into the risk of secondary poisoning to non-target species. During 1994, rat carcasses were laid out with motion sensor cameras to identify potential scavengers. Ravens, northwestern crows and bald eagles were photographed at carcasses, and therefore at risk of feeding on rats that die above-ground. During the baiting program, 19 rats were radio-tagged to determine the proportion dying above-ground, and thus available to predators/ scavengers. Ravens were found poisoned both from feeding directly on the bait, and predating/scavenging poisoned rats. Bald eagles were trapped and blood sampled for brodifacoum residue analysis and prothrombin time evaluation; 15% of the sampled population showed detectable residues but no adversely affected birds were found. They concluded that the use of brodifacoum for rat removal on seabird islands poses a clear risk of secondary poisoning to avian scavengers, which must be weighed against the benefit of rat removal programs.

A couple of studies on the field use of brodifacoum by Eason and colleagues in New Zealand provide some insight on its potential hazards. Eason et al. (1999) point out that the field use of brodifacoum baits to control brushtail possums (*Trichosurus vulpecula*) has increased in recent years and has raised concerns of secondary and tertiary poisoning. In New Zealand, feral pigs (*Sus scrofa*) are known to scavenge possum carcasses and may also gain access to bait stations containing possum baits. Eason et al. (1999) determined the concentrations of brodifacoum in muscle and liver tissue from captive pigs after primary and secondary poisoning. Highest concentrations were found in the liver. Pigs eating 500 to 1776 g of brodifacoum bait containing

20 mg/kg had muscle concentrations ranging from 0.02 to 0.07 mg/kg and liver concentrations ranging from 0.72 to 1.38 mg/kg. Both appeared to be independent of the amount of bait eaten. Possums fed 400 g of bait had similar liver concentrations (0.52-1.20 mg/kg). Pigs that had eaten the soft tissue from eight poisoned possums had brodifacoum concentrations of 0.32 to 0.80 mg/kg present in the liver and the concentration increased in a dose-dependent manner. Brodifacoum was detected in muscle from only one of these animals. In a preliminary field survey, 11 of 21 wild pigs sampled from areas where possum control had been undertaken were contaminated with brodifacoum concentrations in the liver ranging from 0.007 to 1.7 mg/kg. Eason et al. (1999) concluded that, in view of the potential impact on pig hunters and dogs consuming wild pig meat and offal, restrictions on the wide-scale field use of brodifacoum baits appear to be warranted. Eason et al. (2002) reviewed the risks to non-target birds and other wildlife from the use of vertebrate pesticides, including anticoagulant rodenticides. The acute toxicity of brodifacoum to birds in New Zealand varies from <1 mg/kg in pukeko (*Porphyrio p. melanotus*), the native swamp hen, to >20 mg/kg in the paradise shelduck (*Tadorna variegata*). Like other second-generation anticoagulants, brodifacoum is strongly bound to vitamin K epoxide reductase and will persist, apparently for at least 6 months, in organs and tissue containing this enzyme (e.g., liver, kidney, and pancreas). The unique toxicokinetics of this class of compound exacerbates the risk of primary and secondary poisoning of non-target species. Vertebrate pest control programs in New Zealand using bait containing brodifacoum have resulted in the primary and secondary poisoning and sublethal contamination of non-target species. These include native raptors, such as the Australasian harrier (*Circus approximans*) and morepork (*Ninox novaeseelandiae*), other native birds such as the pukeko, weka (*Gallirallus australis*), southern black-backed gull (*Larus dominicanus*), and kiwi (*Apteryx* spp.), and introduced mammals, including game animals. There are increasing numbers of reports worldwide of wildlife contamination and toxicosis after the use of second-generation anticoagulants. Their conclusion is exactly in line with what the findings are in the United States and Europe with regard to brodifacoum hazards to wildlife species.

MBTA and BGEPA implications

Congress enacted the Migratory Bird Treaty Act ("MBTA"), 16 U.S.C. §§ 703 et seq., implementing the International Convention between the United States and several countries, to ensure a uniform, federally centralized system for protecting migratory birds, rather than a patch-work system of protection among the various States. See Humane Soc'y of the United States v. Glickman, No. 98-1510, 1999 U.S. Dist. LEXIS 19759, *32 (D.D.C. July 6, 1999). Section 703 of the MBTA provides that unless and except as permitted by regulations issued by the Secretary of the Interior, "it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, [or] kill . . . any migratory bird . . . included in the terms of the conventions . . .." 16 U.S.C. § 703 (emphasis added). This prohibition has been interpreted to include the poisoning of migratory birds from registered pesticides under FIFRA. United States v. Corbin Farm Service, 444 F. Supp 510 (E.D. Cal. 1978) aff=d United States v. Corbin Farm Service, 578 F.2d 259 (9th Cir. 1978).

Similarly, the Bald and Golden Eagle Protection Act ("BGEPA"), 16 U.S.C. § 668, states that it is illegal to "knowingly, or with wanton disregard for the consequences of his act take . . . any bald eagle . . ., or any golden eagle." "take under the BGEPA "includes also pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, or molest or disturb . . .." 16 U.S.C. § 668c (emphasis added).

Despite these prohibitions, however, the EPA has continued to allow the use of the rodenticides at issue here, which have taken significant numbers of mitgatory birds, and bald and golden eagles. Specifically, eleven golden eagles and two bald eagles were poisoned by brodifacoum. See EIIS Database (and 11 golden eagles and 3 bald eagles total for all nine rodenticides). In addition, there are also 152 reports of migratory birds that were poisoned by brodifacoum included in the EIIS database. Id. (207 total incidents reported for all nine rodenticides).

Rodenticide Risks to Domestic Animals

The Animal Poison Control Center (APCC) in Urbana, Illinois reports 2,334 cases (2,685 individual animals) of domestic animal poisoning with rodenticides (brodifacoum – 1,161; bromadiolone – 511; zinc phosphide – 218; diphacinone – 206; bromethalin – 66; difethialone – 48; warfarin – 48; chlorophacinone – 42; cholecalciferol - 34) between November 2001 and June 2003 (US EPA unpubl). Most of these cases involved domestic dogs. The number of incidents has been increasing steadily since the first 3 years of the APCC (1978-1981), when only 4.4% of the incidents were related to anti-coagulant rodenticides. By 1982, the percentage had almost doubled to 8% of the incidents, and in 1984, it had doubled once again to 17% of the incidents, ranking anti-coagulant rodenticides as the number one cause of animal poisoning incidents.

Of note is a case in which a female dog gave birth to litter of puppies where two of them died neonatally from brodifacoum poisoning from placental exposure; the mother had no symptoms and no known recent exposure to rodenticides (Munday and Thompson 2003). This gives a clear indication of the scope of the problem with brodifacoum.

In most cases, domestic animals are dying following a single exposure. Boermans et al. (1991) gavaged six horses with a commercial brodifacoum-containing bait (Talon) at a dosage of 0.125 mg brodifacoum/kg BW. The horses showed weight loss, severe hypocoagglability and hemogram alterations. This data indicate that a single exposure of horses to brodifacoum has the potential of causing clinical illness and possibly death.

Numerous mortalities have also been reported from captive animals in zoological parks. Borst and Counotte (2002) found that second generation anticoagulant rodenticides can give rise to unexpected casualties in nontarget species in zoos. The first two offspring of a pair of turkey vultures (*Cathartes aura*) died of brodifacoum toxicosis. The adult birds fed rodenticide-killed

mice to their offspring. There are previous case reports of small carnivorous birds (*Dacelo novae-guinae* and *Tockus deckeni*) killed eating poisoned (difenacoum and brodifacoum) mice. Even a granivorous species (*Rollulus roulroul*) died, probably by contamination of its food by cockroaches that transported the rodenticide. In addition, there have been numerous records of captive animals dying from rodenticide poisoning at the National Zoo in Washington, DC.

Rodenticide Risks to Humans

Perhaps the most distressing portion of the EPAs push for re-registration of these nine rodenticides is the fact that in excess of 20,000 people, mainly children ages 5 and under, are suffering exposure and effects from these rodenticides in the United States each year (Litovitz et al. 1999). And of these cases, 30-40% of them are requiring either a visit to a physician or a hospital (or both). Anti-coagulant rodenticides are responsible for a vast majority (>90%) of these cases. Data from 2002, 1998 and 1995 from the American Association of Poison Control Centers (AAPCC) can be compared as follows:

Year	# exposures (total)	# exposures (< 6yrs)	treated in health care facility	deaths
2002	18,144	16,000	5,476	3
1998	17,724	15,854	5,882	1
1995	14,710	13,167	5,479	1

Data from the AAPCC indicates that the number of exposures (total and those <6 yrs of age) is actually increasing over the past 9 years and also since the time EPA issued the rodenticide RED in 1998. And, when the data for these 9 years are summed, the total number of people exposed to rodenticides was approximately 150,132, the number of children less than 6 years of age was 133,685, the total number of cases serious enough to require medical treatment was 48,837, and the number of deaths was 17. These data speak for themselves and it is clear that this is a serious problem that EPA needs to immediately address.

Other Aspects that Need to be Considered

(1) Rodenticide sales and usage data

Directly related to the comments herein, we want to take this opportunity to point out that there is a serious paucity of both sales and usage data for rodenticides in the United States. As an example, the most recent EPA pesticides sales and usage report (Kiely et al. 2004) does not

include rodenticides as a separate category and lumps them in with "other". Both sales and usage data for rodenticides is exceedingly difficult to find in both the US and Canada and it is imperative that the EPA begin to address this by requiring both manufacturers as well as retailers to keep records of their sales. And need we remind you that EPA is the regulating agency responsible for administering FIFRA and has the regulatory power in which to require sales and use data from registrants. The EPA routinely requires sales and use data for insecticides, herbicides, and fungicides (among other pesticides), so now is the time to include rodenticides to this list. Following the necessary restriction of these rodenticides by EPA, professional pesticide applicators should keep close track of rodenticide usage and both sales and usage should be reported in BEAD's (EPA) annual report.

(2) Alternatives to rodenticides

We strongly believe that it is not sufficient to simply restrict the use of these nine rodenticides. The EPA must insist on alternative uses to rodenticides whenever and wherever feasible, especially the use of non-chemical alternatives when it comes to rodent control, of which there are many that have been proven to be effective. We remind the EPA of its role in advocating integrate pest management (IPM) that educates the general public on exclusion, rodent-proofing, habitat modification, proper storage and containment, and other methods, and that they can control their rodent problems in many cases without using hazardous rodenticides. This role is minimized and contradicted with the continued registration of overly hazardous rodenticides.

For purposes of rodent control that involves public health, we agree with the criteria outlined by Frantz (2004) for selecting rodenticides for use in an IPM program for rodents, including the following:

(1) the rodenticide should be the least toxic product that will be effective on the targeted species, and,

(2) the rodenticide must have a highly efficacious and readily available antidote that typically can be administered in time to save an accidentally intoxicated human or animal.

(3) Consultations with the "Services"

Pursuant to Section 7(a)(2) of the ESA, 16 U.S.C. § 1536(a)(2), the EPA must consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service on the effects these pesticides may have on threatened and endangered species. The ESA mandates that all federal agencies "shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or

adverse modification of [critical] habitat of such species . . .." Id. This provision imposes both substantive and procedural obligations on federal agencies, and clearly contemplates a close relationship of cooperation and consultation between the action agency and the Services in order to ensure that endangered and threatened species are "afforded the highest of priorities." T.V.A. v. Hill, 437 U.S. 153, 174 (1978). To guarantee compliance with the substantive no-jeopardy mandate, Section 7(a)(2)'s procedural obligations require a consultation process between the action agency and the Services. See Thomas v. Peterson, 753 F.2d 754, 763 (9th Cir. 1985) ("without substantial compliance with those procedural requirements, there can be no assurance that a violation of the ESA's substantive provisions will not result.").

The EPA's apparent reliance on the Biological Opinion issued in 1993 to satisfy the procedural mandate is unacceptable. See FWS, Effects of 16 Vertebrate Control Agents on Threatened and Endangered Species (1993). Specifically, consultation is required whenever an action agency "may effect" a listed species or critical habitat. 50 C.F.R. § 402.14.[1] The re-registration of these pesticides clearly is the type of agency action that triggers the consultation requirement. Id. § 402.02 (defining an "action" to include: "all activities or programs of any kind authorized, funded, or carried out by the agency," such as "granting of licenses [or] permits" and "actions directly or indirectly causing modifications to the land, water, or air.") Here, as is discussed above and is evident for the information contained in the Risk Assessment, the toxicants unquestionably harm many threatened and endangered species. The EPA would be directly and unequivocally failing to meet its obligations under the ESA if it does not consult on these effects before reregistering these pesticides.[2]

Moreover, the Services' regulations implementing Section 7(a)(2) state that "reinitiation of consultation is required and shall be requested by the Federal agency: . . . if new information reveals effects of the action that may affect listed species . . . in a manner or to an extent not previously considered; [] if the identified action is subsequently modified in a manner that causes an effect to listed species . . . that was not considered in the [Service's determination]; or [] if a new species is listed or critical habitat designated that may be affected by the [] action." 50 C.F.R. § 402.16. Again, as is discussed above, significant new information about the potential

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1 This trigger for consultation was "set sufficiently low to allow Federal agencies to satisfy their duty to 'insure' under Section 7(a)(2). Florida Key Deer v. Stickney, 864 F. Supp. 1222, 1229 (S.D. FL 1994) (quoting 51 Fed. Reg. 19,949-950) (June 3, 1986)) ("Therefore, the burden is on the Federal agency to show the absence of likely, adverse effects to listed species or critical habitat as a result of its proposed action in order to be excepted from the formal consultation obligation.").

2 It is well settled, that a federal agency must complete the consultation process before "an activity that may affect a protected species [can] go forward." Pacific Coast Federation of Fishermen's Associations, v. U.S. Bureau of Reclamation, 138 F. Supp. 2d 1228, 1242 (N.D. Cal. 2001). If an agency proceeds without first obtaining a Biological Opinion, the action agency cannot and does not ensure compliance with Section 7(a)(2)'s obligations and is subject to liability under the ESA. See Bennettv. Spear, 520 U.S. 154, 170 (1997) (completing Section 7 consultation only way to insure compliance).

effects of the pesticides has been developed since the issuance of the 1993 biological opinion. Moreover, additional species have been listed since 1991, and many carcasses of endangered and threatened species have been found to contain one or more of the rodenticide residues. Finally, the earlier consultation did not include an assessment of the potential effects of difethialone.

In addition to the procedural requirements, Section 7(a)(2) of the ESA imposes on all Federal agencies the independent substantive duty to "insure" that their actions are not likely to jeopardize the survival or recovery of listed species. 16 U.S.C. 1536(a)(2). While consultation with the expert wildlife agencies under Section 7 is the procedural manifestation of this obligation, it is each agency's independent duty to meet this "no-jeopardy" standard. Therefore, it is incumbent upon the EPA has an independent duty to avoid specific actions that would jeopardize listed species. However, EPA's implicit acknowledgement that to date it has not implemented the 1993 Biological Opinion is evidence that it has failed to meet this duty. See EPA, Update to the Overview of the Rodenticide Comparative Ecological Assessment (September 9, 2004). Indeed, the EPA's reluctant consent to undertake those actions that it is legally required to take, by "consider[ing] whether to pursue implementation of the 1993 Biological Opinion as an interim measure in advance of re-consultation with the Services," only underscores the EPA's abysmal track record of compliance with its duties under the ESA. Id. As a result, the EPA needs to take immediate steps to meet its obligation to protect listed species.

Finally, given the substantial risk these toxicants present to a wide range of listed species, the use of the newly promulgated counterpart regulations in this instance is inappropriate. See 69 Fed. Reg. 47732 (August 5, 2004) ("providing two optional alternatives for completing Section 7 consultation for FIFRA regulatory actions.") (emphasis added). The EPA has an obligation to utilize the full extent of the Services' expertise in the this area to ensure that the use of these pesticides will not jeopardize the continued existence of the any of the potential affected species, or adversely affect or destroy their habitat. Thus, in meeting this obligation the EPA should employ the general consultation procedure to ensure all of the relevant issues are fully examined and addressed by the expert fish and wildlife agencies; simply, the truncated review in the counterpart regulations is insufficient here.

Problems with the Continued General Use Registration of these Rodenticides (or business as usual)

The system of rodenticide registration and use as it is today in the United States is set up for failure - large numbers of mortalities/morbidities of not only wildlife but also domestic animals and humans as well are occurring each year across the United States. Sales and usage of these rodenticides is not followed by EPA, the public generally is not responsible or knowledgeable enough to use rodenticides properly, and what ends up happening is that rodenticides are too widely broadcast - throughout buildings, around building perimeters, and across urban, suburban, and rural landscapes, and an unacceptable level of humans and animals are exposed and numerous

mortalities/morbidities follow. As it currently stands, the system is broken and is in desperate need of repair. Some additional observations are as follows:

(1) There is scant evidence suggesting that we even require such widespread usages of these second generation anti-coagulant rodenticides in the US. Remember, these compounds were introduced largely to deal with rodent resistance to warfarin. We wonder where the data is on warfarin resistance in the US that warrants this high level of use of the second generation anti-coagulants? It seems as if this is information that you are requesting in this public comment period. Isn't that placing the cart before the horse? Further, where is the data that documents the benefits which could possibly be worth all of the environmental problems caused by these compounds? We are not aware of any data that clearly shows a real benefit to making second generation anti-coagulant rodenticides as broadly available as they are at present. With the growing adoption of IPM, due in large part to the efforts of the EPA, pest control managers for urban and rural areas can be trained in effective non- and least-toxic methods and practices of rodent control.

(2) Rodenticides, particularly the second generation anti-coagulants, kill way too many target and non-target field rodents, which then allows a substantial number of secondary poisonings of predatory/scavenging species. These rodents are exposed to a palatable second generation anti-coagulant bait and would be expected to eat as much of this as they would if exposed to a palatable first generation anti-coagulant bait, thereby accumulating a "super-lethal" dose. This fact leads, at least in part, to the epidemic of secondary poisonings we are seeing in wildlife species in the United States.

(3) The EPA has very little in the way of sales and usage data for rodenticides, although they do have this data for practically all other pesticide groups. We are not sure why this is, but this problem begs for immediate attention.

(4) The general public is just too careless and uninformed with regard to rodenticide usages, using them much more frequently than they are necessary; it is clear to us that the application of rodenticides cannot be left in the hands of the general public.

(5) There are just too many mortality/morbidity incidents for humans, domestic animals, and wildlife species (there is too much misuse, careless bait applications, etc.)

(6) Even PCOs/certified applicators are not using rodenticides in a safe and effective manner in many cases – they just hire someone to apply it who may be miles away from the licensed person when they apply it; this needs to be addressed.

(7) There seems to be some notion that tamper-resistant bait stations are the panacea for dealing with the excessive wildlife mortality incidents. However, tamper-resistant bait stations are not the answer because they do not even begin to address the entire secondary poisoning issue. Just because a bait station is tamper-resistant does not mean that the massive amount of secondary

poisoning will decrease by even one animal.

(8) The EPA assumes that minor label amendments will solve the animal/human exposure problem; the EPA needs to check out the literature from other continents and see that exposure levels are as high in countries where second generation anti-coagulant rodenticides are labeled for indoor use only (e.g., UK); also, regarding label issues, how in the world will the EPA enforce a label change when a product has been used in the US for so many years? This would be an exceedingly difficult thing to do and in fact is unlikely to happen, particularly in light of the fact that the EPA has no reliable data for how much of the product is being sold and how much is being used and where it is being used.

(9) The EPA fails to enforce the requirements that registrants provide information on the significance of the widespread contamination and mortality/morbidity caused by their products nor do they require the registrants to pay for all of the monitoring and analytical work necessary to track this widespread contamination.

(10) Another point that needs to be raised here is that, as part of this comment period, the EPA is requesting a lot of basic information on these rodenticides that they should already possess. We point out here that this information that EPA is requesting is, by and large, does not include information that it would be requesting for any other group of pesticides. The EPA requires much of this data for insecticides, herbicides, and fungicides, among other pesticide groups. Therefore, the EPA should re-examine their entire regulatory program for rodenticides and explain why certain information that is otherwise standard operating procedure is not required for rodenticides. Examples of this are as follows:

* the EPA does not keep track of sales and usage data for rodenticides. These data should already be required of all manufacturers, sellers, and PCOs.
* the EPA does not keep track of resistance issues and does not examine or otherwise assess resistance in the United States. In fact, the only reason the second generation anti-coagulant rodenticides are being used is supposed to be that there is widespread resistance to the first generation anti-coagulants such as warfarin. However, the fact that the EPA does not keep track of resistance has resulted in the widespread use of the second generation anti-coagulants that we see today. This is a major issue and we request the EPA to account for this.
* the EPA is asking for examples of commensal rodent control programs in urban areas and IPM programs targeting any rodents. Isn't this information that the EPA should already have?
* the EPA is asking for wholesale and retail prices of rodenticide baits. We believe that this information should already be required of all rodenticide sellers.
* the EPA is asking for importance of rodenticide baits in relation to non-chemical control methods. Again, isn't this something that the EPA should already have at its disposal? If the EPA does not have this information, then in effect what they are doing with these rodenticides is actively promoting hazardous chemical use in the United States!
* the EPA is asking for detailed estimates of types of damage caused by rodents in the US and economic loss resulting from such damage. Again, this is information that the EPA should

already have. Exactly how can the EPA conduct reliable cost/benefit estimates on rodenticide use if they do not have this information?

Conclusions

We find that the current rodenticide cluster RED as presented is grossly insufficient to deal with the high level of hazard posed by these products. Collectively, these nine rodenticides present a serious level of environmental contamination with consequences that are largely unknown or understood. The situation at present regarding the poisoning of children requires immediate action on the part of the EPA to address this serious problem. Therefore, we call on the EPA to immediately return to their 1998 policy that recognized that rodenticides are an unreasonable health risk in violation of FIFRA and not approve the re-registration of these rodenticides unless manufacturers include two safety measures to protect children: a dye that would make it more obvious when a child had ingested a rodenticide, and a taste aversion ingredient that would discourage children from ingesting rodenticides. The 2001 EPA decision to revoke these safety regulations was incorrect and must be rectified immediately. We therefore request that the EPA rework their RED for each of the nine rodenticide chemicals so that it finally restricts all current usages of the nine rodenticides. Continued usage for all nine rodenticides should be limited to professional pest control operators (PCOs)/certified applicators only and concomitantly, EPA needs to require all PCOs and all of their hired certified applicators to undergo a training program specifically for rodenticide use to minimize environmental hazards. Additionally, we request that the EPA cancel uses for rodenticides that involve field rodents (not commensals) that are not public health-related, that the EPA actively promote non-chemical alternatives to rodenticides, and that the EPA go back to, and enforce, their 1998 regulations that would insist on industry adding the two safety measures to all rodenticides (dye, taste aversion agent).

Thank you for the opportunity to provide comments on this document and on this very important issue in general.

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EXHIBIT 2

AMERICAN BIRD CONSERVANCY
CONSERVING WILD BIRDS AND THEIR HABITATS THROUGHOUT THE AMERICAS

December 8, 2005

Jim Jones, Director
Office of Pesticide Programs 7505C
Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Ave. NW
Washington, D.C. 20460

DEC 14 2005

Dear Director Jones:

American Bird Conservancy continues to be concerned with the prolonged 7 year registration review of rodenticides or rat poisons by the Environmental Protection Agency (EPA). We understand that the registration review was initiated in July 1998 and still has not been completed.

We are also monitoring the re-evaluation of rodenticides being undertaken by the California Department of Pesticide Regulation. They recently held a hearing to consider regulatory action based, in part, on their Pesticide Registration and Evaluation Committee's recommendation to limit the use of "second generation" rodenticide baits containing the active ingredients brodifacoum, difethialone, and bromadialone. In addition, we have monitored the August 8, 2005 Federal District Court (New York) decision with regard to brodifacoum, ordering EPA to issue regulations requiring safety features in packaging to prevent children from being poisoned.

American Bird Conservancy is strongly concerned about the poisoning of our children. But these poisons are also dangerous for birds and wildlife that are not the target of the poisons. The bird and wildlife poisoning is the result of unregulated consumer use of these poisons.

These second generation rodenticides have proved to be extremely hazardous to mammals and birds, as documented by the Pesticide Investigations Unit of the California Department of Fish and Game, the State of New York, and other data documented in the Avian Incident Monitoring System (AIMS) maintained by American Bird Conservancy. The AIMS database lists 126 incidents of bird poisonings involving brodifacoum, and 21 associated with bromodialone. This information is available at: http://www.abcbirds.org/aims. These active ingredients have been detected in carcasses of federally-listed endangered San Joaquin kit foxes, California mountain lions, bobcats, coyotes, and many raptors across the United States, including bald eagles, great horned owls, golden eagles, and many species of hawks. The rodenticide brodifacoum has also been implicated in the poisoning of many thousands of children in the US, as documented by the Center for Disease Control and cited by the NY District Court.

American Bird Conservancy strongly urges the EPA to complete its registration review of all rodenticides. The EPA should allow the sale of "second generation" rodenticides to the general public only if the following three conditions are met. The rodenticide must be in a tamper-proof bait station, must be for indoor use only, and be used for control of household rodents.

All outdoor uses of these products should be registered as restricted use pesticides available only to licensed pest control operators trained to correctly use them in a manner that prevents the poisoning of birds and other wildlife.. We also request that the concentration of active ingredients be reduced in these products. Laboratory and field tests have shown effect rodent control at lower poison bait concentrations. Lowering the poison concentration in baits

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would further reduce the potential for the secondary poisoning of birds and wildlife from eating the poisoned rodent carcasses.

American Bird Conservancy strongly feels that all three second generation rodenticides must be regulated together, because restricting only brodifacoum will allow the producers to change the formulation of over-the-counter rat poisons by substitution of bromodialone and difethialone in these products.

American Bird Conservancy urges the EPA to adopt regulations including the restrictions outlined above for safety of our children and America's birds and wildlife. It is important for EPA to act in order to have consistent regulations across the country. Due to EPA's inaction the California Department of Pesticide Regulation is considering unilaterally implementing the above regulations. We further believe that by not enacting strict regulations the EPA will be in violation of the NY District Court order requiring improved safety measures to protect children.

American Bird Conservancy further recommends that a monitoring program be initiated to evaluate the reduction in bird and wildlife poisonings. This monitoring program needs improvement over the current incident reporting requirements under FIFRA Section 6(a)2. The current requirements have proven to be ineffective in documenting serious bird and wildlife poisoning incidents. If the recommended monitoring program is adopted and demonstrates that the above restrictive measures are not successful in reducing non-target wildlife exposures, American Bird Conservancy recommends that all uses of these three rodenticides be made restricted use, and these rodenticides be available only to licensed pest control operators.

Again, we urge the EPA to take action to restrict the use of rodenticides to prevent the poisoning of America's children, birds and wildlife. Thank you for consideration of the position of American Bird Conservancy on this important issue.

Sincerely,

Michael Fry

Michael Fry, PhD
Director, Pesticide and Birds Program
American Bird Conservancy
1731 Connecticut Ave. NW 3rd Floor
Washington DC, 20009
202-234-7181

EXHIBIT 3

Michael Fry
<mfry@abcbirds.org>
01/20/2006 01:26 PM

To Jim Jones/DC/USEPA/US@EPA
cc
Subject **revised rodenticide letter**

January 20, 2006

Mr. Jim Jones, Director
Office of Pesticide Programs 7505C
Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Ave. NW
Washington, D.C. 20460

Original following by mail

Dear Director Jones:

I wrote on behalf of the American Bird Conservancy in December 2005 to convey concerns surrounding the continuing registration review of rodenticides, and would like to clarify and revise our position, based upon new information and recent discussions held with pesticide and wildlife experts from California.

In December I stated we agreed with the position of the California Department of Pesticide Regulation's Pesticide Registration and Evaluation Committee that "second generation" rodenticides could potentially be safely used around children and non-target wildlife if these products were sold over-the-counter in tamper resistant pre-loaded bait stations. The letter emphasized that over-the-counter sales and household use would need to be closely monitored to evaluate the reduction in secondary raptor and predator poisonings, and further stated that if monitoring were to demonstrate that the above restrictive measures were not successful in reducing non-target wildlife exposures, ABC would petition to have all uses of these three rodenticides be made restricted use, and that these rodenticides be available only to licensed pest control operators.

After discussions with California Department of Fish and Game, and after a review of ABC's own Avian Incident Monitoring System (AIMS) database, we have become convinced that it would be impossible to implement a satisfactory system for monitoring and evaluating rodenticide uses in conjunction with the over-the-counter sales. We do not believe that it would be realistic to expect homeowners purchasing over-the-counter rat poisons to confine the uses to indoors only, even if that were explicitly stated on the label. As a result, we believe indiscriminate use of these three second-generation rodenticides would continue to secondarily poison raptors and mammalian predators. We also do not believe that "tamper-resistant" pre-loaded bait stations would provide sufficient protection for children from these potent second-generation rodenticides. As a result:

- We recommend that Brodifacoum, Bromadiolone, and Difethialone be re-registered as restricted use pesticides, and removed from the over-the-counter market.

Secondary poisoning of raptors and predators continues to be a significant problem for birds and wildlife in California and elsewhere, due to high residue levels in rodents killed with these chemicals. As a result:

- We recommend that the concentration of active ingredient for outdoor uses of restricted-use second-generation rodenticides should be lowered by 50% to reduce the potential for secondary poisoning of wildlife.

The remaining rodenticides under evaluation, including chlorophacinone, diphacinone, bromethalin, warfarin, zinc phosphide, and cholecalciferol, all have the potential to poison children and wildlife if used in an inappropriate or unsafe manner. The ABC AIMS database documents the poisoning of birds by most of these rat poisons, indicating that outdoor uses continue to pose a significant hazard to birds. Secondary poisonings were documented for chlorophacinone, diphacinone, strychnine, and warfarin. Poisoning of granivorous birds (wild turkeys, morning doves, killdeer, pigeons, mallards, black-billed cuckoo, gulls, etc.) by these compounds indicate that inappropriate outdoor application of poison grains have also led to direct poisoning of protected native birds. We believe the use of pre-loaded tamper resistant bait stations would significantly reduce direct wildlife poisonings, and that stronger label language may reduce secondary poisonings, if label directions are followed.
As a result:

- We recommend that any of the above chemicals that are allowed to be marketed over-the-counter be sold only in pre-loaded tamper-resistant bait stations, and required to have clear explicit safety language on the labels for consumers, and a statement requiring the use of tamper-resistant bait stations when products are used outdoors.

American Bird Conservancy believes there are legitimate uses for rat poisons, but we are strongly concerned that untrained people frequently cause wildlife poisonings when these products are incorrectly used. Therefore, we urge the EPA to take action to restrict the use of rodenticides to prevent the poisoning of America's children, birds and other wildlife. Thank you for consideration of American Bird Conservancy's position on this important issue.

Sincerely,

Michael Fry, PhD
Director, Pesticide and Birds Program
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EXHIBIT 4

May 18, 2007

Special Review and Reregistration Division (7508C)
Office of Pesticide Programs
Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460-0001

Attn: docket number EPA-HQ-OPP-2006-0955

Thank you for the opportunity to comment on the Proposed Risk Mitigation Decision for Nine Rodenticides, docket number EPA-HQ-OPP-2006-0955, released on January 17, 2007. We, the undersigned organizations and individuals, welcome this opportunity to comment on this mitigation plan and provide our input on what we consider to be a critically important issue – the continued widespread uses of these rodenticides in the environment.

Background

The rodenticide "cluster" includes nine compounds, including six anti-coagulant rodenticides (brodifacoum, bromadiolone, difethialone, diphacinone, chlorophacinone, warfarin), one neurotoxic rodenticide (bromethalin), and two non-anti-coagulant rodenticides (zinc phosphide, cholecalciferol). Strychnine is an additional rodenticide that was not included in the mitigation plan, but has well-documented potential for non-target lethal exposure and a very high potential for illegal use and abuse in killing wildlife species. We strongly believe strychnine should be included in any rodenticide mitigation plan that addresses outdoor uses, both above ground and underground.

All nine rodenticides are used to control commensal rodents, but only 4 of the 9 (warfarin, diphacinone, chlorophacinone, zinc phosphide) are used to control field rodents. Strychnine is also registered as a product for use in controlling field rodents.

Mitigation Plan Recommendations:

We agree with the proposed decision to classify all bait products containing the active ingredients brodifacoum, bromadiolone, and difethialone as restricted use pesticides. These three second generation compounds have demonstrated the potential for severe adverse effects to birds and mammals from primary and secondary poisonings. We believe that these three poisons must be regulated together, in order to prevent the substitution of one for another in over-the-counter products. This risk mitigation measure would preserve the availability of the second-generation anticoagulants to meet critical public health needs in specific situations, but would result in marked overall reduction in exposure to and adverse effects from those compounds.

We strongly believe strychnine should be included in any rodenticide mitigation plan that addresses outdoor uses, both above ground and underground.

We also agree with the proposal to require all rodenticide bait products available for sale to consumers be sold only in tamper-resistant bait stations with solid bait blocks as the only permissible bait form. We laud the EPA for proposing these difficult decisions in an effort to stem the epidemic of child poisonings and wildlife exposures that have resulted from the indiscriminant use of second generation rodenticides.

We also concur with EPA that label improvements are needed to provide better guidance to both consumers and certified pest control operators to mitigate the risks associated with bait products containing any of these nine rodenticides. We believe also that label improvements are needed with bait products containing strychnine.

The Rodenticide Registrant's Task Force (RRTF) has proposed revising the labels for all nine rodenticides to restricting to certified applicators (or those working under their supervision) the outdoor use of rodenticide bait products containing the nine active ingredients covered in this proposal. We agree with the EPA that it is not appropriate to include on the label of a non-restricted use product any language suggesting that use is limited to certified applicators.

However, we strongly believe that all uses (with limited exceptions noted below) of second generation rodenticides be limited to indoor use only, because of continuing wide-spread poisonings of mammals and birds arising from secondary poisonings due to ingestion of target rodents with super-lethal body burdens of second generation rodenticides.

If the Agency declines to restrict second generation rodenticide use to indoors only, we believe the proposal to require that all outdoor, above-ground placements of bait products containing second-generation anticoagulants be contained in tamper-resistant bait stations, to deny non-target animals ready access to rodenticide bait could be acceptable on a trial basis, providing adequate monitoring of secondary poisonings is included as part of the mitigation plan.

Current rodenticide labels also need revision to provide simple instructions to consumers, and to provide information on how many bait stations would be appropriate for typical situations.

Mitigation measures for below-ground use of rodenticide baits are not included in the current mitigation plan. We believe that considerable non-target wildlife exposure arises from poorly managed farm, professional, and certified applicator rodent control programs in which pelleted or grain baits are applied to burrows. These burrows are plugged with paper or otherwise sealed, but are quickly re-opened by the target rodents, and pelleted baits are then pushed to the surface and made available to non-target birds and mammals. Many of the incidents reported in the American Bird Conservancy's Avian Incident Monitoring System (AIMS) database by the State of New York reflect poor applicator control and subsequent lethal non-target exposure.

We recommend EPA consult with registrants to develop recommendations for the appropriate minimum dose of pellet or grain bait to be placed in burrows to adequately control the expected number of rodents. We request that label instructions be provided to limit the amount of product placed in burrows, which will reduce the amount of bait pushed to the surface when burrows are re-opened by target animals. If, for example, a recommended quantity of "not more than 1

tablespoon" (or other agreed-upon amount) of bait per burrow were on the label, the potential for non-target exposure would be reduced. We further request that clear label instructions be provided that describe the proper control techniques for each species of rodent being targeted. Clear label instructions should be applied to both consumer and restricted use products.

Island Conservation Uses of Rodenticides:

We believe that most uses of the three second generation rodenticides should be designated for indoor use only. We believe there are important uses of for these rodenticides in rodent eradication on islands for conservation programs designed to enhance native species populations, particularly those of threatened and endangered status. The docket entry comment EPA-HQ-OPP-2006-0955- submitted by M. A. Soukup, United States Department of the Interior, National Parks Service, describes this program, and includes a copy of the peer reviewed report by Howald, GR et al. 2003. "Eradication of Black Rats from Anacapa Island: Biological and Social Considerations". Proceedings of the Sixth California Islands Symposium. We support this conservation use of rodenticides under controlled conditions, and incorporate these comments by reference.

Rodenticide Risks to Wildlife

We believe the above measures are required, because of continuing high levels of direct and secondary poisonings of both mammals and birds.

Risks to Endangered Species

San Joaquin Kit Fox (*Vulpes macrotis mutica*) – the San Joaquin kit fox is listed as federally endangered, and there is a clear record of mortality of the San Joaquin kit fox in California from anti-coagulant rodenticides. At present, the Ecological Incident Information System (EIIS) database contains poisoning records for 32 San Joaquin kit foxes, including 27 from brodifacoum (1999 - 2003), 2 each from bromadiolone (1999 and 2000) and chlorophacinone (1990 and 1999), and one for diphacinone (1987). Additional Kit Fox carcasses are currently stored in California Department of Fish and Game freezers awaiting residue analysis that will likely show additional rodenticide poisoning.

Northern Spotted Owl (*Strix occidentalis*).
Two cases of brodifacoum poisoning of endangered Spotted Owls in Washington State (1991, 1995) indicate that field uses of rodenticides have placed endangered owls at risk. It is not clear whether use of bait stations for vole control would reduce the secondary exposure risks to this species. We believe monitoring should be conducted to evaluate the success of the mitigation plan in reducing risks of exposure to endangered owls.

Bald Eagle (*Haliaeetus leucocephalus*)
The AIMS database contains 15 cases of lethal rodenticide poisoning of Bald Eagles, including 11 cases (14 dead birds) involving strychnine, 1 case with brodifacoum, and 3 cases with warfarin.

Risk to raptors and other bird species

Rodenticides pose a substantial risk to both diurnal and nocturnal raptors, particularly from secondary poisoning. The following table lists the number of poisoning cases in the AIMS database, presented by specific rodenticide active ingredient. The AIMS database includes many of the cases documented in the EPA EIIS database, but also includes cases of pesticide misuse and deliberate abuse. We feel these are important to include, because they demonstrate the high toxicity of these compounds, and their availability for abuse.

Table 1: Rodenticide cases in American Bird Conservancy AIMS database and species affected. Table lists the ten most frequently affected species for each compound. The limited number of cases is due largely to the fact that States have few resources to document poisonings, and the majority of cases are from California and New York.

Brodifacoum: 178 Events reported, 242 birds killed

Species	Events	Birds Killed	Birds Sub-lethally Affected
Red-tailed Hawk	50	60	8
Great Horned Owl	50	59	1
American Crow	17	17	1
Golden Eagle	11	7	4
Eastern Screech-owl	9	9	0
Cooper's Hawk	8	8	0
Barn Owl	6	10	0
Long-eared Owl	2	2	0
Red-shouldered Hawk	2	1	2
Bald Eagle	1	1	0

Bromodialone: 24 Events, 66 birds killed

Species	Events	Birds Killed	Birds Sub-lethally Affected
Great Horned Owl	9	9	0
Barn Owl	3	6	0
Cooper's Hawk	2	3	0
Eastern Screech-owl	2	2	0
American Kestrel	1	1	0
Egret	1	1	0
Fish Crow	1	1	0
Great Blue Heron	1	2	0
Hawk	1	6	0
Mourning Dove	1	1	0

Chlorophacinone: 4 Events, 9 birds killed

Species	Events	Birds Killed	Birds Sub-lethally Affected
Wild Turkey	3	8	1
Red-tailed Hawk	1	1	0

Diphacinone: 8 Events, 9 birds killed

Species	Events	Birds Killed	Birds Sub-lethally Affected
Barred Owl	1	0	1
Great Horned Owl	1	1	0
Red-tailed Hawk	1	1	0
Snowy Owl	1	1	0
Turkey Vulture	1	1	0
Unknown Bird	1	3	0
owl	1	1	0
Rock Pigeon	1	1	0

Strychnine: 96 Events, 1967 birds killed

Species	Events	Birds Killed	Birds Sub-lethally Affected
Bald Eagle	11	14	2
Rock Pigeon	11	51	0
Mallard	8	54	0
Golden Eagle	7	8	0
Mourning Dove	7	114	0
Eagle	6	6	0
Canada Goose	5	55	0
Peregrine Falcon	5	5	0
Sparrow	5	291	0
Blackbird	4	88	0

Warfarin: 7 Events, 9 birds killed

Species	Events	Birds Killed	Birds Sub-lethally Affected
Bald Eagle	3	3	0
Great Horned Owl	1	1	0
Northern Bobwhite	1	3	0
Peregrine Falcon	2	2	0
Wild Turkey	1	11	0

Zinc Phosphide: 29 events, 599 birds killed

Species	Events	Birds Killed	Birds Sub-lethally Affected
Wild Turkey	18	72	0
Canada Goose	7	167	0
White-fronted Goose	3	327	0
Snow Goose	2	26	0
Horned Lark	1	3	0
domestic chicken	1	2	0
European starling	1	1	0
Snow Goose	1	1	0

In the above table, strychnine has the highest documented number of birds killed, 1967, which is

higher than the sum of all other rodenticides combined. We believe that strychnine should be regulated along with the other nine rodenticides addressed in the current mitigation plan.

Risks to wildlife from above ground use of "First Generation" Rodenticides:

We agree with the proposed mitigation plan to restrict above ground uses of second generation rodenticides to bait stations. There are several registered uses for first generation rodenticides (chlorophacinone and diphacinone) that allow broadcast application of baits above ground, and even aerial application of chlorophacinone and diphacinone for some uses, but these have not been addressed in the current mitigation plan. We are opposed to the registered use of chlorophacinone for broadcast or aerial application of grain or pelleted baits. Table 2 below presents acute toxicity data for rats and birds.

Table 2. Comparative Acute Toxicity Data for First and Second Generation Anticoagulant Rodenticides

Compound	LD_{50} rat	Median LD_{50} bird
First Generation Anticoagulants		
Chlorophacinone	3.1	3.32
Diphacinone	2.3	2394 (2 species)
Second Generation Anticoagulants		
Brodifacoum	0.3	9.1
Bromodialone	1.12	676
Difethialone	0.56	0.87

Data from: Mineau, P., A. Baril, B.T. Collins , J. Duffe, G. Joerman, R. Luttik. 2001. Reference values for comparing the acute toxicity of pesticides to birds. Reviews of Environmental Contamination and Toxicology 170:13-74.

Table 2 clearly demonstrates the very high toxicity of chlorophacinone to bird species, and the much lower toxicity of diphacinone to the two species of birds tested (mallards and bobwhite quail). The risks of diphacinone are unclear for many raptorial species of birds, because of the documented kills listed above, but we are clear that chlorophacinone poses unreasonable risks to birds from direct exposure. Because of the very high toxicity of chlorophacinone to birds, we are opposed to the use of chlorophacinone above ground unless it is adequately confined within tamper-resistant bait stations. The risk of direct ingestion by non-target birds cannot be justified in light of the very high toxicity of chlorophacinone. While we are not in favor of any broadcast use of rodenticides, except for island conservation use, we understand the conflicts with rodents in some agricultural situations.

Direct risks to birds from ingestion of grain baits

Zinc phosphide poses a greater risk of direct poisoning and mortality than secondary toxicity, due to its mode of action. The table above documents many cases of direct poisoning of grain eating birds exposed to zinc phosphide grain baits found on the ground surface. No raptors have been documented with secondary exposure to zinc phosphide. The risks documented here indicate that careless or deliberate placement of poisoned grain presents a high risk to many species of birds, and the necessity for specific label improvements and greater training of applicators certified to use zinc phosphide.

Rodenticide Risks to Humans

Data from the American Association of Poison Control Centers indicate that more than 15,000 cases of anticoagulant rodenticides poisonings are reported annually in the United States, and the vast majority of cases involve accidental ingestion by children under the age of six. Data have been submitted to the rodenticides docket and have been included as document numbers: EPA-HQ-OPP-2006-0955-0009, -0010, and -0011, and will not be repeated here. While many of the reported cases did not require hospitalization or even an antidote injection of vitamin K, the alarming number of reported poison cases demonstrate the need for preventing exposure of young children to rodenticides baits.

We agree with the mitigation measures proposed by EPA that all rodenticide bait products available for sale to a consumer must be sold in tamper-resistant bait stations, with solid bait blocks as the only permissible bait.

Alternatives to rodenticides

We strongly believe that it is not sufficient to simply restrict the use of these nine rodenticides and strychnine. The EPA must utilize its authority to recommend the principles of Integrated Pest Management (IPM) as part of a successful mitigation plan for rodenticides. We believe it should be the mission of EPA to insist on alternatives to rodenticides whenever and wherever feasible, especially the use of non-chemical alternatives for rodent control, of which there are many that have been proven to be effective. EPA has a valuable role in advocating IPM to educate pest control operators and the general public on exclusion, rodent-proofing, habitat modification, proper storage and containment, mechanical traps, and other non-chemical methods, and that they can control their rodent problems in many cases without using hazardous rodenticides.

We believe that two general principles should be followed in programs to control rodents: (1) the rodenticide should be the least toxic product that will be effective on the targeted species, and, (2) the rodenticide must have a highly efficacious and readily available antidote that typically can be administered in time to save an accidentally intoxicated human or animal.

Conclusions

American Bird Conservancy and the undersigned organizations and individuals believe there are legitimate uses for rat poisons, but we are strongly concerned that rodenticides cause wildlife and human poisonings when these products are incorrectly and indiscriminantly used. Therefore, we

urge the EPA to implement their proposed mitigation plan, modified to include strychnine in the mitigation plan to further prevent unnecessary wildlife poisonings. Please take action to restrict the use of rodenticides to prevent the poisoning of America's children, birds and other wildlife. Thank you for your consideration of our position on this important issue.

Respectfully submitted,

Michael Fry
Director, Pesticides and Birds Program
American Bird Conservancy
Washington, DC

Caroline Kennedy
Senior Director of Field Conservation Programs
Defenders of Wildlife
Washington, DC

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Susan E. Kegley, Ph.D.
Senior Scientist
Pesticide Action Network, North America
San Francisco, CA

EXHIBIT 5

American Bird Conservancy, Natural Resources Defense Council, and Defenders of Wildlife Meeting with Assistant Administrator Jim Gulliford
April 1, 2008 / 1:30 to 2:30 pm

This meeting was requested by representatives from American Bird Conservancy (ABC), Natural Resources Defense Council (NRDC), and Defenders of Wildlife (DoW) to discuss approaches for meeting EPA's goals of reducing wildlife exposures and incidents related to use of rodenticides, and reducing exposure incidents to children.

Aaron Colangelo (NRDC) stated that NRDC supports EPA's January 2007 risk mitigation proposal, and believes that the proposed measures of requiring tamper-resistant bait stations and solid bait blocks are good approaches for addressing the problem of children ingesting rodenticides used in the home. Mr. Colangelo also discussed his view that the mitigation proposal will address the environmental justice issue of disproportionate exposure to people of color, people living in public housing, and low-income communities. Mr. Colangelo also inquired about the Agency's timeline for reaching a decision on rodenticides, and stated that NRDC urges the Agency to move quickly on issuing the decision. NRDC provided a one-page written document summarizing its positions to Assistant Administrator Gulliford and other staff attending the meeting. A copy of that document is attached.

Michael Fry (ABC) explained that ABC supports EPA's proposal for restricted use classification for the second generation anticoagulants, but believes that the Agency should impose an indoor-use-only restriction on the second generation anticoagulants, in addition to restricted use. Dr. Fry also stated support for EPA's proposal to require tamper-resistant bait stations and solid bait blocks, and indicated that ABC supports the concept of allowing a range of bait stations with different levels of protection, as a way to allow for a range of bait station prices. Dr. Fry urged the Agency to require tamper-resistant bait stations for outdoor, above ground placements of all rodenticides, as opposed to the Agency's proposal of only requiring bait stations for outdoor, above ground placements of the second generation anticoagulants. Other additional risk mitigation measures that ABC urged the Agency to consider include limiting zinc phosphide to subterranean use or use in bait stations that would exclude non-target birds, and limiting the active ingredient concentrations in chlorophacinone and diphacinone field-use products to 0.005%. In addition, Dr. Fry discussed ABC's and DoW's support for the use of anticoagulant rodenticides in island conservation projects. ABC and DoW provided a three-page letter summarizing its positions to Assistant Administrator Gulliford and other staff attending the meeting. A copy of that letter is attached.

NRDC
THE EARTH'S BEST DEFENSE

EPA'S PROPOSED RODENTICIDE MITIGATION DECISION WILL PROTECT CHILDREN FROM ACCIDENTAL POISONINGS AND SHOULD BE FINALIZED
April 1, 2008

- NRDC strongly supports EPA's proposal to mandate tamper-resistant bait stations and solid bait block formulations for all rodenticides approved for residential use.
- Tens of thousands of children under age six are accidentally exposed to rodenticides every year. As many as 1,500 suffer symptomatic poisonings that require hospitalization or treatment.
- The most common reported symptoms from rodenticide poisoning in children are diarrhea, vomiting, and skin rash. Anticoagulant rodenticides can also cause nosebleeds, bleeding gums, bloody urine, gastrointestinal bleeding, anemia, bleeding into the eyes and joints, and internal bleeding into the spleen, lung, and liver.
- The vast majority of child poisonings are caused by ingestion of loose pellets of rodenticide bait inside the home. Requiring bait blocks and tamper proof bait stations will eliminate both the loose pellets and children's easy access to the rodenticide baits.
- NRDC submitted comments from more than 6,000 NRDC members in support of EPA's January 2007 mitigation proposal to mandate tamper-resistant bait stations and solid bait block formulations for all residential-use rodenticides. These comments demonstrate significant public support for EPA's mitigation proposal.
- This is also an environmental justice issue: African-American, Latino, and low-income children are disproportionately harmed. In New York State, more than eighty percent of children hospitalized for rodenticide poisoning are African-American or Latino. EPA found that African-American children are more than three times as likely to require hospitalization, and Latino children are more than twice as likely to require hospitalization, because of serious rodenticide poisonings. The proposed safety measures will protect people of color, people living in public housing, and low-income communities.
- A 2005 court order requires EPA to take necessary steps to protect children from rodenticide poisonings. *West Harlem Environmental Action v. EPA*, 380 F.Supp.2d 289 (S.D.N.Y. 2005). EPA has unreasonably delayed compliance with this court order and should finalize its proposed mitigation decision promptly.

AMERICAN BIRD CONSERVANCY

DEFENDERS OF WILDLIFE

Mr. Jim Gulliford
Assistant Administrator
Office of Prevention, Pesticides, and Toxic Substances
United States Environmental Protection Agency
Ariel Rios Buliding
1200 Constitution Ave, NW
Washington D. C. 20460

April 1, 2008

Dear Mr. Gulliford,

On January 17, 2007, EPA proposed the following risk mitigation measures to reduce human health and environmental risks of nine rodenticide bait product active ingredients:

1) Classify all products containing the active ingredients brodifacoum, bromodialone, and difethialone as restricted use pesticides.
2) Require that all rodenticide bait products available for sale to consumers be sold only in tamper-resistant bait stations with solid bait blocks as the only permissible bait form.
3) Require that all outdoor, above ground placements of bait products containing ~~second generation anticoagulants~~ rodenticides be contained in tamper-resistant bait stations.

We are strongly in favor of the above three mitigation measures, which we believe need to be implemented, and thank the Agency for proposing these changes in regulations.

In addition to the above measures, we are also strongly in favor of additional measures to reduce risks to wildlife:

4) To reduce the potential risk of secondary poisoning of non-target predators and scavengers, both birds and mammals, we advocate requiring second generation anticoagulants to be limited to both restricted use only AND indoor use only. We believe there are sufficient research data to justify these regulations.
5) Outdoor field uses of first generation anticoagulants continue to pose direct risks to granivorous birds and small mammals, and secondary poisoning risks to scavenging mammals and birds. We therefore advocate requiring field-bait uses of chlorophacinone and diphacinone to be limited to active ingredient concentrations of not more than 0.005%.
6) Broadcast field use of zinc phosphide on wheat grain bait is well documented as causing direct mortality to non-target granivorous birds. We strongly advocate regulating zinc phosphide as restricted use only, and limiting zinc phosphide applications to subterranean use and all above ground uses only in bait stations that exclude non-target birds.
7) We continue to advocate the use of anticoagulant rodenticides for island conservation projects, because introduced rodents on seabird breeding islands cause extensive damage to breeding birds. While the risks of direct and secondary poisonings exist with the use of anticoagulants on

islands, the benefits of rodent eradication and potential for recovery of breeding populations of seabirds greatly outweigh the incidental poisoning risks. We are in favor of using brodifacoum at the reduced active ingredient concentration of 50 ppm, as well as using diphacinone or cholecalciferol as alternative products, as has been demonstrated in successful rodent eradication projects in California and Mexico.

The Agency has discussed an additional recommendation since the mitigation plan was released in January 2007:

1) The option of allowing the marketing of alternative bait station products that will prevent child exposure, but will not be as costly as the more robust bait stations designed and tested to withstand destruction by a large dog. This is an excellent idea, giving the consumer the option of using an inexpensive bait station where exposure to large dogs is not an issue.

Rationale for our recommendations:

We believe that allowing over-the-counter sale of second generation products is ill-advised. Consumers are usually not aware of the importance of alternating rodenticide active ingredients as part of an integrated pest management (IPM) program to prevent rodenticide resistance, and allowing untrained people to use the most advanced products exclusively has the potential of creating resistance problems. We do not believe that label statements advocating IPM are effective with over-the-counter products sold to untrained consumers, especially when alternative anticoagulants are not available on the consumer market. Arguments that second generation products are needed, because of resistance to first generation anticoagulants do not appear to be substantiated in the data presented in the rodenticide docket. While resistance to first generation products has been documented in the US, most of the cases are old (1970s and 1980s), not well documented geographically, and there are very few recent cases in the docket. We believe the resistance problem is greatly exaggerated, and if it should occur, the problem should be addressed by professionals rather than allowing untrained consumers to use advanced products.

We believe that outdoor use of second generation anticoagulants maximizes the potential risks of secondary poisoning of wildlife, even when the products are restricted use and used by professionals. We advocate restricting all second generation rodenticides to indoor use only, which will greatly minimize secondary exposure of mammalian and avian predators. We have observed statements in industry comments that they are in favor of a policy that will allow outdoor placement of rodenticides along perimeter fences of properties in an effort to exclude all rodents from individual properties. We believe this is a very ill-advised practice, which should not be allowed, because of the very high risk that poisoned rodents will be scavenged around the perimeter of a property.

We understand that farms have a need for rodenticides, but we feel that the vast majority of uses can be accomplished with indoor placement of bait stations containing second generation anticoagulants in addition to outdoor use of first generation products in bait stations.

Outdoor use of first generation products (chlorophacinone, diphacinone and warfarin) in bait stations has been shown to be highly effective, and outdoor farm use should be limited to these products, unless resistance has been documented in the local area. If resistance is a problem a certified pest control

operator should be contracted, who can use all IPM methods available to remedy the problem. We believe the option of a special local needs permit should be available for any State that has documented anticoagulant resistance in target animals, so that limited outdoor use of second generation products should be available if needed. We also believe it is important to have regulatory control of Section 24(c) permits, by requiring documentation of resistance as a condition for renewal of special local needs permits. We believe the goal should be the elimination of rodenticide resistance through all available IPM methods, and not the acceptance that resistance is inevitable.

American Bird Conservancy and Defenders of Wildlife both are concerned that rodenticides continue to poison protected bird species such as wild turkeys, hawks and eagles, and endangered species such as San Joaquin Kit Foxes and Northern Spotted Owls. We believe that restricting uses of second generation anticoagulant rodenticides will markedly reduce non-target poisonings in suburban areas, and restricting second generation anticoagulants to indoor use only will further reduce wildlife poisonings. However, we are concerned that field uses of zinc phosphide and anticoagulants continue to kill significant numbers of protected birds and mammals through direct and secondary toxicity. We believe the field uses allowed through Section 24(c) registrations are responsible for many of these poisonings in the Pacific Northwest, and the necessity of these special registrations needs to be re-evaluated and the benefits weighed against the continuing violations of the Migratory Bird treaty Act and the Endangered Species Act. Complying with FIFRA regulations does not absolve pest control operators, growers and the US Forest Service from violations of these laws. We urge the Agency to develop MOUs with the Fish and Wildlife Service in an effort to reduce non-target poisonings, and to comply with Executive Order 13186, which requires the EPA to develop policies that will conserve migratory bird populations.

Thank you for the opportunity to meet and discuss our concerns with regard to the implementation of the proposed mitigation policy for rodenticides. We believe the EPA has made significant progress in proposing mitigation measures, and we sincerely hope that the Agency will implement strong measures to protect children and wildlife.

Sincerely,

Michael Fry, PhD
Director of Conservation Advocacy
American Bird Conservancy
Washington DC

Caroline Kennedy
Senior Director of Field Conservation
Defenders of Wildlife
Washington DC

Meeting Sign-In Sheet:
Rodenticide Meeting with American Bird Conservancy, Defenders of Wildlife, and Natural Resources Defense Council
April 1, 2008 / 1:30 to 2:30 pm

Name	Affiliation	Phone	Email
Kelly Sherman	OPP | Reregistration	703-305-8401	sherman.kelly@epa.gov
John Hebert	OPP / RD	7033086249	hebert.john@epa.gov
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Dana Spatz	OPP | EFED	703 305-6063	spatz.dana@epa.gov
Susan Lewis	OPP | SRRD	703-308-8229	Lewis.Susan@epa.gov
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Caroline Kennedy	Defenders	202 682 9400	ckennedy@defenders.org

Name	Affiliation	Phone	Email
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Michael Fry	Am. Bird Conservancy	202-234-7181	mfry@abcbirds.org
Debra Edwards	EPA	202 308-7090	edwards.debbie@epa.gov
Arty Williams	EPA, EFED	703-305-7695	williams.arty@EPA.GOV.
Bob Perlis	EPA/OGC	202 564-5536	Perlis.robert@epa.gov
Steven Bradbury	EPA/OPP/SRRD	703308-8000	Bradbury.steve@epa.gov
Jim Gulliford	OPPTS		
Tony Green	OPPTS		
Aaron Colangelo	NRDC	(via speakerphone)	

EXHIBIT 6

May 16, 2011

Steve Bradbury
Office of Pesticide Programs, 750P
U.S. Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460
Dear Director Bradbury,

RE: Cancellation of rodenticide products that do not conform to the new risk mitigation measures

The Final Risk Mitigation Decision for 10 Rodenticides published by the EPA in 2008 (hereafter referred to as EPA) require that all products sold over the counter beginning June 4, 2011 conform to specific packaging designed to reduce incidental harm to humans and wildlife. [1] In that notice, the EPA made clear that rodenticide manufacturers that did not conform to the new risk mitigation measures would face Agency action to force the removal of those non-compliant products from the market (EPA at 28) because they would be unlawful under FIFRA (EPA at 30). In anticipation of the June deadline and the knowledge of at least one rodenticide manufacturer's stated intention to ignore the EPA's explicit directions, American Bird Conservancy and other wildlife conservation and public interest groups signing this letter urge the EPA to immediately take presumptive steps to cancel all products that do not conform to the new mandatory risk mitigation measures.

As you will recall, the EPA decided to implement new risk mitigation procedures for ten rodenticides because of the unacceptable risks to children, pets, and non-target wildlife in 2008. The EPA-mandated changes to household rodenticides (mouse or rat bait products) include switching bait products to tamper- and weather-resistant bait stations, limiting the amount of bait sold to residential consumers, and restricting the use of second-generation active ingredients (EPA at 17-19).

It has come to our attention that Reckitt Benckiser, Inc. has publicly declared its intention to flout the EPA's safety measures for its d-Con® brand. Therefore, we request that the EPA take immediate measures to ensure Reckitt Benckiser conforms to the new risk mitigation measures, and to pull its product from the retail market if it fails to come swiftly into compliance.

It is unacceptable for a major pesticide company to blatantly ignore the risk mitigation measures after the Agency has conducted years of research and risk assessments, and developed a plan to which all companies were given ample time to conform. The EPA's risk mitigation measures were developed because of human health dangers in urban communities, and in response to more than 10,000 calls to poison control centers annually. The sale of an unregistered product after the phase-out period presents an imminent hazard to children, pets, and wildlife, and we strongly believe it is grounds for suspension under FIFRA section 6(c). We feel this is an issue to which the EPA enforcement division must immediately respond with decisive action.

If EPA fails to take rapid and meaningful action to cancel products that are not in compliance with the mitigation requirements of its Risk Mitigation Decision (EPA 2008), then it would constitute a violation of FIFRA by allowing products on the market that cannot meet the safety standard of FIFRA and FQPA.

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[1] EPA. 2008. Final Risk Mitigation Decision for 10 Rodenticides. May 28, 2008, revised June 24, 2008. Document EPA-HQ-OPP-2006-0955-0764. http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2006-0955-0764

See website for more information
http://www.epa.gov/opp00001/reregistration/rodenticides/finalriskdecision.htm

Lastly, we request a meeting with the Agency to discuss what actions will be taken if Reckitt Benckiser, Inc., continues to market products that violate FIFRA.

Thank you in advance for your continued interest and leadership on matters of environmental protection and public health.

Sincerely,

Michael Fry, PhD
American Bird Conservancy

Nichelle Harriott
Beyond Pesticides

Patty Clary
Californians for Alternatives to Toxics

Caroline Cox
Center for Environmental Health

Caroline Kennedy
Defenders of Wildlife

Chris Geiger, Ph.D.
IPM Program Manager

Aimee Code, M.S.
Northwest Center for Alternatives to Pesticides

Karl Tupper
Pesticide Action Network of North America

Diana Post, VMD
Rachel Carson Council

Lynn Carroll, Ph.D.
TEDX (The Endocrine Disruption Exchange)

Jeff Lincer, PhD
Wildlife Research Institute

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Counsel for Proposed Intervenors American Bird Conservancy, Center for Biological Diversity, Defenders of Wildlife and Sierra Club

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE ADMINISTRATOR

In the Matter of: Reckitt Benckiser LLC, et al.,	FIFRA Docket. No. 661 DECLARATION OF JONATHAN EVANS OF THE CENTER FOR BIOLOGICAL DIVERSITY IN SUPPORT OF MOTION TO INTERVENE

I, Jonathan Evans, hereby declare as follows:

1. I submit this declaration in support of the motion to intervene filed by the American Bird Conservancy *et. al.*, in these proceedings. I have personal knowledge of the matters stated herein and, if called as a witness, could and would competently testify thereto.

2. I am the Toxics and Endangered Species Campaign Director for the Center for Biological Diversity ("Center") and also a member of the organization. In my role as the Toxics and Endangered Species Campaign Director, I am closely involved with the organization's work to eliminate the poisoning of endangered species and wildlife by rodenticides and other pesticides.

3. The Center is a non-profit, public interest corporation with over 500,000 members

and e-activists, and offices throughout the United States. The Center and its members are dedicated to protecting the diverse native species and habitats of North America through science, policy, education, and environmental law.

4. The Center has maintained a long-standing campaign to eliminate the threats to endangered species posed by pesticides. The organization has worked to ensure that pesticide registrations minimize harms to endangered species by utilizing the Endangered Species Act, to improve the evaluation and monitoring of pesticides and their effects on endangered species, has developed reports and publications regarding the harms of pesticides on endangered species, and has engaged the public and other non-profit organizations to lend support to the campaign.

5. The regulation of pesticides and rodenticides by the EPA has been one of the key areas in the Center's pesticides and rodenticides campaign. Rodenticides are responsible for the fatal poisoning of wildlife, such as foxes, raptors, and other predators, which eat rats and mice poisoned by rodenticides, as well as species such as kangaroo rats, pocket mice, and woodrats, which eat the rodenticide bait itself. In keeping with its organizational mission, the Center has participated in the proceedings leading up to EPA's Notice of Intent to Cancel, and has submitted comments to the EPA's FIFRA Section 6(b) Notice of Intent to Cancel Twenty Homeowner Rodenticide Bait Products, Dockets #s EPA-HQ-OPP-2006-0955 and EPA-HQ-OPP-2011-0718. *See*, Center Comment Letters dated 5/10/2012, true and correct copy of which is attached hereto as **Exhibit 1**. The Center has developed several reports detailing the harms of pesticides and rodenticides on wildlife and endangered species[1] and engaged in a series of lawsuits enforcing EPA's obligation to adhere to the Endangered Species Act in regulating pesticides.[2]

6. I have reviewed Reckitt-Benckiser, Inc.'s Request for Hearing and Statement of Objections to EPA's Notice of Intent to Cancel, filed on March 6, 2013. I am aware that Reckitt-

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[1] Miller, J., Center for Biological Diversity, Silent Spring Revisited: Pesticide Use and Endangered Species (2004) available at http://www.biologicaldiversity.org/publications/papers/Silent_Spring_revisited.pdf ; Miller, J., Center for Biological Diversity, Poisoning Our Imperiled Wildlife: San Francisco Bay Area Endangered Species at Risk from Pesticides (2006) available at http://www.biologicaldiversity.org/publications/papers/bayareapesticidesreport.pdf .

[2] See e.g. Center for Biological Diversity v. Johnson et al., Case No. CV 02-1580-JSW, United States District Court for the Northern District of California (Case filed April 2, 2002); Center for Biological Diversity v. EPA United States District Court for the Northern District of California, Case No. CV 11-293-JCS (Case filed January 20, 2011).

Benckiser disputes EPA's determination that the rodenticides that are the subject of EPA's Notice of Intent to Cancel pose unreasonable risks to human health and wildlife. I am also aware that Reckitt-Benckiser contends that the EPA has failed to appropriately consider the public health risks that would arise if its products' registrations were cancelled, and that Reckitt-Benckiser argues that the products subject to the Notice of Intent to Cancel do not pose unreasonable risks to non-target wildlife species.

7. EPA's Notice of Intent to Cancel is based on sound scientific evidence, and the Center agrees with EPA that the registrations of the Reckitt-Benckiser products that are the subject of the Notice of Intent to Cancel should be cancelled and/or denied. Additionally, while additional safeguards are necessary to ensure that non-target wildlife species are adequately protected from the effects of rodenticides, the Center also supports the mitigation measures required by EPA.

8. The Center is interested in intervening in these proceedings, in order to ensure that its interests described above in endangered species conservation are adequately represented and to provide support for EPA's position that the rodenticides that are the subject of this petition create unreasonable risks to wildlife. Additionally, the Center seeks to offer specific rebuttals to the arguments made by Reckitt-Benckiser that its products do not pose unreasonable risks to non-target organisms.

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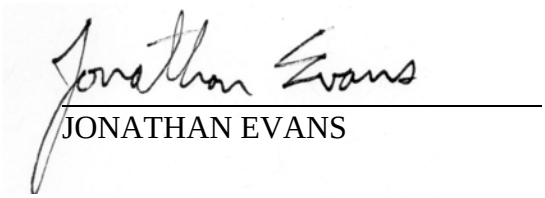
9. Allowing the products that are the subject of the Notice of Intent to Cancel to remain on the market would lead to unreasonable risks, such as the deaths of endangered species and other wildlife species due to fatal rodenticide poisonings. Allowing these products to remain on the market could also lead to larger ecosystem imbalances, as populations of wildlife species are removed from the food web. These effects would harm the Center and its members, who are committed to the conservation of wildlife species, and enjoy viewing wildlife species in their native habitats.

I declare under penalty of perjury that the foregoing is true and correct and within my personal knowledge and belief.

DATED: April 18, 2013.



JONATHAN EVANS

EXHIBIT 1

CENTER for BIOLOGICAL DIVERSITY Because life is good.

protecting and restoring natural ecosystems and imperiled species through science, education, policy, and environmental law

May 10, 2012

via electronic and US mail

Steve Bradbury
Director Office of Pesticide Programs
U. S. Environmental Protection Agency
Mail Code 7501P
1200 Pennsylvania Ave. NW
Washington, DC. 20460
bradbury.steven@epa.gov

RE: FIFRA Section 6(b) Notice of Intent to Cancel Twenty Homeowner Rodenticide Bait Products, Dockets #s EPA-HQ-OPP-2006-0955 and EPA-HQ-OPP-2011-0718

Dear Mr. Bradbury,

The Center for Biological Diversity ("Center") urges the Environmental Protection Agency ("EPA") to quickly proceed with the cancellation of twenty homeowner rodenticide bait products recommended for cancellation in docket numbers EPA-HQ-OPP-2011-0718 and EPA-HQ-OPP-2006-0955. As the EPA's record in the dockets referenced above demonstrates these rodenticide products pose "unreasonable adverse effects on the environment" through unnecessary and "unreasonable risk to man and the environment". 7 U.S.C. §§ 136(bb) 136a(c)(5). The harmful and fatal poisonings to wildlife, pets, and children cannot be justified when the EPA's Risk Mitigation Decision outlines safer cost effective alternatives.

The Center further requests that the EPA reject the spurious claims of Reckitt Benckiser that the decision to cancel those rodenticides will have unanalyzed and adverse effects on low-income or minority populations and run contrary to EPA's environmental justice mandate. Letter from D. Long, Reckitt Benckiser, to L. Garcia, EPA, (Oct. 14, 2011). The record clearly indicates that the EPA addressed the impacts of the cancellation on low income and minority communities, and that the cancellation will benefit those same communities.

EPA has thoroughly analyzed the impacts of the increased potential costs from the cancellation on low income communities. EPA, Impact Assessment of the Draft Notice of Intent to Cancel Selected Residential Consumer Rodenticide Products to Control Commensal Rodents, at 36-37, 39, 41 (Oct. 31, 2011). That analysis determined that "the impacts on residential consumers from the proposed mitigation are relatively low" and depend on what previous action had been taken to address rodent infestaions. *Id*. at 41.

The record before EPA demonstrates a disproportionate burden of rodenticide poisonings in minority communities. In New York State, more than eighty percent of children hospitalized for

Jonathan Evans, Toxics and Endangered Species Campaign Director & Staff Attorney
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www.BiologicalDiversity.org

rodenticide poisoning are African-American or Latino. EPA, Proposed Risk Mitigation Decision for Nine Rodenticides, at 13-14 (Jan. 17, 2007); *see also* Jerome Blondell, EPA, Updated Review of Rodenticide Incident Reports Primarily Concerning Children, at 11 (June 3, 1999). EPA found that African-American children are more than three times as likely to require hospitalization, and Latino children are more than twice as likely to require hospitalization, because of serious rodenticide poisonings. *Id*.

The majority of rodenticide poisonings in New York City harm low income residents. Letter from M. Merlino, T. Matte, and R. Hoffman, New York City Department of Health and Mental Hygiene, to the Office of Pesticide Programs, EPA, at 3 (Nov. 18, 2011). EPA's Risk Mitigation Decision that requires structural restrictions on bait stations and bans the most hazardous products from the market also benefits minority communities because non-english speaking residents are less likely to understand the language on the labeling requirements. *Id*. Restrictions that do not require language interpretation are better suited to minority communities that may have low english language proficiency.

The Center urges the EPA to stand up to the pressure mounted by the rodenticide manufacturers, Reckitt Benckiser, Liphatech, and Spectrum Brands. These companies have had over three years to voluntarily change their products and place safer alternatives on the market, but have refused to do so. Low cost and less harmful alternatives exist and must be adopted now.

Please take action quickly and cancel the twenty homeowner rodenticide bait products that cause unreasonable adverse effects on the environment and human health. Do not hestitate to contact me with any questions or clarifications.

Best regards,

Jonathan Evans
Center for Biological Diversity

cc (via electronic mail):
Lisa Garcia, EPA, Assoc Assistant Administrator for Environmental Justice, garcia.lisa@epa.gov
Eric Wachter, EPA, Director, Office of the Executive Secretariat, wachter.eric@epa.gov

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Counsel for Proposed Intervenors American Bird Conservancy, Center for Biological Diversity, Defenders of Wildlife and Sierra Club

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE ADMINISTRATOR

In the Matter of: Reckitt Benckiser LLC, et al.,	FIFRA Docket. No. 661 DECLARATION OF JASON C. RYLANDER OF DEFENDERS OF WILDLIFE IN SUPPORT OF MOTION TO INTERVENE

I, Jason C. Rylander, hereby declare as follows:

1. I submit this declaration in support of the motion to intervene filed by the American Bird Conservancy, *et. al.*, in these proceedings. I have personal knowledge of the matters stated herein and, if called as a witness, could and would competently testify thereto.

2. I am a Senior Staff Attorney for Defenders of Wildlife ("Defenders") and also a member of the organization. In my role as a staff attorney, I am closely involved with the organization's work to eliminate the poisoning of wildlife by rodenticides and other pesticides.

3. Defenders of Wildlife is a science-based advocacy organization, founded in 1947, dedicated to conserving and restoring native species and the habitat upon which they depend. With more than 1.1 million members and activists, Defenders is a leading advocate for innovative

solutions to safeguard our wildlife heritage for generations to come. Defenders is headquartered in Washington, District of Columbia, with offices throughout the United States, including California.

4. Defenders is committed to protecting imperiled wildlife from threats to their survival and recovery, one of which includes the use of harmful pesticides. Defenders has worked to reform EPA's pesticide approval process and ensure agency compliance with federal laws such as the Endangered Species Act and Migratory Bird Treaty Act. Defenders has petitioned for restrictions on harmful pesticides, and has sought cancellation of pesticides that pose significant risks to wildlife. Defenders has also participated in numerous cases and cancellation proceedings as a plaintiff or intervenor, including actions concerning the use of strychnine, carbofuran, and chlorophacinone.

5. Defenders and its members monitor and aggressively advocate for the conservation of species and their habitat. Defenders routinely submits public comments in response to proposed. EPA decisions which may impact imperiled wildlife. Defenders also regularly publishes, for use of its members, information regarding wildlife in the states impacted by this agency action. The aesthetic, recreational, professional, and organizational interests of Defenders, its members, staff, and officers are affected by EPA decisions regarding pesticides and rodenticides, which have the significant potential to impact non-target and imperiled wildlife.

6. The cancellation and regulation of rodenticides is of great concern to Defenders and its members. Rodenticides are responsible for the fatal poisoning of a range of animal species, including imperiled birds, wildcats and canines. In keeping with its organizational mission, Defenders has been an active participant in the proceedings leading up to EPA's Notice of Intent to Cancel, and has submitted a number of comments to EPA's 2008 Risk Mitigation Decision. *See*, Defenders of Wildlife Comment Letters dated 1/21/2005, 5/18/2007, 4/1/2008, 5/16/2011, true and correct copies of which are attached hereto as **Exhibits 1-4**. Defenders also participated in an April 1, 2008 meeting with EPA, to discuss methods for reducing wildlife exposures and human health exposures. *See,* **Exhibit 3**.

7. Reckitt-Benckiser, Inc. filed a Request for Hearing and Statement of Objections to EPA's Notice of Intent to Cancel on March 6, 2013. I have reviewed this document. Reckitt-Benckiser disputes EPA's determination that the rodenticides that are the subject of EPA's Notice of

Intent to Cancel pose unreasonable risks to human health and wildlife. Reckitt-Benckiser contends that the EPA has failed to appropriately consider the public health risks that would arise if its products' registrations were cancelled. Reckitt-Benckiser further argues that the products subject to the Notice of Intent to Cancel do not pose unreasonable risks to non-target wildlife species.

8. EPA's Notice of Intent to Cancel is based on sound scientific evidence, and Defenders of Wildlife agrees with EPA that the registrations of the Reckitt-Benckiser products that are the subject of the Notice of Intent to Cancel should be cancelled and/or denied. Defenders agrees with EPA that the mitigation measures required by the agency are important for the protection of human health and wildlife.

9. Defenders of Wildlife is interested in intervening in these proceedings, in order to ensure that its interests described above in wildlife conservation are adequately represented and to provide support for EPA's position that the rodenticides that are the subject of this petition create unreasonable risks to wildlife.

10. Allowing the products that are the subject of the Notice of Intent to Cancel to remain on the market would lead to unreasonable risks, such as the deaths of endangered and imperiled species due to fatal rodenticide poisonings. Allowing these products to remain on the market could also lead to larger ecosystem imbalances, as key species are removed from the food web. These effects would harm Defenders of Wildlife and its members, who are committed to wildlife conservation, and enjoy viewing wild animals in their native habitats.

I declare under penalty of perjury that the foregoing is true and correct and within my personal knowledge and belief.

DATED: April 17, 2013.

JASON C. RYLANDER

EXHIBIT 1

21 January 2005

Kelly White
Special Review and Reregistration Division (7508C)
Office of Pesticide Programs
Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460-0001

Attn: Docket ID Number OPP-2004-0033

Federal Register: 22 September 2004 (Volume 69, Number 183, Pages 56756-56758)

Submitted by email to opp-docket@epa.gov and white.kelly@epa.gov

Dear EPA Office of Pesticide Programs:

Thank you for the opportunity to comment on the revised comparative ecological risk assessment for the nine rodenticides, entitled "Potential Risks of Nine Rodenticides to Birds and Nontarget Mammals: a Comparative Approach" and dated July 2004 currently being considered for re-registration (OPP-2004-0033). We, the undersigned organizations and individuals, welcome this opportunity to comment on this document and provide our input on what we consider to be a critically important issue – the continued widespread uses of these rodenticides in the environment.

As background, this rodenticide "cluster" Reregistration Eligibility Decision (RED), first released on 11 September 1998, includes nine compounds, including six anti-coagulant rodenticides (brodifacoum, bromadiolone, difenacoum, diphacinone, chlorophacinone, warfarin), one neurotoxic rodenticide (bromethalin), and two non-anti-coagulant rodenticides (zinc phosphide, cholecalciferol). It is clearly stated in this document that the U.S. Environmental Protection Agency (EPA) "is concerned about accidental poisonings of children by rodenticide products" and is also worried about incident data showing "potential problems involving non-target and secondary exposures to wildlife from the rodenticides". We agree wholeheartedly with those concerns.

All nine rodenticides are used against commensal rodents, but only 4 (warfarin, diphacinone, chlorophacinone, zinc phosphide) are used against field rodents. Overall, the EPA ranks the potential overall risk to birds and non-target mammals as HIGH for brodifacoum (1), zinc phosphide (2), difethialone (3), diphacinone (4). Each of the 9 rodenticides are available to the public "over-the-counter" as grain-based food baits for control of commensal rats and mice

(predominantly the Norway rat (*Rattus norvegicus*), roof or black rat (*R. rattus*), and house mouse (*Mus musculus*) in and around buildings, transport vehicles (mainly ships), and inside sewers. Four of these rodenticides – warfarin, diphacinone, chlorophacinone, and zinc phosphide – also are available for control of various rodents and other small mammal pests in the field and other outdoor settings. For example, zinc phosphide is a broad spectrum rodenticide that has a variety of agricultural uses including the control of jackrabbits and prairie dogs on rangeland. These four rodenticides were initially registered prior to passage of the 1972 FIFRA amendments, which means that they lack the 1972 and 1978 FIFRA updates regarding data requirements. Therefore, the continued uses of these four rodenticides in particular are in serious need of additional data to support them.

Our comments on this document will outline problems found with the comparative rodenticide risk assessment itself, include discussions of risk to wildlife species (including species listed under the Endangered Species Act), domestic animals, and humans, problems found with the current general use registration of these rodenticides (business as usual), and conclude by outlining a number of recommendations regarding the outcome of this re-registration process.

As far as the contents of the document itself, our comments do not include a critique of each point, rather we have focused on the larger issues as we see them. In our comments on the previous version of the rodenticide risk assessment dated 31 March 2003, we provided more content-related comments. Because many of the concerns we raised in these comments were not addressed, we include them here by reference.

The 30 November 2000 version of the rodenticide risk assessment was peer reviewed by Drs. Elwood Hill, Raymond O'Connor and Charles Eason (Document ID OPP-2002-0049-0004). These three scientists are exceptionally qualified for this particular peer-review, and we defer to their critiques in matters relating to the toxicity, chemistry, and environmental hazards posed by the nine compounds investigated. These comments are also hereby incorporated by reference.

Inherent Problems with the Rodenticide Registration Notice Process

Initially, we have two major concerns regarding how the EPA has handled this rodenticide "cluster" re-registration process, as follows:

(1) In 1991, the EPA concluded that most of these rodenticides were eligible for re-registration. Since that time, a mountain of evidence of widespread contamination and mortality/morbidity incidents resulting from these rodenticides have been documented wherever they are used and regardless of labeling requirements. It is painfully obvious to us that the EPA has disregarded this evidence and has failed to address the seriousness of the issue, and is continuing to pursue a course of action based on its 1991 decision. The data used to reach this conclusion should, in fact, be updated and revisited.

(2) The EPA's chosen strategy of lumping all nine rodenticides together into a "comparative" risk assessment leaves the Agency without the ability to deal with one or more of the most egregiously hazardous rodenticides. By ranking the rodenticides by hazard for several different categories, it allows EPA an "out", where rodenticides can be ranked by some artificial method and compared and discussed instead of scrutinizing the hazards of each chemical individually. Consequently, under the present strategy, close scrutiny of the most hazardous rodenticides is bypassed and the true hazards of individual rodenticides can be obfuscated or otherwise overlooked. Although the comparative method is a useful screening tool, it only provides a rough estimate of relative risk. Therefore, we believe that this comparative method was not the proper way to conduct the risk assessment because the results will be of limited use for predicting the true environmental risks posed to animals and humans by the continued use of these rodenticides.

Problems with the Comparative Rodenticide Risk Assessment

We are pleased to see that the EPA comparative risk assessment clearly points out the Agency's own concerns regarding the substantial risks to birds and non-target mammals. These concerns include the following:

(1) The high acute toxicity of these rodenticide baits, particularly the second generation anti-coagulants, is of major concern – they were designed to kill small mammals in rapid fashion; many are lethal following one exposure, some baits (commensal and field) contain ingredients that attract non-target animals, and predators and scavengers are then attracted to the dead or dying rodents or non-target organisms.

(2) Risk estimates (based on available exposure and effects data) exceed the EPAs levels of concern (LOCs).

(3) There is substantial mortality of birds and non-target mammals exposed to rodenticide baits or poisoned prey in controlled or uncontrolled settings as evidenced by controlled lab studies, field incident records, and lab and field observations.

(4) Retention times of residues in body tissues of primary consumers are of great concern because it is so high.

(5) Numerous reported incidents indicate that exposure is occurring in numerous non-target species, including avian and mammalian predators and scavengers.

We couldn't agree more that the EPA should be concerned about these issues. In addition to these, we have the following concerns:

(1) It is apparent to us that the RRTF (Rodenticide Registrants Task Force) has blocked, delayed, and essentially forced the EPA to re-write the rodenticide risk assessment. The RRTF

has had numerous exclusive meetings with EPA since the initial 1998 risk assessment and the current risk assessment seems to reflect their undue influence over the entire process. And there has been little to no opportunity for any other stakeholder to provide input or even attend any of these meetings with EPA. In addition, the EPA would not allow any other stakeholder to view drafts of this the rodenticide risk assessment as it progressed, yet willingly shared them with industry.

(2) There are incredibly few data for toxicological tests that compare the toxicity and efficacy of these nine products side by side for a variety of species. This is particularly true for field studies, and we note that most of the available studies showed that the test compound did not work well or involved the use of compounds which are not included in this RED and/or are no longer registered. This is a true weakness of the risk assessment. Without this direct comparison available, the EPA is piecing together indirect comparisons that may or may not be valid.

(3) The risk assessment fails to consider sublethal effects. The continued reliance by EPA on dead bodies is incredibly short-sighted and demonstrates that the Agency is content with remaining in the dark ages of wildlife toxicology; in addition to liver pathology, there is some evidence to suggest that reproduction may be impacted by sublethal exposure to rodenticides – disruption of Ca mobilization and remobilization processes and eggshell production in birds and reptiles, ataxia, anorexia, dyspnea, and behavioral changes (lethargy, exercise intolerance), among others (Mineau pers. comm.; Plumlee 2004).

(4) There is no consideration of the possible impact of prior exposure (tissue residues of one or more rodenticides) on subsequent exposure; there is some data to support the idea that non-target mammals already exposed to rodenticides have a greater susceptibility to subsequent exposure to rodenticides (Mosterd and Thijssen 1991); from the available data, it is apparent that the second generation anti-coagulants are highly persistent in the liver and other tissues due to their high target binding capacity, so animals carrying around residue burdens of second generation anti-coagulants may have increased susceptibility, a potentially critical factor that is overlooked by EPA.

(5) Current rodenticide risk models do not reflect real-world use and exposure. For example, prey populations are chosen with rodent body burdens that have very few individuals with high residue levels, and a vast majority with very low residue levels. Also, these models use a number for % of rodents that will be exposed (i.e., 1%) that is substantially lower than many field conditions. Further, resistance issues are not addressed in these models. There is a huge amount of uncertainty associated with these nine compounds, and all of the probabilistic risk assessment in the world will not be able to shed enough new light on the subject to make the substantial effort worthwhile.

(6) The EPA relies much too heavily on acute toxicity data for their comparative risk assessment; this is a problem because there are many reasons to be wary of acute toxicity studies of rodenticides; mortality is not a good endpoint because it is highly variable, is tied to animal

husbandry practices, the acute toxicity tests are too short a duration to account for all test mortality, and for birds, the test birds are being provided the antidote (through their feed – soy and alfalfa often are high in vitamin K_1) at the same time they are being dosed, which really confounds matters.

(7) A significant source of uncertainty in the risk assessment is the fact that most of the laboratory studies have tested acute effects in species such as the northern bobwhite, mallard, laughing gull, ring-necked pheasant and domestic chicken. Secondary effects were tested primarily in barn owls, red-tailed hawks, Eurasian buzzard and laughing gulls. The incident data presented applies largely to great horned owls, screech owls, golden eagles, and red-tailed hawks. However, as indicated by a well-documented brodifacoum poisoning incident at the National Zoo, birds of much smaller body size, such as finches, thrushes and warblers, are also susceptible to secondary (and most likely primary as well) exposure to rodenticides. However, very little research has been presented to address either toxicity or exposure to small birds. As indicated in the critique by Dr. Woody Hill, "neither the 175-200 g quail nor the 1-1.2 kg duck is a proper representative (physiologically or toxicologically) of a 50 g bird even if the 50 g bird is a juvenile bobwhite or mallard. These sources of variation (error?) should be addressed in the narrative." Furthermore, the small size of these birds might well preclude them from being recovered and included in incident data. Many small birds may also face significant exposure. The ubiquity of birds such as robins, chickadees, finches and cardinals near urban and rural houses means that they could come into contact directly with baits placed outdoors, or secondarily by feeding on insects that have fed upon bait. We believe that the exclusion of data on small birds from consideration in either the laboratory studies or the incident data has significant potential to underestimate the overall risk to birds of these rodenticides.

(8) Exposure as a component of risk - the 2002 rodenticide risk assessment document states that "Risk is a function of exposure and hazard (toxicity)." The assessment bases exposure estimates on the "amount of active ingredient available per kilogram of grain-bait formation," stating that more specific information about where and how much of each product is used is not available for the rodenticide compounds tested. The 2000 document, however, contains a significant amount of information and recommendations regarding use that have been deleted in the 2002 document.

(9) Secondary risk to birds can be reduced by limiting the availability of the more highly toxic, persistent second-generation anticoagulents (e.g., brodifacoum, bromadiolone, difethialone) to certified applicators only. Zinc phosphide, chlorophacinone and diphacinone products for field use in orchards, range land and elsewhere must be applied by certified applicators, but products of all 9 rodenticides registered for rat and mouse control in and around buildings are available to anyone "over the counter." We believe that persons not trained or experienced in rodent control may be significantly more likely to intentionally or inadvertently misuse rodenticides.

(10) Primary risk to birds can be reduced by making bait inaccessible to birds; for example, by applying bait in adequately designed bait stations. Current rodenticide labels require that bait for commensal rats and mice be placed in bait stations or areas inaccessible to non-target mammals,

which should reduce primary exposure to birds. However, misuse may occur due to intentional or unintentional failure to comply with directions and restrictions. Further, this does nothing to address the continued problems of secondary poisoning.

(11) None of the scientists reviewing the 2000 document criticized that draft's comments and recommendations concerning reducing risk by altering use practices to minimize exposure. Yet this language has been entirely deleted in the 2002 document, and ingredient concentration in the product is used as a proxy for exposure. This is not justified in light of the reviewers' comments, and the lack of attention to use as a factor in exposure also hampers the conclusions of the 2002 document. We request that the Agency please explain the deletion of the need to alter use practices to minimize exposure.

(12) A weakness pointed out by the peer-reviewers and addressed in the 2002 document is that missing data and other uncertainties about toxicity limit the predictive capabilities of the assessment. According to the 2002 document, data that would contribute to a better assessment of risk includes: chronic, secondary, sublethal and reproductive hazards, retention times in liver and blood, usage information, and differences between modes of action of the various types. We concur with this assessment; however, the need for such hazard data to improve decision-making should not outweigh the need to include considerations of exposure, particularly with respect to use. We are particularly concerned that the assessment fails to account for 1) the inability to enforce label guidelines on use, potentially leading to improper outdoor uses that increase exposure risk; and 2) the possibility that if one or more popular but high-risk compounds is restricted, the market for other compounds of equal hazard might expand, thus increasing potential exposure and therefore risk.

(13) The 2000 risk assessment document was much more straightforward in concluding that the risks of several posed by several of the rodenticides warrant measures to limit exposure:

Based on a "weight-of-the-evidence" approach and data evaluation by means of a decision table, the Agency concludes that there are major differences in the potential risks of these compounds.

The three rodenticides posing the highest primary risk to birds are brodifacoum, difethialone and zinc phosphide. Because brodifacoum and difethialone also exhibit high potential secondary risk to birds, reducing exposure to these compounds is essential.

Based on data evaluation by means of a decision table, brodifacoum and difethialone were identified as the two rodenticides posing the greatest overall risk to birds and nontarget mammals. Reducing exposure of wildlife to these two compounds is of utmost importance.

The 2002 document concludes that *brodifacoum poses the greatest potential overall risk to birds and nontarget mammals, followed by zinc phosphide, difethalione and diphacinone*, but offers no recommendations regarding exposure. This may be a function of having defined exposure so narrowly, but it detracts from the usefulness of the risk assessment.

Rodenticide Risks to Wildlife

Risks to Endangered Species

San Joaquin kit fox (*Vulpes macrotis mutica*) – the San Joaquin kit fox is listed as federally endangered, and there is a clear record of mortality of the San Joaquin kit fox in California from anti-coagulant rodenticides. At present, the Ecological Incident Information System (EIIS) database contains records for 32 San Joaquin kit foxes, including 27 for brodifacoum (1999 - 2003), 2 each from bromadiolone (1999 and 2000) and chlorophacinone (1990 and 1999), and one for diphacinone (1987). The incidents and their trends resulting from brodifacoum poisoning are troubling. These incidents have increased in number from 4 each in 1999, 2000, and 2001 to 14 in 2002. There is one confirmed kit fox poisoning record from 2003, and it contained the highest level of brodifacoum ever seen in kit foxes (11 ppm in the liver). At present, there are approximately 40 foxes showing rodenticide poisoning (many already listed in the EIIS database) and a freezer full of dead foxes waiting for residue analysis that will likely show additional rodenticide poisoning. We should point out here that this residue analysis is contingent on generating funds to conduct it which are not available at present and therefore this data unfortunately may not be available for some time. In addition to high liver residues of brodifacoum as well as other rodenticides in the tissues of these animals, necropsies are revealing large amounts of free blood in abdominal cavities, meaning that the likely cause of death was rodenticide poisoning. It is uncommon for brodifacoum to be the sole rodenticide present – there are usually multiple rodenticide residues found upon analysis, including other second generation anti-coagulants such as bromadiolone. We note here that at least 5 kit foxes have recently been found with residues of coumatetralyl, an anticoagulant rodenticide not even registered in the United States! Finally, it is ironic to note here that the finding that San Joaquin kit foxes were susceptible to rodenticides was published 30 years ago by Schitoskey (1975), who reported that the San Joaquin kit fox was susceptible to both primary and secondary poisoning from rodenticides (sodium monofluoroacetate, strychnine, zinc phosphide) contained in poisoned kangaroo rats.

One further note on San Joaquin kit fox - we note that the USFWS Biological Opinion (1993) stated that the San Joaquin kit fox was a species for which brodifacoum "is not likely to jeopardize" their continued existence. Their reasonable and prudent alternatives/measures for the species was that incidental take can be minimized by requiring that outdoor applications be made in tamper-resistant bait boxes placed in areas not accessible to wildlife. We point out here that this assessment is egregiously erroneous in the sense that tamper-resistant bait boxes will have absolutely no effect on the probability of kit foxes dying from secondary poisoning. So, this needs to be taken into account if and when the EPA ever decides to take a closer look at this Biological Opinion.

Other highlighted cases

Bald eagle (*Haliaeetus leucocephalus*) – bald eagles are federally listed as Threatened in the contiguous lower 48 states, and there are two records of bald eagles killed by brodifacoum and one record of a bald eagle killed by warfarin in the EIIS database.

Spotted owl (*Strix occidentalis*) – spotted owls are federally listed as Endangered, and there is at least one case of a spotted owl being killed by brodifacoum in the EIIS database.

San Joaquin antelope ground squirrel (*Ammospermophilus nelsoni*) – the San Joaquin antelope ground squirrel was an ESA Category I Candidate Species in 1995, but subsequently relegated to a Species of Concern in 1996. It is listed as Threatened in the state of California. This species, endemic to the San Joaquin Valley, has also suffered poisoning from rodenticides – an unknown number of mortalities.

In 1993, the USFWS published a Biological Opinion "Effects of 16 Vertebrate Control Agents on Threatened and Endangered Species" dealing with the 1991 ESA Section 7 consultation with EPA. This Biological Opinion included jeopardy determinations for mammals, birds, and reptiles potentially exposed via primary or secondary exposure to 8 of the 9 rodenticides (the other one, difethiolone, was not registered for use until 1995). Unfortunately, the EPA chose to totally ignore this Biological Opinion, and as a result, numerous birds, non-target mammals, and other wildlife species, including endangered and threatened species, have had to pay the price ever since. The fact that the taxpayers spend millions of dollars annually on the San Joaquin kit fox recovery as well as the recovery of many other T&E species seems to be lost on the EPA as they continue to allow the San Joaquin kit fox and other T&E species such as the bald eagle and spotted owl to perish from rodenticide poisoning each year.

Risk to raptors

Rodenticides pose a substantial risk to both diurnal and nocturnal raptors, particularly from secondary poisoning. In addition to the extensive wildlife incident record, there are many published studies dealing with the impact of rodenticides on raptor species. Applications of brodifacoum in apple orchards resulted in the deaths of radio-marked screech-owls (*Otus asio*) (Hegdal and Colvin 1988). Mendenhall and Pank (1980) documented secondary poisoning of owls by anticoagulant rodenticides (36 barn owls - bromadiolone, brodifacoum, diphacinone were lethal, difenacoum was sublethal; 3 great-horned owls (*Bubo virginianus*) and 1 northern saw-whet owl (*Aegolius acadicus*) fed diphacinone-killed mice – 3 of them died 7-14 days following exposure). Mendenhall and Pank (1980) make a good point that susceptibility to rodenticides can be exacerbated by stress, changes in diet, increased activity, and minor injuries (even if injury preceeds exposure by many days).

Newton et al. (1990) examined the prevalence of rodenticides found in barn owls from the UK.

They found that exposure of barn owls to second generation anti-coagulants was likely frequent and widespread. Berny et al. (1997) reported that bromadiolone was detected in livers of 15/16 dead Eurasian buzzards (*Buteo buteo*), 5/5 black kites (*Milvus migrans*), and 1/1 harrier examined. Saucy et al. (2001) also reported deaths of numerous raptors (Eurasian buzzards, black kites) and carrion crows following a mechanical application of bromadiolone bait (150 ppm) to underground burrows for water vole control in Switzerland. Townsend et al. (1981) assessed the secondary poisoning hazard of warfarin to tawny owls.

Sheffield (1997) conducted a thorough review of pesticide impacts on owls, and found that many of the papers in the published literature (9 of 24) dealt with rodenticide impacts on owls, mainly brodifacoum. In New York, 77% and 50% of asymptotic great-horned owls and red-tailed hawks, respectively, tested positive for all rodenticides combined (Stone et al. 2003). Finally, Mineau (unpublished data) assessed a random sample of red-tailed hawks and great-horned owls found dead from 1995-2001 in Ontario and Manitoba for rodenticides (using LCMS/MS) – found that 57% of the red-tailed hawks (n=30) and 87% of great-horned owls (n=84) had rodenticide residues, and that more owls had two or more rodenticides more commonly than either 0 or 1; red-tailed hawks had 40% brodifacoum and 50% bromodiolone, great-horned owls had 75% brodifacoum and 67% bromadiolone, but other rodenticides found included warfarin, diphacinone, chlorphacinone, and difethiolone.

Risk to other bird species

Rodenticides have been also been shown to pose substantial hazards to other birds species. Ramey and Sterner (1995) found that death due to zinc phosphide poisoning occurred in 18/26 (69%) of pheasants (*Phasianus colchicus*) exposed in 0.2 ha enclosures planted in alfalfa; sublethal effects were seen in some pheasants (ataxia, lethargy, hypoactivity – took 7 days for them to move normally again and 14 days to fully recover); 94% of the mortalities occurred within 24 hrs of bait application; none of the 26 Calif quail used in the study ended up dying from zinc phosphide exposure.

Smaller birds such as passerines are likely highly vulnerable to the hazards posed by rodenticides, particularly if the rodenticide bait is broadcast in an area where birds may feed. However, there is little data (either scientific studies of incident reports) on the impacts of rodenticides on smaller birds. The lack of incident reports for smaller birds may be explained by their small size and speed at which their carcasses disappear in the field.

Risk to non-target mammalian species

Non-target mammalian species are common victims of both primary and secondary poisoning from rodenticides. There are a high number of mortality incidences due to rodenticides not only for wild mammals but also for domestic mammals (dogs, cats, farm animals, etc. – see below).

Mammalian carnivores seem to be the most common victim of rodenticide poisoning, with mustelids and canids the most prevalent species involved.

There are a few controlled, captive studies of note with regard to impacts on carnivores. Evans and Ward (1967) found that nutria (*Myocastor coypus*) killed with anti-coagulant rodenticides were responsible for secondary poisoning of mink (*Mustela vison*) and dogs (*Canis familiaris*). Hill and Carpenter (1982) found that Siberian ferrets consuming rodents killed by zinc phosphide learned to avoid eating the GI tracts of the rodents, thereby minimizing the toxicity; zinc phosphide has an emetic action, so after one incident, the ferrets learned to avoid; however, the ferrets suffered sublethal effects, including significant decreases (18-48%) in Hb, increases of 35-91% in serum iron, and elevated levels of serum globulin, cholesterol, and triglycerides; Hb/Fe, urea nitrogen/creatinine, and albumin/globulin ratios also were altered by the secondary poisoning; also, 19 of the 20 ferrets lost body mass.

As far as impacts of rodenticides on mammalian carnivores in the field, Saucy et al. (2001) reported the mortality of 38 wild mammals, mainly red foxes and weasels, and 18 cats and dogs, following mechanical application of bromadiolone bait (150 ppm) in underground burrows for control of water voles in Switzerland. In New Zealand, Alterio (1996) found that secondary poisoning of stoats (*Mustela erminea*), feral ferrets (*Mustela furo*), and feral house cats (*Felis catus*) occurred following exposure to brodifacoum. Similarly, Alterio and Moller (2000) reported secondary poisoning of stoats (*Mustela erminea*) in a South Island podocarp forest in New Zealand. Townsend et al. (1984) found that least weasels (*Mustela nivalis*) in the United Kingdom (UK) suffered secondary poisoning following exposure to warfarin. McDonald et al. (1998) reported that residues of one or more anti-coagulant rodenticides were found in the livers of stoats (*Mustela erminea*) and weasels (*M. nivalis*); residues were found in 9 of 40 stoats (23%) and 3 out of 10 weasels (30%); most common rodenticides involved included the second generation anti-coagulants brodifacoum and bromadiolone; concluded that weasels were victims of secondary poisoning on these estates through consumption of non-target species (rodenticides used widely away from buildings). Shore et al. (1996) found that polecats (*Mustela putorius*) in the UK were frequent victims of secondary poisoning by second generation anti-coagulant rodenticides by hunting around farm buildings and feeding on rodents mainly in winter. Residues were found in 7 of 24 livers (29%) and in 2 of 5 stomachs (40%). Difenacoum was detected most frequently, but bromadiolone and brodifacoum were also detected. Most polecat carcasses were found along roadsides. The results indicated that exposure of polecats to second generation anti-coagulant rodenticides may be common and widespread. Schitoskey (1975) reported that the San Joaquin kit fox was susceptible to both primary and secondary poisoning from rodenticides (sodium monofluoroacetate, strychnine, zinc phosphide) contained in poisoned kangaroo rats (*Dipodomys* sp.). Littrell (1988) reported deaths of a raccoon and a mountain lion in northern CA resulting from diphacinone poisoning. Finally, Savarie et al. (1979) orally dosed 10 wild coyotes with diphacinone (doses ranged from 0.31 – 5 mg a.i./mg) and attached radiocollars to the coyotes which were then released back into the wild. Seven of 10 (70%) coyotes died within 7 – 16 days, with an average time to death of 9.6 days.

Incident Data

The EPA's EIIS database reveals at least 358 wildlife mortality incidents in which one or more of the rodenticides was detected in birds or non-target mammals. This includes 255 incidents for brodifacoum alone, including 58 owls, 72 diurnal raptors, 18 corvids, 4 other birds, 48 wild canids, 5 wild felids, 10 other carnivores, 5 white-tailed deer, 33 rodents/lagomorphs, and 2 opossums. Other incident totals include bromadiolone (40), zinc phosphide (25), diphacinone (20), chlorophacinone (13), warfarin (4) and difethiolone (1), with none for bromethelin or cholecalciferol.

The scope of the problem of wildlife mortalities due to rodenticides is readily apparent in the few states that actively monitor. These include primarily New York and California, whose records constitute over 90% of the rodenticide incidents in the EIIS database. In New York, Stone et al. (2003) reported on 80 incidents involving raptors exposed to anti-coagulant rodenticides, mainly brodifacoum (84%). Stone et al. (1999) previously reported on 55 incidents involving wildlife species exposed to anti-coagulant rodenticides in New York. Brodifacoum was implicated in 80% of the incidents. Secondary poisoning of raptors, mainly great-horned owls and red-tailed hawks, comprised 50% of all cases. Gray squirrels, raccoons, and white-tailed deer were the most frequently poisoned non-target mammals.

Of course, this is just the tip of the proverbial iceberg, as carcasses in the field last but a very short amount of time (usually a matter of just hours or days) and there are very few individuals or local, state, or federal agencies actually looking for carcasses. Two states (New York and California) make up well over 90% of the records cited above, as the majority of states do not have monitoring efforts. However, even when there are monitoring efforts, in many instances, carcasses may not be detected. Further, death may be attributed to natural causes, as rodenticide-poisoned animals do not appear to be anything but natural. And many incidents that could be added to the database may simply go unreported for any number of reasons. Therefore, the large number of incidents that actually found their way into the EPA EIIS database provides substantial evidence of a much larger problem as a direct result of the present system of rodenticide use.

Concerns regarding brodifacoum

Brodifacoum is a highly toxic second generation anti-coagulant rodenticide that accounts for 30% of all rodenticide active ingredients in the United States. Therefore, its continued use is of major concern to animals and humans everywhere. Brodifacoum is such a highly hazardous chemical to animals and humans that we believe that its continued uses should be severely restricted (i.e., only persons that are certified or otherwise trained should be using it). However, we support the continued use of brodifacoum for conservation purposes such as protecting island species impacted by rodents and other non-native species. Introduced commensal rats

(*Rattus* spp.) are a major contributor to the extinction and endangerment of island plants and animals. Although it is a powerful conservation tool, it is highly toxic to all other animals and its continued use for this purpose should be tightly controlled. Further, on some islands, its use may not be feasible without prohibitively expensive mitigation. Also, it should be noted that other rodenticides may be useful alternatives to brodifacoum for this purpose.

There are a couple of good examples of conservation uses of rodenticides on islands. Donlan et al. (2003) experimentally tested brodifacoum and two less toxic rodenticides, diphacinone and cholecalciferol, in eradicating *Rattus rattus* from three small islands in the northern Gulf of California, Mexico. All three rodenticides were successful in eradicating rats, suggesting that the less toxic diphacinone and cholecalciferol may be useful alternatives to brodifacoum for some island eradication programs. However, they point out that the choice of rodenticide must be balanced between efficacy and the risks to non-target species. Applied field research is needed on less toxic rodenticides, as well as improving palatability of baits. This may prove invaluable in preventing extinctions and in restoring larger and more diverse island ecosystems (Donlan et al. (2003). On Langara Island, at the northwestern tip of British Columbia's Queen Charlotte archipelago, Howald et al. (1999) examined the use of brodifacoum for conservation purposes. Langara Island was once nesting grounds for an estimated 500,000 seabirds. However, infestations of Norway rats (*Rattus norvegicus*) and their predation of eggs and breeding adults have caused extirpation or serious declines of all seabird species. By 1993, the breeding population of ancient murrelets (*Synthliboramphus antiquus*) had declined to 10% of its historical size. The island is also home to breeding bald eagles (*Haliaeetus leucocephalus*), peregrine falcons (*Falco peregrinus*), and other wildlife. In 1994 and 1995 they initiated a two-year study into the risk of secondary poisoning to non-target species. During 1994, rat carcasses were laid out with motion sensor cameras to identify potential scavengers. Ravens, northwestern crows and bald eagles were photographed at carcasses, and therefore at risk of feeding on rats that die above-ground. During the baiting program, 19 rats were radio-tagged to determine the proportion dying above-ground, and thus available to predators/ scavengers. Ravens were found poisoned both from feeding directly on the bait, and predating/scavenging poisoned rats. Bald eagles were trapped and blood sampled for brodifacoum residue analysis and prothrombin time evaluation; 15% of the sampled population showed detectable residues but no adversely affected birds were found. They concluded that the use of brodifacoum for rat removal on seabird islands poses a clear risk of secondary poisoning to avian scavengers, which must be weighed against the benefit of rat removal programs.

A couple of studies on the field use of brodifacoum by Eason and colleagues in New Zealand provide some insight on its potential hazards. Eason et al. (1999) point out that the field use of brodifacoum baits to control brushtail possums (*Trichosurus vulpecula*) has increased in recent years and has raised concerns of secondary and tertiary poisoning. In New Zealand, feral pigs (*Sus scrofa*) are known to scavenge possum carcasses and may also gain access to bait stations containing possum baits. Eason et al. (1999) determined the concentrations of brodifacoum in muscle and liver tissue from captive pigs after primary and secondary poisoning. Highest concentrations were found in the liver. Pigs eating 500 to 1776 g of brodifacoum bait containing

20 mg/kg had muscle concentrations ranging from 0.02 to 0.07 mg/kg and liver concentrations ranging from 0.72 to 1.38 mg/kg. Both appeared to be independent of the amount of bait eaten. Possums fed 400 g of bait had similar liver concentrations (0.52-1.20 mg/kg). Pigs that had eaten the soft tissue from eight poisoned possums had brodifacoum concentrations of 0.32 to 0.80 mg/kg present in the liver and the concentration increased in a dose-dependent manner. Brodifacoum was detected in muscle from only one of these animals. In a preliminary field survey, 11 of 21 wild pigs sampled from areas where possum control had been undertaken were contaminated with brodifacoum concentrations in the liver ranging from 0.007 to 1.7 mg/kg. Eason et al. (1999) concluded that, in view of the potential impact on pig hunters and dogs consuming wild pig meat and offal, restrictions on the wide-scale field use of brodifacoum baits appear to be warranted. Eason et al. (2002) reviewed the risks to non-target birds and other wildlife from the use of vertebrate pesticides, including anticoagulant rodenticides. The acute toxicity of brodifacoum to birds in New Zealand varies from <1 mg/kg in pukeko (*Porphyrio p. melanotus*), the native swamp hen, to >20 mg/kg in the paradise shelduck (*Tadorna variegata*). Like other second-generation anticoagulants, brodifacoum is strongly bound to vitamin K epoxide reductase and will persist, apparently for at least 6 months, in organs and tissue containing this enzyme (e.g., liver, kidney, and pancreas). The unique toxicokinetics of this class of compound exacerbates the risk of primary and secondary poisoning of non-target species. Vertebrate pest control programs in New Zealand using bait containing brodifacoum have resulted in the primary and secondary poisoning and sublethal contamination of non-target species. These include native raptors, such as the Australasian harrier (*Circus approximans*) and morepork (*Ninox novaeseelandiae*), other native birds such as the pukeko, weka (*Gallirallus australis*), southern black-backed gull (*Larus dominicanus*), and kiwi (*Apteryx* spp.), and introduced mammals, including game animals. There are increasing numbers of reports worldwide of wildlife contamination and toxicosis after the use of second-generation anticoagulants. Their conclusion is exactly in line with what the findings are in the United States and Europe with regard to brodifacoum hazards to wildlife species.

MBTA and BGEPA implications

Congress enacted the Migratory Bird Treaty Act ("MBTA"), 16 U.S.C. §§ 703 et seq., implementing the International Convention between the United States and several countries, to ensure a uniform, federally centralized system for protecting migratory birds, rather than a patch-work system of protection among the various States. See Humane Soc'y of the United States v. Glickman, No. 98-1510, 1999 U.S. Dist. LEXIS 19759, *32 (D.D.C. July 6, 1999). Section 703 of the MBTA provides that unless and except as permitted by regulations issued by the Secretary of the Interior, "it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, [or] kill . . . any migratory bird . . . included in the terms of the conventions . . .." 16 U.S.C. § 703 (emphasis added). This prohibition has been interpreted to include the poisoning of migratory birds from registered pesticides under FIFRA. United States v. Corbin Farm Service, 444 F. Supp 510 (E.D. Cal. 1978) aff=d United States v. Corbin Farm Service, 578 F.2d 259 (9th Cir. 1978).

Similarly, the Bald and Golden Eagle Protection Act ("BGEPA"), 16 U.S.C. § 668, states that it is illegal to "knowingly, or with wanton disregard for the consequences of his act take . . . any bald eagle . . ., or any golden eagle." "take under the BGEPA "includes also pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, or molest or disturb . . .." 16 U.S.C. § 668c (emphasis added).

Despite these prohibitions, however, the EPA has continued to allow the use of the rodenticides at issue here, which have taken significant numbers of mitgatory birds, and bald and golden eagles. Specifically, eleven golden eagles and two bald eagles were poisoned by brodifacoum. See EIIS Database (and 11 golden eagles and 3 bald eagles total for all nine rodenticides). In addition, there are also 152 reports of migratory birds that were poisoned by brodifacoum included in the EIIS database. Id. (207 total incidents reported for all nine rodenticides).

Rodenticide Risks to Domestic Animals

The Animal Poison Control Center (APCC) in Urbana, Illinois reports 2,334 cases (2,685 individual animals) of domestic animal poisoning with rodenticides (brodifacoum – 1,161; bromadiolone – 511; zinc phosphide – 218; diphacinone – 206; bromethalin – 66; difethialone – 48; warfarin – 48; chlorophacinone – 42; cholecalciferol - 34) between November 2001 and June 2003 (US EPA unpubl). Most of these cases involved domestic dogs. The number of incidents has been increasing steadily since the first 3 years of the APCC (1978-1981), when only 4.4% of the incidents were related to anti-coagulant rodenticides. By 1982, the percentage had almost doubled to 8% of the incidents, and in 1984, it had doubled once again to 17% of the incidents, ranking anti-coagulant rodenticides as the number one cause of animal poisoning incidents.

Of note is a case in which a female dog gave birth to litter of puppies where two of them died neonatally from brodifacoum poisoning from placental exposure; the mother had no symptoms and no known recent exposure to rodenticides (Munday and Thompson 2003). This gives a clear indication of the scope of the problem with brodifacoum.

In most cases, domestic animals are dying following a single exposure. Boermans et al. (1991) gavaged six horses with a commercial brodifacoum-containing bait (Talon) at a dosage of 0.125 mg brodifacoum/kg BW. The horses showed weight loss, severe hypocoagglability and hemogram alterations. This data indicate that a single exposure of horses to brodifacoum has the potential of causing clinical illness and possibly death.

Numerous mortalities have also been reported from captive animals in zoological parks. Borst and Counotte (2002) found that second generation anticoagulant rodenticides can give rise to unexpected casualties in nontarget species in zoos. The first two offspring of a pair of turkey vultures (*Cathartes aura*) died of brodifacoum toxicosis. The adult birds fed rodenticide-killed

mice to their offspring. There are previous case reports of small carnivorous birds (*Dacelo novae-guinae* and *Tockus deckeni*) killed eating poisoned (difenacoum and brodifacoum) mice. Even a granivorous species (*Rollulus roulroul*) died, probably by contamination of its food by cockroaches that transported the rodenticide. In addition, there have been numerous records of captive animals dying from rodenticide poisoning at the National Zoo in Washington, DC.

Rodenticide Risks to Humans

Perhaps the most distressing portion of the EPAs push for re-registration of these nine rodenticides is the fact that in excess of 20,000 people, mainly children ages 5 and under, are suffering exposure and effects from these rodenticides in the United States each year (Litovitz et al. 1999). And of these cases, 30-40% of them are requiring either a visit to a physician or a hospital (or both). Anti-coagulant rodenticides are responsible for a vast majority (>90%) of these cases. Data from 2002, 1998 and 1995 from the American Association of Poison Control Centers (AAPCC) can be compared as follows:

Year	# exposures (total)	# exposures (< 6yrs)	treated in health care facility	deaths
2002	18,144	16,000	5,476	3
1998	17,724	15,854	5,882	1
1995	14,710	13,167	5,479	1

Data from the AAPCC indicates that the number of exposures (total and those <6 yrs of age) is actually increasing over the past 9 years and also since the time EPA issued the rodenticide RED in 1998. And, when the data for these 9 years are summed, the total number of people exposed to rodenticides was approximately 150,132, the number of children less than 6 years of age was 133,685, the total number of cases serious enough to require medical treatment was 48,837, and the number of deaths was 17. These data speak for themselves and it is clear that this is a serious problem that EPA needs to immediately address.

Other Aspects that Need to be Considered

(1) Rodenticide sales and usage data

Directly related to the comments herein, we want to take this opportunity to point out that there is a serious paucity of both sales and usage data for rodenticides in the United States. As an example, the most recent EPA pesticides sales and usage report (Kiely et al. 2004) does not

include rodenticides as a separate category and lumps them in with "other". Both sales and usage data for rodenticides is exceedingly difficult to find in both the US and Canada and it is imperative that the EPA begin to address this by requiring both manufacturers as well as retailers to keep records of their sales. And need we remind you that EPA is the regulating agency responsible for administering FIFRA and has the regulatory power in which to require sales and use data from registrants. The EPA routinely requires sales and use data for insecticides, herbicides, and fungicides (among other pesticides), so now is the time to include rodenticides to this list. Following the necessary restriction of these rodenticides by EPA, professional pesticide applicators should keep close track of rodenticide usage and both sales and usage should be reported in BEAD's (EPA) annual report.

(2) Alternatives to rodenticides

We strongly believe that it is not sufficient to simply restrict the use of these nine rodenticides. The EPA must insist on alternative uses to rodenticides whenever and wherever feasible, especially the use of non-chemical alternatives when it comes to rodent control, of which there are many that have been proven to be effective. We remind the EPA of its role in advocating integrate pest management (IPM) that educates the general public on exclusion, rodent-proofing, habitat modification, proper storage and containment, and other methods, and that they can control their rodent problems in many cases without using hazardous rodenticides. This role is minimized and contradicted with the continued registration of overly hazardous rodenticides.

For purposes of rodent control that involves public health, we agree with the criteria outlined by Frantz (2004) for selecting rodenticides for use in an IPM program for rodents, including the following:

(1) the rodenticide should be the least toxic product that will be effective on the targeted species, and,

(2) the rodenticide must have a highly efficacious and readily available antidote that typically can be administered in time to save an accidentally intoxicated human or animal.

(3) Consultations with the "Services"

Pursuant to Section 7(a)(2) of the ESA, 16 U.S.C. § 1536(a)(2), the EPA must consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service on the effects these pesticides may have on threatened and endangered species. The ESA mandates that all federal agencies "shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or

adverse modification of [critical] habitat of such species . . .." Id. This provision imposes both substantive and procedural obligations on federal agencies, and clearly contemplates a close relationship of cooperation and consultation between the action agency and the Services in order to ensure that endangered and threatened species are "afforded the highest of priorities." T.V.A. v. Hill, 437 U.S. 153, 174 (1978). To guarantee compliance with the substantive no-jeopardy mandate, Section 7(a)(2)'s procedural obligations require a consultation process between the action agency and the Services. See Thomas v. Peterson, 753 F.2d 754, 763 (9th Cir. 1985) ("without substantial compliance with those procedural requirements, there can be no assurance that a violation of the ESA's substantive provisions will not result.").

The EPA's apparent reliance on the Biological Opinion issued in 1993 to satisfy the procedural mandate is unacceptable. See FWS, Effects of 16 Vertebrate Control Agents on Threatened and Endangered Species (1993). Specifically, consultation is required whenever an action agency "may effect" a listed species or critical habitat. 50 C.F.R. § 402.14.[1] The re-registration of these pesticides clearly is the type of agency action that triggers the consultation requirement. Id. § 402.02 (defining an "action" to include: "all activities or programs of any kind authorized, funded, or carried out by the agency," such as "granting of licenses [or] permits" and "actions directly or indirectly causing modifications to the land, water, or air.") Here, as is discussed above and is evident for the information contained in the Risk Assessment, the toxicants unquestionably harm many threatened and endangered species. The EPA would be directly and unequivocally failing to meet its obligations under the ESA if it does not consult on these effects before reregistering these pesticides.[2]

Moreover, the Services' regulations implementing Section 7(a)(2) state that "reinitiation of consultation is required and shall be requested by the Federal agency: . . . if new information reveals effects of the action that may affect listed species . . . in a manner or to an extent not previously considered; [] if the identified action is subsequently modified in a manner that causes an effect to listed species . . . that was not considered in the [Service's determination]; or [] if a new species is listed or critical habitat designated that may be affected by the [] action." 50 C.F.R. § 402.16. Again, as is discussed above, significant new information about the potential

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1 This trigger for consultation was "set sufficiently low to allow Federal agencies to satisfy their duty to 'insure' under Section 7(a)(2). Florida Key Deer v. Stickney, 864 F. Supp. 1222, 1229 (S.D. FL 1994) (quoting 51 Fed. Reg. 19,949-950) (June 3, 1986)) ("Therefore, the burden is on the Federal agency to show the absence of likely, adverse effects to listed species or critical habitat as a result of its proposed action in order to be excepted from the formal consultation obligation.").

2 It is well settled, that a federal agency must complete the consultation process before "an activity that may affect a protected species [can] go forward." Pacific Coast Federation of Fishermen's Associations, v. U.S. Bureau of Reclamation, 138 F. Supp. 2d 1228, 1242 (N.D. Cal. 2001). If an agency proceeds without first obtaining a Biological Opinion, the action agency cannot and does not ensure compliance with Section 7(a)(2)'s obligations and is subject to liability under the ESA. See Bennettv. Spear, 520 U.S. 154, 170 (1997) (completing Section 7 consultation only way to insure compliance).

effects of the pesticides has been developed since the issuance of the 1993 biological opinion. Moreover, additional species have been listed since 1991, and many carcasses of endangered and threatened species have been found to contain one or more of the rodenticide residues. Finally, the earlier consultation did not include an assessment of the potential effects of difethialone.

In addition to the procedural requirements, Section 7(a)(2) of the ESA imposes on all Federal agencies the independent substantive duty to "insure" that their actions are not likely to jeopardize the survival or recovery of listed species. 16 U.S.C. 1536(a)(2). While consultation with the expert wildlife agencies under Section 7 is the procedural manifestation of this obligation, it is each agency's independent duty to meet this "no-jeopardy" standard. Therefore, it is incumbent upon the EPA has an independent duty to avoid specific actions that would jeopardize listed species. However, EPA's implicit acknowledgement that to date it has not implemented the 1993 Biological Opinion is evidence that it has failed to meet this duty. See EPA, Update to the Overview of the Rodenticide Comparative Ecological Assessment (September 9, 2004). Indeed, the EPA's reluctant consent to undertake those actions that it is legally required to take, by "consider[ing] whether to pursue implementation of the 1993 Biological Opinion as an interim measure in advance of re-consultation with the Services," only underscores the EPA's abysmal track record of compliance with its duties under the ESA. Id. As a result, the EPA needs to take immediate steps to meet its obligation to protect listed species.

Finally, given the substantial risk these toxicants present to a wide range of listed species, the use of the newly promulgated counterpart regulations in this instance is inappropriate. See 69 Fed. Reg. 47732 (August 5, 2004) ("providing two optional alternatives for completing Section 7 consultation for FIFRA regulatory actions.") (emphasis added). The EPA has an obligation to utilize the full extent of the Services' expertise in the this area to ensure that the use of these pesticides will not jeopardize the continued existence of the any of the potential affected species, or adversely affect or destroy their habitat. Thus, in meeting this obligation the EPA should employ the general consultation procedure to ensure all of the relevant issues are fully examined and addressed by the expert fish and wildlife agencies; simply, the truncated review in the counterpart regulations is insufficient here.

Problems with the Continued General Use Registration of these Rodenticides (or business as usual)

The system of rodenticide registration and use as it is today in the United States is set up for failure - large numbers of mortalities/morbidities of not only wildlife but also domestic animals and humans as well are occurring each year across the United States. Sales and usage of these rodenticides is not followed by EPA, the public generally is not responsible or knowledgeable enough to use rodenticides properly, and what ends up happening is that rodenticides are too widely broadcast - throughout buildings, around building perimeters, and across urban, suburban, and rural landscapes, and an unacceptable level of humans and animals are exposed and numerous

mortalities/morbidities follow. As it currently stands, the system is broken and is in desperate need of repair. Some additional observations are as follows:

(1) There is scant evidence suggesting that we even require such widespread usages of these second generation anti-coagulant rodenticides in the US. Remember, these compounds were introduced largely to deal with rodent resistance to warfarin. We wonder where the data is on warfarin resistance in the US that warrants this high level of use of the second generation anti-coagulants? It seems as if this is information that you are requesting in this public comment period. Isn't that placing the cart before the horse? Further, where is the data that documents the benefits which could possibly be worth all of the environmental problems caused by these compounds? We are not aware of any data that clearly shows a real benefit to making second generation anti-coagulant rodenticides as broadly available as they are at present. With the growing adoption of IPM, due in large part to the efforts of the EPA, pest control managers for urban and rural areas can be trained in effective non- and least-toxic methods and practices of rodent control.

(2) Rodenticides, particularly the second generation anti-coagulants, kill way too many target and non-target field rodents, which then allows a substantial number of secondary poisonings of predatory/scavenging species. These rodents are exposed to a palatable second generation anti-coagulant bait and would be expected to eat as much of this as they would if exposed to a palatable first generation anti-coagulant bait, thereby accumulating a "super-lethal" dose. This fact leads, at least in part, to the epidemic of secondary poisonings we are seeing in wildlife species in the United States.

(3) The EPA has very little in the way of sales and usage data for rodenticides, although they do have this data for practically all other pesticide groups. We are not sure why this is, but this problem begs for immediate attention.

(4) The general public is just too careless and uninformed with regard to rodenticide usages, using them much more frequently than they are necessary; it is clear to us that the application of rodenticides cannot be left in the hands of the general public.

(5) There are just too many mortality/morbidity incidents for humans, domestic animals, and wildlife species (there is too much misuse, careless bait applications, etc.)

(6) Even PCOs/certified applicators are not using rodenticides in a safe and effective manner in many cases – they just hire someone to apply it who may be miles away from the licensed person when they apply it; this needs to be addressed.

(7) There seems to be some notion that tamper-resistant bait stations are the panacea for dealing with the excessive wildlife mortality incidents. However, tamper-resistant bait stations are not the answer because they do not even begin to address the entire secondary poisoning issue. Just because a bait station is tamper-resistant does not mean that the massive amount of secondary

poisoning will decrease by even one animal.

(8) The EPA assumes that minor label amendments will solve the animal/human exposure problem; the EPA needs to check out the literature from other continents and see that exposure levels are as high in countries where second generation anti-coagulant rodenticides are labeled for indoor use only (e.g., UK); also, regarding label issues, how in the world will the EPA enforce a label change when a product has been used in the US for so many years? This would be an exceedingly difficult thing to do and in fact is unlikely to happen, particularly in light of the fact that the EPA has no reliable data for how much of the product is being sold and how much is being used and where it is being used.

(9) The EPA fails to enforce the requirements that registrants provide information on the significance of the widespread contamination and mortality/morbidity caused by their products nor do they require the registrants to pay for all of the monitoring and analytical work necessary to track this widespread contamination.

(10) Another point that needs to be raised here is that, as part of this comment period, the EPA is requesting a lot of basic information on these rodenticides that they should already possess. We point out here that this information that EPA is requesting is, by and large, does not include information that it would be requesting for any other group of pesticides. The EPA requires much of this data for insecticides, herbicides, and fungicides, among other pesticide groups. Therefore, the EPA should re-examine their entire regulatory program for rodenticides and explain why certain information that is otherwise standard operating procedure is not required for rodenticides. Examples of this are as follows:

* the EPA does not keep track of sales and usage data for rodenticides. These data should already be required of all manufacturers, sellers, and PCOs.
* the EPA does not keep track of resistance issues and does not examine or otherwise assess resistance in the United States. In fact, the only reason the second generation anti-coagulant rodenticides are being used is supposed to be that there is widespread resistance to the first generation anti-coagulants such as warfarin. However, the fact that the EPA does not keep track of resistance has resulted in the widespread use of the second generation anti-coagulants that we see today. This is a major issue and we request the EPA to account for this.
* the EPA is asking for examples of commensal rodent control programs in urban areas and IPM programs targeting any rodents. Isn't this information that the EPA should already have?
* the EPA is asking for wholesale and retail prices of rodenticide baits. We believe that this information should already be required of all rodenticide sellers.
* the EPA is asking for importance of rodenticide baits in relation to non-chemical control methods. Again, isn't this something that the EPA should already have at its disposal? If the EPA does not have this information, then in effect what they are doing with these rodenticides is actively promoting hazardous chemical use in the United States!
* the EPA is asking for detailed estimates of types of damage caused by rodents in the US and economic loss resulting from such damage. Again, this is information that the EPA should

already have. Exactly how can the EPA conduct reliable cost/benefit estimates on rodenticide use if they do not have this information?

Conclusions

We find that the current rodenticide cluster RED as presented is grossly insufficient to deal with the high level of hazard posed by these products. Collectively, these nine rodenticides present a serious level of environmental contamination with consequences that are largely unknown or understood. The situation at present regarding the poisoning of children requires immediate action on the part of the EPA to address this serious problem. Therefore, we call on the EPA to immediately return to their 1998 policy that recognized that rodenticides are an unreasonable health risk in violation of FIFRA and not approve the re-registration of these rodenticides unless manufacturers include two safety measures to protect children: a dye that would make it more obvious when a child had ingested a rodenticide, and a taste aversion ingredient that would discourage children from ingesting rodenticides. The 2001 EPA decision to revoke these safety regulations was incorrect and must be rectified immediately. We therefore request that the EPA rework their RED for each of the nine rodenticide chemicals so that it finally restricts all current usages of the nine rodenticides. Continued usage for all nine rodenticides should be limited to professional pest control operators (PCOs)/certified applicators only and concomitantly, EPA needs to require all PCOs and all of their hired certified applicators to undergo a training program specifically for rodenticide use to minimize environmental hazards. Additionally, we request that the EPA cancel uses for rodenticides that involve field rodents (not commensals) that are not public health-related, that the EPA actively promote non-chemical alternatives to rodenticides, and that the EPA go back to, and enforce, their 1998 regulations that would insist on industry adding the two safety measures to all rodenticides (dye, taste aversion agent).

Thank you for the opportunity to provide comments on this document and on this very important issue in general.

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EXHIBIT 2

May 18, 2007

Special Review and Reregistration Division (7508C)
Office of Pesticide Programs
Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460-0001

Attn: docket number EPA-HQ-OPP-2006-0955

Thank you for the opportunity to comment on the Proposed Risk Mitigation Decision for Nine Rodenticides, docket number EPA-HQ-OPP-2006-0955, released on January 17, 2007. We, the undersigned organizations and individuals, welcome this opportunity to comment on this mitigation plan and provide our input on what we consider to be a critically important issue – the continued widespread uses of these rodenticides in the environment.

Background

The rodenticide "cluster" includes nine compounds, including six anti-coagulant rodenticides (brodifacoum, bromadiolone, difethialone, diphacinone, chlorophacinone, warfarin), one neurotoxic rodenticide (bromethalin), and two non-anti-coagulant rodenticides (zinc phosphide, cholecalciferol). Strychnine is an additional rodenticide that was not included in the mitigation plan, but has well-documented potential for non-target lethal exposure and a very high potential for illegal use and abuse in killing wildlife species. We strongly believe strychnine should be included in any rodenticide mitigation plan that addresses outdoor uses, both above ground and underground.

All nine rodenticides are used to control commensal rodents, but only 4 of the 9 (warfarin, diphacinone, chlorophacinone, zinc phosphide) are used to control field rodents. Strychnine is also registered as a product for use in controlling field rodents.

Mitigation Plan Recommendations:

We agree with the proposed decision to classify all bait products containing the active ingredients brodifacoum, bromadiolone, and difethialone as restricted use pesticides. These three second generation compounds have demonstrated the potential for severe adverse effects to birds and mammals from primary and secondary poisonings. We believe that these three poisons must be regulated together, in order to prevent the substitution of one for another in over-the-counter products. This risk mitigation measure would preserve the availability of the second-generation anticoagulants to meet critical public health needs in specific situations, but would result in marked overall reduction in exposure to and adverse effects from those compounds.

We strongly believe strychnine should be included in any rodenticide mitigation plan that addresses outdoor uses, both above ground and underground.

We also agree with the proposal to require all rodenticide bait products available for sale to consumers be sold only in tamper-resistant bait stations with solid bait blocks as the only permissible bait form. We laud the EPA for proposing these difficult decisions in an effort to stem the epidemic of child poisonings and wildlife exposures that have resulted from the indiscriminant use of second generation rodenticides.

We also concur with EPA that label improvements are needed to provide better guidance to both consumers and certified pest control operators to mitigate the risks associated with bait products containing any of these nine rodenticides. We believe also that label improvements are needed with bait products containing strychnine.

The Rodenticide Registrant's Task Force (RRTF) has proposed revising the labels for all nine rodenticides to restricting to certified applicators (or those working under their supervision) the outdoor use of rodenticide bait products containing the nine active ingredients covered in this proposal. We agree with the EPA that it is not appropriate to include on the label of a non-restricted use product any language suggesting that use is limited to certified applicators.

However, we strongly believe that all uses (with limited exceptions noted below) of second generation rodenticides be limited to indoor use only, because of continuing wide-spread poisonings of mammals and birds arising from secondary poisonings due to ingestion of target rodents with super-lethal body burdens of second generation rodenticides.

If the Agency declines to restrict second generation rodenticide use to indoors only, we believe the proposal to require that all outdoor, above-ground placements of bait products containing second-generation anticoagulants be contained in tamper-resistant bait stations, to deny non-target animals ready access to rodenticide bait could be acceptable on a trial basis, providing adequate monitoring of secondary poisonings is included as part of the mitigation plan.

Current rodenticide labels also need revision to provide simple instructions to consumers, and to provide information on how many bait stations would be appropriate for typical situations.

Mitigation measures for below-ground use of rodenticide baits are not included in the current mitigation plan. We believe that considerable non-target wildlife exposure arises from poorly managed farm, professional, and certified applicator rodent control programs in which pelleted or grain baits are applied to burrows. These burrows are plugged with paper or otherwise sealed, but are quickly re-opened by the target rodents, and pelleted baits are then pushed to the surface and made available to non-target birds and mammals. Many of the incidents reported in the American Bird Conservancy's Avian Incident Monitoring System (AIMS) database by the State of New York reflect poor applicator control and subsequent lethal non-target exposure.

We recommend EPA consult with registrants to develop recommendations for the appropriate minimum dose of pellet or grain bait to be placed in burrows to adequately control the expected number of rodents. We request that label instructions be provided to limit the amount of product placed in burrows, which will reduce the amount of bait pushed to the surface when burrows are re-opened by target animals. If, for example, a recommended quantity of "not more than 1

tablespoon" (or other agreed-upon amount) of bait per burrow were on the label, the potential for non-target exposure would be reduced. We further request that clear label instructions be provided that describe the proper control techniques for each species of rodent being targeted. Clear label instructions should be applied to both consumer and restricted use products.

Island Conservation Uses of Rodenticides:

We believe that most uses of the three second generation rodenticides should be designated for indoor use only. We believe there are important uses of for these rodenticides in rodent eradication on islands for conservation programs designed to enhance native species populations, particularly those of threatened and endangered status. The docket entry comment EPA-HQ-OPP-2006-0955- submitted by M. A. Soukup, United States Department of the Interior, National Parks Service, describes this program, and includes a copy of the peer reviewed report by Howald, GR et al. 2003. "Eradication of Black Rats from Anacapa Island: Biological and Social Considerations". Proceedings of the Sixth California Islands Symposium. We support this conservation use of rodenticides under controlled conditions, and incorporate these comments by reference.

Rodenticide Risks to Wildlife

We believe the above measures are required, because of continuing high levels of direct and secondary poisonings of both mammals and birds.

Risks to Endangered Species

San Joaquin Kit Fox (*Vulpes macrotis mutica*) – the San Joaquin kit fox is listed as federally endangered, and there is a clear record of mortality of the San Joaquin kit fox in California from anti-coagulant rodenticides. At present, the Ecological Incident Information System (EIIS) database contains poisoning records for 32 San Joaquin kit foxes, including 27 from brodifacoum (1999 - 2003), 2 each from bromadiolone (1999 and 2000) and chlorophacinone (1990 and 1999), and one for diphacinone (1987). Additional Kit Fox carcasses are currently stored in California Department of Fish and Game freezers awaiting residue analysis that will likely show additional rodenticide poisoning.

Northern Spotted Owl (*Strix occidentalis*).
Two cases of brodifacoum poisoning of endangered Spotted Owls in Washington State (1991, 1995) indicate that field uses of rodenticides have placed endangered owls at risk. It is not clear whether use of bait stations for vole control would reduce the secondary exposure risks to this species. We believe monitoring should be conducted to evaluate the success of the mitigation plan in reducing risks of exposure to endangered owls.

Bald Eagle (*Haliaeetus leucocephalus*)
The AIMS database contains 15 cases of lethal rodenticide poisoning of Bald Eagles, including 11 cases (14 dead birds) involving strychnine, 1 case with brodifacoum, and 3 cases with warfarin.

Risk to raptors and other bird species

Rodenticides pose a substantial risk to both diurnal and nocturnal raptors, particularly from secondary poisoning. The following table lists the number of poisoning cases in the AIMS database, presented by specific rodenticide active ingredient. The AIMS database includes many of the cases documented in the EPA EIIS database, but also includes cases of pesticide misuse and deliberate abuse. We feel these are important to include, because they demonstrate the high toxicity of these compounds, and their availability for abuse.

Table 1: Rodenticide cases in American Bird Conservancy AIMS database and species affected. Table lists the ten most frequently affected species for each compound. The limited number of cases is due largely to the fact that States have few resources to document poisonings, and the majority of cases are from California and New York.

Brodifacoum: 178 Events reported, 242 birds killed

Species	Events	Birds Killed	Birds Sub-lethally Affected
Red-tailed Hawk	50	60	8
Great Horned Owl	50	59	1
American Crow	17	17	1
Golden Eagle	11	7	4
Eastern Screech-owl	9	9	0
Cooper's Hawk	8	8	0
Barn Owl	6	10	0
Long-eared Owl	2	2	0
Red-shouldered Hawk	2	1	2
Bald Eagle	1	1	0

Bromodialone: 24 Events, 66 birds killed

Species	Events	Birds Killed	Birds Sub-lethally Affected
Great Horned Owl	9	9	0
Barn Owl	3	6	0
Cooper's Hawk	2	3	0
Eastern Screech-owl	2	2	0
American Kestrel	1	1	0
Egret	1	1	0
Fish Crow	1	1	0
Great Blue Heron	1	2	0
Hawk	1	6	0
Mourning Dove	1	1	0

Chlorophacinone: 4 Events, 9 birds killed

Species	Events	Birds Killed	Birds Sub-lethally Affected
Wild Turkey	3	8	1
Red-tailed Hawk	1	1	0

Diphacinone: 8 Events, 9 birds killed

Species	Events	Birds Killed	Birds Sub-lethally Affected
Barred Owl	1	0	1
Great Horned Owl	1	1	0
Red-tailed Hawk	1	1	0
Snowy Owl	1	1	0
Turkey Vulture	1	1	0
Unknown Bird	1	3	0
owl	1	1	0
Rock Pigeon	1	1	0

Strychnine: 96 Events, 1967 birds killed

Species	Events	Birds Killed	Birds Sub-lethally Affected
Bald Eagle	11	14	2
Rock Pigeon	11	51	0
Mallard	8	54	0
Golden Eagle	7	8	0
Mourning Dove	7	114	0
Eagle	6	6	0
Canada Goose	5	55	0
Peregrine Falcon	5	5	0
Sparrow	5	291	0
Blackbird	4	88	0

Warfarin: 7 Events, 9 birds killed

Species	Events	Birds Killed	Birds Sub-lethally Affected
Bald Eagle	3	3	0
Great Horned Owl	1	1	0
Northern Bobwhite	1	3	0
Peregrine Falcon	2	2	0
Wild Turkey	1	11	0

Zinc Phosphide: 29 events, 599 birds killed

Species	Events	Birds Killed	Birds Sub-lethally Affected
Wild Turkey	18	72	0
Canada Goose	7	167	0
White-fronted Goose	3	327	0
Snow Goose	2	26	0
Horned Lark	1	3	0
domestic chicken	1	2	0
European starling	1	1	0
Snow Goose	1	1	0

In the above table, strychnine has the highest documented number of birds killed, 1967, which is

higher than the sum of all other rodenticides combined. We believe that strychnine should be regulated along with the other nine rodenticides addressed in the current mitigation plan.

Risks to wildlife from above ground use of "First Generation" Rodenticides:

We agree with the proposed mitigation plan to restrict above ground uses of second generation rodenticides to bait stations. There are several registered uses for first generation rodenticides (chlorophacinone and diphacinone) that allow broadcast application of baits above ground, and even aerial application of chlorophacinone and diphacinone for some uses, but these have not been addressed in the current mitigation plan. We are opposed to the registered use of chlorophacinone for broadcast or aerial application of grain or pelleted baits. Table 2 below presents acute toxicity data for rats and birds.

Table 2. Comparative Acute Toxicity Data for First and Second Generation Anticoagulant Rodenticides

Compound	LD_{50} rat	Median LD_{50} bird
First Generation Anticoagulants		
Chlorophacinone	3.1	3.32
Diphacinone	2.3	2394 (2 species)
Second Generation Anticoagulants		
Brodifacoum	0.3	9.1
Bromodialone	1.12	676
Difethialone	0.56	0.87

Data from: Mineau, P., A. Baril, B.T. Collins , J. Duffe, G. Joerman, R. Luttik. 2001. Reference values for comparing the acute toxicity of pesticides to birds. Reviews of Environmental Contamination and Toxicology 170:13-74.

Table 2 clearly demonstrates the very high toxicity of chlorophacinone to bird species, and the much lower toxicity of diphacinone to the two species of birds tested (mallards and bobwhite quail). The risks of diphacinone are unclear for many raptorial species of birds, because of the documented kills listed above, but we are clear that chlorophacinone poses unreasonable risks to birds from direct exposure. Because of the very high toxicity of chlorophacinone to birds, we are opposed to the use of chlorophacinone above ground unless it is adequately confined within tamper-resistant bait stations. The risk of direct ingestion by non-target birds cannot be justified in light of the very high toxicity of chlorophacinone. While we are not in favor of any broadcast use of rodenticides, except for island conservation use, we understand the conflicts with rodents in some agricultural situations.

Direct risks to birds from ingestion of grain baits

Zinc phosphide poses a greater risk of direct poisoning and mortality than secondary toxicity, due to its mode of action. The table above documents many cases of direct poisoning of grain eating birds exposed to zinc phosphide grain baits found on the ground surface. No raptors have been documented with secondary exposure to zinc phosphide. The risks documented here indicate that careless or deliberate placement of poisoned grain presents a high risk to many species of birds, and the necessity for specific label improvements and greater training of applicators certified to use zinc phosphide.

Rodenticide Risks to Humans

Data from the American Association of Poison Control Centers indicate that more than 15,000 cases of anticoagulant rodenticides poisonings are reported annually in the United States, and the vast majority of cases involve accidental ingestion by children under the age of six. Data have been submitted to the rodenticides docket and have been included as document numbers: EPA-HQ-OPP-2006-0955-0009, -0010, and -0011, and will not be repeated here. While many of the reported cases did not require hospitalization or even an antidote injection of vitamin K, the alarming number of reported poison cases demonstrate the need for preventing exposure of young children to rodenticides baits.

We agree with the mitigation measures proposed by EPA that all rodenticide bait products available for sale to a consumer must be sold in tamper-resistant bait stations, with solid bait blocks as the only permissible bait.

Alternatives to rodenticides

We strongly believe that it is not sufficient to simply restrict the use of these nine rodenticides and strychnine. The EPA must utilize its authority to recommend the principles of Integrated Pest Management (IPM) as part of a successful mitigation plan for rodenticides. We believe it should be the mission of EPA to insist on alternatives to rodenticides whenever and wherever feasible, especially the use of non-chemical alternatives for rodent control, of which there are many that have been proven to be effective. EPA has a valuable role in advocating IPM to educate pest control operators and the general public on exclusion, rodent-proofing, habitat modification, proper storage and containment, mechanical traps, and other non-chemical methods, and that they can control their rodent problems in many cases without using hazardous rodenticides.

We believe that two general principles should be followed in programs to control rodents: (1) the rodenticide should be the least toxic product that will be effective on the targeted species, and, (2) the rodenticide must have a highly efficacious and readily available antidote that typically can be administered in time to save an accidentally intoxicated human or animal.

Conclusions

American Bird Conservancy and the undersigned organizations and individuals believe there are legitimate uses for rat poisons, but we are strongly concerned that rodenticides cause wildlife and human poisonings when these products are incorrectly and indiscriminantly used. Therefore, we

urge the EPA to implement their proposed mitigation plan, modified to include strychnine in the mitigation plan to further prevent unnecessary wildlife poisonings. Please take action to restrict the use of rodenticides to prevent the poisoning of America's children, birds and other wildlife. Thank you for your consideration of our position on this important issue.

Respectfully submitted,

Michael Fry
Director, Pesticides and Birds Program
American Bird Conservancy
Washington, DC

Caroline Kennedy
Senior Director of Field Conservation Programs
Defenders of Wildlife
Washington, DC

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San Francisco, CA

EXHIBIT 3

American Bird Conservancy, Natural Resources Defense Council, and Defenders of Wildlife Meeting with Assistant Administrator Jim Gulliford
April 1, 2008 / 1:30 to 2:30 pm

This meeting was requested by representatives from American Bird Conservancy (ABC), Natural Resources Defense Council (NRDC), and Defenders of Wildlife (DoW) to discuss approaches for meeting EPA's goals of reducing wildlife exposures and incidents related to use of rodenticides, and reducing exposure incidents to children.

Aaron Colangelo (NRDC) stated that NRDC supports EPA's January 2007 risk mitigation proposal, and believes that the proposed measures of requiring tamper-resistant bait stations and solid bait blocks are good approaches for addressing the problem of children ingesting rodenticides used in the home. Mr. Colangelo also discussed his view that the mitigation proposal will address the environmental justice issue of disproportionate exposure to people of color, people living in public housing, and low-income communities. Mr. Colangelo also inquired about the Agency's timeline for reaching a decision on rodenticides, and stated that NRDC urges the Agency to move quickly on issuing the decision. NRDC provided a one-page written document summarizing its positions to Assistant Administrator Gulliford and other staff attending the meeting. A copy of that document is attached.

Michael Fry (ABC) explained that ABC supports EPA's proposal for restricted use classification for the second generation anticoagulants, but believes that the Agency should impose an indoor-use-only restriction on the second generation anticoagulants, in addition to restricted use. Dr. Fry also stated support for EPA's proposal to require tamper-resistant bait stations and solid bait blocks, and indicated that ABC supports the concept of allowing a range of bait stations with different levels of protection, as a way to allow for a range of bait station prices. Dr. Fry urged the Agency to require tamper-resistant bait stations for outdoor, above ground placements of all rodenticides, as opposed to the Agency's proposal of only requiring bait stations for outdoor, above ground placements of the second generation anticoagulants. Other additional risk mitigation measures that ABC urged the Agency to consider include limiting zinc phosphide to subterranean use or use in bait stations that would exclude non-target birds, and limiting the active ingredient concentrations in chlorophacinone and diphacinone field-use products to 0.005%. In addition, Dr. Fry discussed ABC's and DoW's support for the use of anticoagulant rodenticides in island conservation projects. ABC and DoW provided a three-page letter summarizing its positions to Assistant Administrator Gulliford and other staff attending the meeting. A copy of that letter is attached.

NRDC
THE EARTH'S BEST DEFENSE

EPA'S PROPOSED RODENTICIDE MITIGATION DECISION WILL PROTECT CHILDREN FROM ACCIDENTAL POISONINGS AND SHOULD BE FINALIZED
April 1, 2008

- NRDC strongly supports EPA's proposal to mandate tamper-resistant bait stations and solid bait block formulations for all rodenticides approved for residential use.
- Tens of thousands of children under age six are accidentally exposed to rodenticides every year. As many as 1,500 suffer symptomatic poisonings that require hospitalization or treatment.
- The most common reported symptoms from rodenticide poisoning in children are diarrhea, vomiting, and skin rash. Anticoagulant rodenticides can also cause nosebleeds, bleeding gums, bloody urine, gastrointestinal bleeding, anemia, bleeding into the eyes and joints, and internal bleeding into the spleen, lung, and liver.
- The vast majority of child poisonings are caused by ingestion of loose pellets of rodenticide bait inside the home. Requiring bait blocks and tamper proof bait stations will eliminate both the loose pellets and children's easy access to the rodenticide baits.
- NRDC submitted comments from more than 6,000 NRDC members in support of EPA's January 2007 mitigation proposal to mandate tamper-resistant bait stations and solid bait block formulations for all residential-use rodenticides. These comments demonstrate significant public support for EPA's mitigation proposal.
- This is also an environmental justice issue: African-American, Latino, and low-income children are disproportionately harmed. In New York State, more than eighty percent of children hospitalized for rodenticide poisoning are African-American or Latino. EPA found that African-American children are more than three times as likely to require hospitalization, and Latino children are more than twice as likely to require hospitalization, because of serious rodenticide poisonings. The proposed safety measures will protect people of color, people living in public housing, and low-income communities.
- A 2005 court order requires EPA to take necessary steps to protect children from rodenticide poisonings. *West Harlem Environmental Action v. EPA*, 380 F.Supp.2d 289 (S.D.N.Y. 2005). EPA has unreasonably delayed compliance with this court order and should finalize its proposed mitigation decision promptly.

AMERICAN BIRD CONSERVANCY

DEFENDERS OF WILDLIFE

Mr. Jim Gulliford
Assistant Administrator
Office of Prevention, Pesticides, and Toxic Substances
United States Environmental Protection Agency
Ariel Rios Buliding
1200 Constitution Ave, NW
Washington D. C. 20460

April 1, 2008

Dear Mr. Gulliford,

On January 17, 2007, EPA proposed the following risk mitigation measures to reduce human health and environmental risks of nine rodenticide bait product active ingredients:

1) Classify all products containing the active ingredients brodifacoum, bromodialone, and difethialone as restricted use pesticides.
2) Require that all rodenticide bait products available for sale to consumers be sold only in tamper-resistant bait stations with solid bait blocks as the only permissible bait form.
3) Require that all outdoor, above ground placements of bait products containing ~~second generation anticoagulants~~ rodenticides be contained in tamper-resistant bait stations.

We are strongly in favor of the above three mitigation measures, which we believe need to be implemented, and thank the Agency for proposing these changes in regulations.

In addition to the above measures, we are also strongly in favor of additional measures to reduce risks to wildlife:

4) To reduce the potential risk of secondary poisoning of non-target predators and scavengers, both birds and mammals, we advocate requiring second generation anticoagulants to be limited to both restricted use only AND indoor use only. We believe there are sufficient research data to justify these regulations.
5) Outdoor field uses of first generation anticoagulants continue to pose direct risks to granivorous birds and small mammals, and secondary poisoning risks to scavenging mammals and birds. We therefore advocate requiring field-bait uses of chlorophacinone and diphacinone to be limited to active ingredient concentrations of not more than 0.005%.
6) Broadcast field use of zinc phosphide on wheat grain bait is well documented as causing direct mortality to non-target granivorous birds. We strongly advocate regulating zinc phosphide as restricted use only, and limiting zinc phosphide applications to subterranean use and all above ground uses only in bait stations that exclude non-target birds.
7) We continue to advocate the use of anticoagulant rodenticides for island conservation projects, because introduced rodents on seabird breeding islands cause extensive damage to breeding birds. While the risks of direct and secondary poisonings exist with the use of anticoagulants on

islands, the benefits of rodent eradication and potential for recovery of breeding populations of seabirds greatly outweigh the incidental poisoning risks. We are in favor of using brodifacoum at the reduced active ingredient concentration of 50 ppm, as well as using diphacinone or cholecalciferol as alternative products, as has been demonstrated in successful rodent eradication projects in California and Mexico.

The Agency has discussed an additional recommendation since the mitigation plan was released in January 2007:

1) The option of allowing the marketing of alternative bait station products that will prevent child exposure, but will not be as costly as the more robust bait stations designed and tested to withstand destruction by a large dog. This is an excellent idea, giving the consumer the option of using an inexpensive bait station where exposure to large dogs is not an issue.

Rationale for our recommendations:

We believe that allowing over-the-counter sale of second generation products is ill-advised. Consumers are usually not aware of the importance of alternating rodenticide active ingredients as part of an integrated pest management (IPM) program to prevent rodenticide resistance, and allowing untrained people to use the most advanced products exclusively has the potential of creating resistance problems. We do not believe that label statements advocating IPM are effective with over-the-counter products sold to untrained consumers, especially when alternative anticoagulants are not available on the consumer market. Arguments that second generation products are needed, because of resistance to first generation anticoagulants do not appear to be substantiated in the data presented in the rodenticide docket. While resistance to first generation products has been documented in the US, most of the cases are old (1970s and 1980s), not well documented geographically, and there are very few recent cases in the docket. We believe the resistance problem is greatly exaggerated, and if it should occur, the problem should be addressed by professionals rather than allowing untrained consumers to use advanced products.

We believe that outdoor use of second generation anticoagulants maximizes the potential risks of secondary poisoning of wildlife, even when the products are restricted use and used by professionals. We advocate restricting all second generation rodenticides to indoor use only, which will greatly minimize secondary exposure of mammalian and avian predators. We have observed statements in industry comments that they are in favor of a policy that will allow outdoor placement of rodenticides along perimeter fences of properties in an effort to exclude all rodents from individual properties. We believe this is a very ill-advised practice, which should not be allowed, because of the very high risk that poisoned rodents will be scavenged around the perimeter of a property.

We understand that farms have a need for rodenticides, but we feel that the vast majority of uses can be accomplished with indoor placement of bait stations containing second generation anticoagulants in addition to outdoor use of first generation products in bait stations.

Outdoor use of first generation products (chlorophacinone, diphacinone and warfarin) in bait stations has been shown to be highly effective, and outdoor farm use should be limited to these products, unless resistance has been documented in the local area. If resistance is a problem a certified pest control

operator should be contracted, who can use all IPM methods available to remedy the problem. We believe the option of a special local needs permit should be available for any State that has documented anticoagulant resistance in target animals, so that limited outdoor use of second generation products should be available if needed. We also believe it is important to have regulatory control of Section 24(c) permits, by requiring documentation of resistance as a condition for renewal of special local needs permits. We believe the goal should be the elimination of rodenticide resistance through all available IPM methods, and not the acceptance that resistance is inevitable.

American Bird Conservancy and Defenders of Wildlife both are concerned that rodenticides continue to poison protected bird species such as wild turkeys, hawks and eagles, and endangered species such as San Joaquin Kit Foxes and Northern Spotted Owls. We believe that restricting uses of second generation anticoagulant rodenticides will markedly reduce non-target poisonings in suburban areas, and restricting second generation anticoagulants to indoor use only will further reduce wildlife poisonings. However, we are concerned that field uses of zinc phosphide and anticoagulants continue to kill significant numbers of protected birds and mammals through direct and secondary toxicity. We believe the field uses allowed through Section 24(c) registrations are responsible for many of these poisonings in the Pacific Northwest, and the necessity of these special registrations needs to be re-evaluated and the benefits weighed against the continuing violations of the Migratory Bird treaty Act and the Endangered Species Act. Complying with FIFRA regulations does not absolve pest control operators, growers and the US Forest Service from violations of these laws. We urge the Agency to develop MOUs with the Fish and Wildlife Service in an effort to reduce non-target poisonings, and to comply with Executive Order 13186, which requires the EPA to develop policies that will conserve migratory bird populations.

Thank you for the opportunity to meet and discuss our concerns with regard to the implementation of the proposed mitigation policy for rodenticides. We believe the EPA has made significant progress in proposing mitigation measures, and we sincerely hope that the Agency will implement strong measures to protect children and wildlife.

Sincerely,

Michael Fry, PhD
Director of Conservation Advocacy
American Bird Conservancy
Washington DC

Caroline Kennedy
Senior Director of Field Conservation
Defenders of Wildlife
Washington DC

Meeting Sign-In Sheet:
Rodenticide Meeting with American Bird Conservancy, Defenders of Wildlife, and Natural Resources Defense Council
April 1, 2008 / 1:30 to 2:30 pm

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Name	Affiliation	Phone	Email
Jason Aylander	Defenders of Wildlife	202-772-3245	jaylander@defenders.org
Michael Fry	Am. Bird Conservancy	202-234-7181	mfry@abcbirds.org
Debra Edwards	EPA	202 308-7090	edwards.debbie@epa.gov
Arty Williams	EPA, EFED	703-305-7695	williams.arty@EPA.GOV.
Bob Perlis	EPA/OGC	202 564-5536	Perlis.robert@epa.gov
Steven Bradbury	EPA/OPP/SRRD	703308-8000	Bradbury.steve@epa.gov
Jim Gulliford	OPPTS		
Tony Green	OPPTS		
Aaron Colangelo	NRDC	(via speakerphone)	

EXHIBIT 4

May 16, 2011

Steve Bradbury
Office of Pesticide Programs, 750P
U.S. Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460
Dear Director Bradbury,

RE: Cancellation of rodenticide products that do not conform to the new risk mitigation measures

The Final Risk Mitigation Decision for 10 Rodenticides published by the EPA in 2008 (hereafter referred to as EPA) require that all products sold over the counter beginning June 4, 2011 conform to specific packaging designed to reduce incidental harm to humans and wildlife. [1] In that notice, the EPA made clear that rodenticide manufacturers that did not conform to the new risk mitigation measures would face Agency action to force the removal of those non-compliant products from the market (EPA at 28) because they would be unlawful under FIFRA (EPA at 30). In anticipation of the June deadline and the knowledge of at least one rodenticide manufacturer's stated intention to ignore the EPA's explicit directions, American Bird Conservancy and other wildlife conservation and public interest groups signing this letter urge the EPA to immediately take presumptive steps to cancel all products that do not conform to the new mandatory risk mitigation measures.

As you will recall, the EPA decided to implement new risk mitigation procedures for ten rodenticides because of the unacceptable risks to children, pets, and non-target wildlife in 2008. The EPA-mandated changes to household rodenticides (mouse or rat bait products) include switching bait products to tamper- and weather-resistant bait stations, limiting the amount of bait sold to residential consumers, and restricting the use of second-generation active ingredients (EPA at 17-19).

It has come to our attention that Reckitt Benckiser, Inc. has publicly declared its intention to flout the EPA's safety measures for its d-Con® brand. Therefore, we request that the EPA take immediate measures to ensure Reckitt Benckiser conforms to the new risk mitigation measures, and to pull its product from the retail market if it fails to come swiftly into compliance.

It is unacceptable for a major pesticide company to blatantly ignore the risk mitigation measures after the Agency has conducted years of research and risk assessments, and developed a plan to which all companies were given ample time to conform. The EPA's risk mitigation measures were developed because of human health dangers in urban communities, and in response to more than 10,000 calls to poison control centers annually. The sale of an unregistered product after the phase-out period presents an imminent hazard to children, pets, and wildlife, and we strongly believe it is grounds for suspension under FIFRA section 6(c). We feel this is an issue to which the EPA enforcement division must immediately respond with decisive action.

If EPA fails to take rapid and meaningful action to cancel products that are not in compliance with the mitigation requirements of its Risk Mitigation Decision (EPA 2008), then it would constitute a violation of FIFRA by allowing products on the market that cannot meet the safety standard of FIFRA and FQPA.

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[1] EPA. 2008. Final Risk Mitigation Decision for 10 Rodenticides. May 28, 2008, revised June 24, 2008. Document EPA-HQ-OPP-2006-0955-0764. http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2006-0955-0764

See website for more information
http://www.epa.gov/opp00001/reregistration/rodenticides/finalriskdecision.htm

Lastly, we request a meeting with the Agency to discuss what actions will be taken if Reckitt Benckiser, Inc., continues to market products that violate FIFRA.

Thank you in advance for your continued interest and leadership on matters of environmental protection and public health.

Sincerely,

Michael Fry, PhD
American Bird Conservancy

Nichelle Harriott
Beyond Pesticides

Patty Clary
Californians for Alternatives to Toxics

Caroline Cox
Center for Environmental Health

Caroline Kennedy
Defenders of Wildlife

Chris Geiger, Ph.D.
IPM Program Manager

Aimee Code, M.S.
Northwest Center for Alternatives to Pesticides

Karl Tupper
Pesticide Action Network of North America

Diana Post, VMD
Rachel Carson Council

Lynn Carroll, Ph.D.
TEDX (The Endocrine Disruption Exchange)

Jeff Lincer, PhD
Wildlife Research Institute

GREGORY C. LOARIE, CA Bar No. 215859
IRENE V. GUTIERREZ, CA Bar No. 252927
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Counsel for Proposed Intervenors American Bird Conservancy, Center for Biological Diversity, Defenders of Wildlife and Sierra Club

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE ADMINISTRATOR

In the Matter of:	FIFRA Docket. No.661
Reckitt Benckiser LLC, et al.,	DECLARATION OF GREGORY C. LOARIE IN SUPPORT OF MOTION TO INTERVENE

I, Gregory C. Loarie, hereby declare as follows:

1. I am counsel for proposed intervenors American Bird Conservancy *et al.* (collectively, the "Wildlife Groups") in the above-captioned proceedings. I have personal knowledge of the matters stated herein and, if called as a witness, could and would competently testify thereto.

2. By e-mail dated April 23, 2013, I notified Robert Perlis, counsel for the Environmental Protection Agency ("EPA"), Lawrence Culleen, counsel for Reckitt Benckiser LLC, and representatives of DoItBest, Greater Cincinnati Northern Kentucky Apartment Association, and Louisville Apartment Association that the Wildlife Groups intended to move to intervene in these proceedings to support the EPA's notice of intent to cancel.

3. On April 24, 2013, counsel for EPA advised me that EPA did not object to the Wildlife Groups' intervention.

4. On April 24, 2013, counsel for Reckitt advised me that Reckitt would not take a

position on the Wildlife Groups' intervention until Reckitt reviewed the Wildlife Groups' moving papers.

5. On April 24, 2013, Mark Franks, executive vice president of the Greater Cincinnati Northern Kentucky Apartment Association, advised me that his organization would take no position on the Wildlife Groups' motion to intervene.

6. Representatives from DoItBest and the Louisville Apartment Association did not respond to my April 23, 2013 e-mail.

I declare under penalty of perjury that the foregoing is true and correct and within my personal knowledge and belief.

DATED: April 26, 2013.

Gregory C. Loarie

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Counsel for Proposed Intervenors American Bird Conservancy, Center for Biological Diversity, Defenders of Wildlife and Sierra Club

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE ADMINISTRATOR

In the Matter of: Reckitt Benckiser LLC, et al.,	FIFRA Docket. No. 661 DECLARATION OF ANDREW CHRISTIE OF SIERRA CLUB – SANTA LUCIA CHAPTER IN SUPPORT OF MOTION TO INTERVENE

I, Andrew Christie, hereby declare as follows:

1. I submit this declaration in support of the motion to intervene filed by the American Bird Conservancy *et. al.*, in these proceedings. I have personal knowledge of the matters stated herein and, if called as a witness, could and would competently testify thereto.

2. I am the Director of the Santa Lucia Chapter of the Sierra Club and also a member of the organization. In my role as Chapter Director, I have experience in Sierra Club's work to combat the dangerous effects of pesticides. Recently, I assisted with the successful settlement of a lawsuit brought by Sierra Club and other environmental organizations against SunPower Corp. and Topaz Solar Farms, LLC, which included an agreement by the companies to refrain from use of rodenticides in their Carrizo Plain development, which is situated within the range of the endangered

San Joaquin kit fox.

3. Founded in 1892, The Sierra Club is a national nonprofit organization of approximately 600,000 members dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives.

4. The Sierra Club's interest in this case stems from our long involvement in the protection of wildlife from the effects of rodenticides and other industrial toxins in ecosystems. The Sierra Club has spearheaded a number of ground-breaking lawsuits to better regulate pesticides and to reduce pesticides risks.[1] The Sierra Club has commented on 2004 proposed amendments to FIFRA, as well as on proposals to reconsider the registration of pesticides such as the neonicotinyl class of insecticides. The Sierra Club has also distributed fact sheets and helped raise public awareness about the effects of pesticides.

5. The Sierra Club has been an active participant in EPA's efforts to regulate rodenticides. The Sierra Club supported the mitigation measures required by the EPA's Rodenticide Risk Mitigation Decision, including the use of bait stations, the ban on pelleted bait, and restrictions on the use of second generation anticoagulant rodenticides. A true and correct copy of the January 31, 2007 Comment Letter Submitted by the Sierra Club is attached hereto as **Exhibit 1**. In our comments, we supported a ban the outdoor use of Second Generation Anticoagulants to protect wildlife.

6. I have reviewed Reckitt-Benckiser, Inc.'s Request for Hearing and Statement of Objections to EPA's Notice of Intent to Cancel, filed on March 6, 2013. I am aware that Reckitt-Benckiser disputes EPA's determination that the rodenticides that are the subject of EPA's Notice of Intent to Cancel pose unreasonable risks to human health and wildlife. I am also aware that Reckitt-

[1] E.g., *Sierra Club v. Peterson*, 705 F.2d 1475, 1478 (9th Cir. 1983)(requiring United States Forest Service to obtain permits prior to spraying herbicide); *Defenders of Wildlife v. EPA*, 882 F.2d 1294 (8th Cir. 1989)(use of strychnine could amount to "taking" in violation of Endangered Species Act).

Benckiser contends that the EPA has failed to appropriately consider the public health risks that would arise if its products' registrations were cancelled, and that Reckitt-Benckiser argues that the products subject to the Notice of Intent to Cancel do not pose unreasonable risks to non-target wildlife species.

7. EPA's Notice of Intent to Cancel is based on sound scientific evidence, and Sierra Club agrees with EPA that the registrations of the Reckitt-Benckiser products that are the subject of the Notice of Intent to Cancel should be cancelled and/or denied. While additional safeguards should be put into place to protect wildlife from exposure to rodenticides, Sierra Club supports the mitigation measures required by EPA.

8. The Sierra Club is interested in intervening in these proceedings in order to ensure that its interests in wildlife conservation are adequately represented and to provide additional support for EPA's position that the rodenticides that are the subject of this petition create unreasonable risks to wildlife.

9. The Sierra Club and its members would be harmed if the products that are at issue in the proceedings are allowed to remain on the market. These types of rodenticides are responsible for causing the deaths of a number of wild species. Sierra Club and its members would be harmed by their continued use, as their ability to enjoy viewing wild animals in their native habitats, and to protect and promote healthy ecosystems would be affected.

I declare under penalty of perjury that the foregoing is true and correct and within my personal knowledge and belief.

DATED: April 22, 2013.

ANDREW CHRISTIE

EXHIBIT 1

SIERRA CLUB
FOUNDED 1892

January 31, 2007

Kelly Sherman and Laura Parsons
Special Review and Reregistration Division (7508P)
Office of Pesticide Programs
Environmental Protection Agency
1200 Pennsylvania Ave., NW.
Washington, DC 20460-0001

Re: EPA Rodenticide Mitigation Decision - EPA–HQ–OPP–2006–0955

Ms. Sherman and Ms. Parsons:

The Sierra Club supports EPA's proposed rodenticide mitigation decision published in the January 17, 2007 *Federal Register.*

Sierra Club supports EPA proposed definition of tamper-resistant bait stations and the requirement that all consumer sales of rodenticides be solid baits integrated into the bait station. The use of pellets is unacceptably dangerous. It also supports the designation of Second Generation Anticoagulants as Restricted Use Pesticides.

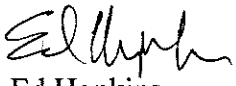
Sierra Club believes that EPA should ban the outdoor use of Second Generation Anticoagulants to more effectively protect wildlife. While it recognizes EPA's reasoning that even indoor uses can result in outdoor exposure, the limitation should significantly reduce that outdoor exposure.

Rodents present serious dangers to children and families in affordable housing. The U.S. Centers for Disease Control and Prevention reports that as many as 10,000 children are bitten by rats every year, and the majority of those bites occur in sleeping areas of the home. Yet the American Association of Poison Control Centers reported approximately 12,000 to 15,000 rodenticide exposures annually to children six years old or younger. Clearly solving one problem by creating another is not the answer. EPA fairly balances the costs of the additional safeguards and provides practical options that may be used in by affordable housing managers.

408 C ST NE, Washington, DC 20002 TEL: (202) 547-1141 FAX: (202) 547-6009 www.sierraclub.org

Sierra Club encourages EPA to quickly finalize its decision so children and wildlife can benefit from the decision sooner.

Sincerely,



Ed Hopkins

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