

Wildlife Services

Protecting People
Protecting Agriculture
Protecting Wildlife

National Wildlife Research Center

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Product Registration: Providing Tools for Wildlife Services



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Major Cooperators

- USDA/APHIS Wildlife Services Operations
- U.S. Fish and Wildlife Service
- Private rodenticide registrants
- Association of Fish and Wildlife Agencies
- State Wildlife Management Agencies

Groups Affected By These Problems

- Urban and suburban residents
- Farmers, ranchers, and livestock producers
- Federal, State and private natural resource managers

NWRC Maintains Chemical Tools for Wildlife Damage Management

The NWRC Registration Unit is responsible for ensuring WS registrations of chemical-based management tools are current and meet State and Federal regulations. The NWRC Registration Unit works closely with APHIS's Policy and Program Development, Environmental Services office in all product registration activities. APHIS continues to hold registrations with the U.S. Environmental Protection Agency (EPA) for rodenticides, predacides, avicides, repellents, snake toxicants, and an avian repellent. APHIS also holds Investigational New Animal Drug (INAD) applications with the U.S. Food and Drug Administration (FDA) for immobilizing agents used in animal damage management. In addition, the Registration Unit is working on product registrations through the EPA for contraceptives to be used on wild and feral animals. To maintain or expand authorized use of these products, the Registration Unit works closely with NWRC scientists to ensure that studies conducted for regulatory purposes meet EPA and FDA guidelines.

The Registration Unit also provides technical assistance and information to state WS programs, Federal and State agricultural and conservation agencies, academic institutions, non-governmental groups, and private industry. Assistance often includes responding to requests for regulatory assistance from Federal and State agencies, in addition to WS. Many of the requests for assistance come from WS Operations personnel seeking new products or improvements to existing products, or looking for help interpreting product labels to ensure proposed applications are legal.

Applying Science & Expertise to Wildlife Challenges

APHIS Pesticide Product Registrations—APHIS currently holds registrations through the EPA for eleven active ingredients formulated into 23 federally registered vertebrate pesticide products. These products meet the needs of bird management (five avicides and one avian repellent), rodent management (11 rodenticides and one burrow fumigant), predator management for livestock protection (two predacides and one fumigant), and a toxicant for managing brown treesnakes on Guam.

Rodenticides—Three new rodenticide products were registered by APHIS through the EPA in 2007 with the assistance of the U.S. Fish and Wildlife Service (FWS) and a non-governmental organization. These products are used for the eradication of invasive rodents on islands and unmanned derelict ships for conservation purposes. The State of Hawaii granted a state registration for Diphacinone 50 Conservation in 2007 and WS and the FWS conducted an eradication project on the 16-acre Mokapu Island in February 2008. Rodent monitoring on the island will continue for 2 years to ensure the eradication was successful. The State of Alaska approved Brodifacoum 25W Conservation to conduct a rat eradication project on the 7,000-acre Rat Island in the Aleutian Islands in September 2008. These new tools are vital in the efforts to protect native wildlife on islands from invasive rodents.

In addition to the new conservation labels for rodent eradication using anticoagulant rodenticides, the Registration Unit also obtained an EPA Emergency Use Permit to use a zinc phosphide rodenticide for the eradication of Gambian giant pouched rats from Grassy Key, Florida. This project was unique in that it was the first eradication effort against the Gambian giant pouched rat in the United States.

The California Department of Food and Agriculture (CDFA) requested APHIS modify the "Zinc Phosphide Concentrate label (EPA Reg. 56228-6)" to help control California voles in artichoke fields. In a cooperative effort, the CDFA provided all the data needed to ensure product efficacy and worker safety, and APHIS submitted a label amendment request to EPA in 2007 that was approved in March 2008. In addition to this label modification, APHIS also submitted a request to EPA to allow the use of this product in food and feed crops, including alfalfa, barley, dry beans, sugar beets and wheat.



United States Department of Agriculture
Animal and Plant Health Inspection Service

Wildlife Contraceptives—The NWRC is a world leader in the development of effective wildlife contraceptives. GonaCon™, an immunocontraceptive vaccine, is the first product of its type to provide multiple years of infertility to a variety of mammal species following a single injection. A registration application for the use of GonaCon with white-tailed deer was submitted to the EPA in early 2009. WS worked closely with the Association of Fish and Wildlife Agencies to develop guidelines for the effective use of GonaCon.

NWRC is currently testing the effectiveness of GonaCon in two other cervid species—fallow deer and elk. An EPA Experimental Use Permit (EUP) was obtained in July 2007 for a study being conducted on invasive fallow deer in cooperation with the U.S. National Park Service at Point Reyes National Seashore in California. Another EUP was approved in November 2007 to test GonaCon in overabundant elk populations in Rocky Mountain National Park (RMNP). This is part of a larger effort to study and manage the health and abundance of elk in the Park. It is a cooperative effort among the National Park Service, Colorado State University, the Colorado Division of Wildlife, and the NWRC.

Small scale field studies have demonstrated the effectiveness of GonaCon on rodents, such as prairie dogs and tree squirrels. Consequently, registrations are being considered for these species.

Predacides—In November 2007, the EPA sought public comment on a petition received by the EPA Administrator to cancel predacide registrations for sodium cyanide and sodium fluoroacetate. In reply to the petition, an inter-program APHIS task force was assembled to prepare a comprehensive APHIS response. The response submitted to EPA detailed the WS Program use of these compounds in the M-44 and Livestock Protection Collar (LPC), compliance and record-keeping, the economics of predator management, and human and pet health and safety of M-44 and LPC use over a period of 5 years.

After a two-year review, the EPA found M-44 and LPC use has a significant benefit in reducing predation on livestock without making an impact on coyote, other target or nontarget species, or the environment. The EPA and the Department of Homeland Security agreed that WS use of the predacides did not pose a potential bioterrorism threat that would warrant cancellation or suspension of the tools. WS remains committed to the partnership and consultation with other agencies, including the EPA, the U.S. Fish and Wildlife Services, and other land management agencies, which includes continued communications among agencies that will enable the program to serve its constituents' needs and wildlife populations.

Selected Publications:

Bergman, D. L., T. B. Veenendaal, B. F. Wakeling, and J. D. Eiseman. 2007. Current and historical use of alpha-chloralose on wild turkeys. *Proceedings of the National Wild Turkey Symposium* 9:51-57.

Bynum, K. S., J. D. Eiseman, G. C. Weaver, C. A. Yoder, K. A. Fagerstone, and L. Miller. 2007. Nicarbazin OvoControl G bait reduces hatchability of eggs laid by resident Canada geese in Oregon. *Journal of Wildlife Management* 71:135-143.

Fagerstone, K. A., L. A. Miller, J. D. Eisemann, J. R. O'Hare, and J. P. Gionfriddo. 2008. Registration of wildlife contraceptives in the United States of America with OvoControl and GonaCon immunocontraceptive vaccines as examples. *Wildlife Research* 35:586-592.

Johnston, J. J. 2007. Assessing rodenticide hazards: improving the art and science of risk assessment. *Proceedings of the Wildlife Damage Management Conference* 12:170-174.

Johnston, J. J., R. S. Stahl, H. J. Homan, G. M. Linz, and W. C. Pitt. 2007. Probabilistic bioenergetic/toxicity modeling approach for estimating toxicant induced mortality to target invasive species and non-target wildlife. Pages 393-397 in G. W. Witmer, W. C. Pitt, and K. A. Fagerstone, editors. *Managing invasive vertebrate species: proceedings of an international symposium*. USDA/APHIS/National Wildlife Research Center, Fort Collins, Colorado, USA.

Killian, G., K. Fagerstone, T. Kreeger, L. Miller, and J. Rhyan. 2007. Management strategies for addressing wildlife disease transmission: the case for fertility control. *Proceedings of the Wildlife Damage Management Conference* 12:265-271.

Miller, L. A., J. Gionfriddo, K. A. Fagerstone, J. Rhyan, and G. Killian. 2008. The single-shot GnRH immunocontraceptive vaccine (GonaCon™) in white-tailed deer: comparison of several GnRH preparations. *American Journal of Reproductive Immunology* 60:214-223.

Pilon, J., C. Loiacono, D. Okeson, S. Lund, K. Vercauteren, J. Rhyan, and L. Miller. 2007. Anti-prion activity generated by a novel vaccine formulation. *Neuroscience Letters* 429:161-164.

Major Research Accomplishments:

- APHIS submitted a registration application to the U.S. Environmental Protection Agency for the use of GonaCon™ Immunocontraceptive Vaccine for controlling white-tailed deer. Wildlife Services worked very closely with the Association of Fish and Wildlife Agencies on this product development.
- APHIS received three new rodenticide product registrations in the last two years. The development of these registrations was a cooperative effort with the U.S. Fish and Wildlife Service and two private rodenticide manufacturers. The products are for use by government conservation agencies to eradicate invasive rodents for islands solely for conservation purposes. These products were used in 2007 to eradicate rodents from a 16 acre island in Hawaii and a 7,000 acre island in Alaska.
- NWRC worked cooperatively with APHIS Legislative and Public Affairs and Wildlife Services Operations to produce a summary of Wildlife Services use of the M-44 (sodium cyanide) and Compound 1080 (sodium fluoroacetate) during the last 5 years. This report was submitted to the U.S. EPA in response to a petition they received from a coalition of environmental groups to cancel predacide uses of these materials.

Vertebrate control products currently registered or approved for use by USDA APHIS				
Taxa	APHIS Products	Mode of Action	Species	Uses Unique to APHIS
RODENTS	Zinc Phosphide (3 products)	Lethal	Voles, mice, rats, hares, woodchucks, ground squirrels, muskrats, nutria, prairie dogs	Some
	Strychnine (4 products)	Lethal	Pocket gophers	No
	Gas Cartridge (1 product)	Lethal	Prairie dogs, ground squirrels, woodchucks, marmots	No
	Diphacinone (1 product)	Lethal	Invasive rodents on islands	Yes
	Brodifacoum (2 products)	Lethal	Invasive rodents on islands	Yes
CANINE PREDATORS	Large Gas Cartridge (1 product)	Lethal	Coyotes, red foxes, striped skunks	Yes
	M-44 Cyanide Capsules (2 products)	Lethal	Coyotes, red foxes, gray foxes, arctic foxes, feral dogs	Some
	Livestock Protection Collar Compound 1080	Lethal	Coyotes	Yes
	Tranquilizer Trap Device	Non-lethal Immobilizing Agent	Wolves, coyotes, feral dogs	Yes
CERVIDS	GonaCon Immunocontraceptive Vaccine	Non-lethal Contraceptive	White-tailed deer*	Yes
BIRDS	Compound DRC-1339 Concentrate (4 labels)	Lethal	Gulls, pigeons, ravens, crows, magpies, starlings, blackbirds	Yes
	Compound DRC-1339 Concentrate—Feedlots	Lethal	Blackbirds, starlings, grackles, cowbirds	Some
	Mesurool Aversive Conditioning Egg Treatment	Non-lethal	Crows, ravens	Yes
	Alpha-chloralose	Non-lethal	Geese, ducks, coots, pigeons, ravens	Yes
	Corn Oil	Non-lethal	Canada geese	No
SNAKES	Acetaminophen	Lethal	Brown treesnakes	Yes
	Cinnamon, Clove and Anise Oil	Non-lethal Repellent	Snakes	No

* Registration review by EPA in progress